

**Public Subsidies for Higher Education in California:  
An Exploratory Analysis of Who Pays and Who Benefits**

Paper prepared for the Harvard Civil Rights Project and University of California

Expanding Opportunity in Higher Education: California and the Nation

Donald E. Heller  
Associate Professor and Senior Research Associate  
Center for the Study of Higher Education  
The Pennsylvania State University  
400 Rackley Building  
University Park, PA 16802  
814-865-9756  
dheller@psu.edu

© 2003, Donald E. Heller

## Introduction

Over the last two generations California has been a leader in higher education in this nation. Since the development of The Master Plan in the early 1960s, California has led the nation in providing access to high quality postsecondary education for many of its citizens. Today, one in seven higher education students nationally attend college in the state (National Center for Education Statistics, 2002a). This proportion will likely increase over the next decade, as the size of the cohorts of high school graduates in California is expected to increase at a rate in excess of that of the rest of the nation (Western Interstate Commission for Higher Education, 1998).

Yet while in the aggregate higher education in The Golden State may look to be a boom business, there are a number of problems when one peaks beyond the veil. First, while overall access to higher education in the state exceeds that of most other states (National Center for Public Policy and Higher Education, 2002), that access is unequally distributed by race and class. White, Asian American, and upper-income students are disproportionately enrolled in and receive degrees from the campuses of the University of California, the premier public university system in the nation, while Latino, African American, and poorer students populate the California Community Colleges (California Postsecondary Education Commission, 2001). This trend of inequality is likely to be exacerbated as the Latino population in the state is projected to grow at rates far in excess of the other groups.

Second, the abandonment of the use of race in college admissions, originally enacted by the Regents of the University of California, and later spread statewide by Proposition 209 (Pusser, 2001), has helped to widen the gaps in participation between majority and minority students. A recent report of the Harvard Civil Rights Project (Horn & Flores, 2003) found that while black and Hispanic enrollments across the entire U. of California system have dropped only slightly since the elimination of the use of race in admissions, the enrollment declines of these two groups at UCLA and Berkeley – the two most prestigious and selective campuses – have been much more precipitous.

The third issue major issue facing California is the current fiscal crisis that is dominating the policy debate in the state. In a recent review of the status of state budget and revenues across the country, California led the nation with almost a 25 percent decline in quarterly revenue from 2001 to 2002 (Jenny, 2002). The impact of this constraint on state spending is already being seen in mid-year appropriation recisions and tuition increases in the public higher education institutions. And the budget picture is not likely to get much better in the near future. The combination of growing demand for higher education – expected to increase by 400,000 additional students by the end of this decade, above the two million already enrolled – and constrained resources is likely to make for difficult times.

To understand the status of equity in the California public higher education system, however, requires more than just a picture of where students go to college. A more nuanced understanding of how fairly the state treats different groups of individuals can be obtained by looking at the

flow of economic costs and benefits associated with attending college. This paper is the first step in a broader look at the question of who pays for higher education in the state – particularly in the form of public subsidies through appropriations and financial aid, and charges paid directly by students and their families – as well as the question of which groups benefit from attending the public institutions in the state.

Over three decades ago Hansen and Weisbrod (1969) published a pioneering study of questions similar to these for the state of California. A key finding of their study was that “Public subsidies for higher education in California tend to go disproportionately to students from relatively high income families and are received in quite different amounts by people even within given income classes” (p. 84). Much has changed in California over the ensuing period; the population has grown more racially diverse, the public system has continued to grow in size and stature, and the economy of the state has changed. Yet postsecondary enrollments in the state are still distributed disproportionately in the three sectors.

While the focus of Hansen and Weisbrod’s study was on aspects of income distribution, this study focuses primarily on racial and ethnic distribution of costs and benefits. This early work documents the racial and ethnic distribution of these benefits, in the form of enrollments in different sectors and different types of institutions, as well as on the costs, in the form of the share borne by families versus the state. Besides building on the work of Hansen and Weisbrod, it will also be informed by more recent research on the topic (Horn & Flores, 2003; Lee, Swail, & Gladieux, 2001; Shires, 1996). This study examines only the enrollment and degree attainment of undergraduate students.

This study utilizes data from a variety of sources, including the California Postsecondary Education Commission, the California Student Aid Commission, EdFund of California, the National Center for Education Statistics, the U.S. Census Bureau, and other agencies and departments in California. It is labeled an “exploratory analysis” because only these publicly-available data were used, thus limiting the depth to which the analysis could be conducted. The study may also require the assumption of a number of large leaps of faith (some may wish to label them “transcontinental leaps”) in the use of the data that are publicly available for analysis. Nonetheless, I believe the study does establish a framework for further consideration of these issues with more detailed data.

## **Postsecondary Participation Patterns in California**

### *College Enrollment*

This section of the study uses higher education enrollment and public high school graduation data from the California Postsecondary Education Commission (CPEC, 2003a). Data from the most recent ten years available, from the 1993-1994 academic year to the 2002-2003 year, are used to examine the trends in enrollment from students in different racial and ethnic groups. This period also includes near the midpoint the fall of 1998, which was the first year that the

prohibition on the use of race in admissions was in effect.<sup>1</sup> The categories used by CPEC include Asian American/Pacific Islanders, Filipinos, blacks, Latinos, Native Americans, whites, non-resident alien, other (generally multiracial), and non-respondents. I have recategorized the groups into the following, in order to be more consistent with racial/ethnicity reporting categories used in other jurisdictions:

CPEC Categories	Recoded Categories
Asian, Filipino	Asian American
Black	Black
Latino	Latino
Native American	Native American
White	White
Non-resident alien, other, and non-respondents	Other

Table 1 presents the ten-year enrollment trends in each of the three sectors of higher education in California (undergraduates only). Overall, enrollment increased almost 30 percent across the three sectors, with the rate in each ranging from 21 percent at CSU to 32 percent in the California Community Colleges (CCC). Latinos (77 percent) saw the largest proportional growth in the public sector (shown in the last row of the table), while whites saw the smallest growth (4 percent).

**Table 1: Undergraduate enrollment by sector and racial group**

	Asian American	Black	Latino	Native American	White	Other
<u>California Community Colleges*</u>						
1993	146,269	85,980	208,210	12,501	538,287	102,415
1994	154,495	88,549	225,263	13,173	520,566	102,989
1995	152,948	86,571	231,075	12,941	490,981	99,098
1996	157,684	89,349	248,681	13,438	512,218	108,046
1997	172,159	92,290	275,333	13,314	515,589	90,935
1998	171,807	89,285	277,969	12,737	500,604	106,238
1999	168,693	90,825	289,576	12,167	484,211	101,348
2000	187,118	94,278	321,364	13,376	548,651	124,161
2001	201,300	101,089	359,006	13,860	576,823	122,359
2002	214,532	109,067	382,783	13,540	591,617	132,015
Change, 1993 to 2002	46.7%	26.9%	83.8%	8.3%	9.9%	28.9%

**Table 1: Undergraduate enrollment by sector and racial group (continued)**

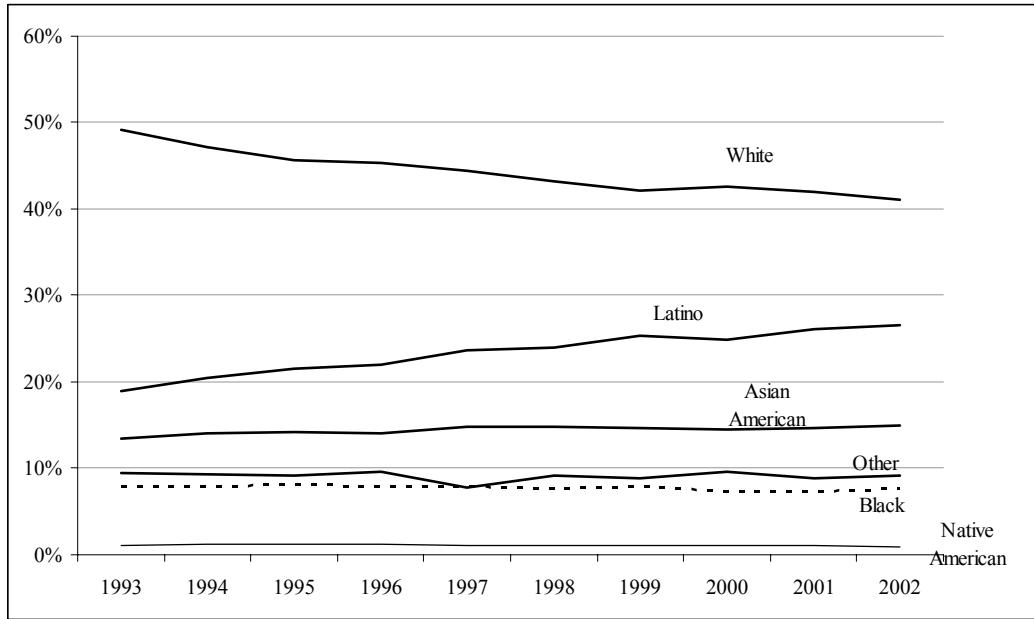
<u>California State University</u>						
1993	47,468	16,041	41,597	2,585	123,817	30,984
1994	48,885	16,464	44,616	2,625	114,383	31,987
1995	51,427	17,552	49,409	2,850	110,427	32,730
1996	52,976	18,450	52,884	2,968	109,010	36,354
1997	53,893	18,391	55,155	2,991	106,885	38,739
1998	54,174	17,663	56,431	2,879	106,444	41,014
1999	54,665	17,444	58,151	2,704	107,402	44,226
2000	55,397	17,127	60,156	2,531	109,287	46,962
2001	57,432	17,833	64,346	2,503	113,895	50,911
2002	58,501	18,193	66,546	2,476	116,621	56,064
Change, 1993 to 2002	23.2%	13.4%	60.0%	-4.2%	-5.8%	80.9%
<u>University of California</u>						
1993	36,111	4,911	15,395	1,194	54,840	9,820
1994	38,820	4,848	16,096	1,173	51,324	9,354
1995	41,300	5,000	16,927	1,233	49,724	9,300
1996	43,226	4,956	17,201	1,226	49,490	9,738
1997	44,880	4,983	17,103	1,194	50,161	10,103
1998	45,747	4,737	16,878	1,145	49,768	13,692
1999	47,322	4,516	16,945	1,037	51,472	15,055
2000	48,946	4,464	17,273	915	53,025	15,974
2001	51,794	4,433	18,503	904	54,765	16,964
2002	55,376	4,613	19,933	932	56,370	17,094
Change, 1993 to 2002	53.3%	-6.1%	29.5%	-21.9%	2.8%	74.1%
Change, all three sectors	42.9%	23.3%	76.9%	4.1%	6.6%	43.3%

Source: California Postsecondary Education Commission (2003a)

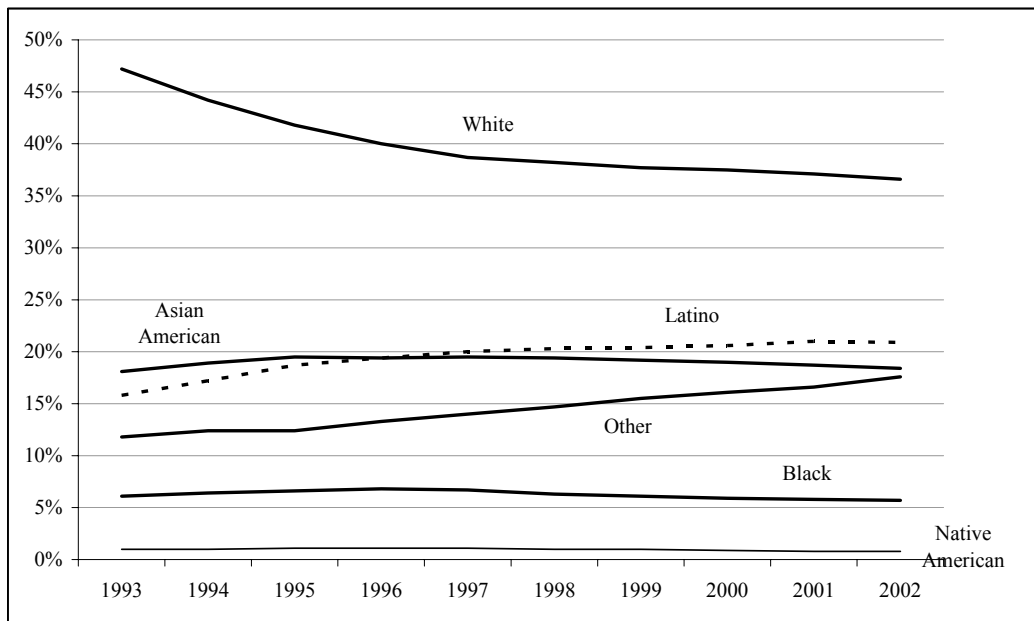
\* Includes non-credit enrollments

The differences in the enrollment growth rates of each group are reflected in figures 1 through 3, which show the change in the proportion of enrollment of each group in the three sectors. In the California Community Colleges (figure 1), white students represented just under 50 percent of all students in 1993, but their representation dropped to 41 percent a decade later. Latinos, in contrast, increased their representation by almost the same percentage that whites dropped in that sector.

The pattern at CSU (figure 2) was similar, with the declining proportional representation of whites offset by the gains by Latinos (as well as the “other” category). At UC (figure 3), however, the pattern was different. While the decline in the representation of whites was of a similar magnitude to the other two sectors, the proportion of Latinos was largely flat over the decade. Asian Americans and students in the other category made up the ground lost by whites,



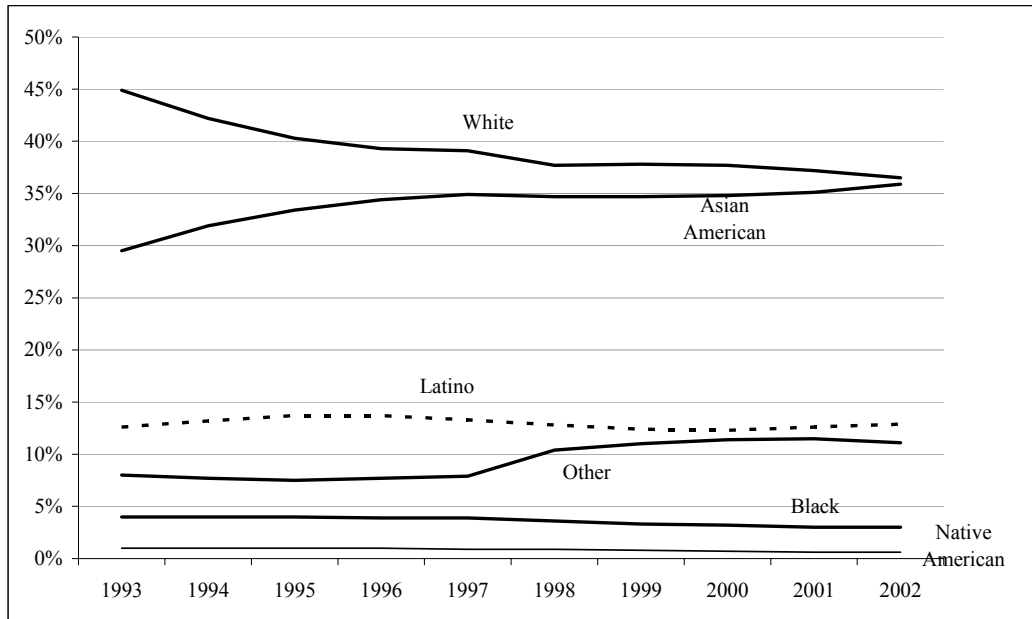
**Figure 1: Proportion of enrollment by racial group, California Community Colleges**



**Figure 2: Proportion of enrollment by racial group, California State University**

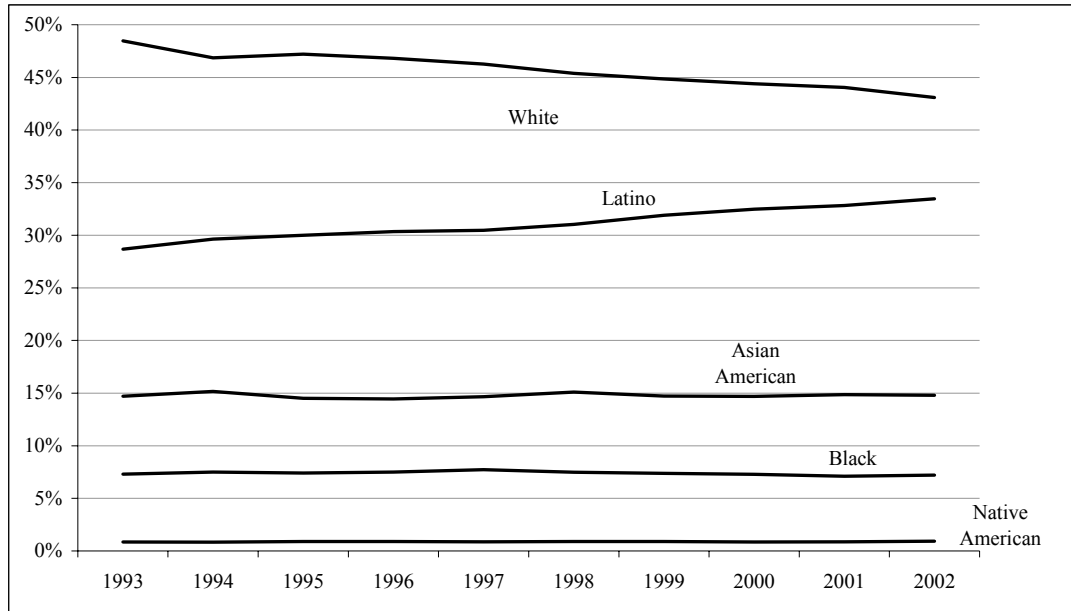
to the extent that by 2002, almost as many Asian Americans were enrolled as undergraduates at UC as were whites.<sup>2</sup> This accomplishment is even more extraordinary when one considers that

in the 2000 Census, only 11 percent of all Californians were Asian, while 47 percent were white (U.S. Census Bureau, 2002).



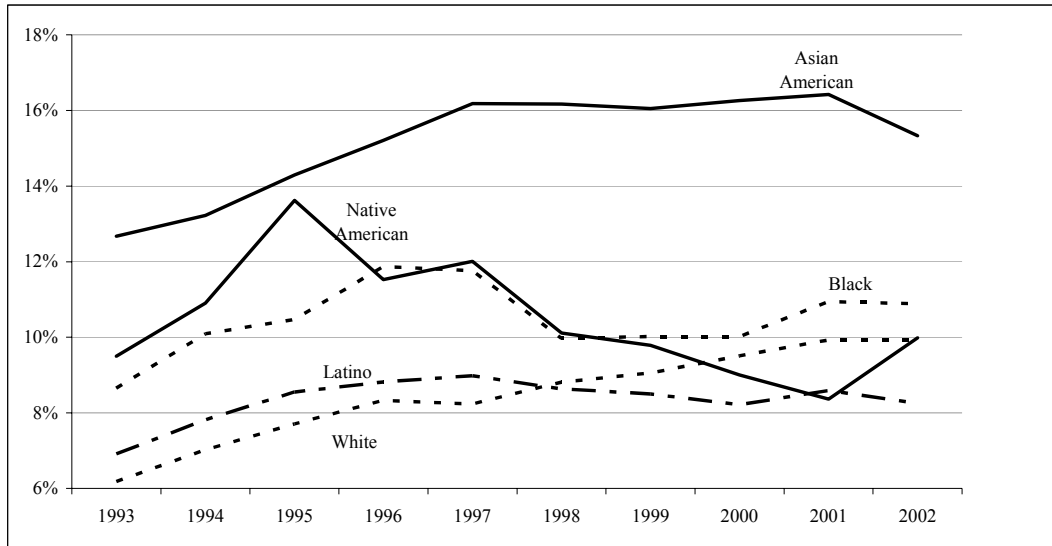
**Figure 3: Proportion of enrollment by racial group, University of California**

The enrollment patterns in California institutions can best be understood in the context of the changing demographics in the state. The population of Latinos is growing rapidly relative to the other racial groups, and the growth is highest among the youngest age cohorts. Figure 4 shows the proportion of each racial group among high school graduates in the state. The growth in the Latino population of graduates is mirrored by the decline in the white cohort.<sup>3</sup>



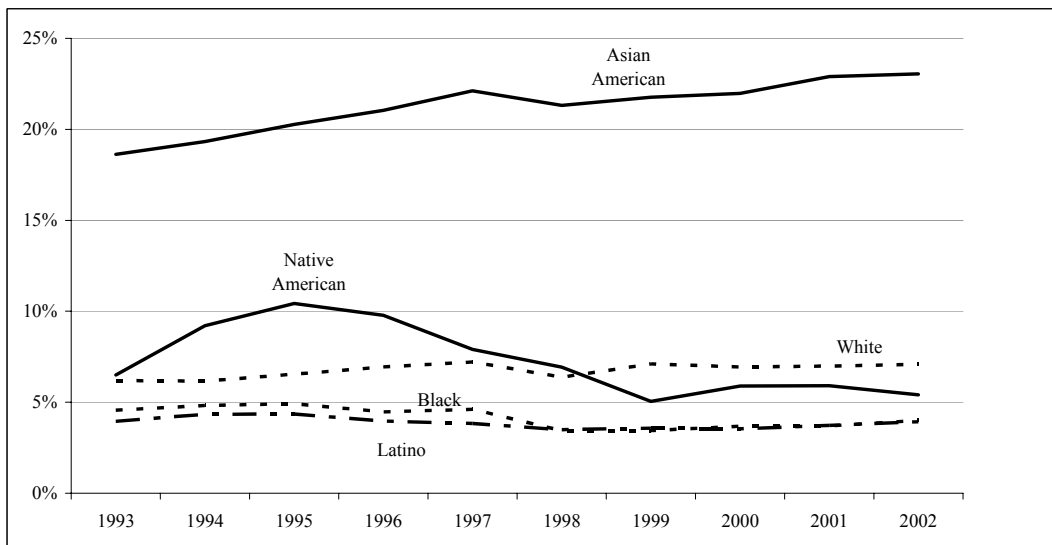
**Figure 4: Proportion of public high school graduates by racial group**

By merging these two datasets – the college enrollment data and the public high school graduate data – we can get a picture of the college continuation rates in each sector. Figures 5 and 6 show the freshmen enrollments in CSU and UC each fall as a proportion of high school graduates the previous spring.<sup>4</sup> At CSU, all groups saw a larger proportion of high school graduates enrolling at the end of the ten year period than at the beginning. Earlier gains made by Native Americans – which are a very small proportion of the California population, less than one percent of all high school graduates – were lost, and after gains by Latinos earlier in the period, their enrollment proportion stagnated.



**Figure 5: Freshman enrollment as a proportion of public high school graduates, CSU**

At UC only Asian Americans saw large gains in the proportion enrolling in that sector, increasing from 19 percent of Asian American high school graduates in 1993 to 23 percent in 2002. Whites saw less than a one percent gain in the proportion enrolling, while the ratio for the other three groups declined during this period.

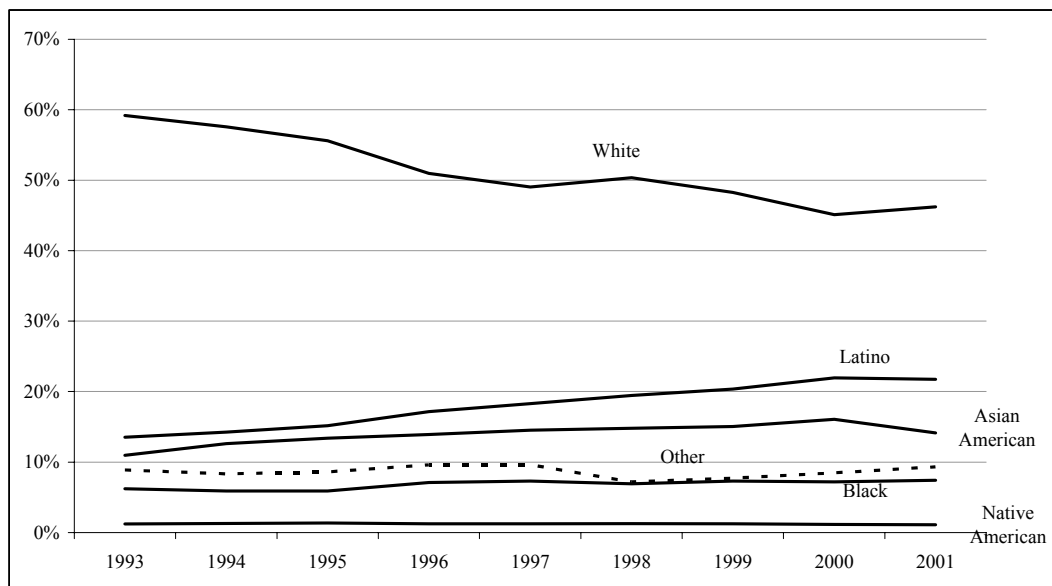


**Figure 6: Freshman enrollment as a proportion of public high school graduates, UC**

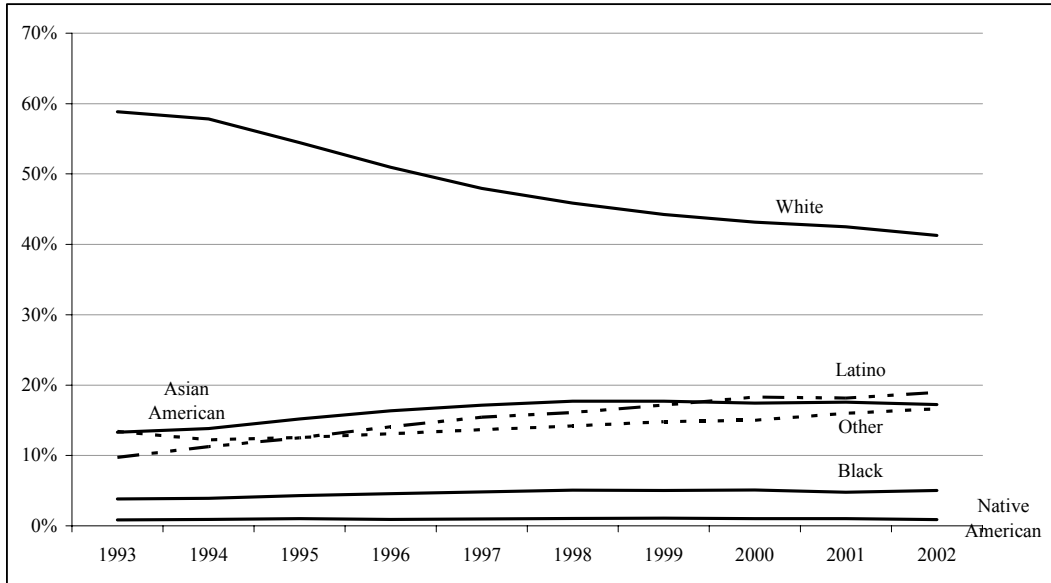
### *Degree Attainment*

Data from the California Postsecondary Education Commission (2003a) were used for the analysis in this section. The analysis here includes all baccalaureate and sub-baccalaureate degrees and certificates issued by the three sectors of public higher education in California. The UC and CSU institutions award bachelor's degrees, while the community colleges award associate's degrees and non-degree certificates.

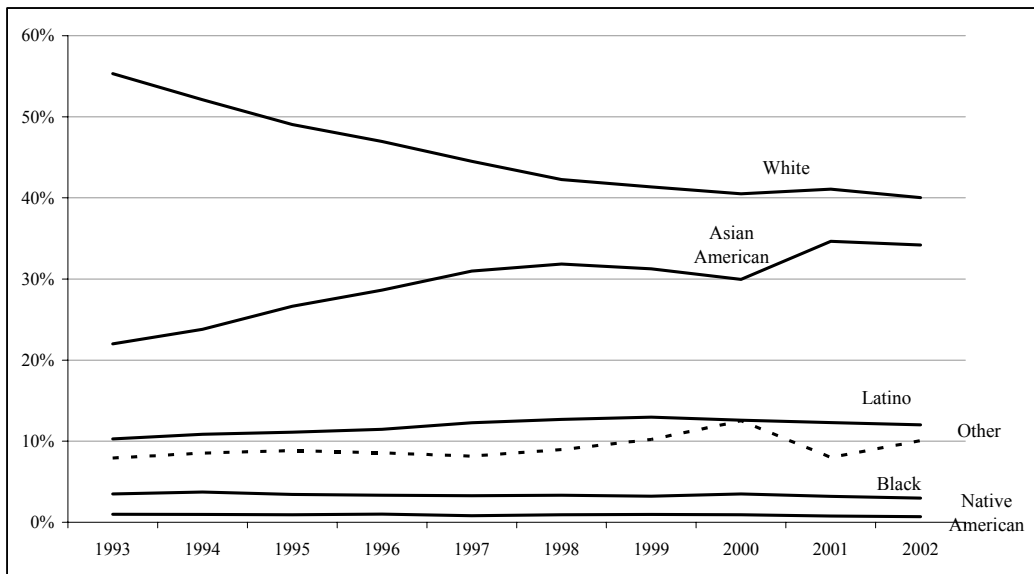
The awarding of degrees in the three sectors mirrored the enrollment trends shown previously. Figures 7 through 9 show the proportional degree attainment of each racial group in the California Community Colleges, CSU, and UC, respectively. Latinos gained in the community colleges and at CSU, while Asian Americans made large gains in the UC system. In all three sectors, the proportion of the degrees received by whites dropped at least 13 percentage points.



**Figure 7: Proportion of certificates and degrees received by racial group, California Community Colleges**



**Figure 8: Proportion of bachelor's degrees received by racial group, California State University**

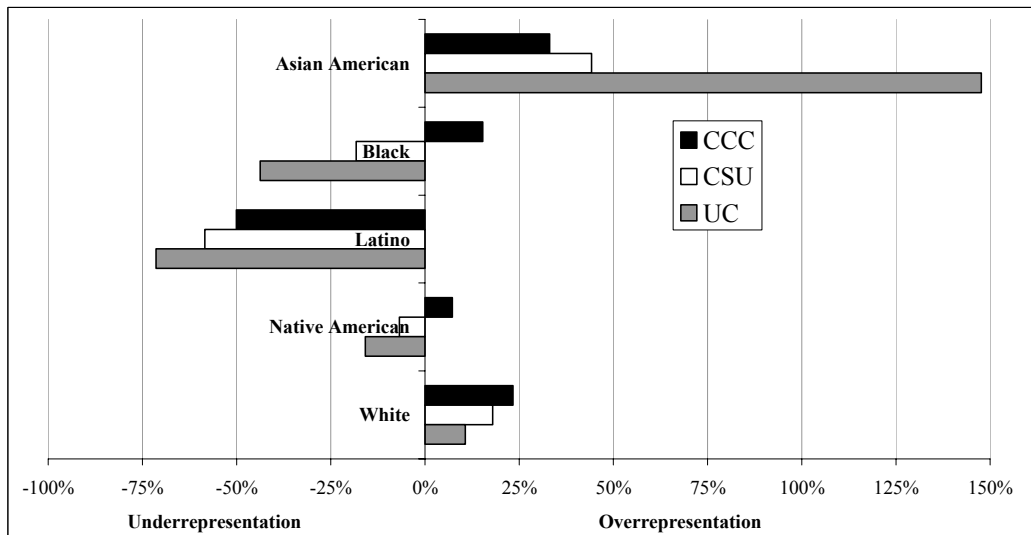


**Figure 9: Proportion of bachelor's degrees received by racial group, University of California**

In order to examine the proportion of degrees awarded to each group relative to the underlying population in the state, the degree data were combined with data from the 2000 Census (U.S. Census Bureau, 2003a). This relationship was calculated as follows for each racial group:

$$\frac{(\text{Proportion of degrees awarded in 2000} - \text{Proportion of 22 to 29 population})}{\text{Proportion of 22 to 29 population}}$$

For example, if a group represented 20 percent of the degrees awarded, but only 10 percent of the population 22 to 29 years old, then they would be overrepresented among degree recipients by 100 percent.<sup>5</sup> Similarly, if a group received 15 percent of the degrees awarded, but represented 30 percent of the population, they would be underrepresented by 50 percent. If a group's representation among degree recipients was equivalent to its representation in the population, the ratio would be zero. The results of this calculation for each group in each of the three sectors is shown in Figure 10.



**Figure 10: Ratio of degree representation to population representation, 2000**

In all three sectors, white and Asian American degree recipients are overrepresented compared to the underlying population, while Latinos are underrepresented in each sector. Native American and black students are underrepresented at CSU and UC, and slightly overrepresented in the community colleges.

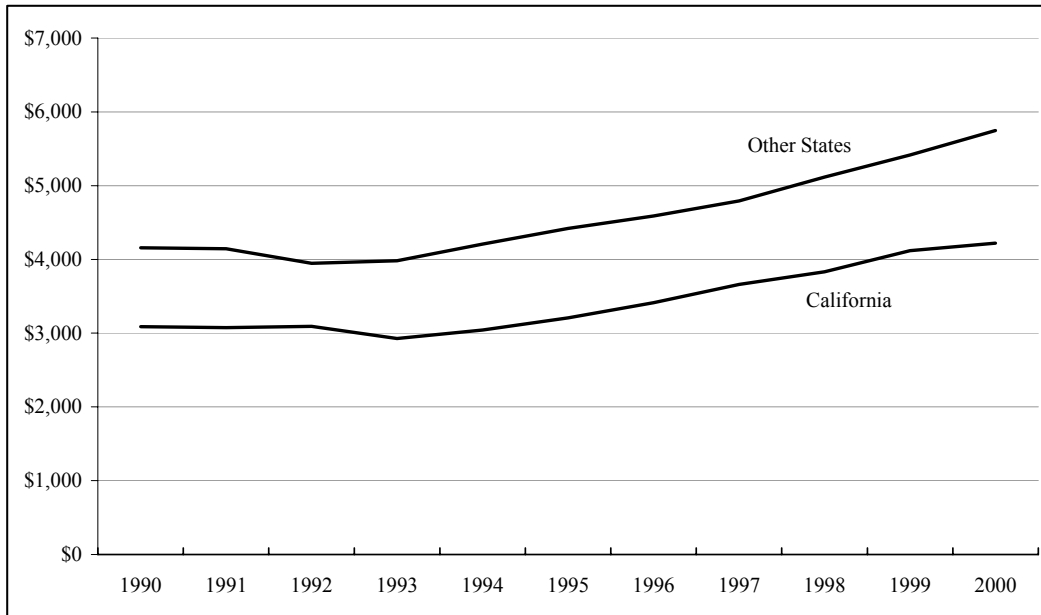
## Public Subsidies for Higher Education in California

### *State Appropriations<sup>6</sup>*

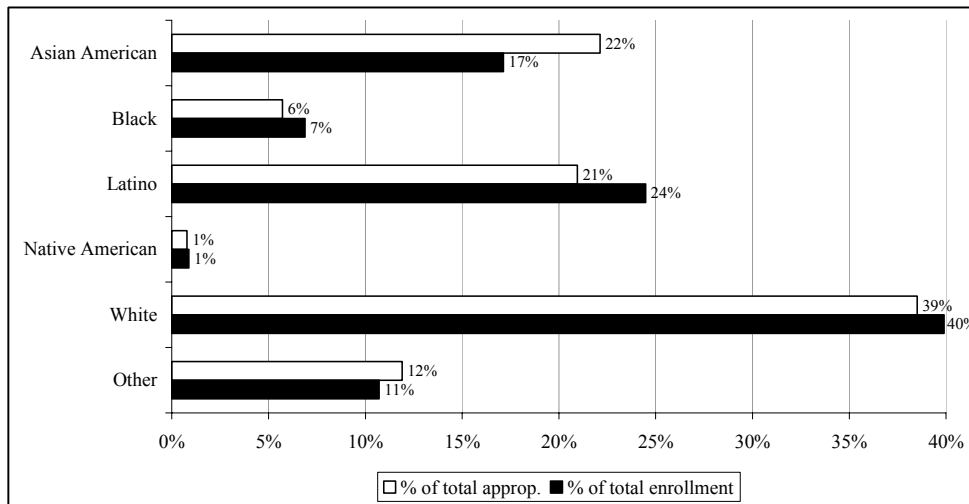
Since development of the Master Plan, California has had a long history of being a relatively low tuition state. This position was not achieved, however, because of a relatively high level of appropriations from the state (and local revenues, for the California Community Colleges) in comparison to other states. Rather, the strategy has been pursued through the expansion of the community college sector. While nationally less than 45 percent of public college students during the 1990s were enrolled in community colleges, in California, the proportion has exceeded 70 percent during the same period (Quantum Research Corporation, 2003). The cost to educate students at community colleges is approximately one-fourth that of the University of California and 40 percent of the cost at California State University.

Because costs are lower at community colleges than at 4-year institutions, a strategy emphasizing enrollments in 2-year institutions has allowed California to expand access to higher education while spending less public money than other states. Figure 11 shows the appropriations per student in California and the rest of the nation (California Postsecondary Education Commission, 2003b; Center for the Study of Educational Policy, various years; National Center for Education Statistics, 2003). During the 1990s, appropriations per student in California lagged behind the rest of the nation by at least \$1,000. Yet in a ranking of states on how well they perform on measures of college participation, the National Center for Public Policy and Higher Education (2002) ranked California 9<sup>th</sup> in the nation.

By merging the appropriation and racial group enrollment data, we can estimate the proportion of the total state (and local) investment in higher education that flows to students in each group. This amount is determined by two factors: the proportion of each group's enrollment in each sector, and the distribution of each group among the three sectors. Figure 12 compares the proportional enrollment (in all three sectors) with the proportion of the state appropriation received by each group.<sup>7</sup> Asian Americans, who represent 17 percent of the enrollment across the three sectors, received 22 percent of the investment of state and local appropriations. Latinos, on the other hand, represent almost one-fourth of the students enrolled, but receive only 21 percent of the appropriations.



**Figure 11: State and local appropriations per student (current dollars)**



**Figure 12: Proportion of total enrollments and state appropriation received, 2002-2003**

### *Financial Aid*

No data are publicly available on the distribution of state financial aid awards (CalGrants) or institutional grants to students from different racial groups. A 2001 report produced for EdFund, the loan servicing arm of the California Student Aid Commission (CSAC), provides some information about the distribution of state and institutional grants by sector (Gladieux, Swail, & Carvajal, 2001). In the 1999-2000 academic year, \$355 million in grants was awarded by CSAC, with \$187 million, or 53 percent, going to students in the three sectors of public higher education in the state. Table 2 details the distribution of CalGrants by sector.

**Table 2: CalGrant awards by sector, 1999-2000**

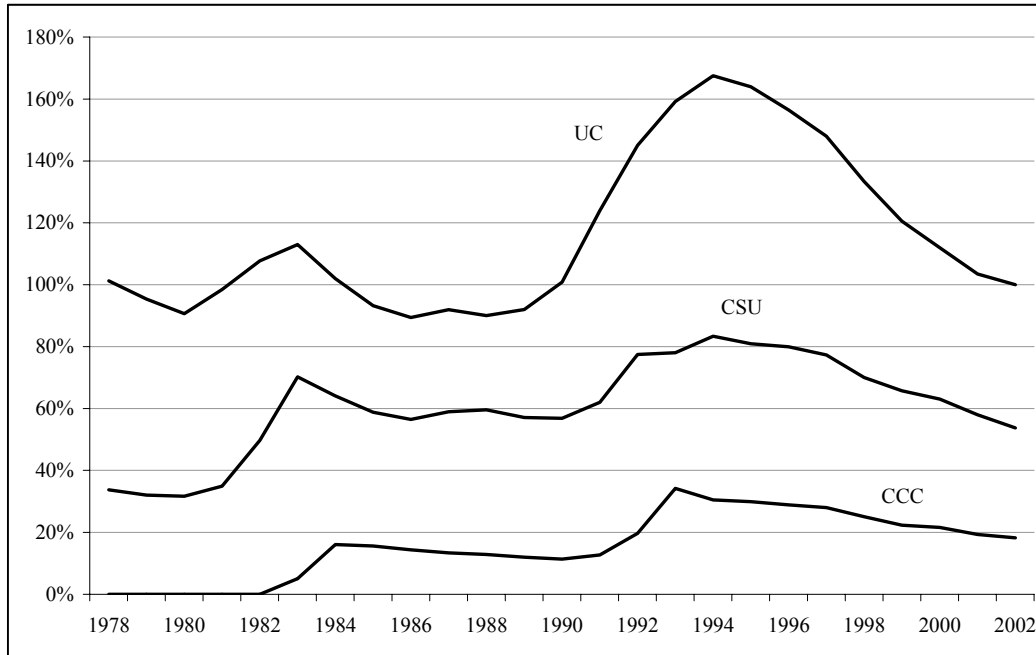
Sector	Total awards	Number of grants	Mean Amount	% of undergraduates receiving grants
UC	\$112,491,000	33,007	\$3,408	24.2%
CSU	\$54,952,000	31,644	\$1,737	11.1%
CCC	\$19,658,000	18,927	\$1,039	1.7%
Total	\$187,101,000	83,578	\$2,239	5.3%

In addition to the CalGrant awards, the three sectors awarded grants totaling the following amounts in the 1999-2000 year: UC - \$172,555,000; CSU - \$161,186,000; CCC - \$98,525,000.<sup>8</sup>

### **Student and Parental Contributions**

#### *Tuition and Fees*

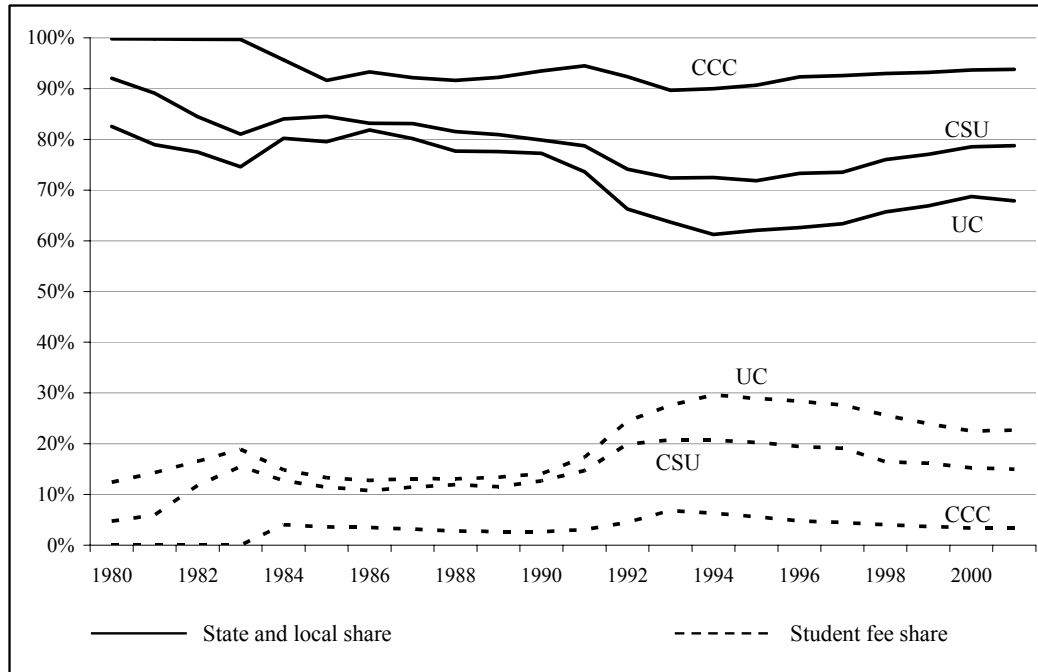
As described earlier, California has historically been a low tuition state.<sup>9</sup> Tuition charges at California State University and the California Community Colleges (which until 1984 charged no tuition at all) have historically been well below national averages, while at the University of California tuition has been closer to the national average for flagship institutions. Figure 13 shows tuition charges in all three sectors as a proportion of the national median for that sector (Washington Higher Education Coordinating Board, various years).



**Figure 13: California resident tuition as a percentage of national median**

In all three sectors tuition rose relative to national averages following the recession of the early 1990s, and then declined in the middle part of that decade as the state economy rebounded and higher education appropriations increased. As of last year, tuition at UC had returned to the point it had been at 25 years earlier – right on the national median, while charges in the other two sectors had moved closer to the earlier points. However, tuition in the three sectors will undoubtedly climb relative to the national average because of the large increases imposed this fall – 30 percent at UC and CSU, and 60 percent at the community colleges (Arnone, 2003; Selingo, 2003).

Over the last two decades, students and their families have been paying an increasing share of the cost of education in all three systems. Figure 14 shows the cost of instruction-related activities borne by revenues from the state (and local tax revenues for the community colleges), and that covered by student fees in each of the three sectors (the remainder comes from other sources, including institutionally-generated revenues and state lottery funds). Two decades ago, taxpayers provided 83 percent or more of the instructional costs in each of the three sectors. By 2001, these shares had dropped to under 70 percent at UC, 79 percent at CSU, and 94 percent at the community colleges, with revenues from student fees making up the bulk of the difference.



**Figure 14: Public and student fee shares of the cost of instruction**

### *Financial Aid*

The student fee shares shown above include gross tuition and fee revenues, and do not subtract any financial aid received by the students. Thus, the share of the cost of instruction actually paid, net of financial aid, is going to vary from student to student based on the level of grants received. While actual data were not available to calculate the level of grants received by students in different racial groups in each sector, it is possible to estimate these amounts based on national data from the National Postsecondary Student Aid Study (National Center for Education Statistics, 2002b). This study is a nationally-representative sample of all undergraduate students enrolled in the 1999-2000 academic year, and includes detailed information about college costs and financial aid received by the students. Table 3 shows the distribution of the national headcount enrollment by sector and race, along with the distribution of state, institutional, and federal grant dollars awarded in the 1999-2000 academic year.

**Table 3: Distribution of enrollment and grant dollars in the U.S., 1999-2000**

	White	Black	Latino	Asian*
<i>Community colleges</i>				
% of enrollment	65%	13%	12%	6%
% of state grant \$	62	20	10	NA
% of institutional grant \$	62	13	16	NA
% of federal grant \$	51	24	15	6
<i>4-year non-doctoral institutions</i>				
% of enrollment	68	12	11	5
% of state grant \$	66	18	8	5
% of institutional grant \$	67	15	10	6
% of federal grant \$	50	21	19	6
<i>4-year doctoral institutions</i>				
% of enrollment	71	10	8	8
% of state grant \$	58	15	11	13
% of institutional grant \$	67	14	7	9
% of federal grant \$	50	23	14	10

\* The NPSAS survey has separate categories for Asians and Native Hawaiian/other Pacific Islanders; these two categories were combined into one category

NA: Number of observations too small to estimate.

In all three sectors, black and Latino students received a share of federal grants larger than their proportional share of enrollment. This is because federal grants (Pell and Supplementary Educational Opportunity Grants) are awarded based on financial need, and both nationally and in California, black and Latino families have incomes well below the national median.<sup>10</sup> White students received a share of federal grants lower than their share of enrollment, while the share for Asian students was closer to their proportional share of enrollments. Federal grants are the single largest source of grant aid to undergraduates in public institutions, comprising 43 percent of all grant aid awarded in 1999-2000 (author's calculations from NPSAS data). State and institutional grants totaled 18 and 23 percent, respectively, with the remainder from private sources.

Black students also received a larger share of state grants in all three sectors, again, largely because approximately 75 percent of all state grants are awarded using financial need criteria (National Association of State Student Grant & Aid Programs, 2003). The same was true only of Latinos in 4-year doctoral institutions. Institutional grant dollars were awarded to all groups in closer proportion to their enrollment ratios.

The national data in table 3 were combined with the data from EdFund report on student aid in California (Gladieux, Swail, & Carvajal, 2001) to estimate the proportion of that aid that was distributed to students in each racial group in the three sectors of public higher education in the state. The steps taken to prepare these estimates were:

1. The shares of grant dollars and enrollment for each group in table 3 were compared to measure the rate at which each group was overrepresented or underrepresented in the awarding of grants.
2. These representation rates were then applied to the proportional enrollment rates of each group in each sector in California (shown in figures 1 through 3) to estimate the proportion of grant dollars awarded to each group.
3. These proportions were then multiplied by the total grant dollars awarded from all three sources (state, institutional, and federal) reported in the EdFund report.

The formula used for each racial group in each sector was:

$$\left( \frac{(\text{national grant dollars share} - \text{national enrollment share})}{\text{national enrollment share}} + 1 \right) \times (\text{Calif. enrollment share}) \times (\text{Calif. total grant dollars})$$

An important assumption in these calculations is that the distribution of grant dollars by race in California within each sector roughly mirrors that of the nation as a whole. While it is not possible to test this with the publicly available data, the figures shown in table 4 can be construed as reasonable estimates of the distribution of aid in California *if* this assumption held.

**Table 4: Estimates of the distribution of grant dollars in California, 1999-2000 (millions)**

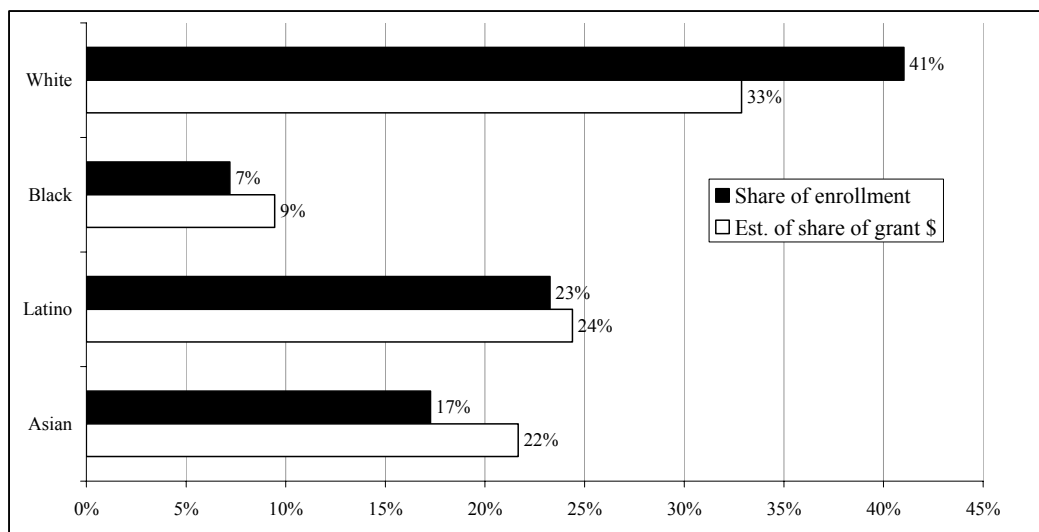
	White	Black	Latino	Asian	All Races*
<i>California Community Colleges</i>					
State grant \$	\$7.9	\$2.4	\$4.1	NA	\$19.7
Institutional grant \$	39.3	7.7	32.3	\$18.5	98.5
Federal grant \$	118.3	52.2	107.2	50.4	358.9
Total – all three sources	165.5	62.3	143.7	NA	477.1
<i>California State University</i>					
State grant \$	20.0	4.9	8.2	10.9	54.9
Institutional grant \$†	60.1	11.5	28.8	33.4	161.2
Federal grant \$	65.5	24.3	83.2	52.5	237.7
Total – all three sources	145.5	40.8	120.2	96.8	453.8
<i>University of California</i>					
State grant \$	34.6	5.6	18.3	69.1	113.0
Institutional grant \$	61.2	8.0	18.6	70.5	172.6
Federal grant \$	27.7	8.2	21.6	47.2	105.5
Total – all three sources	123.5	21.7	58.5	186.8	391.1

NA: Number of observations too small to estimate.

\* Includes Native Americans and students of other and unknown race

† Includes grants to graduate students, who comprise only 12 percent of the headcount enrollment at CSU.

The dollar estimates in table 4 were converted to shares of the total grant dollars awarded, and were compared with the enrollment proportions shown in figures 1 through 3. The results are shown in figure 15.



**Figure 15: Enrollment shares and estimate of total grant dollar shares received in California, 1999-2000**

White students, who comprised 41 percent of the total enrollment in all three public sectors, received 33 percent of the total grant dollars. Asian students received a much greater share of grant dollars as compared to their enrollment share. Given the nature of these estimates, it is probably fair to conclude that for blacks and Latinos their share of grant dollars received and enrollment are roughly equivalent.

## Conclusions and Recommendations for Further Research

### *Summary of Findings*

This study has analyzed the participation, degree attainment, and funding of public higher education in California. Using publicly-available data, it begins an exploration of the distribution by racial group of the benefits from the public investment in postsecondary education in the state, an investment in excess of \$9.5 billion in the 2002-2003 academic year.

In the measures of enrollment in higher education, Asian Americans in California have the highest participation rates when compared to their representation among high school graduates in the state. While the percentage of high school graduates who were Asian American stayed steady at approximately 15 percent over the last decade, their share of undergraduate enrollments at the University of California increased from 30 to 36 percent, and at California State University their share was approximately 19 percent over the ten year period. Latinos, who comprise the fastest growing racial group in California, saw their share of high school graduates increase from

29 percent of the total in 1993 to 34 percent in 2002. In all three sectors of public higher education, however, Latinos are underrepresented, with their enrollment share in 2002 reaching 27 percent at the California Community Colleges, 21 percent at CSU and 13 percent at UC. Blacks, who have represented approximately 7 percent of high school graduates over the last decade, are underrepresented at CSU and UC. Whites have seen a steady decline both in their representation among high school graduates as well as in higher education participation.

The patterns of enrollment changes over the last decade have largely been mirrored in the awarding of degrees and certificates in the three sectors. When comparing credentials awarded in 2000, Asian Americans and whites were overrepresented in all three sectors as compared to their share of the population in California in the prime degree-receiving ages of 22 to 29. In contrast, blacks and Latinos were underrepresented.

The public investment in higher education in California, as in other states, comes in two primary forms: general state appropriations to each of the three sectors, and financial aid awarded to students through the California Student Aid Commission. Because of the fungible nature of higher education finance, it is difficult to trace exactly how the state money that flows to institutions in the form of appropriations is spent on specific purposes. But some general estimates can be made, based on published figures for the amount each sector spends on instruction and the enrollment of students in each sector.

Asian American students, who represented 17 percent of all students enrolled across the three sectors, are estimated to have benefited from approximately 22 percent of the state appropriations for higher education in California. This difference is due to the fact that Asian Americans are overrepresented in the most expensive sectors (UC and CSU). The instructional cost per student in the community colleges is approximately one-fourth that of UC and 40 percent of the cost at CSU. Latino students, because of their underrepresentation in these latter two sectors, are estimated to benefit from only 21 percent of the state's appropriations even though they comprise 24 percent of the undergraduates in public higher education.

Tuition in California has historically been relatively low compared to national averages. Following the increases of the early 90s and the cuts in the late 1990s, the tuition charges paid by students attending CSU and the community colleges in 2002-2003 were less than 60 percent of the national average, while tuition at UC in 2002-2003 was right at the national median.<sup>11</sup> Compared to two decades ago, however, students and their families are paying a larger share of the cost of education, while the state is paying a smaller share.

To accurately measure the financial burden on students and their families, one needs to examine the role of grants, which act as a discount to the gross tuition, or sticker price, paid.<sup>12</sup> The amount of grants received by each student is going to be a function of a number of factors:

- The cost of attendance at the institution in which the student enrolls
- The type of institution in which the student enrolls and the availability of institutional aid
- The state of residence

- The income and assets of the student (and her family, in the case of dependent students), which affects the awarding of need-based aid
- The academic performance of the student, which affects the awarding of merit aid

Without knowing these characteristics of each student enrolled in every institution in California, or without knowing the nature of the financial aid package each receives, one can make only very rough estimates of the distribution of aid in California. An estimate using data that are publicly available found that Asian American students are overrepresented in their share of financial aid received (relative to their share of enrollment across the three sectors), while white students are underrepresented.

### *Policy Implications*

College participation is determined by a host of factors. Some of these factors – such as funding for public K-12 and postsecondary institutions, the quality of those systems, and funding for state financial aid – are directly influenced by the decisions made by state policymakers. Other factors – such as social and cultural influences on college attendance, the status of labor markets (which offer an alternative to college attendance), the availability of other forms of financial aid, and tastes and preferences for higher education – are less directly controlled by the state (Hossler, Schmit, & Vesper, 1999; McDonough, 1997).

State policy levers that affect college participation and equity can be used to further specific state goals. In California, for example, there has been a longstanding emphasis on initial entry into the postsecondary education system. This tradition has been supported through the establishment of a strong community college system, which has placed over 100 public 2-year institutions throughout the state that charge very low tuition (and offer a fairly generous tuition waiver system for needy students). In California, 76 percent of the undergraduates enrolled in public institutions in the 2000-2001 academic year attended community colleges; in the rest of the nation, only 49 percent were enrolled in this sector (National Center for Education Statistics, 2003). One in every four community college students in the nation are enrolled in the California Community Colleges.

This emphasis on initial college entry may have come at the expense of other goals of postsecondary education, however. In the rankings of the National Center for Public Policy and Higher Education's (2002) *Measuring Up* report, California ranked 11<sup>th</sup> in the nation in the measure of college participation, but only 36<sup>th</sup> in college completion.<sup>13</sup> This overall performance can be understood when one looks at some of the specific measures that comprise the composite college completion score. California did very well in the 4-year sector; it ranked second out of 49 states in the percentage of freshmen in 4-year institutions returning for a second year (84 percent), and tenth of 50 states in the proportion of first-time, full-year students completing a bachelor's degree within six years of college entry (60 percent). But in the broader measures of college completion, which encompass outcomes of the community college sector, the state performed more poorly. California ranked 34<sup>th</sup> out of the 43 states ranked in the percentage of first year community college students who returned for a second year (48 percent), and 44<sup>th</sup> out

of 50 states in the number of certificates and degrees awarded per 100 undergraduate students (14).

This strategy may have been appropriate when the Master Plan was developed in the 1960s. The needs of labor markets at that time were different than today, and the goal of emphasizing sub-baccalaureate education for those students who did continue their education after high school likely helped fuel the growth of the California economy through the 1960s, 1970s, and 1980s. But more and more jobs today require skills and education that demand more than the minimal levels of postsecondary training many Californians are receiving today.

In addition to the issue of what type of postsecondary education and training is emphasized in California, state policymakers need to be aware of the distributional equity of the state's investment in its three sectors of public higher education. This report has demonstrated that the benefits are not equally distributed among the racial and ethnic groups present in the state. Some groups, particularly Asian Americans, are overrepresented both in college participation and degree attainment; others, such as Latinos, are well underrepresented. Yet this allocation of the benefits, as pointed out above, is not solely the result of state policy decisions. Many of the factors that have led to the current situation likely are beyond the scope of state policies.

Policymakers in California need to confront a number of issues with respect to the future of public higher education in the state. A continued emphasis on sub-baccalaureate education may not meet the needs of either students or the labor markets of the state. From 1965 to 2002, enrollments in the community colleges grew 277 percent, while 4-year enrollments grew 164 percent (California Postsecondary Education Commission, 2003b). In recent years, the expansion of the four year sector has been accomplished largely at the margins, with few new campuses being built.

Tuition pricing mechanisms can be used to influence the distribution of students among the sectors within a state. For example, a recent blue ribbon panel that reviewed the future of higher education in Colorado examined relative prices in the community college and 4-year sectors in that state (Governor's Blue Ribbon Panel on Higher Education for the 21<sup>st</sup> Century, 2003). The panel found that prices in the two sectors were so close (Colorado has relatively high community college tuition and low 4-year tuition) that there was little price incentive for students to enroll in the community colleges. California has the reverse situation; prices at community colleges are the lowest in the nation (less than one-fifth the national average last year), while prices in the 4-year sector are closer to the national average (60 percent of the median at CSU and at the median at UC). This likely provides a pricing incentive for some students to see the community colleges as a much bigger higher education "bargain," but who may otherwise be qualified and able to enroll in a 4-year institution.

Such a shift in policy to emphasizing enrollment in baccalaureate institutions, however, would clearly come at a price. Capacity in the 4-year institutions would have to somehow be increased, and/or community colleges could be authorized to implement some bachelor's degree programs. Such changes would likely require increased capital and operating expenditures, a difficult prospect for state policymakers to face in light of the dreadful fiscal conditions facing the state today. Yet there are other options to expanding capacity and access that, once the state fiscal situation returns to normalcy, may offer alternatives to the original Master Plan strategy of

building campuses. Following the last recession and fiscal crisis in California, the California Higher Education Policy Center issued a report outlining a dozen tactics that could be pursued to expand access to baccalaureate programs without building campuses (Breneman, 1995).

Included in the list were:

- Excluding all out-of-state undergraduates from public universities
- Deemphasizing master's programs at CSU and doctoral programs at some of the UC campuses, and shifting resources to undergraduate education
- Expanding the use of technology for instruction
- Making better use of existing facilities at non-peak times

Many of the dozen suggestions were likely unpopular on certain campuses and among certain stakeholders. But as the author of the report pointed out, "The twelve ideas advanced above are no doubt flawed and open to improvement. But they do represent a start in the search for ways to ensure higher educational opportunity for the next generation of California's young citizens" (p. 17).

A similar dialogue to address today's "emergency" in California can help establish a roadmap for the future of higher education in the state. All can agree that the current fiscal crisis likely makes any immediate change all but impossible, but by beginning this dialogue today, the state can be prepared for addressing existing needs in the near future.

In addition to a discussion of access and capacity issues, policymakers should examine whether the existing distributional inequities can be addressed through the higher education policy levers available to the state. Research on higher education in California has shown that issues of academic preparation and motivation in the K-12 sector are important impediments to addressing the underrepresentation of Latino students, for example (University of California Latino Eligibility Task Force, 1997; University of California Office of the President, 1997). The UC system has responded to these findings by improving its outreach efforts to schools and families, particularly among these underrepresented populations.

As tuition prices in California rise relative to the ability to pay of students and their families (an inevitability given the fiscal situation), both state and institutional policymakers should ensure that financially needy students have adequate access to financial aid resources. To date, California has resisted the trend in many other states to abandon financial need as the criterion for awarding grants in favor of merit criteria. Such a shift has helped to exacerbate the gaps in college participation in many of those states (Heller & Marin, 2002). Given the documented gaps in postsecondary participation and attainment, the state should continue to emphasize assisting the neediest students with financial aid.

### *Suggestions for Future Research*

As described in the introduction, this has been an exploratory analysis which has utilized publicly-available data to address the issues in this study. The limitations of the data mean that many of the estimates of participation, attainment, and funding are just that – estimates. Specifically, while there are good publicly-available data on enrollments and degree attainment by racial and ethnic group within each sector, there are many fewer data available on the financing and financial aid expenditures that allow the research to relate these categories to specific groups of students.

Future research could refine the estimates here by exploring the available of data directly from the three sectors of public higher education in the state, through the system offices or individual institutions themselves. For example, data on the actual financial aid packages received by undergraduate students – including aid from federal, state, institutional, and private sources – would allow one to calculate much more accurate estimates of the net cost of college paid by different groups. Similarly, data on the specific enrollment patterns of students (full-time versus part-time, certificate or degree program, etc.) could be combined with proprietary cost data to better measure the allocation of the costs of instruction between the public (from state appropriations) and individual students and their families (through tuition and fees).

Another area of research that could help expand our understanding of the issues covered here is the topic of tax incidence studies. Hansen and Weisbrod (1969) related who benefited from the public investment in higher education in California to who paid through an analysis of the tax incidence on different income groups in the state. I was unable to find any comparable studies that examined tax incidence by racial group. Investigation of the availability of data from sources such as the State Board of Equalization and the Franchise Tax Board could help determine whether such studies could be conducted.

## References

- Arnone, M. (2003, August 15). Students face another year of big tuition increases in many states. *The Chronicle of Higher Education*, p. A24.
- Breneman, D. W. (1995). *A state of emergency? Higher education in California*. San Jose, CA: California Higher Education Policy Center.
- California Postsecondary Education Commission. (2001). *First-time freshmen in California colleges and universities, fall 1999*. Sacramento: Author.
- California Postsecondary Education Commission. (2003a). CPEC student data [http://www.cpec.ca.gov/OnLineData/OnLineData.asp]. Sacramento: Author.
- California Postsecondary Education Commission. (2003b). *Fiscal profiles, 2002 (03-8)*. Sacramento: Author.
- Center for the Study of Education Policy. (various years). *Appropriations of state tax funds for operating expenses of higher education*. Normal: Illinois State University.
- Gladieux, L. E., Swail, W. S., & Carvajal, E. (2001, July). *California trends in student aid 1990-91 to 1999-00*. Rancho Cordova, CA: EdFund.
- Governor's Blue Ribbon Panel on Higher Education for the 21<sup>st</sup> Century (2003). *Final report*. Denver: Colorado Commission on Higher Education.
- Hansen, W. L., & Weisbrod, B. A. (1969). *Benefits, costs, and finance of public higher education*. Chicago: Markham Publishing Company.
- Heller, D. E., & Marin, P. (Eds.). (2002). *Who should we help? The negative social consequences of merit scholarships*. Cambridge, MA: Harvard Civil Rights Project.
- Horn, C. L., & Flores, S. M. (2003). *Percent plans in college admissions: A comparative analysis of three states' experiences*. Cambridge, MA: The Civil Rights Project, Harvard University.
- Hossler, D., Schmit, J., & Vesper, N. (1999). *Going to college: How social, economic, and educational factors influence the decisions students make*. Baltimore, MD: The Johns Hopkins University Press.
- Jenny, N. W. (2002). *Large decline in April-June 2002 quarter caps terrible fiscal year for states*. Albany, NY: Nelson A. Rockefeller Institute of Government.
- Lee, J. B., Swail, W. S., & Gladieux, L. E. (2001). *The California dream and its future: Indicators of educational and economic opportunity in the Golden State*. Rancho Cordova, CA: EdFund.

- McDonough, P. M. (1997). *Choosing colleges: How social class and schools structure opportunity*. Albany: State University of New York Press.
- National Association of State Student Grant & Aid Programs. (2003). *NASSGAP 33rd annual survey report on state-sponsored student financial aid 2001-2002 academic year*. Albany: New York State Higher Education Services Corporation.
- National Center for Education Statistics. (2002a). *Digest of education statistics, 2001* (NCES 2002-130). Washington, DC: U.S. Department of Education.
- National Center for Education Statistics. (2002b). National Postsecondary Student Aid Study 1999-2000 restricted use files. Washington, DC: U.S. Department of Education.
- National Center for Education Statistics. (2003). *Digest of education statistics, 2002* (NCES 2003-060). Washington, DC: U.S. Department of Education.
- National Center For Public Policy and Higher Education. (2002). *Measuring up 2002: The state-by-state report card for higher education*. San Jose, CA: Author.
- Pusser, B. (2001). The contemporary politics of access policy: California after Proposition 209. In D. E. Heller (Ed.), *The states and public higher education policy: Affordability, access, and accountability* (pp. 121-152). Baltimore, MD: The Johns Hopkins University Press.
- Quantum Research Corporation. (2003). CASPAR database system [<http://caspar.nsf.gov>]. Bethesda, MD: Author.
- Selingo, J. (2003, July 25). California's public universities adopt steep tuition increases. *The Chronicle of Higher Education*, p. A20.
- Shires, M. A. (1996). *The future of public undergraduate education in California* (MR-561-LE). Santa Monica, CA: RAND.
- United States Census Bureau. (2002). *Census 2000: California profile* (C2KPROF/00-CA). Washington, DC: Author.
- United States Census Bureau. (2003a). Census 2000 summary file 1 100-percent data, table P12. Washington, DC: Author.
- United States Census Bureau. (2003b). Census 2000 summary file 3 sample data, table P53 and P152. Washington, DC: Author.
- University of California Latino Eligibility Task Force. (1997, July). *Latino student eligibility and participation in the University of California. ¡YA BASTA!* Oakland: Author.
- University of California Office of the President. (1997, July). *New directions for outreach: Report of the University of California Outreach Task Force*. Oakland: Author.

Washington Higher Education Coordinating Board. (various years). *Washington state tuition and fee report*. Olympia: Author.

Western Interstate Commission on Higher Education. (1998). *Knocking at the college door: Projections of high school graduates by state and race/ethnicity 1996-2012 (2A302)*. Boulder, CO: Author.

## Notes

- 
- <sup>1</sup> The prohibition was initially in effect at the University of California due to Regents policies SP-1 and SP-2, and later in the remaining two sectors due to Proposition 209 (Pusser, 2001).
  - <sup>2</sup> It should be noted here that the overall enrollment pattern within the UC system differs when you examine the two most selective institutions, UC Berkeley and UCLA. Horn and Flores (2003) document that Latino (and black) representation among the incoming freshmen classes at these two institutions dropped precipitously in 1998.
  - <sup>3</sup> There are important differences in the rate of high school graduation among the racial groups. Horn and Flores (2003) reported that while the graduation rate for whites and Asian Americans in California in 2000 was 78 and 85 percent respectively, the black (58 percent) and Latino (57 percent) lagged behind.
  - <sup>4</sup> Only public high school graduates are included in the CPEC high school data (the denominator of the ratio), while the postsecondary enrollment data (numerator) include all first-time freshmen from California, regardless of what type of high school they attended. Thus, these figures should not be construed as exact college-going rates for all high school graduates in the state. Data are not shown for the California Community Colleges as the majority of students enrolled there are counted as first-time freshmen, and thus are not a good representation of the high school to college transition.
  - <sup>5</sup> The 22 to 29 age group was chosen somewhat arbitrarily, as most degree or certificate recipients likely fall into this age group. However, changing the age group chosen, within reasonable limits, would not substantively change the results shown in figure 10.
  - <sup>6</sup> Unless otherwise indicated, all data in this section are from the California Postsecondary Education Commission (2003b). Funding described here is for the general operating expense appropriations for higher education, and excludes capital funding from the state.
  - <sup>7</sup> These estimates would be affected by the presence of out-of-state students, who pay much higher tuition levels. However, data from the NCES IPEDS enrollment surveys show that 94 percent of all undergraduates at UC and CSU are California residents, and 96 percent of all community college students are residents of the state (Quantum Research Corporation, 2003). Thus, the impact of out-of-state students on these estimates is likely small. The estimates would also be affected by the distribution of students between part-time and full-time status (headcount enrollments are used here).
  - <sup>8</sup> The CSU total includes grants to both undergraduates and graduate students; the other two sectors are grants to undergraduates alone. Eighty-three percent of the grants in the community colleges were awarded in the form of fee waivers.
  - <sup>9</sup> Charges for California residents in all three sectors are referred to as “fees.” I use here “tuition” in concordance with how most states label charges for resident students.
  - <sup>10</sup> Median family incomes in 1999 as reported in the 2000 census were (United States Census Bureau, 2003b):

	California	United States	% Difference
All families	\$47,493	\$41,994	14%
White	53,734	45,367	18
Black	34,956	29,423	19
Latino	36,532	33,676	8
Asian American	55,366	51,908	7
Native Hawaiian/Pacific Islander	48,650	42,717	14

Median family incomes in California exceed the national figures, with whites and blacks enjoying the largest difference. The gap in income between whites, and blacks and Latinos, is proportionally similar in California as in the nation as a whole. The distribution of grant dollars would be affected not just by the overall incomes of each group, but also the rate at which each group attends college in each sector.

- <sup>11</sup> As noted earlier, these comparisons with the rest of the nation will likely change because of the large tuition increases imposed in California in the 2003-2004 academic year.
- <sup>12</sup> Loans and work study have not been considered in this analysis because the former are not a true discount to tuition, but rather, are a mechanism to allow students to postpone paying for a portion of the tuition charges. Work study is considered wages for work performed.
- <sup>13</sup> As described earlier California has been a relatively low tuition state, a fact confirmed by its ranking of first among the fifty states in the *Measuring Up* category of affordability.