Office of the President
February 10, 1999

TO MEMBERS OF THE COMMITTEE ON EDUCATIONAL POLICY:

ITEM FOR DISCUSSION

For Meeting of February 18, 1999

PROVIDING ACCESS TO THE UNIVERSITY OF CALIFORNIA -- A PROGRESS REPORT ON LONG-RANGE ENROLLMENT PLANNING

California is in the midst of dramatic changes -- educational, economic, demographic, and social. Already a state with an R&D-intense economy dependent on science and technology, California's future prosperity and competitiveness will depend on constant innovation and discovery and full participation in a global economy.

To meet the changing needs of California's and the nation's economies, to carry out its mission as a public research university, and to continue to provide access for a growing population of high school graduates, the University of California must increase both its graduate and undergraduate enrollments.

This item summarizes the importance and relevance of UC's graduate education to California and the world, and the economic and societal forces that are creating a need for more students prepared at the masters, doctoral and professional levels. The item also examines demographic forces driving growth in undergraduate enrollments.[1]

The item presents the University's current planning for accommodating the growth that is considered necessary to meet societal and economic needs and to respond to demographic pressures. The amount of growth that is proposed is influenced by several factors:

- Commitment to the Master Plan's designation of the University as a public research university, which means that UC is dedicated to providing instruction for both graduate and undergraduate students;

- Commitment to the Master Plan's guarantee of enrollment for all eligible California undergraduates who choose to attend;

[1]This item discusses only general campus enrollments; planning for health science enrollments is being developed separately. A fuller description of the forces driving both graduate and undergraduate general campus growth can be found in the report, *Educating the Next Generation of Californians in a Research University Context: University of California Graduate and Undergraduate Enrollment Planning Through 2010*, and its technical appendices, *Workforce Projections and Job Market Trends for Graduate and Professional Degree Recipients* and *Undergraduate Enrollment Demand Projection Methods*, available from the Office of the President, Planning and Analysis.

- Recognition of the planning parameters and commitments made in the Long Range Development Plans (LRDPs) at existing UC campuses and of current planning assumptions about enrollments that can be accommodated at the Merced campus.

Given the projected growth in high school graduates and the expected increases in workforce demand for graduate degree holders, it appears likely that the number of students the University has been planning to accommodate will fall short of the number who should be accommodated. This item examines several options for increasing UC's capacity to enroll more students. It should not, however, be viewed as a finished plan, but as a progress report on the significant issues associated with enrollment growth.

The unique nature of planning enrollments for a research university

A research university is a unique learning environment. By engaging both undergraduate and graduate students in research together with faculty and postdoctoral scholars, the research university experience develops creative processes and exposes students to the most current findings in each field of study. Students at both levels are essential to this mission, and their educational experiences help advance the research program. UC's enrollment planning must therefore take into account both graduate and undergraduate populations simultaneously. Considering them together allows us to craft the balance necessary for the high-quality instruction and research that is essential to the best research universities in the country. By excelling in its research mission, UC is fulfilling its commitments to the State's citizens.

In recent years, the fact of a growing high school population, and hence a growing undergraduate population, has dominated the discussion in higher education planning. It has been and continues to be necessary to address this issue. However, the University cannot neglect its responsibility for careful planning for graduate education. While the University fully intends to meet its commitment to enroll all eligible undergraduates who choose to attend, graduate enrollments in high quality programs are equally essential to the State's well-being and economic development and should not be cut back in order to accommodate growing undergraduate enrollments.

I. POTENTIAL UC ENROLLMENT GROWTH: 1998-99 through 2010-11

The University has been preparing for the following general campus headcount enrollments through the year 2010-11, given assumptions about student demand, State needs, resource availability and campus capacity:

	1998-99	2005-06	2010-11	Change from 1998 to 2010
Undergraduate	126,900	144,300	158,400	+31,500
Graduate	26,700	31,700	34,500	+ 7,800
Total	153,600	176,000	192,900	+39,300

Between now and 2010, what has been called "Tidal Wave II"—the projected large growth in the number of California high school graduates—will become college age, UC's eight existing general campuses will reach the enrollment limits established by their current Long Range Development Plans, and UC Merced will open as the University's tenth campus. As the following sections show, there are compelling reasons for the University to plan for this much growth. However, it may become necessary to plan for even more.[2]

II. GRADUATE ENROLLMENT

Significant social and economic forces will require increased graduate enrollments.

California now competes in a new economy, where research and innovation drive economic success. What is true for California today is also increasingly true for the United States. This new economy is part of a global society and marketplace which require a broader and deeper understanding of cultures different from one another and from our own. Sophisticated knowledge in the fields of science and technology are essential to California's continued prosperity and competitiveness, as well as knowledge of foreign languages, traditions and cultures. This new economy co-exists, however, with an array of challenges associated with urbanization, poverty, a poorly educated citizenry, and environmental problems.

UC's graduate enrollments must grow beyond the current level in order to respond to these driving forces. Graduates at all levels—masters, professional and doctoral—who are firmly grounded in the concepts, techniques and knowledge gained from a research university education are needed to meet these needs.

- ***As a high-technology state, California will rely more on highly educated workers.*** As a consequence, as much as a third of the growth UC is considering could come in engineering and computer science enrollments, in response to the high projected demand for highly skilled workers in these fields, especially in areas linked to high-tech industries. Campuses are also proposing growth in life sciences fields, in part to meet needs in the pharmaceutical and biotechnology industries, which are especially important to California.

  The high-tech economy is also spurring enrollment growth in non-science areas. These include, for example, growing emphasis within UC business programs on management of high-tech business and the development or expansion of digital arts programs.

[2] Unless otherwise noted, all enrollments are presented in year-average headcount. This method allows for comparison to LRDP enrollment levels, and to projections made by the Department of Finance, Legislative Analyst's Office and California Postsecondary Education Commission. Full-time equivalent (FTE) enrollments better reflect the operating and capital costs required to serve students, and are used for State budgeting purposes. Section IV includes campus enrollments in both headcount and FTE.

- ***California's future is tied to its leadership role in an international economy, particularly focused on the Pacific Rim.*** Campuses are targeting growth in programs that will prepare leaders, entrepreneurs and professionals who understand the cultures, economies, politics and languages of Asia and Latin America.

- ***California and the U.S. also face many social and economic challenges.*** Campuses want to increase programs that will benefit K-12 education and will address challenges arising from immigration, poverty, health care, crime, urbanization, and the environment. Drawing on their respective research strengths, campuses are expanding and developing programs that will benefit their individual regions' particular economic bases, social needs, or cultural environments.

- ***Some growth will meet demographically driven needs.*** Campus growth plans also assume modest increases in demand for college and university faculty in California and across the United States, even though these projected needs are lower than projections made a decade ago. UC Ph.D.'s comprise more than 20 percent of the faculties at both UC and CSU. With large enrollment growth projected for both systems, many additional UC Ph.D.'s will be needed to teach the State's own college students. In addition, UC will expand its K-12 credential programs and programs to meet increased teacher demand for education beyond the credential, as well as preparing more faculty for teacher education programs throughout the state.

Graduate enrollment growth is therefore targeted to meet anticipated demand both in existing fields and in emerging fields—which is exactly what California excels in creating. However, growth will be moderated by holding steady or even cutting back in disciplines where there does not appear to be sufficient workforce demand. Much of the growth campuses are planning will be in masters programs, as compared to doctoral programs, which will help move a growing cadre of workers with advanced, research-based skills into the workforce in a short period of time.

However, the State of California is under-investing in graduate education, despite highly successful UC programs.

Graduate programs grow by careful design related to workforce needs, unlike undergraduate enrollment increases which are largely driven by population growth. In the face of the driving societal forces for more highly educated individuals, it seems increasingly apparent that California is under-investing in graduate education. Despite high quality programs and strong student demand, enrollments in UC's graduate programs are lower today than they were a decade ago, both in number and in percent of total enrollment, as shown in Figures 1 and 2, while undergraduate enrollments have continued to grow. In the last 30 years, graduate enrollments have increased only 7 percent as compared to 100 percent growth in undergraduate enrollments.

Figure 1 – General Campus Undergraduate and Graduate Enrollments, 1967-68 to 1997-98
Year-Average Headcount

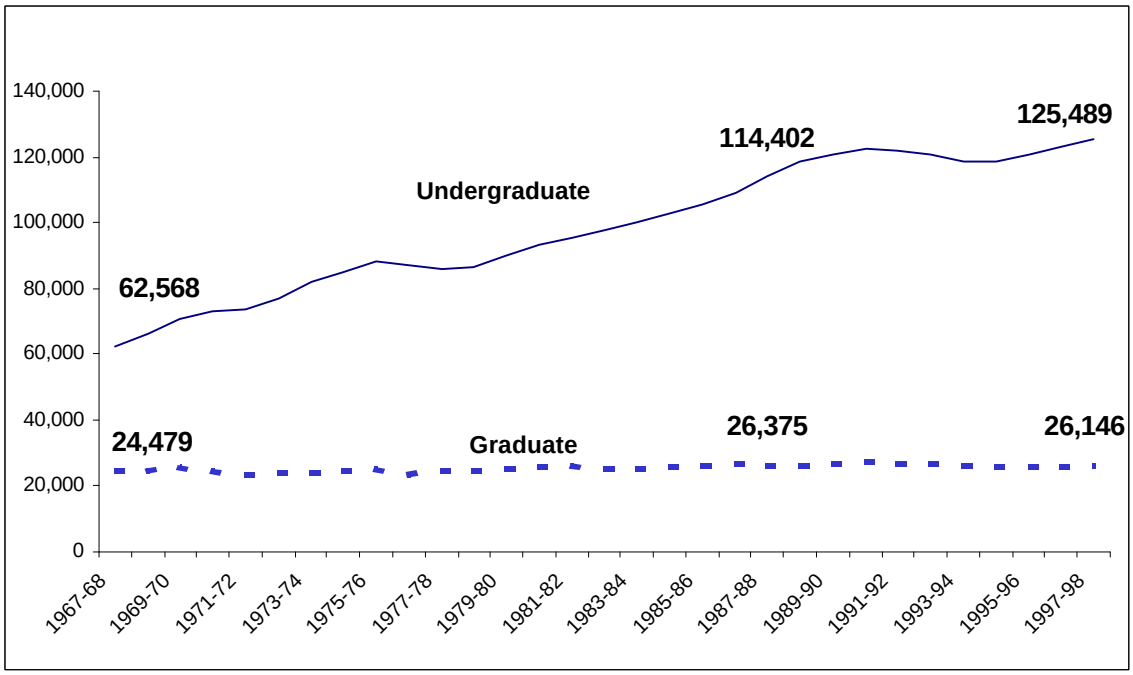

Figure 2 - Undergraduate and Graduate Students as a Percentage of Total General Campus Enrollment, 1967-68 to 1997-98
Year-Average Headcount[3]

	Graduates	Undergraduates
1967-68	28.1%	71.9%
1977-78	22.3%	77.7%
1987-88	18.7%	81.3%
1997-98	17.2%	82.8%

Furthermore, as Figure 3 shows, UC's graduate enrollment as a percentage of total campus enrollment is lower than the percentage at our four public comparison universities, our four private comparison universities[4], and eleven public Association of

[3]Calculating the percentage of graduate students on the basis of headcount yields slightly different results than calculations based on FTE. Budget documents often use an FTE –based calculation. For example, in 1997-98, graduate students were 17.6 percent of total FTE enrollment.

[4]These eight institutions are those agreed to by UC and the California Postsecondary Education Commission as UC's comparison universities, for use in setting the level of UC faculty salaries. The four public ones are the Universities of Illinois-Urbana-Champaign, Michigan-Ann Arbor, Virginia, and SUNY-Buffalo. The private universities are Harvard, MIT, Stanford, and Yale.

American University (AAU) institutions that are similar to UC in their research and graduate education missions.[5] The table also shows that UC's percentage in various subcategories of enrollment is in almost all cases lower than any of the comparison groups.

Figure 3 – Graduate Enrollments as a Percent of Total Campus Enrollments, Fall 1997[6]

	University of California %	*Public Comparison %*	*Private Comparison %*	*11 Public AAU Institutions %*
Total Percent Graduate Enrollment	***18.1***	***27.0***	***51.3***	***24.7***
Graduate Academic	***13.3***	***15.4***	***30.9***	***15.7***
Letters and Science	***9.3***	***8.7***	***17.6***	***9.8***
Engineering/ Computer Science	***2.9***	***4.8***	***11.0***	***3.9***
Professional Doctoral	***1.1***	***1.9***	***2.4***	***2.0***
Graduate Professional (Masters)	***4.8***	***11.5***	***20.4***	***9.0***

Finally, a 1998 analysis by the Council of Graduate Schools comparing graduate education across the 50 states, plus Washington D.C. and Puerto Rico, revealed some significant trends and comparisons.[7] As Figure 4 shows, the State of California has the highest graduate enrollment—159,000 students. However, controlling for size presents a different picture. Graduate enrollments divided by state residents 25-64 years old places California in the bottom third of the United States. Graduate enrollments per state resident with a B.A. rank California even lower. What is more, over the past decade, California actually lost graduate enrollments, one of only five states to have fewer graduate students in 1996 than in 1986, and it had by far the greatest numerical decline in graduate enrollments of any state.[8] Yet, California benefits more than most states in terms of federal R&D dollars it receives per enrolled graduate student.

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[5] Includes UC's public comparison universities and the AAU institutions for which comparable enrollment data were available: Universities of Colorado-Boulder, Minnesota-Twin Cities, North Carolina-Chapel Hill, Ohio State University, Texas-Austin, Wisconsin-Madison, and Washington. Six of UC's eight general campuses belong to the AAU, a prestigious group of 62 U.S. and Canadian institutions.

[6] For comparability with other institutions, UC proportions in Figure 3 include enrollments in non-State-funded graduate degree programs. The percentages are therefore higher than figures shown elsewhere in this document, which reflect only State-funded enrollments.

[7] Syverson, Peter D., "State Comparisons of Graduate Enrollment: An Exploration," *Communicator*, June 1998, pp. 9-12.

[8] The other states with declines in graduate enrollments between 1986 and 1996 were Arkansas, Connecticut, Kansas and Oklahoma.

Figure 4 – State of California's National Ranking on Selected Comparative Measures

Measure	*CA Measure (Includes all California Universities)*	*CA Rank Compared to All States*	*CA Rank Compared to 15 Most Populous States*
Total graduate enrollment	***159,000***	***1***	***1***
Federal R&D dollars per graduate student	***$10,492***	***9***	***2***
Graduate students per 100 state residents 25-64 years old	***1/100***	***36***	***11***
Graduate students per 100 state residents with BA	***3/100***	***39***	***14***

Despite these indicators and trends, UC graduate programs have achieved a level of quality, effectiveness and international distinction that few other institutions can match, as indicated by several measures, including the highest possible national rankings, selective admissions, strong placement records upon degree completion, and unrivaled federal research support.

- ***Highest national rankings.*** Studies of doctoral programs and faculty research consistently confirm that few other institutions can match the quality of UC's doctoral programs. The National Research Council's (NRC) study of doctoral programs found, for example, that eight UC doctoral programs ranked number one in their academic fields in terms of faculty quality (a key indicator of doctoral program quality), and more than one-third of all UC programs evaluated—at eight UC campuses—ranked in the top ten. More than half of the 229 UC doctoral programs evaluated ranked in the top 20 in their fields, a record unmatched by any other university system in the nation.[9] Another national study, by researchers Hugh Davis Graham and Nancy Diamond, reaffirmed the extraordinary productivity and quality of faculty research at all UC campuses and made particular note of the remarkable rise to excellence of UC's newer campuses at Santa Barbara, Riverside, and Santa Cruz.[10] UC's professional schools of business, education, engineering, law, medicine, public policy, and veterinary medicine rank very highly, too, according to ratings by *U.S. News and World Report (USN&WR).*[11] The extraordinary quality of graduate education and research at each of the nine campuses is briefly summarized in Figure 5.

[9]National Research Council, *Research-Doctorate Programs in the United States: Continuity and Change* (Washington, D.C.: National Academy Press, 1995).

[10]Hugh Davis Graham and Nancy Diamond, *The Rise of American Research Universities: Elites and Challengers in the Postwar Era* (Baltimore, MD: The Johns Hopkins University Press, 1997).

[11]*U.S. News and World Report*, 1998 rankings.

Figure 5 – Selected Indicators of Graduate Education and Research Quality at UC Campuses

Berkeley	Ranks #1 in U.S. in number of top-10 Ph.D. programs (36) in NRC study. Per faculty member, ranks #1 in overall research performance in Graham-Diamond study. *USN&WR* ranks professional programs in education #1, engineering #2, public policy #5, law #7, and business #10. AAU member.
Davis	NRC study ranks four Ph.D. programs in top 20. Per faculty member, ranks #11 among public universities in total number of journal publications, in Graham-Diamond study. *USN&WR* ranks veterinary medicine program #1. Elected to prestigious AAU in 1996.
Irvine	NRC study ranks five Ph.D. programs in top 20. Per faculty member, ranks #3 among public universities in publications in leading science journals and #6 in total number of journal publications, in Graham-Diamond study. Elected to prestigious AAU in 1996.
Los Angeles	Ranks #14 in U.S. in number of top-10 Ph.D. programs (13) and #3 in number of top-20 programs (31) in NRC study. Per faculty member, ranks #4 among public universities in overall research performance in Graham-Diamond study. *USN&WR* ranks programs in education #5 and business #8. AAU member.
Riverside	Per faculty member, ranks #1 among public universities in total number of journal publications, #4 in prestigious arts and humanities awards, and #6 in publications in leading social science journals, in Graham-Diamond study.
San Diego	Ranks #10 in U.S. in number of top-10 Ph.D. programs (14) in NRC study. Per faculty member, ranks #1 among public universities in federal R&D funding, #1 in publications in leading science journals, and #2 in total journal publications, in Graham-Diamond study. AAU member.
San Francisco	NRC study ranks six of the nine Ph.D. programs it reviewed in the top 10. *USN&WR* ranks its medical school #7.
Santa Barbara	NRC study ranks 10 Ph.D. programs in top 20. Per faculty member, ranks #2 among public universities in overall research performance (including #2 in prestigious arts and humanities awards) in Graham-Diamond study. Elected to prestigious AAU in 1995.
Santa Cruz	NRC study ranks 2 of its 17 rated Ph.D. programs in top 10. Per faculty member, ranks #1 among public universities in publications in leading social science journals and #6 in prestigious arts and humanities awards, in Graham-Diamond study.

- ***Student selectivity***. UC graduate academic and professional programs are both highly attractive to students and highly selective. Applications to UC's general campus graduate programs are now over 67,000, an increase of seven percent over the previous decade, despite widely publicized concerns about a weak Ph.D. job market in recent years. Overall, UC's graduate programs accept only 28 percent of these applicants with some programs accepting even fewer. Nearly half of those admitted (44 percent overall in 1997) decide to enroll, a proportion that has remained relatively stable for more than a decade.

- ***Strong placement records.*** Contrary to popular impressions, the unemployment rate among Ph.D. recipients from U.S. universities is quite low—and lower than the current 4.5 percent rate for the U.S. civilian labor force as a whole. For example, in 1995, overall unemployment among recent Ph.D.'s in the sciences and engineering was 1.9%; for Ph.D.'s in the humanities, it was 3.0%. And all indications are that the job market for Ph.D.'s has improved since 1995.

  Moreover, new UC Ph.D.'s have better placement records than do Ph.D.'s nationally, especially in engineering/computer sciences and in physical sciences/mathematics fields. For example, by the time they completed their degree programs, 81 percent of UC Ph.D.'s in engineering or computer sciences who graduated in 1994 to 1996 and

who wanted to enter the labor force immediately (rather than pursue postdoctoral work) had already secured jobs or were negotiating for them, compared to only 73 percent nationally. Placement rates for UC Ph.D.'s in the physical sciences and mathematics are similarly higher than national rates.[12] It is important to note that these percentages are based on placements at the time of filing the dissertation—that is, immediately after completing their degrees—so do not include those who found employment soon thereafter.

New UC Ph.D.'s find employment quickly, and do well even in fields with difficult job markets. For example, a study by UC San Diego of recent Ph.D. recipients found that within a few months of graduation 95 percent were employed, in postdoctoral positions, or were pursuing further education. A survey by Irvine's Department of English and Comparative Literature found that 90 percent of Ph.D.'s awarded since 1992 are employed in academic positions, with others finding employment in the private sector.

Placement of UC professional degree recipients is also strong. For example, at UCLA's Anderson School of Management, 99 percent of the class of 1997 had accepted full-time offers or had developed entrepreneurial opportunities by September 1997, with about two-thirds taking positions in California. Placement information from UC Berkeley's Haas School of Business showed that 90 percent of their 1997 M.B.A. graduates had accepted job offers within three months after graduating, with an average annual salary over $76,000. Business schools at the other UC campuses had equally strong placements. Unemployment rates for the 1996 graduates of UC's three schools of law—a class that faced a particularly difficult job market—were below the national average of 11 percent.

- ***Unrivaled federal research support.*** A final aspect of the "UC-advantage" in offering graduate studies is the unrivaled success of the University in attracting research support, particularly from the federal agencies. In 1997-98, excluding funding for the national laboratories, UC received almost $2.2 billion in contract and grant awards, about $1.5 billion of which came from the federal government. Three UC campuses (San Diego, Los Angeles, and San Francisco) are among the top ten institutions in the country in federal R&D expenditures, and all of the other campuses place well, too. This success has unquestionable benefits for the University, because it creates a cycle of increasing quality: when faculty attract high levels of support they are able to build excellent programs to which they are able to attract high quality students, who in turn attract higher quality faculty who attract more support.

[12] Comparisons are based on data for 1993-94, 1994-95, and 1995-96 U.S. doctorate recipients from the National Research Council's Survey of Earned Doctorates: UC's NRC data files and a special analysis of national NRC data provided by the National Opinion Research Center. Includes those who were returning to predoctoral positions, those who had secured definite commitments, and those who were negotiating with one or more specific organizations.

The University will undertake several important tasks in order to accommodate the increase in graduate enrollment.

To meet the State and national needs described above, the University is planning for an increase of 7,800 graduate students between 1998-99 and 2010-11. This growth would restore UC's overall graduate proportion to approximately 18.3 percent (based on FTE enrollment), about the same proportion as in 1990, before budget cuts. In order to accommodate this growth in graduate students, continue to foster academic quality, and accomplish both within limited resources, UC must attend to a number of tasks:

- Each campus will continue to monitor and foster quality, productivity, flexibility, and innovation in its graduate programs, ensuring student diversity, reasonable progress to the degree, and continued success in placement.

- The UC system will continue to monitor both workforce and social forces on the one hand and availability of resources on the other to ensure that graduate enrollment growth is both necessary and achievable, and will continue to modify existing programs to meet changing needs.

- While continuing to develop individual strengths and core programs, campuses will also continue to find ways to work collaboratively in their delivery of graduate education in order to avoid academically unnecessary duplication of programs.

- In addition to relying on traditional sources, campuses will develop new forms and sources of student financial support to attract the best students in a highly competitive environment and to ensure their timely progress toward their degrees.

III. UNDERGRADUATE ENROLLMENT

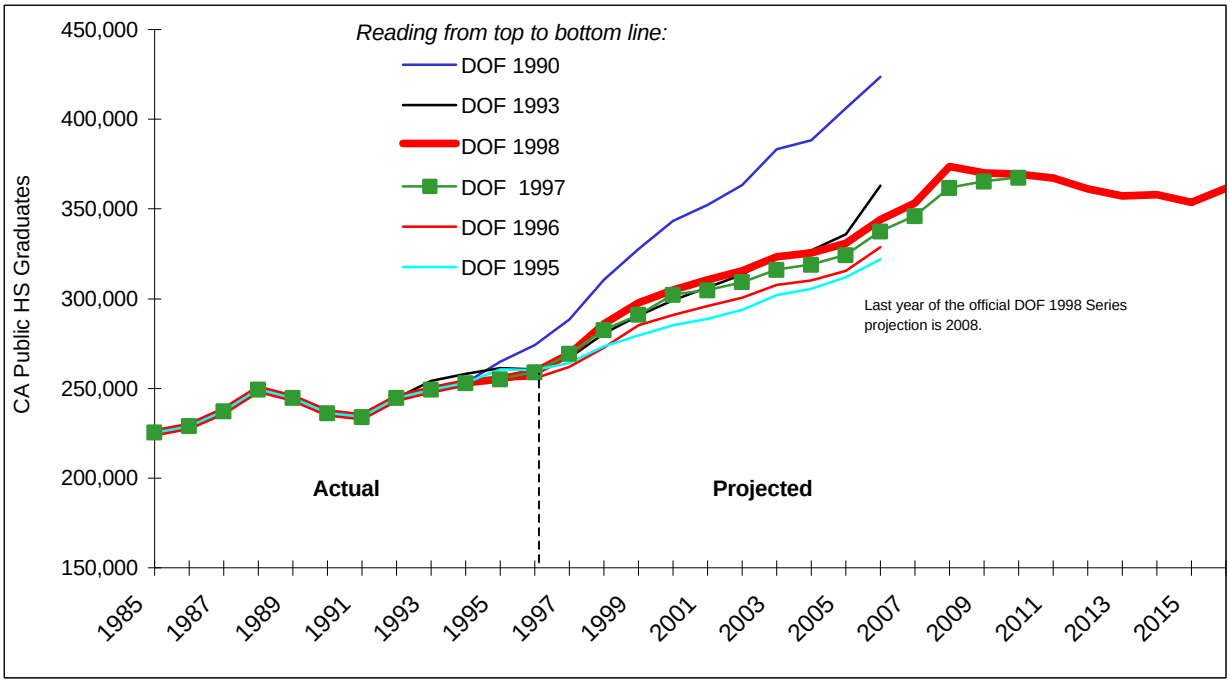
Projections of high school graduates indicate a growing demand for UC undergraduate enrollment.

Unlike graduate programs, which grow by careful design related to workforce needs, undergraduate enrollment growth is largely driven by population growth and student choice. California's population of high school graduates is projected to grow substantially in the next decade, and under California's Master Plan for Higher Education, the University is committed to enrolling all of those who meet the eligibility requirements and who choose to attend.

The State Department of Finance (DOF) Demographic Research Unit's 1998 projections indicate a 30 percent increase in the number of California public high school graduates between 1998 and 2010, an annual growth rate of 2.2 percent. DOF's projections from several years are shown in Figure 6. It is important to note that projections dropped significantly between the 1990 and 1995 series, years during which California experienced a serious recession and population out-migration. Since 1995 the projections

have been increasing. However, the most recent projections (1998 series) also show a decline after 2008.[13]

Figure 6 – Department of Finance 1998 Projection of California Public High School Graduates Compared to Earlier Projections



Using DOF projections of public high school graduates, it is possible to establish a reasonable range of demand within which to plan undergraduate enrollments by modeling various assumptions about the rate at which high school graduates and transfer students will choose to enroll at UC in the future. Figure 7 shows the results of such modeling compared to DOF's projections of UC enrollments, and to the enrollments for which UC has been planning. The four lines, reading from top to bottom, represent the following:

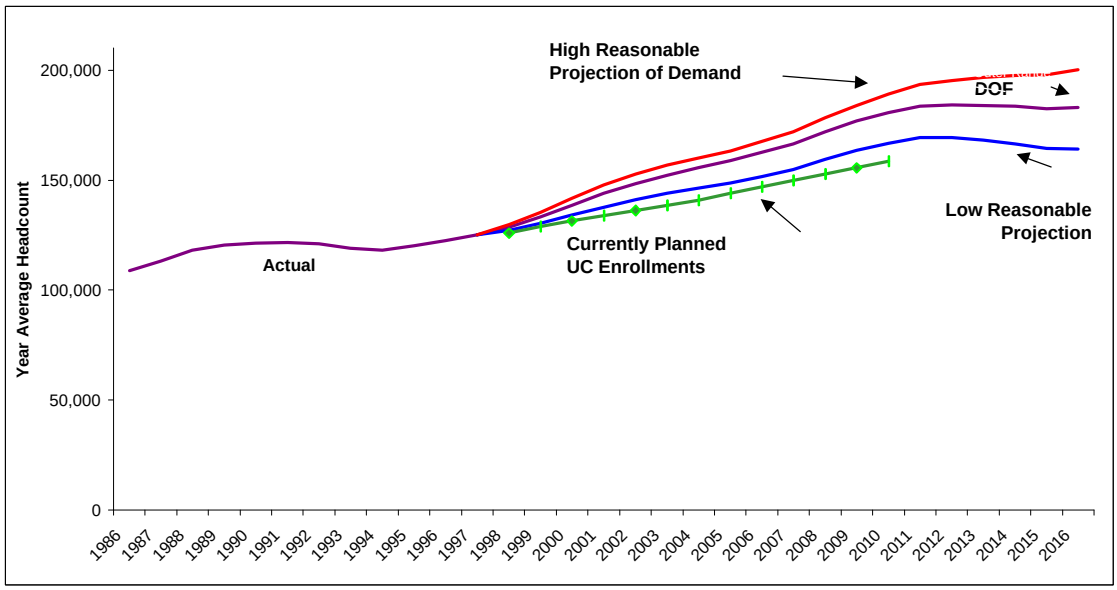
- An estimate of a reasonable maximum level of undergraduate enrollment demand. This top line assumes that new freshmen in each major racial and ethnic population group, expressed as a percentage of high school graduates, would enroll at their highest historical rate by no later than 2010.[14]

- DOF's 1998 projection of UC's undergraduate enrollment based on recent historical trends (second line).

- An estimate of a reasonable minimum level of undergraduate enrollment demand. This third line assumes that new freshmen would enroll at the lowest overall rate experienced in the last ten years.

[13] DOF's projections of high school graduates and of UC enrollments after 2008 are unofficial, but are provided to the University to assist in long-range planning.
[14] It is assumed in each of the University's estimates of demand, and in the currently planned enrollments, that transfer student enrollment will reflect the Memorandum of Understanding with the Community Colleges, i.e., that transfer enrollments will increase by a third, to 14,500 students in 2005.

Figure 7 - Projections of UC Undergraduate Enrollment Demand Compared to Currently Planned Enrollments



- The bottom line indicates the level of undergraduate enrollment at existing campuses and UC Merced for which the University has been planning. This level of undergraduate enrollments represents the number that can be accommodated (assuming the graduate enrollments described above) while staying within the enrollment commitments made in campus Long Range Development Plans. Since the LRDPs proposed a higher percentage of graduate enrollments than the University now projects, this current planning target includes about 9,000 more undergraduates (and correspondingly fewer graduate students) than campus LRDPs anticipated.

UC's existing plans for accommodating undergraduate enrollment fall short of possible demand.

As Figure 7 shows, UC's current plan for enrolling an additional 31,500 undergraduates by 2010, which keeps campuses within LRDP commitments, falls short of even the minimum level of potential demand by about 7,400 students. It falls short of DOF's projections by about 22,000 students.

Many factors, particularly the economic health of the State and consequent net in-migration, can influence the number of future high school graduates. In addition, many factors, including cost, socio-economic factors, and family desires, will influence the enrollment decisions students make 10 to 15 years from now. Therefore, the magnitude of the potential problem must be viewed with some caution. Furthermore, projections of possible total enrollment demand do decline for several years after 2012, reflecting the corresponding decline in high school graduates projected to occur a few years earlier (see again Figure 6). Thus, it seems prudent for the University to approach a revision of its current plans cautiously, by estimating a level of growth that is reasonably assured, rather than projecting growth for enrollments that may not materialize or that may represent a

temporary bulge. However, because even conservative projections of demand now seem higher than existing plans, the University is actively exploring options that will expand undergraduate capacity.

These options include educating more students off-campus, considering changes to the academic calendar and instructional schedule, increasing LRDP enrollment levels at one or more existing campuses, and developing an eleventh campus.[15] What follows is an initial assessment of these options.

Some increase in capacity can be gained by changing where and when some students attend classes.

- ***Increasing the potential for the number of students at off-campus locations.*** Campuses may be able to increase their capacity to enroll students by taking advantage of existing off-campus programs. For example, it may be possible for more students to participate in the Education Abroad Program and the University's program in Washington, D.C.

  Some campuses may also explore the possibility of creating off-campus centers in locations at some distance from the campus to serve either full- or part-time students. Off-campus centers are usually created either to serve the needs of a working population, or to take advantage of proximity to related industries. While their greatest value may be in graduate education, they may also provide a way to reach more transfer students who have completed their lower-division courses at a community college, but who are unable to attend classes at the main campus location.

  While no firm planning has been completed, initial campus estimates indicate that enrollments in both existing and new off-campus programs could increase by over 5,000 students.

- ***Using the summer more intensively for instruction.*** Each general campus currently has a summer session program that consists of sessions running from three to ten weeks. About 90 percent of the registrants are undergraduates, and about 75 percent of these are UC students. On average, each registrant takes about six units (a normal quarter load is 15 units). Summer session is not funded by the State; students pay for the cost of the program. Campuses estimate, again without benefit of in-depth analysis or planning, that an additional 2,000 students could be enrolled.

- ***Expanding the instructional day, week or year.*** Campuses do not estimate any significant increase in capacity by teaching evening or weekend classes. Many are already using these times to teach bottleneck courses, such as introductory laboratory science classes required by several majors or for University Extension classes.

[15] A full discussion of these options is included in the document *Educating the Next Generation of Californians in a Research University Context*. A separate report will also be sent to the Legislature in March 1999 in response to 1998 Supplemental Language that requests UC to explore options for expanding capacity.

A more significant proposal is one that would look at converting the summer months to a full quarter for at least some students. The University has already proposed to use the summer—with State funding—to increase programs for teacher credential students. There may be students in other programs for whom a summer quarter—funded by the State—would make academic sense. The University is committed to conducting a thorough study of the opportunities and ramifications of a full-year academic calendar, and will report back to The Regents in early 2000.

More significant increases in capacity can occur through re-evaluation of LRDP enrollment capacity limits.

In the late 1980s each campus carried out extensive analyses that resulted in a physical planning statement, the campus's LRDP. These LRDPs were predicated on a determination of an achievable level of enrollment and the corresponding development of a physical infrastructure that would occur between 1989 and 2005. For some campuses, the enrollment levels represented an optimal capacity level; for others they represented a reasonable target for that particular timeframe.

Over ten years have passed since most campuses created their LRDPs. Because of continuing enrollment pressures and other campus and community changes, it seems to be time to consider again the appropriateness of each campus's LRDP. Of course, any efforts to change them significantly will require resources, time, community involvement and legal counsel. However, as a rough estimate, it does appear reasonable to think that existing campuses have the physical potential to enroll up to 10,000 to12,000 students above their current LRDP targets by 2010, if necessary.

It appears that existing campuses and UC Merced can close the demand gap.

Initial estimates indicate that through increased off-campus enrollments, an expanded use of summer months for instruction, and most importantly, through the modification of LRDP enrollment targets, existing campuses may be able to enroll an additional 17,000 to 19,000 students by 2010. This is slightly fewer than the 22,000 students required to fill the gap between UC's current plans and DOF's projections, but well above the 7,400 required to meet UC's lowest estimate of demand. These estimates require considerably more study and analysis. In addition, some campuses, including UC Merced, may be able to expand further after 2010. Therefore, it appears at this time, that the University should concentrate its energies on growth alternatives for its existing campuses and UC Merced.

Over the course of the next year, UC will be pursuing these options to understand their implications in greater detail. Because it will help to have a framework for this planning effort, the University will:

- Use the level of undergraduate enrollments currently projected by DOF;
- Assume at least the number of transfer students agreed to in the Memorandum of Understanding; and

- Plan for graduate student enrollments at 18.3 percent of the total general campus FTE enrollment.

The University's options for expanding undergraduate enrollment capacity will not include substituting undergraduate enrollments for graduate enrollments or admitting students from anything less than the top 12.5 percent.

Those who have focused primarily on the challenge of accommodating the "Tidal Wave II" undergraduate enrollments have also suggested two additional solutions that the University considers neither feasible nor prudent: reducing graduate enrollments in order to meet the burgeoning undergraduate enrollments, and reducing the eligibility pool for freshmen below 12.5 percent.

This paper argues, we hope convincingly, that the State and nation need the graduate students UC produces, and will need more of them. Graduate education is essential to provide the trained researchers and professionals on which our economy depends, and undergraduate education can only reflect the forefront research and creative thinking characteristic of a research university when graduate students in appropriate numbers play their part in the process. It should also be obvious that as the numbers of undergraduates continue to grow, student demand for graduate degrees will also increase.

The University also continues to be committed to the Master Plan's mandate that any student in the top 12.5 percent of California's public high school graduates who wishes to attend be able to enroll somewhere within the UC system.

Any potential for expanding capacity depends on availability of both operating and capital support.

Finally, it is important to note that the plans the University is able to develop for expanding capacity for undergraduate enrollments ultimately depend on having the financial support to realize those plans. There are four areas of significant interest and concern with respect to resources that must be actively pursued to achieve the necessary funds: a commitment by the State to predictable funding for the University system, which could take the form of a new compact; efforts by the State and the campuses to provide the capital resources to accommodate expanding enrollments and to renew an aging physical plant; increased federal support, especially for research; and multiple-source strategies to provide adequate and competitive graduate student financial support.

The University will work with all its major sources of support to address the issues in order to accommodate long-range increases in enrollment.

IV. HEADCOUNT AND FTE CAMPUS ENROLLMENTS WITHIN LRDP PLANNING PARAMETERS

General Campus Year-Average Enrollments, 1998-99, 2005-06 and 2010-11

	Headcount			Budgeted FTE		
	1998-99	2005-06	2010-11	1998-99	2005-06	2010-11
Berkeley	28,970	28,700	28,700	27,800	27,800	27,800
Undergrad	21,270	21,000		20,290	20,290	
Graduate	7,700	7,700		7,510	7,510	
Davis	21,790	25,000	25,000	20,300	23,400	23,400
Undergrad	18,670	21,200		17,210	19,630	
Graduate	3,120	3,800		3,090	3,770	
Irvine	16,090	20,670	25,000	15,700	20,300	24,600
Undergrad	14,010	17,600		13,700	17,330	
Graduate	2,080	3,070		2,000	2,970	
Los Angeles	30,630	31,000	31,000	28,500	28,900	28,900
Undergrad	23,590	23,860		21,570	21,880	
Graduate	7,040	7,140		6,930	7,020	
Merced		1,040	5,200		1,000	5,000
Undergrad		935			900	
Graduate		105			100	
Riverside	10,000	14,510	18,000	9,550	13,800	17,400
Undergrad	8,680	12,530		8,250	11,850	
Graduate	1,320	1,980		1,300	1,950	
San Diego	17,140	21,650	25,000	16,850	21,300	24,600
Undergrad	14,920	18,350		14,650	18,030	
Graduate	2,220	3,300		2,200	3,270	
Santa Barbara	18,500	20,000	20,000	17,880	19,400	19,400
Undergrad	16,260	17,000		15,700	16,500	
Graduate	2,240	3,000		2,180	2,900	
Santa Cruz	10,460	13,450	15,000	10,420	13,400	15,000
Undergrad	9,450	11,870		9,445	11,870	
Graduate	1,010	1,580		975	1,530	
UC Total	153,580	176,020	192,900	147,000	169,300	186,100
Undergrad	126,850	144,345	158,400	120,815	138,280	152,275
Graduate	26,730	31,675	34,500	26,185	31,020	33,825

Individual campus graduate and undergraduate enrollments after 2005-06 have not been determined.

Budgeted FTE enrollments are based on 1998-99 conversion ratios and are subject to change as conversion ratios change.