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AN ANALYSIS OF ALTERNATIVES FOR GAINING CAPACITY SO AS TO MAINTAIN ACCESS TO THE UNIVERSITY OF CALIFORNIA

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ABSTRACT

This paper analyzes the need for providing additional undergraduate enrollment capacity at the University of California (UC) and of alternatives for gaining such capacity at UC and, by extension, other public research universities. In addition to the creation of new campuses, other approaches are capable of giving significant additional capacity as well. Some of these approaches are congruent with academic objectives; others are substantially neutral in that regard; and others probably do lessen the academic experience. A desirable approach is to have new campus sites continually identified, while retaining sufficient capability for alternate means of accommodating enrollment so as to enable continued capacity development in times of budgetary stringency.

Introduction

Ever-growing population and constrained state resources bring on a problem of how best to gain additional capacity for undergraduate enrollment in public universities. The analysis here applies to public research universities, and uses the specific example of the University of California (UC). Approaches for gaining capacity are general to a degree, but it is also helpful to have a specific case in mind. I have chosen the University of California because the issue is particularly stark for California, because of my experience with the UC system, and because California's Master Plan for Higher Education affords a certain amount of useful structure for the analysis. The analysis should be relevant to those concerned with planning at the University of California and within the state government and associated boards and commissions in California, as well as to those with similar roles in other states and other countries.

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Parameters Underlying Capacity Needs and Near-Term Projections

The Master Plan for Higher Education in California, established in 1960, designates the University of California (UC) as the public research university of the state and specifies that eligibility for attendance as a freshman at UC should be accorded to the top 12.5% of the state's public high school graduates.¹ UC sets standards for eligibility that are targeted to match the upper 12.5%, and equivalent standards are used for California students from private high schools and other forms of secondary education.² A subsequent update to the Master Plan assures freshman admission for all eligible applicants, but not necessarily at the campus or in the major of choice. In addition, the Master Plan indicates that UC should define eligibility for, and admit a sufficient number of, junior-level transfer students from the community-college system and elsewhere so that Upper Division (i.e., junior- and senior-level) students constitute at least 60% of the undergraduate student body.

Periodic studies are made under the auspices of the California Postsecondary Education Commission to measure the percent of public high school graduates actually eligible, and adjustments to the eligibility standards are then made by UC as appropriate to re-target 12.5% eligibility.³ Of course, not all eligible students actually attend. At present, 7.7% of California's public high school graduates attend the University of California.⁴ In addition, the equivalent of another 1.7% of California public high school graduates from other sources, such as private and out-of-state high schools, attend UC.

Historically, the capacity to provide access for all eligible students who wish to attend the University of California has been achieved through the creation of new campuses. The Irvine, San Diego, and Santa Cruz campuses were launched in the salad days of the early 1960s, and more recently – and much more slowly – a new campus at Merced has been established, opening in September 2005 with 875 students, targeted to grow to 5000 by 2010.

The growth in UC undergraduate enrollment from 1990 to 2003 is shown in Figure 1.⁵ The university is presently in a period of large growth rate, attributable to the echo (next generation) of the post-World War II baby boom (the so-called "Tidal Wave II"), with annual undergraduate enrollment growth in the range of 5000 to 7000 students, or 3-4%.

¹ University of California Office of the President, *The California Master Plan for Higher Education*, <http://www.ucop.edu/acadinit/mastplan/mp.htm>. See also John A. Douglass and Todd Greenspan, *The History of the California Master Plan for Higher Education* (Center for Studies in Higher Education, UC Berkeley), http://sunsite.berkeley.edu/uchistory/archives_exhibits/masterplan/; and John Aubrey Douglass, *The California Idea and American Higher Education, 1850 to the 1960 Master Plan* (Palo Alto: Stanford University Press, 2000).

² To date, these standards have involved completion of specified college preparatory courses, along with performance criteria based on grade point average in those courses and scores on standardized tests.

³ See, e.g., California Postsecondary Education Commission, "University Eligibility Study for the Class of 2003," <http://www.cpec.ca.gov/completereports/2004reports/04-05.pdf>.

⁴ 2003 data, according to Carol Copperud, Office of Planning and Analysis, UC Office of the President (personal communication). These figures are underlain by a considerable disparity among ethnic groups in eligibility for, and attendance at, UC.

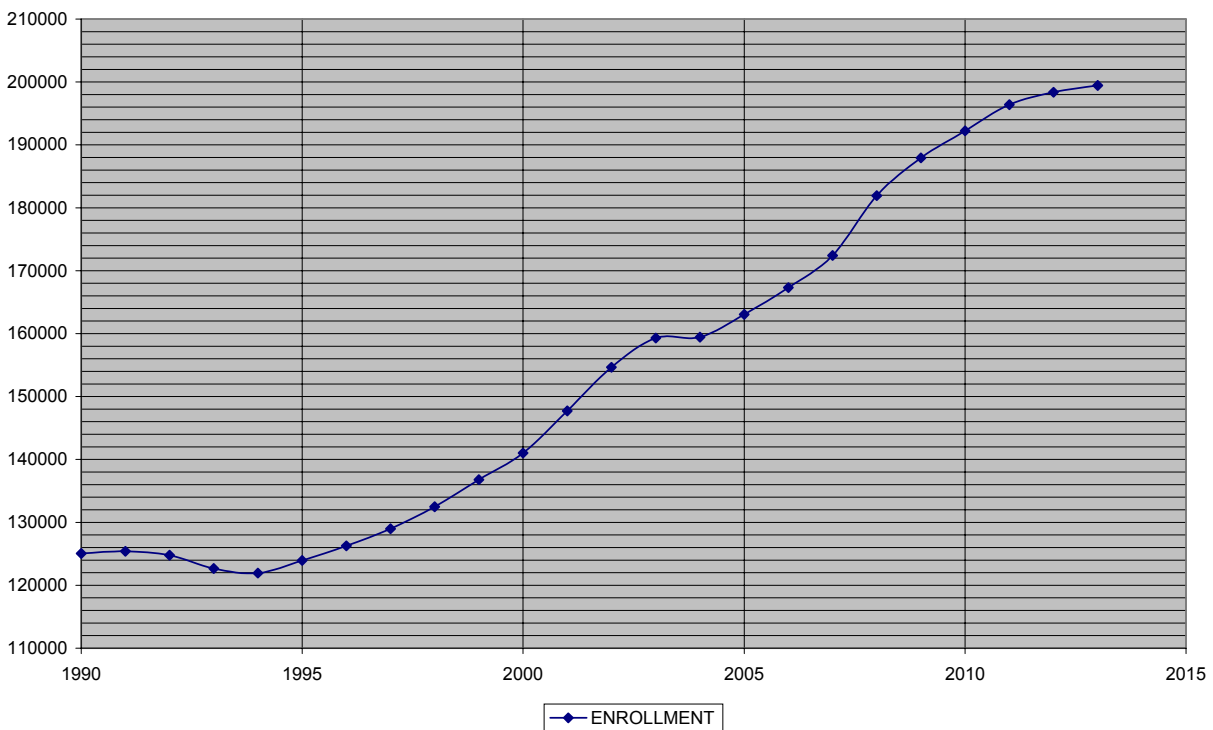
⁵ California Department of Finance Demographic Research Unit, "California Public Postsecondary Enrollment Projections, 2004 Series" (Sacramento, March 2005), <http://www.dof.ca.gov/html/demograp/post2nd%5F04.htm>.

Projections until 2013 are also shown in Figure 1. The present large growth rate is predicted to continue through 2011 and then to taper off for some years thereafter.

Through academic reasoning summarized by Kerr,⁶ the ultimate general-campus⁷ enrollment capacity of UC campuses was historically set at 27,500, and has grown over the years at Los Angeles and Berkeley to about 32,000. Some campuses, most notably Santa Cruz and Santa Barbara, have been constrained to lesser size through community agreements.

The University of California presently has a plan for achieving growth through 2010-11.⁸ That plan involves residual growth for existing campuses, state-funded summer instruction that is voluntary on the part of the student, somewhat expanded off-campus instruction, and slightly shorter average time to degree. Beyond 2011, the projected slowing toward a plateau in enrollment (Figure 1) occurs and, in light of that plateau, the new Merced campus should be able to assume the necessary growth for a number of years (see below).

Figure 1. PREDICTED AND PROJECTED UNDERGRADUATE ENROLLMENT AT THE UNIVERSITY OF CALIFORNIA
(California Department of Finance)



⁶ Clark Kerr, *The Gold and the Blue*, vol. 1 (Berkeley: University of California Press, 2001), pp. 73-77.

⁷ This excludes Health Sciences and University Extension (continuing education) enrollments.

⁸ UC Office of the President, Planning and Analysis, "Accommodating Tidal Wave II" (February 10, 2000), <http://www.ucop.edu/planning/enrollpres0100/>.

Assessment of Need

An analysis of options for creating capacity should begin with an assessment of the capacity that is needed. In addition to demographic projections, one should also address questions related to the Master Plan, such as whether the concepts of eligibility and guaranteed access for eligible freshman students should be preserved and, if so, what percentage of public high school students should be eligible for UC. As well, one can reassess the transfer-related provisions of the Master Plan. The analysis will be carried out in terms of undergraduate students, assuming that the proportion of graduate students remains essentially the same, an assumption that is tested below.

Demographic growth beyond 2013 is difficult to project because of swings in in-migration and out-migration, related in part to the state's economy; because of issues of college-going rates of different ethnic groups; and because, ultimately beyond 2023, the 18-year-olds in question have not yet been born. One inference may be made by averaging the California Department of Finance projections for total 15-19 and 20-24 year-olds through 2050.⁹ This approach gives the following annual growth rates averaged over decades:

2000-10	+1.9%
2010-20	-0.03%
2020-30	+1.1%
2030-40	+0.06%
2040-50	+0.07%
<hr/>	
Overall average for 50 years	+0.08%

However, such an analysis is a very uncertain estimate and is probably unduly low. As applied to UC's share of this age group, it does not allow for the fact that historically the fraction of 18-24 year-olds seeking admission and going to UC has continually increased, nor does it take into account the public and political perceptions of the high worth of a UC education, especially among those seeking upward mobility, and the nature and needs of the California economy.

With regard to Master Plan issues, the concept of eligibility has proven to be extremely valuable. It provides a clear and public measure of what preparation it takes to benefit from, and succeed at, the University of California. It provides the public with a simple and understandable criterion by which admissions to the University of California system as a whole are determined. Given the very large interest in and desire for attending the University of California, this simple criterion serves to restrain what would otherwise be even more widespread feelings by those who are not admitted that some sort of ill-defined and perhaps improper criteria have been used against them, whereas they were in their own views fully deserving of attending UC. Finally, the requirements for eligibility afford the K-12 school system with a clear standard as to what they should provide to students in order to prepare them for the University of California. Eligibility as a construct should be preserved.

⁹ California Department of Finance Demographic Research Unit, "Population Projections by Race/Ethnicity, Gender and Age for California and Its Counties, 2000-2050" (Sacramento, May 2004), http://www.dof.ca.gov/HTML/DEMOGRAP/DRU_Publications/Projections/P3/P3.htm.

As noted above, since 1960 the target for eligibility has been 12.5% of California public high school graduates. The demand for attendance at UC is very high; as already noted, nearly 8% of public high school graduates actually attend. Access to UC is a treasured commodity within California, as reflected by the large attention given by the Legislature to UC admissions, in turn fueled by public interest and pressures. Compared with other states, California ranks relatively low (46th of the 50 states, normalized by population) in attainment of bachelor's degrees.¹⁰ Yet the economy of the state is based on activities requiring a workforce that is relatively well educated. A reduction of the 12.5% figure does not make economic, social, or political sense for California. It also does not make political sense for the University of California, since the proportions of UC graduates among the public and in the legislature are already strikingly small for a major public university. An institution's own graduates tend to be substantial sources of political support for that institution.

Given the strong interests in access in general, the needs of the California economy, and understandable desires by under-represented groups for access to UC as an avenue for upward mobility, an increase in the 12.5% eligibility figure could well make economic, social, and political sense. That, of course, would serve to increase the needed capacity of UC further.

The other parameter of the Master Plan that sets capacity needs is the degree of emphasis on transfer as a route to a University of California degree, reflected by the current requirement that the ratio of upper-division to lower-division students be at least 60:40, which results in about 30% of graduating UC seniors having entered via the transfer route.¹¹ Transfer is a valued path. It provides a second chance for those students who were not eligible for UC as freshmen.¹² The transfer route is generally less expensive for the state as well as for students and their families, the latter because of historically low fees for attending community colleges and because of the opportunity for community college students to live at home. It also provides a stream of students that is increasingly diverse; among entering transfer students, the percentage of students from under-represented groups is now greater than that among freshman enrollees.¹³ A well-recognized issue concerning transfer is the extremely uneven distribution of transfer across the various community colleges. Transfer numbers are very high for a few

¹⁰ Saul Geiser, Center for Studies in Higher Education, UC Berkeley (personal communication); calculated from US Census and NCES data for 1999-2000.

¹¹ 21% of enrolled UC undergraduate students have entered by the transfer route. See University of California, "Transfer Admission,"

http://www.universityofcalifornia.edu/admissions/undergrad_adm/paths_to_adm/transfer.html.

Time to graduation after entry is an average of 8.2 and 13.0 enrolled quarters for transfer students and entering freshmen, respectively. See UC Office of the President, Student Academic Services, *Information Digest 2003*, <http://www.ucop.edu/sas/infodigest03>. Therefore, out of every 1000 enrolled students, an average of 86 graduate each quarter ($210/8.2 + 790/13.0 = 25.6 + 60.8 = 86.4$). 25.6/86.4, or 29.7%, of these students come through the transfer route.

¹² Although there has been no full systematic study, it appears that nearly all transfer students (well over 90%) were not UC-eligible as freshmen, a point that is explored further below.

¹³ Compare the data for entering freshmen with those for entering transfer students: UC Office of the President, Student Academic Services, *Information Digest 2003*, "Application, Admission, & Enrollment Data for First-Time Freshman Students,"

http://www.ucop.edu/sas/infodigest03/Data_Freshmen.pdf and "Application, Admission, & Enrollment Data for Transfer Students,"

http://www.ucop.edu/sas/infodigest03/Data_Transfers.pdf.

community colleges and strikingly low for many others.¹⁴ Efforts to make transfer a more viable route across all community colleges are in order, are much encouraged by legislators, and should serve to increase the flow of transfer students beyond the *status quo*. For all these reasons, it is not appropriate to decrease the proportion of transfer students, and there is good reason to consider an increase. Given the guarantee of access for eligible freshman applicants, such an increase in the number of transfer students would be in addition to, rather than a replacement of, the number of eligible freshman students.

Putting all these factors together, it is reasonable to assume a long-term need for growth on the order of 2% (4000 students in 2013 terms) per year, rather than the more pessimistic numbers that would be derived by simplistic application of the CA Department of Finance projections of total population. With such a growth rate, UC needs the capacity equivalent of one new full-grown campus (22,000 to 24,000 undergraduates) coming into operation every six years. To maintain a given percentage of growth, the time interval between new campuses would become smaller over time as the base grows.

The new Merced campus can absorb substantial capacity beyond 2011, the end date for the present UC plan. Given the low projections of demographic increase for that decade, it may be 2017 to 2022 when capacity must increase beyond what the existing campuses plus Merced can provide. One might conclude that this gives a comfortable 12- to 17-year cushion, until one recognizes that it has taken 17 years, start-to-finish, to bring the new Merced campus to the point of opening, and that it will be an elapsed period of at least 22 years before the Merced campus can absorb capacity increases of thousands of students per year. A cushion of 12 to 17 years is not all that long, after all, if capacity is to be gained through new campuses.

Alternatives For Gaining Capacity

With the presumption that the needed capacity for growth is on the order of 2% per year averaged over the long term (about 4000 students per year in 2013 terms), what are the best ways to obtain this capacity? The approach that I shall follow is to identify and analyze individual possibilities.

Bring Existing Campuses to LRDP Targets

Each campus has an understanding of ultimate campus size that has been delineated with the surrounding community through the process of a Long-Range Development Plan (LRDP). The first and most obvious step is to utilize the remaining LRDP capacity on existing campuses, including the new campus at Merced. As noted above, this approach, along with some other smaller contributions, is likely to provide the capacity needed up through somewhere in the range of 2017 to 2022. This provides useful and needed lead time.

¹⁴ UC Office of the President, "Data for Transfer Students," http://www.ucop.edu/sas/infodigest03/Data_Transfers.pdf, p. 59.

Larger Enrollment per Campus

The next most obvious approach is to increase the enrollment targets for existing campuses. Other major public university campuses (e. g., Ohio State, Columbus; Minnesota, Twin Cities; Illinois, Urbana; and Michigan, Ann Arbor) have grown to enrollments of 35,000 to 50,000. By doing the same, campuses of the University of California could gain a substantial capacity increase. Arguing against such an approach are issues of proximities, academic interactions, and other academic factors as outlined by Kerr and mentioned earlier. More practical and constraining limits are the LRDPs. Renegotiating the LRDP to increase campus size is a difficult, drawn-out, usually contentious and often unsuccessful process. Although communities are generally very supportive of campus development and growth in early years, significant forces tend to develop over time in opposition to campus growth.

Assessing what increases in LRDP targets could be practically achievable is uncertain at best. A crude estimate based upon personal experience is 10,000 to 16,000 students, or about 5 to 8% increase in capacity. However, a substantial portion of that amount may be consumed in meeting enrollment needs through 2010.

More Intensive Use of Existing Campuses

Reduce Time to Degree. The average elapsed time to graduation for UC students entering as freshmen is about 13 enrolled quarters,¹⁵ including students who work, double majors, and majors requiring more than 180 quarter units. This figure compares favorably with other public research universities. A small decrease in this figure is built into the plan for accommodating enrollments through 2011. It does not seem that a further significant gain can be made here.

Increase Summer Enrollment/Year-Round Operation. Increased enrollment in the summer is often cited as a way to gain more complete and efficient use of the physical plant and to make fuller use of allowable LRDP enrollment limits year-round. Four of the eight existing UC general campuses (Berkeley, Davis, Los Angeles, and Santa Barbara) have already been funded by the state for year-round operation and the remaining four have been funded to begin in 2005-06. On a full-time-equivalent (FTE) basis, summer enrollments at the four funded campuses constitute 7.5% of total year-round FTE enrollment on those campuses.¹⁶ On a headcount basis, the percentage is much larger, up to 70% at the Berkeley campus, since students tend to take fewer courses when enrolled in the summer.¹⁷ Campuses have already strongly encouraged summer enrollment, and it is likely that the figures cannot be increased much if it remains voluntary for students.

Three other factors need to be considered as well. One is that summer is prime time for student employment. Many UC students must work to support themselves and even their families during their college years. The average amount of employment, on- or off-

¹⁵ UC Office of the President, *Programs to Assist Students to Graduate within Four Years*, Report to the CA Legislature (2000), <http://www.ucop.edu/planning/finishinfour00.pdf>.

¹⁶ UC Office of the President, Budget Office, "2003-04 General Campus State-supported Full-Time Equivalent Enrollments" (13 January 2005), <http://budget.ucop.edu/enroll/2003-04.pdf>.

¹⁷ UC Berkeley, "Summer Enrollment and Student Credit Hours," <http://calprofilesplus.vcbf.berkeley.edu/summer/summerClg.cfm>.

campus, for all UC undergraduates is 8.1 hours per week during the academic year.¹⁸ Typically it is much greater in the summer. Another factor is that summer instruction does require a corresponding increase in faculty size, since faculty in a research university, in order to have some concerted time for research, should not be required to carry out instruction year-round. A third factor is that many facilities are already used in the summer for a variety of programs that serve public interest, e.g., teacher continuing education.

Increase Evening and Weekend Instruction. This approach has essentially the same pro and con issues as those for increased use during the summer and therefore cannot be considered a major prospect for increasing capacity. In this case continuing education is a significant user of facilities in evenings.

Exclude Non-Residents. In a 1995 report, Breneman suggested that one approach for gaining capacity would be to exclude all out-of-state undergraduates from public colleges and universities in California.¹⁹ Using 2001 data, 5.9% of entering freshmen and 8.8% of entering transfer students, or 6.7% of all entering undergraduate students, were not California residents.²⁰ Of the non-resident students, 61% were from elsewhere in the United States, and 39% were foreign. Thus a capacity gain of 6 to 7% could be accomplished by eliminating out-of-state and foreign students. This potential gain must be weighed against several factors, as follows:

- There is academic value from having students from diverse geographical backgrounds present;
- There is value accrued to California by the fact that many of these students stay in the state for employment after graduation;
- Because non-resident students must overcome stiff competition to be admitted, they are among the very best students academically;
- Eliminating out-of-state students would negate reciprocity agreements that California has with other states.

The gain in capacity for California residents at the undergraduate level does not seem to be worth the academic and societal loss. At the graduate level, such a step would be extremely damaging to the importation mechanism that supplies advanced manpower to California's industry.

Decrease Graduate Enrollment. Another concept would be to increase undergraduate enrollment at the expense of graduate enrollment. However, a recent analysis demonstrated that graduate enrollments at UC are low both in comparison with other leading public research universities and in comparison with the needs of California's knowledge-based and high-tech economy.²¹ As well, there is a certain minimal level of

¹⁸ "Learning and Academic Engagement in the Multiversity", SERU21 Project, Center for Studies in Higher Education, University of California, Berkeley (June 2004), <http://cshe.berkeley.edu/seru21/UCUESReport0604.pdf>, p. 14.

¹⁹ David W. Breneman, *A State of Emergency? Higher Education in California*, (San Jose: California Higher Education Policy Center [superceded by National Center for Public Policy and Higher Education], January 1995).

²⁰ UC Office of the President, *Information Digest 2003*, "Selected Statewide and UC Postsecondary Data," http://www.ucop.edu/sas/infodigest03/Selected_data.pdf, p. 5.

²¹ UC Office of the President, *Making Discovery Work*, Report of the Commission on Graduate

graduate enrollment that is essential to the optimal workings of a research university and, at 17% graduate enrollment, UC is at or below that level. It does not make sense for California for UC to reduce the proportion of graduate enrollment.

New Campuses

New General Campuses. Although it has been the historical solution for increasing capacity, creation of new campuses involves lead time, expense, and risk. The process that has led to the opening of the Merced campus in 2005 began in 1988,²² and 17 years elapsed until the campus actually opened. In the 1960s, it was easier to open a new campus. Today, the process is made more complex by increased governmental planning expectations, legal and political considerations, and budgeting issues. A major change since the launching of the new campuses of the early 1960s has been the nature and complexity of environmental and permitting regulations, which afford many opportunities for legal challenge, thereby drawing out the process. Successive, but somewhat overlapping, steps along the way toward realization of the Merced campus included projection, identification and approval of the need, consideration of candidate regions of the state and then selection of a region, consideration of specific sites and then selection of a site, site permitting and development, recruitment of an initial campus administration, academic and physical planning, recruitment of faculty, and construction. Incremental state funding is needed at many points along the way and is subject to annual appropriations and the associated risks.

Even more years are needed before a new campus can reach the point of assuming substantial capacity. As noted earlier, although the Merced campus opened in 2005, it will be another five years or more before it can assume capacity increases of 2000 or more students per year. Opening a new campus is a long, risky, and expensive process.

Consideration must also be given to the optimal ultimate number of campuses for the UC system. Factors favoring more campuses are the need to accommodate increased enrollment and the opportunity to serve regions of the state that presently are not served or are under-served. Factors discouraging more campuses are the effectiveness of governance of the system and the fact that gaining capacity by expanding existing campuses is generally more cost-effective than creation of new campuses.

The one region of the state that is clearly under-served by UC at present is the geographic half of the state that is north of the San Francisco Bay area and Sacramento. However, population in the north is far less dense than in the south. Of its 23 campuses, the California State University has only two (Humboldt and Chico) in the northern region. UC has none. It would certainly be advantageous to the development of the north-state workforce and economy to develop an eleventh UC campus there, but it is unclear whether the necessary political support can be mustered.

Acquire Other Facilities. Some universities have expanded by acquiring released facilities. Two recent examples are the new Monterey Bay and Channel Islands

Education (1999), <http://www.ucop.edu/services/graded.pdf> and http://www.universityofcalifornia.edu/news/factsheets/graded011905_files/v3_document.htm.

²² See David P. Gardner, *Earning My Degree*, (Berkeley: University of California Press, 2005), pp. 244-5; and UC Merced, "History," http://ucmerced.edu/about_ucmerced/history.asp.

campuses of the California State University, which were derived from a decommissioned Army base (Fort Ord) and a former state hospital (Camarillo), respectively. Whether or not to do this is a matter of balancing utility and cost. For a research university, laboratory facilities are key, and few released facilities are likely to have those in adequate amounts.

Acquire Other Universities or Campuses. UC could consider annexing, for example, a campus of the California State University or a private university. This, of course, would not increase the overall enrollment capacity for higher education in California. If the campus annexed is not part of a research university, there is again the question of laboratory facilities, as well as the matter of a difficult generational change of tenured faculty from those of a non-research university to those suitable for a major research university.²³

Create Campuses of a Different Sort. The top 12.5% of California public high school graduates and their private-high-school equivalents deserve a university education of UC caliber, but does that mean that they will benefit most from a research university? Would an Amherst or Swarthmore type of education do as well or better for some of them? The history of UC's Santa Cruz campus is in many ways the history of such an experiment.²⁴ Issues include the satisfaction of the faculty who do not have research equivalency, and the ability of such a campus to provide mass instruction. The intensive instruction associated with such a campus may mean that the costs are not significantly less than those for a full research campus.

Given the nature of the California economy, another possibility is to create one or more UC technical/scientific research-university campuses in the model of MIT, Caltech, or Rensselaer. Douglass has also suggested a series of such campuses, more on the models of the San Luis Obispo and Pomona campuses of the California State University, as a possible fourth system of California public higher education.²⁵

These are possibilities for academic consideration. However, they are relatively independent of the capacity factors considered here.

Off-Campus Instruction

Students enrolled for degree programs at locations away from the main campus do not, in general, count in LRDP limits for the main campus. Such programs thereby provide another avenue toward enrollment expansion.

Academic Programs. Some off-campus instruction fits well with academic goals and needs and is much to be encouraged. Examples within UC are the Education Abroad Program (EAP),²⁶ the Washington DC Center,²⁷ and the still new Sacramento Center.²⁸

²³ Issues of this sort were encountered in the amalgamation of the Santa Barbara campus into the University of California. That history is described in Douglass, *The California Idea*, and some of the ensuing difficulties are described by Kerr in Chapter 21 of his *The Gold and the Blue*, vol. 1.

²⁴ See Chapter 19 of Kerr's *The Gold and the Blue*.

²⁵ John Aubrey Douglass, "A Reflection and Prospectus on California Higher Education: The Beginning of a New History," *California Policy Issues*, November 2004, p. 141.

²⁶ See <http://www.eap.ucop.edu/>.

All are programs in which the student goes to another location, is able to take some standard and required courses, and, in the latter two programs, participates in an internship, and then receives academic credit for the experience. Present enrollments are still relatively small – about 4800 students per year, nearly all of them in EAP and not all of whom are away from their campuses at the same time. In recognition of the importance of international knowledge and experience in an increasingly global society and economy, the Education Abroad Program has recently been given special emphasis by UC, with the result that enrollment doubled twice over recent successive three-year periods. There is also significant enrollment in independent and campus-based international programs, with about the same number of students participating, many for academic credit transferable to UC.

If these programs can eventually increase to where 10,000 more students at a time are studying at locations away from their campus, the result would be a 5% gain in enrollment capacity on a 2010 base.

Satellite Campuses. Yet another kind of off-campus instruction is the use of satellite campuses, located away from the main campus but administratively and organizationally part of the main campus. Such campuses would not offer comprehensive coverage and might instead concentrate on certain majors or on a Lower Division program. Two existing examples within the UC system are the Ventura and Santa Maria Centers of the Santa Barbara campus, which offer eight undergraduate degrees in humanities and social science areas;²⁹ and the new Palm Desert Campus of the Riverside campus, offering the MBA and an MFA in Creative Writing and Writing for the Performing Arts.³⁰

Satellite campuses are, of course, faced with much of the same expense and uncertainties with regard to start-up that new campuses are. Those concerns may be mitigated to some degree by acquisition of existing facilities that have served other purposes. As well, satellite campuses can raise the questions of whether the students or faculty are second-class in some way and whether the quality of education is less. Those issues can be ameliorated if the satellite campus is close enough to the main campus geographically so that faculty from the main campus can commute easily to the satellite campus for instruction and office hours, in which case the faculty would be the same as for the main campus. Their lesser availability for consultation outside of the classroom could be offset by the availability of information technology for on-line office hours and the smaller campus environment of the satellite campus.

A satellite campus for Lower Division instruction is a form of enhanced transfer education and will be discussed later under that subject.

Use of Information Technology for Off-Campus Instruction. The principal use of information technology for on-campus instruction should be to enhance and complement in-person instruction, so as to take advantage of faculty-student contact. For off-campus instruction, the alternatives are to provide internet-based instruction for the entirety of a course or to combine internet instruction with occasional visits of the student to the

²⁷ See <http://www.ucdc.edu/>.

²⁸ See <http://uccs.universityofcalifornia.edu/>.

²⁹ See <http://www.ocs.ucsb.edu/>.

³⁰ See <http://www.palmdesert.ucr.edu/>.

campus and/or of the instructor to a satellite location. The bulk of experience so far with entirely internet-based instruction is that it works well enough for continuing education, but that with students of traditional college age the attrition rate is high. As internet instruction matures to the point where it can retain the involvement of such students and generate an experience close enough to that of in-person instruction, it affords the possibility of allowing students a quarter/semester or a year for at-home internet-based instruction, or possibly more.

There is a demonstrated value to the residential experience, to the point that many consider residential life to be among the greatest benefits of a college education for 18 to 22-year-olds. Thus the value of off-site, internet-based instruction must be balanced against the lost benefit from a protracted residential experience.

What gain in enrollment capacity can be achieved over time through internet-based off-campus instruction cannot be gauged with any confidence or precision at this point.

Enhanced and Encouraged Transfer

In terms of persistence, graduation rates, and grade-point average, current transfer students do essentially as well at UC as do students who entered as freshmen.³¹ They also have had a shorter time in residence at UC than have students who entered as freshmen. Faster throughput generates additional capacity by releasing spots sooner. Hence increasing the proportion of transfer students within the student body can increase capacity for degree production.

However, the California Master Plan guarantees freshman enrollment at UC for every freshman-eligible student. Simply adding more transfer students on top of these students consumes capacity rather than creating it. In order for there to be an overall capacity benefit from having a greater proportion of transfer students, the additional transfer students must be generated by attracting to the transfer route eligible students who would otherwise have entered UC as freshmen. As noted earlier (see Footnote 13), very few freshman-eligible students currently choose the transfer route. Having more eligible freshmen voluntarily choose the transfer path requires making that option more attractive.

Another approach would be to mandate that a certain fraction of eligible freshmen come to UC by the transfer route instead. However, that is a clear breach of current Master Plan expectations. As well, it raises the issues of criteria for choosing which of the freshman-eligible students would receive this mandate and why this does not simply equate to a change in eligibility standards and a reduction below 12.5% in effective freshman eligibility.

Some approaches for attracting more freshman-eligible students to the transfer path are the following:

- Create a more attractive fee schedule for students taking this path;
- For freshman-eligible students who elect the transfer route, guarantee admission to

³¹ UC Office of the President, "Community College Students at the University of California," 2002 Annual Report, http://www.ucop.edu/sas/publish/transfer_ar2002.pdf, p. 16.

a particular UC campus for their Upper Division work.³²

In addition, it should be recognized that a major barrier to successful transfer is articulation with respect to the UC major. Although many members of the public, and hence the legislature, would like to see automatic articulation of all courses taken at a community college that are preparatory for a UC major, the situation is much more complex, with there now being individual articulation agreements between individual UC campuses and individual community colleges.³³ The practical reason for this is that courses must be of a certain minimal caliber in order for students to have mastered the knowledge that they need as a basis for subsequent courses in the major at UC. Counseling with respect to articulation and transfer is spotty and inconsistent. Because of this situation, more freshman-eligible students might take the transfer route voluntarily if the articulation burden were eased and they were provided with continual and effective counseling. Another strategy would target freshman-eligible students only:

- Create Lower Division satellite campuses of UC campuses in key locations proximate to the main campus. The curricula of these colleges would be designed to enable students to progress seamlessly to the Upper Division in their major at the main campus. As noted above, this approach addresses LRDP enrollment limits for the main campus. From a Master Plan standpoint, however, such a move could be interpreted as an encroachment upon the mission of the California community colleges, although there could also be a structure where Lower Division satellite campuses are run jointly by a UC campus and a community college campus.

Two other strategies would target all prospective transfer students, rather than just freshman-eligible students:

- Place counselors who are well-trained UC employees in each community college;
- Use internet technology to create and/or augment “gold standard” entry-level courses or course materials that can readily be used in any community college. These courses would be of a certain caliber so as to be satisfactory for UC articulation.

Taking the present situation, where 30% of graduating UC undergraduates have come by the transfer route, and recognizing that the average time in residence at UC is 37% less for a transfer student than for those entering as freshmen (see Footnote 12), diverting 10% and 20% of the eligible freshmen who would attend UC to the transfer route would generate effective overall enrollment capacity increases of about 6% and 12%, respectively.

Cooperation with Other States

³² This is a variant of the Dual Admissions Plan that was approved by the UC Regents in 2001 but has not yet been funded. That plan was for freshman-ineligible students who are at the 4-12.5% level in their high school. See UC Office of Strategic Communications, “Facts about the University of California (July 2001), <http://www.ucop.edu/news/factsheets/2001/dualadmissions.pdf>; and University of California, “Dual Admissions Program,” <http://www.ucop.edu/pathways/dap/>.

³³ See “ASSIST,” <http://www.assist.org/web-assist/welcome.html>.

Different states have different and potentially complementary needs and situations with respect to higher education. This fact is already recognized through the existence of organizations such as the Western Interstate Commission for Higher Education (WICHE), which operates cooperative programs giving reduced out-of-state-tuition and in-state tuition for certain distinctive and less common graduate programs, as well as home-state support for health sciences students to enroll in a university in another state.³⁴ Many other similar arrangements exist.³⁵

More imaginative such arrangements are possible that could serve the bilateral interests of different states. California could arrange to buy enrollment spots at universities elsewhere that have or will generate available capacity. In his 1995 report, Breneman suggested that California should allow portability of state student financial aid to enable students who wish to enroll out-of-state to do so.³⁶ Such a policy, probably in the form of partial portability,³⁷ could be particularly useful given California's recently enhanced Cal Grants program.

Discussion and Conclusions

Clearly, no one approach will be sufficient for gaining the needed capacity. A combination of approaches is appropriate.

Fortunately, there are alternatives for gaining capacity within the present campuses that should be explored further and developed. Some of these are highly congruent with academic and state objectives:

- The Education Abroad Program should be further nurtured and it should be made both easier and more attractive for students to take part. The same is true for the Washington DC and Sacramento programs, although they have much less enrollment capacity.
- The effectiveness and attractiveness of internet technology for off-campus course instruction should be closely monitored over time and that technology should be utilized as it attains sufficient maturity.

Some other routes that are more neutral academically but do make particular sense for California are:

- Students who are eligible as freshman should be encouraged to choose the transfer route instead, by offering incentives and providing more effective opportunities.. Several possibilities are outlined above.

³⁴ See WICHE, "Student Exchange Programs," <http://www.wiche.edu/sep/>.

³⁵ Cornell Higher Education Research Institutes, "Survey of Tuition Reciprocity Agreements at Public Research and Doctoral Universities" (2001), <http://www.ilr.cornell.edu/cheri/survey/survey2001/summary.html>.

³⁶ Breneman, *A State of Emergency?*

³⁷ See the California Student Aid Commission's Grant Programs, <http://www.csac.ca.gov/doc.asp?id=33>.

- The state could allow partial or even full portability of Cal Grant financial aid, so that students can receive that support if they choose to enroll in other states.
- Campuses should pursue increases to their Long-Range Development Plan enrollment targets in cases where they are not already built to a size that optimizes the combination of the academic experience for students, operational efficiencies, and the local geographic and community situations.
- As an alternative to expanding the main campus, campuses could create satellite campuses in other nearby communities, close enough at hand to enable faculty and students to travel conveniently between the satellite campus and the main campus. Some or all of these satellite campuses could concentrate on Lower-Division instruction.
- The state could consider purchasing spots at high-caliber universities in other states.

All that said, it is prudent to start the planning process for a new campus, taking those initial steps that require little or no budget. There are several cogent reasons for doing so:

- Even with use of the alternative measures outlined above, at least one new campus is very likely to be needed at some point between 2015 and 2030.
- The university will be well served to be out in front in the process of identifying the sites for new campuses, before political interests dominate and constrain that process. The university's guiding principle for selection of campus sites should be to serve the students of the state in the most effective and facile way.
- As outlined earlier, the avenue to building new campuses is long, risk-filled, and dependent upon state appropriations of substantial monies. It is best for the university to get far enough along the path of identifying sites and planning for new campuses so that the risk and time for actual creation of a new campus, when needed and possible, are reduced.

Extending this logic, it is advisable for the university to be in the selection or planning process for the next new campus at virtually all times.

One can argue that having a site identified for the next new campus will unleash political forces that might precipitate the development of the campus before it is truly needed. However, there will also be political and budgetary forces opposing the development of the campus. Although the process may not be pretty, the opposing forces should result in actions that do take the salient factors realistically into account.

The same risks and uncertainties that surround new campuses speak to the desirability of not exhausting all of the alternate means of building capacity. The time will come when additional capacity is much needed and a new campus is not achievable for any of various practical reasons. At that time, it will be necessary to use alternative means, and sufficient potential capability of that sort should be kept available.