

Policy Issue Report

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Variations on a Theme: Higher Education Performance in California by Region and Race

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Executive Summary

This report is the first comprehensive attempt to analyze California's performance on the 50-state higher education report card that has been produced by the National Center for Public Policy and Higher Education three times since 2000. While the report card presents composite, statewide scores in each of five categories, its authors intended these aggregate ratings to spur more detailed analysis within states. An examination of the individual components within each category, and a breakdown of the data by region and race/ethnicity, reveals several key performance problems facing the state, including:

- * Low levels of high school student preparation, especially in science and math.
- * Low rates of college enrollment directly from high school – a pattern that significantly reduces chances for college completion.
- * Low rates of persistence and completion among the majority of the state's students, who attend part-time at the community colleges.
- * High levels of student debt incurred for college expenses.
- * Substantial disparities across regions in all of the performance measures described in this report, with the wealthier urban areas generally providing better opportunities for higher education than the state's rural areas.
- * Large disparities across racial/ethnic populations in levels of college preparation, participation, and completion.

Policy implications of this analysis include the following:

- * Increasing the rates of high school graduation, college participation, and degree completion among the black and Latino populations is essential to California's social and economic health.
- * K-12 reform efforts must promote a college-going culture and improve the linkages between high school proficiency and college readiness.
- * Policies that promote direct, full-time enrollment after high school stand to reap huge benefits for degree and certificate completion, and ultimately for state economic health.
- * Policies that encourage regional collaboration across sectors to address unique regional challenges might be more effective than statewide interventions, given the huge variations across regions.
- * Attention to a long-term finance plan that addresses state appropriations in concert with fee policy is critical. Achieving efficiencies throughout the system will be an important consideration in the development of a finance plan.

Introduction

In 2000, the National Center for Public Policy and Higher Education initiated a bi-annual report card that grades the 50 states on the performance of their higher education systems.¹ Three such reports, called *Measuring Up*, have been issued, grading states in six categories: preparation, participation, affordability, completion, benefits, and learning.² The Center's report and data are intended to push states to delve more deeply into performance issues and to develop plans for improving performance. Many states are using the data in *Measuring Up*, and from related national initiatives,³ to guide policy discussions, and some have set bold new directions.

There has been no such effort in California to analyze, interpret, expand, and act upon the available data.⁴ California can benefit from a closer look at these and other performance data. Although K-12 education issues typically take precedence on the policy agenda in California, higher education has its share of problems. Some of these problems are masked by the overall report card grades which are composites of many factors. Other problems are masked by the huge variations across the regions and subpopulations of this diverse and complex state. This report analyzes the available data in order to call attention to important performance issues facing California higher education. Specifically, it includes:

- ◆ An explanation of the overall state grade in each category of *Measuring Up* that highlights key performance issues underlying the grade;
- ◆ A breakdown of the data, where possible, by region⁵ and race, in order to focus attention on the key variations that warrant policy attention;
- ◆ An explanation of California's performance in two areas not covered in *Measuring Up* – finance and the overall pipeline from high school through to college completion;
- ◆ A summary of the policy implications of the available performance data; and
- ◆ Appendices to assist those with an interest in the derivation of the computations.

There is no substitute for an educated populace in California's drive for economic and social health. Higher levels of educational attainment are clearly associated with increased earnings, economic activity, and higher tax revenues.⁶ A more educated population also makes fewer demands on costly public services like welfare and corrections. Policymakers are increasingly recognizing the connection between education and economic development. We offer this report to help policymakers strengthen this connection and enhance the future prospects of California.

¹ See www.highereducation.org

² See Appendix 1 for brief description of the report's methodology.

³ The National Center for Higher Education Management Systems (NCHEMS) has recently established the National Information Center for Higher Education Policymaking and Analysis, which maintains a website that uses data from *Measuring Up* and other sources to assist states in comparing their performance to that of other states.

⁴ We first noted this in an earlier report: Shulock, N. & Moore, C. (2004). *Facing Reality: California Needs a Statewide Agenda to Improve Higher Education Outcomes*. Sacramento, CA: Institute for Higher Education Leadership & Policy.

⁵ See Appendix 3 for definition of regions.

⁶ Day, J.C. & Newburger, E.C. (2002). *The big payoff: Educational attainment and synthetic estimates of work-life earnings*. Washington, DC: US Census Bureau.

How Does California “Measure Up?”

Table 1 shows the overall grades California received in each of the six categories.⁷ The state’s grades improved slightly over those in 2000 and 2002 in the area of preparing K-12 students for higher education, in the level of participation in higher education, and in measures of the economic and social benefits of having an educated population. The state’s grade for getting students to complete certificate or degree programs declined slightly from 2002, and the score on affordability declined substantially, although it remains the highest grade in this category among all 50 states.

Table 1: California’s Grades in *Measuring Up* 2000, 2002, and 2004

	2000	2002	2004
Preparation	C-	C-	C
Participation	B+	B+	A
Affordability	A	A	B
Completion	C	C+	C
Benefits	B+	A-	A
Learning*	I	I	I

* All states received a grade of “incomplete” in the learning category due to a lack of information to make state-by-state comparisons.

Preparation

The slight increase in the overall grade for preparation reflects very mixed performance on readying K-12 students for higher education. The share of 8th graders taking algebra has increased significantly over the last decade, making California one of the leading states on this measure. However, high school students are not enrolling in the rigorous upper-level math and science courses needed for success in higher education. The numbers of students scoring well on college entrance exams and

C

PREPARATION

- + California is among the top states in the percentage of 8th graders taking Algebra, after substantial improvement on this measure over the last few years.
- + The number of high school juniors and seniors taking and doing well on Advanced Placement tests has increased.
- California is near the bottom among states in the share of high school students taking advanced math and science courses.
- California is in the bottom fifth among states in the share of 8th graders scoring at or above “proficient” on all subject areas of the National Assessment of Educational Progress (NAEP), and has especially low scores on the science measure (tied for last place) and on all measures among low-income students.

Advanced Placement (AP) tests have increased, although top-performing states do much better than California on these measures. Small improvements have been made in the achievement of 8th graders on standardized tests in math and writing, although scores remain very low as compared to students in other states, and science achievement has actually declined. *California*

⁷ See Appendix 2 for a list of California’s scores on each of the indicators in the grades and their weighting.

is tied for last place in science achievement. About two-thirds of secondary school students in the state are taught by qualified teachers, and improvements on this measure have outpaced those of many other states.

Key Findings: Regional Differences

- * Proficiency in math and language arts among 8th grade students, as measured by the state's Standardized Testing and Reporting (STAR) exams, varies considerably across regions (see Table 2).
- * Only one-quarter of 8th graders in the San Joaquin Valley and the Inland Empire are proficient in language arts, while the rate of proficiency is over 40 percent in Orange County, the Central Coast, the San Francisco Bay area and the Inyo-Mono region.
- * More than one-third of 8th graders in Orange County and the Inyo-Mono region are proficient in math, while fewer than one-fifth of 8th graders are proficient in the San Joaquin Valley, Los Angeles County and the Inland Empire.
- * The number of high scores on Advanced Placement (AP) exams varies dramatically across regions, reflecting both differences in the availability of AP coursework and in the performance of students who take the tests.
- * The number of high scores on college entrance exams differs as well, reflecting variation in both the share of seniors taking the tests and the performance of the test-takers.⁸
- * Course-taking patterns vary, with schools in some regions doing a better job of providing their students with a more rigorous curriculum that includes algebra in the 8th grade, upper-level math and science courses in high school, and completion of the A–G curriculum⁹ required for admission to the public university systems (see Figure 1).
- * The San Diego/Imperial region has the highest share of its juniors and seniors enrolled in chemistry and physics, and also enrolls the largest share of 8th graders in algebra, while the Inyo-Mono region enrolls the highest share of juniors and seniors in advanced math courses.
- * Only 20 percent of high school graduates in the South San Joaquin Valley complete the A-G curriculum, while more than double that percentage (41%) of graduates in the San Francisco Bay area fulfills that requirement for university admission.

⁸ The number of SAT test-takers as a share of 12th grade enrollment varies substantially across the regions – from 20% to 29% in Superior California, the North Coast and the San Joaquin and Sacramento Valley regions; from 30% to 39% in the San Diego/Imperial region, Los Angeles County, the Central Coast and the Monterey Bay area; and from 40% to 45% in the Inyo-Mono region, Orange County and the San Francisco Bay area.

⁹ See a description of A-G requirements at <http://pathstat1.ucop.edu/ag/a-g/index.html>

Key Findings: Racial/Ethnic Differences

- * Substantially larger shares of Asian¹⁰ and white 8th graders are proficient on the state’s standardized tests of math and language arts as compared to black and Latino students (see Table 3).
- * White and Asian students achieve high scores on college entrance exams at much higher rates than black and Latino students, due both to higher rates of taking the exams (for Asians, in particular) and higher scores among those who take the test.¹¹
- * Black and Latino students are less likely to take rigorous coursework, including higher-level math and science courses and the required series of university preparation courses (see Figure 2).

Table 2
K-12 Preparation Measures by Region, 2003-04

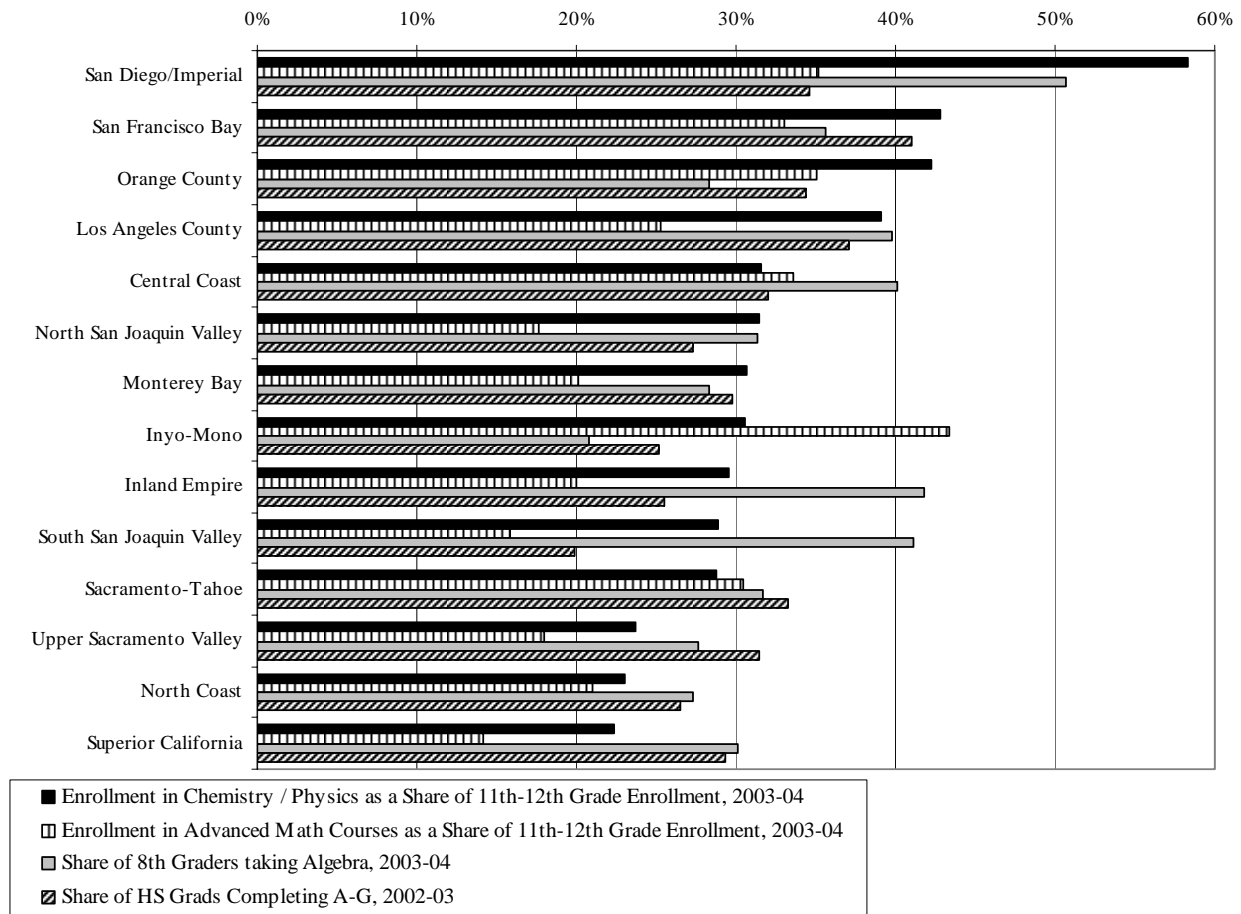
Region	Share of 8th Graders at or Above “Proficient” in Math	Share of 8th Graders at or Above “Proficient” in Language Arts	Number of AP Scores >=3 per 1,000 11th and 12th Graders	Number of Scores on SAT >=1000 and on ACT >=21 per 1,000 HS Seniors
Inyo-Mono	40%	44%	121	258
Orange County	35%	41%	310	332
San Francisco Bay	31%	42%	263	347
Central Coast	30%	41%	231	275
Superior California	30%	38%	89	186
Sacramento-Tahoe	28%	39%	129	243
Upper Sacramento Valley	24%	34%	86	169
North Coast	23%	35%	108	202
San Diego/Imperial	22%	36%	267	295
Monterey Bay	20%	30%	142	200
Los Angeles County	19%	28%	229	216
North San Joaquin Valley	19%	26%	108	150
Inland Empire	18%	27%	127	153
South San Joaquin Valley	16%	25%	97	124

Source: Author calculations based on data from the California Department of Education

¹⁰ This report combines all persons of Asian or Pacific Islander descent into one category due to data limitations. There are likely substantial differences across Asian sub-populations in measures related to college preparation, participation and completion which are masked by only using one category.

¹¹ The percentage of high school seniors taking the SAT was 47% for Asian students, 27% for white students, 28% for black students and 19% for Latino students. The average total score was 1,048 for Asians, 1,075 for whites, 858 for blacks and 892 for Latinos.

Figure 1: Enrollment in College Preparatory Courses by Region



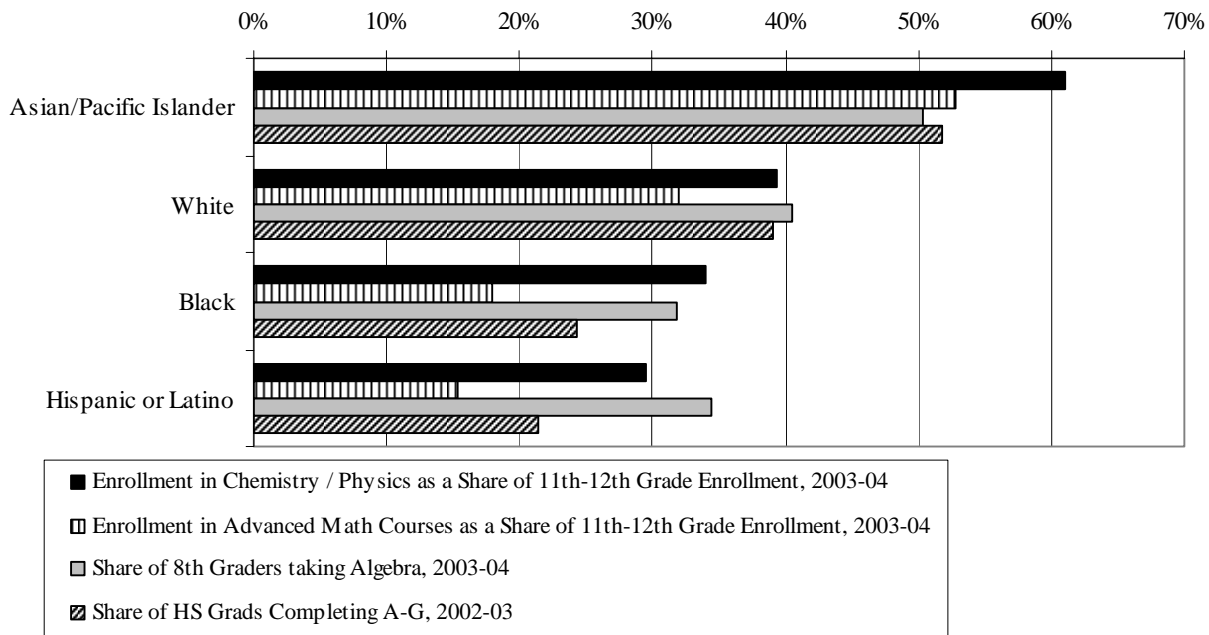
Source: Author calculations based on data from the California Department of Education

Table 3
K-12 Preparation Measures by Race/Ethnicity, 2003-04

Region	Share of 8 th Graders at or Above "Proficient" in Math	Share of 8 th Graders at or Above "Proficient" in Language Arts	Number of Scores on SAT ≥ 1000 and on ACT ≥ 21 per 1,000 HS Seniors
Asian/Pacific Islander	40%	50%	341
White	36%	51%	243
Hispanic or Latino	14%	18%	72
Black	11%	19%	85

Source: California Department of Education.

Figure 2: Enrollment in College Preparatory Courses by Race/Ethnicity



Source: Author calculations based on data from the California Department of Education

Affordability

California’s “B” on affordability was the highest grade in the nation in the *Measuring Up 2004* report. The state was awarded an “A” in both the 2000 and 2002 reports.¹² No state received an “A” on affordability in the most recent report. In fact, nearly all states (47) received a grade of either “D” or “F.”

B

AFFORDABILITY

- + California is the top-performing state in this category, due primarily to the low fees at community colleges.
- California families must devote a comparatively large share of family income, after financial aid, to pay for college tuition, room and board.
- On average, California undergraduates borrow \$3,710 per year for college expenses, compared to \$2,619 at top-performing states.

California’s “high performance” relative to other states is due primarily to the low tuition at community colleges, making the good grade a muted cause for celebration considering the low rates of successful completion in that sector as discussed later. The state compares less favorably with the best-performing states on other measures of affordability, particularly on measures of the share of family income required to pay college costs (net of financial aid, including room and board). The state’s high cost of living and comparatively low average income levels at the bottom of the income distribution mean that net college expenses take up a larger share of family resources than in many other states. In addition, the state’s undergraduates take out larger student loans. California is not among the top-performing states in providing need based

¹² Unlike the earlier reports, the 2004 report uses a different basis for comparison on the affordability grade than on the other grades. The grade is calculated using the top five state scores from a decade ago as a benchmark, rather than using the current top five scores.

financial aid to low-income students as measured in the report, though increases in the Cal Grant program in recent years have improved the state's performance on this measure.

Data are not available to calculate comparable affordability measures by region or by race/ethnicity. Student fee levels within each segment of higher education are the same across the state,¹³ while average household income varies both by region and by race/ethnicity. However, any judgment about "affordability" would have to include adjustments for student financial aid, and those data are not readily available by region or race/ethnicity.

Participation

California's "A" for participation is due largely to the high number of working-age adults enrolled part-time in college. The state's low-cost, open-access community colleges continue to attract working adults, even as the nation as a whole has declined on this measure over the past decade. *The rate of high school graduates going directly to college is more*

problematic. Half of California's high school graduates enroll in college within one year, as compared to a national average of 57 percent. The percentage of 9th graders enrolling in college within four years is only 32 percent, as compared to more than 50 percent among the highest-performing states, reflecting high school dropouts as well as a lower college-going rate among graduates. *Even more troubling, this figure represents a decline of nine percentage points over the past decade.* State residents who delay college attendance also delay the economic and social benefits of higher education for both themselves and the state. In addition, research on college completion suggests that students who follow the traditional college enrollment pattern of entering college immediately following high school are more likely to graduate.¹⁴ The consequence of the state's more non-traditional attendance patterns is revealed in lower student completion rates, as discussed later in this report.

PARTICIPATION

A

- + Nearly 6% of working-age adults in the state are enrolled part-time in postsecondary education, making California the top performer on this measure.
- + 38% of Californians age 18 to 24 are enrolled in college, giving the state a rank of 4 on this measure.
- Only 1/3 of high school freshmen enroll in college within 4 years, as compared to 52% among the top states.
- California ranks 40th among all states on the rate of high school graduates going directly to college.

Key Findings: Regional Differences

- * As measured by the U.S. Census, the college participation rate of 18 to 24 year-olds varies from a low of 13 percent in the Inyo-Mono region to a high of 50 percent in the Upper Sacramento Valley region (see Table 4).¹⁵

¹³ While the statewide fees are the same across campuses, each college or university may charge somewhat different amounts in campus fees for health services, instructional materials, student centers, etc.

¹⁴ Adelman, C. (1999). *Answers in the toolbox: Academic intensity, attendance patterns, and bachelor's degree attainment*. Washington, DC: US Department of Education.

¹⁵ Note that the participation rates in Tables 4 and 5 are not directly comparable to those we present in our recent report titled *Shared Solutions*; they are based on different data and methodology. The rates presented here are similar to those used by the National Center to make comparisons across all 50 states, and include participation in independent and proprietary institutions.

- * The Census participation rates for some regions are affected by the location of universities. For example, the location of CSU Chico and its 17,000 students in Butte County significantly raises the participation rate of the Upper Sacramento Valley region to 50 percent, where the rate is only 17 to 27 percent in the other counties of this rural region.
- * The share of older adults enrolled in higher education ranges from four percent in the Inyo-Mono region to seven percent in Orange County and the San Diego/Imperial region.
- * Residents of counties without easy access to community colleges have lower participation rates, particularly among adults ages 25 and over. The rate of participation among this group is substantially lower in some of the rural counties, with rates of two to three percent in Modoc, Calaveras and Trinity Counties.
- * The college-going rate directly from high school varies from a low of 26 percent in the Upper Sacramento Valley to a high of 67 percent in the Central Coast area (see Figure 3).
- * A 9th grader in the Upper Sacramento Valley has only a 20 percent chance of enrolling in college within four years, as compared to a 50 percent chance for a Central Coast 9th grader.

Key Findings: Racial/Ethnic Differences

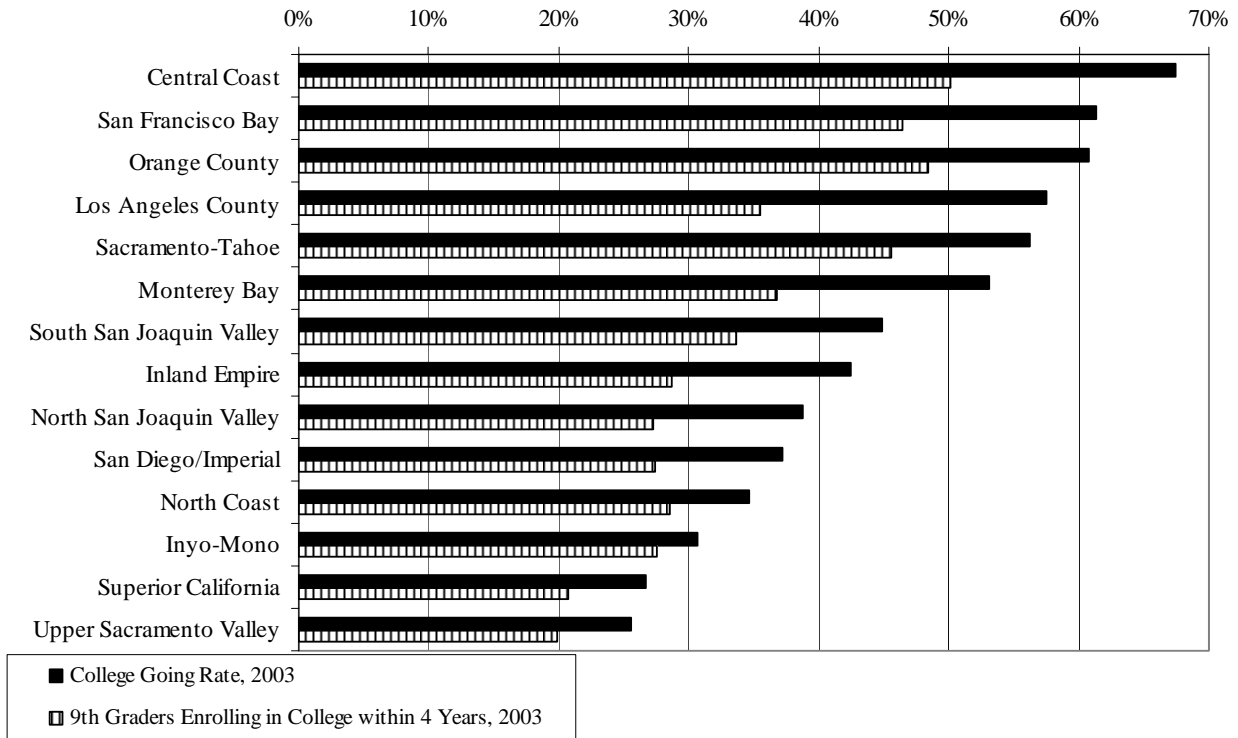
- * Californians of Asian descent have the highest rate of participation in postsecondary education. Sixty percent of Asian young adults are enrolled in college, as compared to 43 percent of white youth, 32 percent of black youth and 22 percent of young Latinos (Table 5).
- * Nearly eight out of ten Asian high school graduates go directly to college, a rate far higher than for any other racial/ethnic group (see Figure 4).
- * The chance of a black or Latino 9th grader enrolling in college within four years is lower than that for a white student, and much lower than that for an Asian student.

Table 4
College Participation Rates by Region

Region	Percent of 18-24 Year-Olds Enrolled in College	Percent of Adults Ages 25+ Enrolled in College
Upper Sacramento Valley	50%	5.7%
Central Coast	46%	6.0%
Orange County	39%	6.9%
San Francisco Bay	39%	6.8%
Sacramento-Tahoe	38%	6.6%
San Diego/Imperial	36%	7.1%
Los Angeles County	35%	6.5%
North Coast	35%	5.9%
Monterey Bay	33%	6.3%
Superior California	29%	4.2%
North San Joaquin Valley	29%	5.1%
Inland Empire	28%	5.6%
South San Joaquin Valley	22%	4.8%
Inyo-Mono	13%	4.0%

Source: Author calculations based on data from Census 2000 Summary File 4, Table PCT63

Figure 3: Direct College-Going Rates by Region



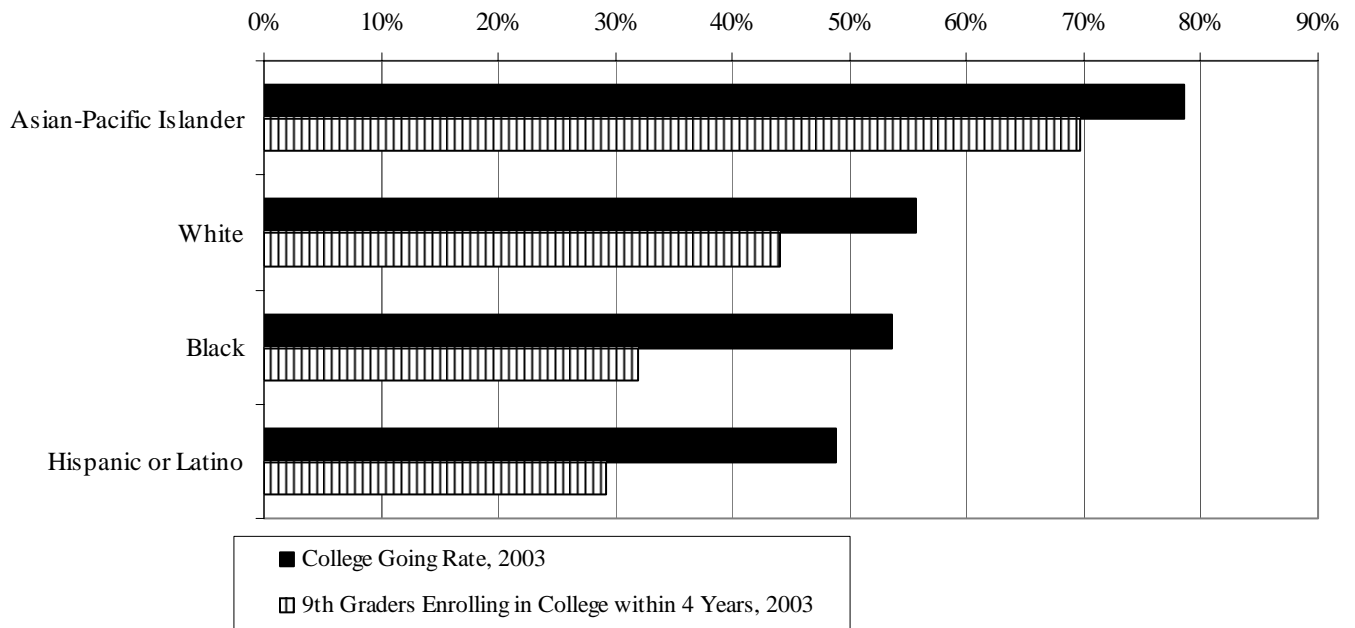
Source: Author calculations based on data from the California Department of Education and the California Postsecondary Education Commission

Table 5
College Participation Rates by Race/Ethnicity

Racial/Ethnic Group	Percent of 18-24 Year-Olds Enrolled in College	Percent of Adults Ages 25+ Enrolled in College
Asian/Pacific Islander	60%	9.1%
White	43%	5.8%
Black	32%	8.8%
Hispanic or Latino	22%	5.4%

Source: Author calculations based on data from Census 2000 Summary File 4, Table PCT63

Figure 4: Direct College-Going Rates by Race/Ethnicity



Source: Author calculations based on data from the California Department of Education and the California Postsecondary Education Commission

Completion

California’s average grade on completion results from its mixed performance on the various indicators used in *Measuring Up*. The state scores very well on retention and graduation rates among full-time students at four-year universities. More than 80 percent of full-time freshmen at universities return for their

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COMPLETION

- + California is among top-performing states in the share of freshmen at 4-year universities returning for their sophomore year.
- Only 48% of first-year, full-time community college students return their second year, as compared to 63% in the top-performing states.
- The number of certificates and degrees awarded per 100 undergraduates enrolled is extremely low, placing California 48th among all states.

sophomore year, and nearly 60 percent complete a bachelor's degree within six years. *However, these rates do not take into account California's heavy reliance on community colleges for providing lower division instruction.* California's Master Plan for Higher Education ensures that a substantial number of students enroll in the community colleges for the first two years of baccalaureate instruction. Nearly 75 percent of all public higher education enrollments in California are in the community colleges, considerably above the 45 percent enrolled in that sector in the rest of the country.¹⁶ Typical graduation rates, like those included in *Measuring Up*, do not include the outcomes of these students, and capture primarily the success rate of the most well-prepared and financially stable students who can begin their baccalaureate studies full time at UC or CSU. On other indicators of completion, including retention of community college students and the number of certificates and degrees awarded per 100 undergraduates enrolled, California performs very poorly in comparison to other states.

Key Findings: Regional Differences

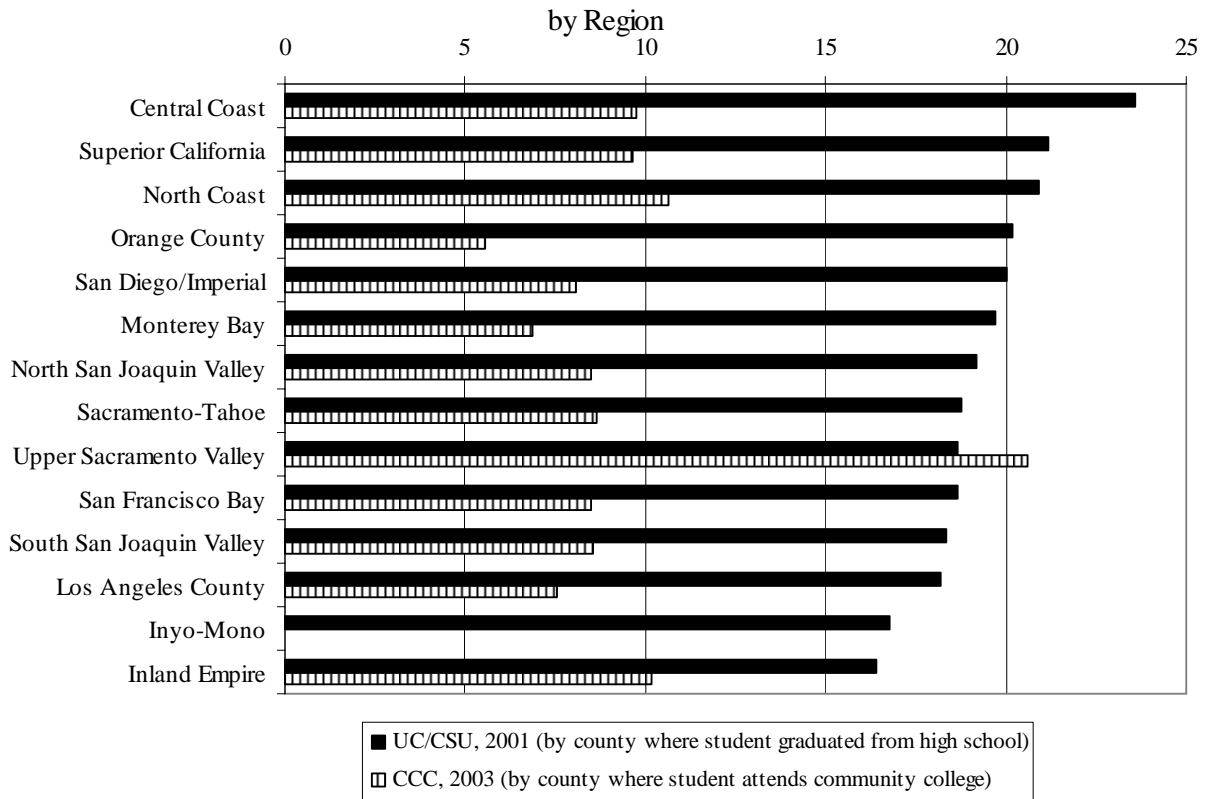
- * The number of baccalaureate degrees awarded as a share of enrollment is highest for students from the Central Coast (23.6) and lowest for students from the Inland Empire (16.4)(see Figure 5).
- * Variations in award rates across community colleges in different regions may be related to the needs of local job markets, to the number of choices for higher education in an area, and/or to the degree of focus of a particular college on serving students interested in terminal certificates and degrees as opposed to transfer to a university (students who transfer generally do so without earning a degree).
- * The exceptionally high award rate for community colleges in the Upper Sacramento Valley region is related to the award of many short-term certificates (less than one year) in agricultural production and protective services disciplines. Every region except the Upper Sacramento Valley awards more associates degrees than short-term certificates.
- * The differences among colleges and universities in completion rates is not large enough (other than the one anomaly explained above) to warrant particular concern; the primary concern is that completion rates are uniformly low across the state.

Key Findings: Racial/Ethnic Differences

- * The number of BA degrees awarded per 100 undergraduates enrolled is highest for white students (22.4) and lowest for black students (17.0)(see Figure 6).
- * The differences across racial/ethnic groups in completion rates are less than the differences in college participation, indicating that the biggest barrier facing the state in reducing educational gaps is in promoting college participation.
- * Differences across racial/ethnic groups may in part reflect different goals and intentions of the students enrolled (e.g., pursuing transfer to a university or attending to upgrade either basic skills or specific career skills will not lead to a certificate or degree).

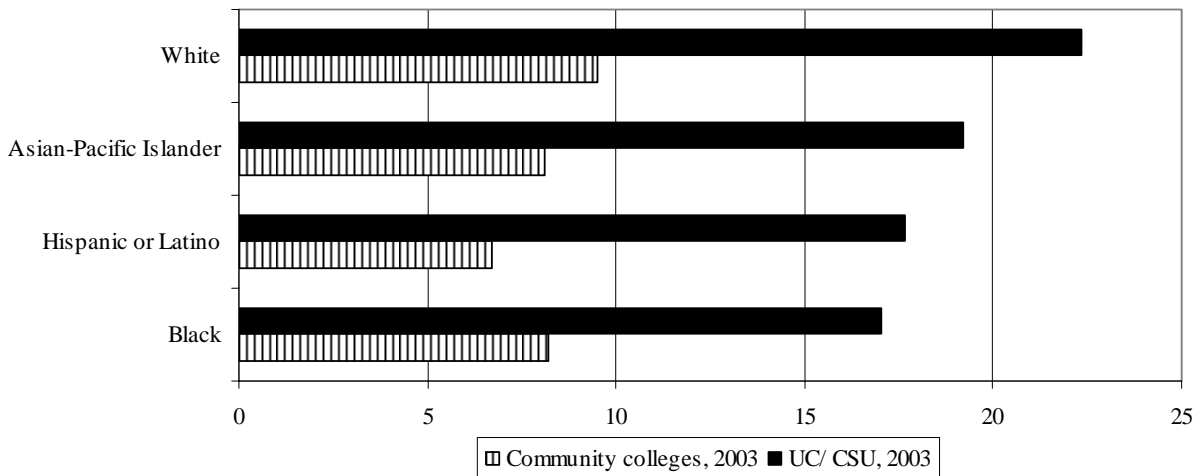
¹⁶ National Center for Education Statistics, *Digest of Education Statistics 2003*, Table 199.

Figure 5: Certificates and Degrees Awarded per 100 Undergraduates Enrolled



Source: Author calculations based on data from the California Postsecondary Education Commission

Figure 6: Certificates and Degrees Awarded per 100 Undergraduates Enrolled
by Race/Ethnicity



Source: Author calculations based on data from the California Postsecondary Education Commission

Benefits

California's highest grade was awarded in the area of economic and societal benefits to the state as the result of having well educated residents, *a category that reflects many things other than the performance of the state's higher education system*. California compares well with other states in the share of the adult population

with a bachelor's degree or higher (31% among those age 25 to 65), and in the increase in personal income that results from a college education. California scores 85.5 on the Progressive Policy Institute's New Economy Index, a measure of the competitiveness of state economies and the extent to which they are based on high technology and other knowledge industries. California falls behind only Washington (86.2) and Massachusetts (90) on this measure. The state does not garner as many civic benefits related to education as the top-performing states; a lower share of residents vote in national elections compared to high-performing states, and voter participation has declined over the last decade. Not all of the benefits to the state related to higher education are generated by producing graduates in its own colleges and universities. California also benefits from its ability to attract new residents with high levels of education from other states and countries.

BENEFITS

A

- + California ranks in the top quartile among states in the share of the adult population with a bachelor's degree or higher.
- + California is among top-performing states in the economic benefits derived from college-educated residents.
- Just 44% of eligible California voters went to the polls in the 1998 and 2000 national elections, compared to 60% in the top-performing states.

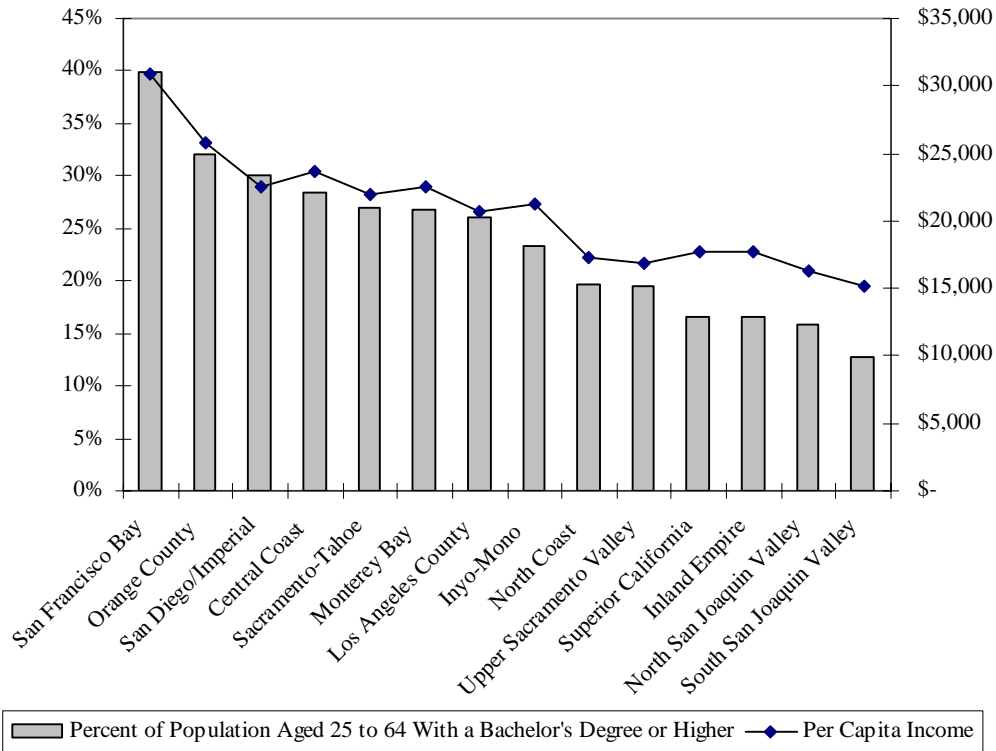
Key Findings: Regional Differences

- * Educational attainment levels vary substantially across California's regions; 40 percent of adults in the San Francisco Bay area between the ages of 25 and 65 have at least a bachelor's degree, approximately three times the share of adults with that level of education in the South San Joaquin Valley (see Figure 7).
- * Differences in educational attainment levels may, in part, reflect differences in access to higher education. They may also be related to differences in the needs of local economies and in the ability of communities to attract highly educated residents. The coastal and urban areas of the state have more colleges and universities and may be better able to attract new residents with high levels of education.
- * Regions with higher levels of educational attainment among their populations also have higher per capita income.

Key Findings: Racial/Ethnic Differences

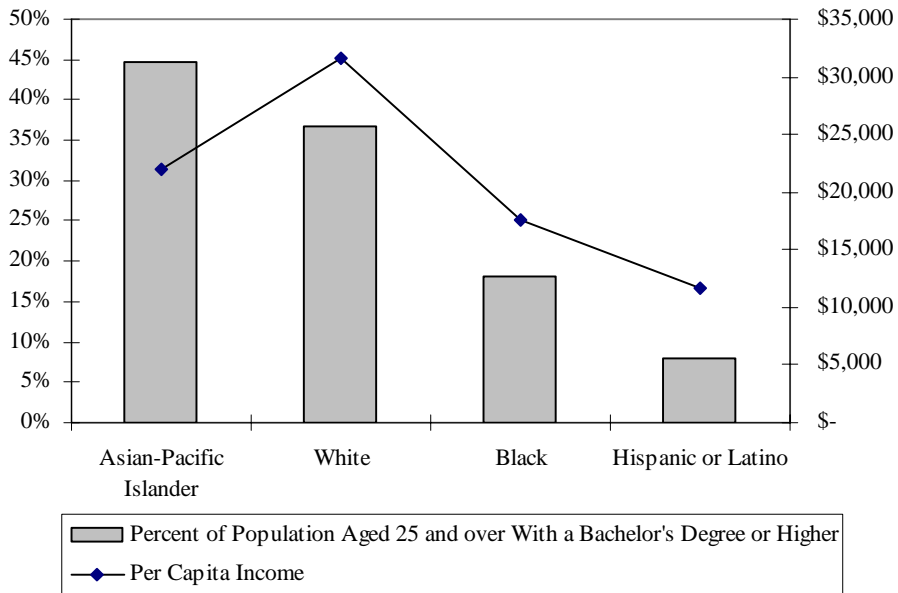
- * Among adults ages 25 to 64, nearly 45 percent of Asians and 37 percent of whites have at least a bachelor's degree, while comparable figures for black and Latino adults are 18 percent and eight percent, respectively (see Figure 8).
- * Per capita income is generally higher among populations with higher levels of educational attainment (note that Figure 8 includes the earning of the entire population, not just those with a college education).

Figure 7: Educational Attainment and Per Capita Income by Region



Source: Author calculations based on data from Census 2000 Summary File 4, Table PCT25 (for educational attainment) and Summary File 3, Tables P1 and P83 (for per capita income, in 1999 dollars)

Figure 8: Educational Attainment and Per Capita Income by Race/Ethnicity

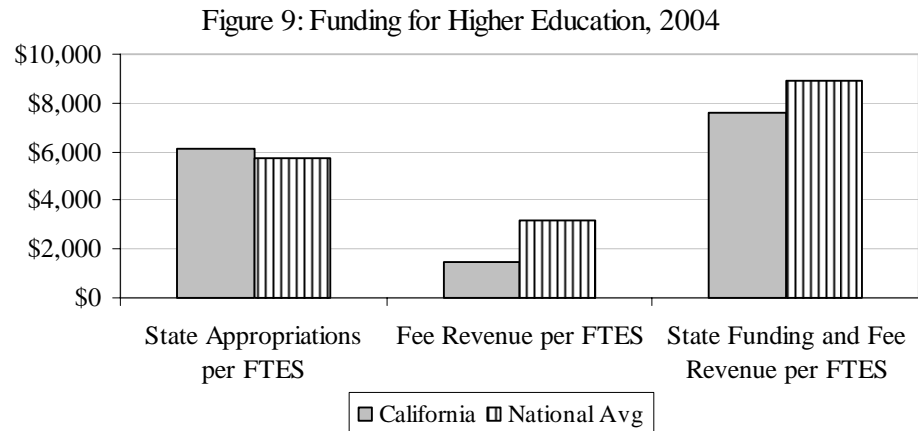


Source: Author calculations based on data from Census 2000 Summary File 4, Table PCT65 (for educational attainment) and PCT1 and PCT 131 (for per capita income, in 1999 dollars)

Higher Education Finance

State and local appropriations for higher education in California amounted to \$6,103 per FTES in 2004, nearly \$400 above the national average. However, revenues from student fees per FTES were less than half the national average, bringing total funding per FTES to \$7,611, about \$1,300 below the national average of \$8,908. *Only eleven states in the nation had lower total funding per FTES.*

In California, 20 percent of total funding per FTES is generated through student fees, as compared to a national average of 36 percent.¹⁷



Source: National Information Center for Higher Education Policymaking and Analysis

The Student Pipeline

NCHEMS has developed a measure allowing states to assess their “throughput,” or the number of students successfully navigating the “student pipeline” through high school graduation, college entry and college completion.¹⁸ Table 6 shows, for every 100 9th graders, the number that graduate from high school, go directly to college, return for their second year of college, and graduate within 150 percent of the program time (6 years for bachelor’s and 3 years for associate). In California, 18 of every 100 9th graders make it through this pipeline, the same as in the nation as a whole.

Table 6
Student Pipeline – Transition and Completion Rates from High School to College, 2002

For every 100 9th Graders:	Number that Graduate from High School	Number that Directly Enter College	Number Still Enrolled their Sophomore Year	Number Graduating within 150% Time
California	70	36	24	18
Nation	68	39	26	18

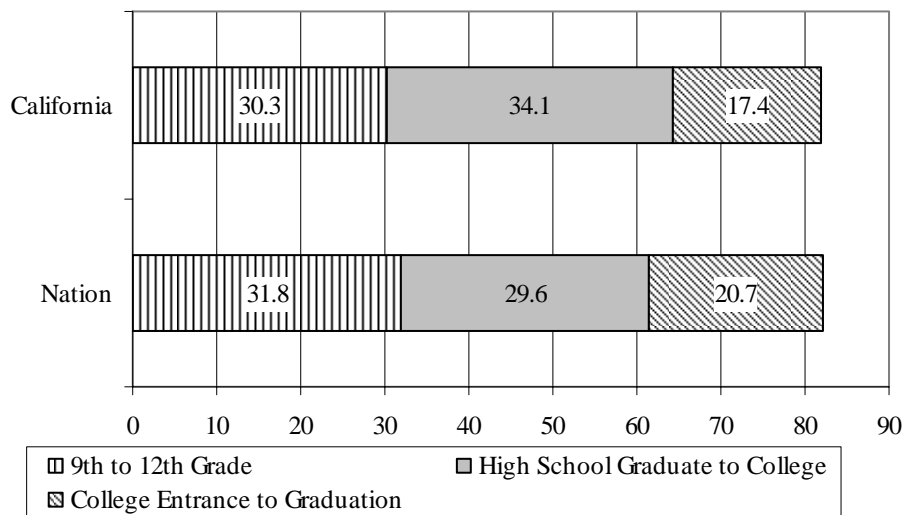
Source: National Information Center for Higher Education Policymaking and Analysis

¹⁷ In our report titled *Shared Solutions*, we do a more in-depth analysis of the share of costs borne by students and the state, adjusting for state costs for financial aid that goes toward paying the fees for needy students. We conclude that students and families currently pay about 21.5% of instructional costs overall (though it varies by segment, with fee revenues covering a greater share in UC and CSU than in the community colleges).

¹⁸ For a discussion of the development of the pipeline measures presented here, see Ewell, P. T., Jones, D. P. & Kelly, P. J. (2004). *Conceptualizing and Researching the Educational Pipeline*, available at www.higheredinfo.org/suppinfo/Pipeline%20Article.pdf.

The pipeline measure can be used to assess the relative strengths and weaknesses of a state's education system at each stage of transition. For example, California has a "yield" of 18, the same as the nation as a whole. But, as shown in Figure 10, more students are lost nationally during high school and during the college years than is the case in California (i.e., the drop-out rates are higher), *while California loses more students at the point of direct entry to college.*

Figure 10: Of 100 9th Graders - Number Lost at Each Stage of Transition



Source: National Information Center for Higher Education Policymaking and Analysis

The pipeline measure is valuable for understanding success at moving students through the "traditional" college pipeline, but it does not provide a complete picture of a state's performance in providing higher education to its people. Many "non-traditional" college students do not fit the prototype of an 18-year old high school graduate enrolling the following fall term and attending full-time and continuously. Fewer than 40 percent of college freshmen in California are 19 years old or younger, and even among these traditional-aged freshmen, one-third enroll only part-time.¹⁹ Degrees awarded to older, non-traditional students are not accounted for in the pipeline measure. However, research on degree completion demonstrates that students are more likely to complete a degree when they enroll immediately after high school, attend full-time, work less than 20 hours per week, and enroll continuously.²⁰ To the extent that policymakers and educators can encourage these "traditional" college attendance patterns, both students and the state could benefit from the greater economic and social returns achieved through earlier

¹⁹ California Postsecondary Education Commission, on-line student data, "Enrollment by Student Age Aggregated by Student Age, Student Level" and "Enrollment of First-Time Freshmen age 19 and under in Public Institutions Aggregated by Time Category," for 2003. Excludes non-credit and concurrently enrolled high school students.

²⁰ Adelman, C. (1999). *Answers in the toolbox: Academic intensity, attendance patterns, and bachelor's degree attainment*. Washington, DC: US Department of Education; Ashby, C. M. (2003). *College completion: Additional efforts could help education with its completion goals*. Washington, DC: General Accounting Office; Fry, R. (2002). *Latinos in higher education: Many enroll, too few graduate*. Washington, DC: The Pew Hispanic Center.

college enrollment and completion.²¹ Policies related to rigorous college preparation, financial aid, outreach and student support services could all be used to affect student attendance patterns.

The Pipeline for Underrepresented Minority Students

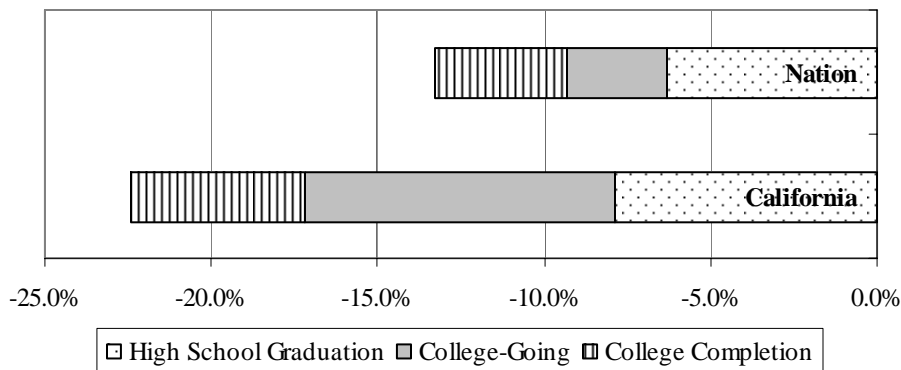
Another pipeline measure developed by NCHEMS allows states to determine how well they are educating black and Latino students relative to other ethnic groups and other states. Table 7 shows the representation of blacks and Latinos among the 18 year-old population in 2000, as well as among that year’s high school graduates, first-time college freshmen, and recipients of any undergraduate degree or credential. In California, nearly half of the 18 year-old population is black or Latino, but only one fourth of undergraduate certificates and degrees are awarded to students in those ethnic groups. There is a decline in representation of blacks and Latinos in all 50 states, and particularly in the larger and more ethnically diverse states that face the greatest challenge in serving large numbers of students from populations historically underrepresented in higher education. California ranks 50th on this measure, demonstrating the largest difference between the share of the 18 year-old population that is black or Latino and the share of undergraduate degrees awarded to students in those groups. Figure 11 shows where along the pipeline the largest numbers of underrepresented students are lost. While nationally nearly half of these students are lost to the high school dropout problem, that issue accounts for only about one-third of the loss in California. California’s challenges are more evenly divided along the pipeline, with the largest loss of these students related to lower rates of direct college going.

Table 7
Change in Representation of Blacks and Latinos from High School to College Completion, 2000

	Percent of 18 year-old Population	Percent of High School Graduates	Percent of First-time Freshmen	Percent of Undergraduate Certificates/Degrees Awarded	Difference between Awards and 18 year-old Population
California	47.8%	39.9%	30.6%	25.4%	-22.4%
Nation	30.3%	24.0%	21.0%	17.0%	-13.3%

Source: National Information Center for Higher Education Policymaking and Analysis

Figure 11: Loss in Representation of African Americans and Latinos from High School to College Completion



²¹ Monks, J. (1997). The impact of college timing on earnings. *Economics of Education Review*, 419-423.

Conclusions

A quick look at California's report card grades masks serious challenges facing the state. The state, after all, gets an A or B in three categories and a C in only two categories. A careful review of available performance data, however, reveals *a number of serious problems and challenges* that deserve heightened attention from policymakers and educators:

- * There are substantial improvements still to be made in the level of preparation for college among California's young people. Too few high school students are taking the kind of rigorous math and science courses needed for success in college, and the state's students do poorly on standardized tests of educational achievement.
- * California often celebrates its high rate of college participation or "access" – many adults take advantage of the low-cost, open-access community colleges. But the rate of high school graduates going directly to college is low, and this pattern significantly reduces chances for college completion.
- * Access does not translate into the levels of success and completion that the state needs. While traditional baccalaureate graduation rates are high, those measures only include first-time, full-time students in the four-year institutions, ignoring the far lower rates of persistence and completion among the majority of the state's students who attend part-time at the community colleges.
- * The state's good grade on affordability is primarily due to the low fees at community colleges – yet we have noted above that good access, helped by low cost, does not lead to good success on a statewide basis. Moreover, California's families devote a higher share of their income to college costs than in other states and California's students incur larger debts.
- * There are substantial disparities across regions in all of the performance measures described in this report, with the wealthier urban areas generally providing better opportunities for higher education than the state's rural areas. Some of the fastest-growing regions, including the Central Valley and the Inland Empire, are among those that compare poorly on measures of college preparation and participation.
- * Particularly troubling, in view of the demographic trends in the state, are the large disparities across racial/ethnic populations. Latinos lag behind other racial/ethnic groups in levels of college preparation, participation and completion, which bodes poorly for California's economic future as the Latino share of the state's working-age population will be 36 percent by 2010, and nearly 50 percent ten years later.²²
- * California scores well on measures of public benefits associated with an educated populace, but is highly reliant on importing people from out-of-state to achieve those benefits. The state lags most other states in the ratio of degrees produced in high-technology fields to the number of jobs in those fields, and is a substantial net importer of college graduates.

²² California Department of Finance (2004). *Race/ethnic population with age-sex detail, 2000-2050*. Available at http://www.dof.ca.gov/html/Demograp/DRU_datafiles/Race/RaceData_2000-2050.htm.

- * When state appropriations and fee revenues are considered together, California falls well below the national average in funding higher education on a per-FTE basis.

Policy Implications

Both personal prosperity and state economic competitiveness are increasingly linked to educational attainment, particularly in California where the economy is more dependent on “knowledge workers” than are the economies of many other states. If policymakers are serious about realizing the proven economic and social benefits of postsecondary education, they should make room on the state policy agenda for the following items, which could best be addressed through a comprehensive strategic and finance plan for higher education:

- * Increasing the rates of high school graduation, college participation, and degree completion among the black and Latino populations is essential to California’s social and economic health.
- * K-12 reform efforts need to be continued and expanded, with specific attention to improving proficiency in science and math, to promoting a college-going culture, and to improving the linkages between high school proficiency and college readiness.
- * Although it is important to accommodate non-traditional college attendance patterns, policies that promote direct, full-time enrollment after high school stand to reap huge benefits for degree and certificate completion, and ultimately for economic health.
- * Policies that encourage regional collaboration across sectors to address unique regional challenges might be more effective than statewide interventions, given the huge variations across regions. To the extent that regional variations reflect geographic barriers to four-year colleges, policies that encourage four-year institutions to offer upper division instruction on community college campuses could be part of the solution.
- * Attention to a long-term finance plan that addresses state appropriations in concert with fee policy is critical. As part of this plan, the state needs to acknowledge that if it is to continue its long-standing commitment to low fees, state appropriations per FTES may have to be increased so that *total funding* is sufficient to sustain access and quality. Achieving efficiencies throughout the system will be an important consideration in the development of a finance plan.

Appendix 1

Measuring Up: Summary of Methodology

The *Measuring Up* report cards assign grades (A, B, C, D or F) in six performance categories, including college preparation, participation, affordability, completion, public benefits and student learning. The grades are derived from a compilation of approximately 30 indicators that (1) are collected regularly by reliable, public sources, (2) are comparable across all 50 states and (3) measure state-level performance on higher education. There are several indicators in each of the performance categories, with varying weights assigned to each indicator based on the National Center's assessment of their importance to overall performance in the category. For each indicator, raw scores for each state are converted to a 100-point index scale using the top five state scores as a benchmark. For the 2004 report, the top five state scores from a decade ago are used as the benchmark in the affordability category; all other categories continue to use the top states in the current year. A category index score is then calculated, and grades assigned using a common grading scale (90-100 = A, 80-89 = B, etc.).

The report cards have been issued every two years since 2000, with the third report released last fall. For each report, the National Center recalculates each state's grades in the five categories, and assesses whether the states are making progress by determining whether a majority of the indicators in a category have increased. The 2004 report also compares state scores on individual indicators with their performance a decade ago.

Appendix 2

California's Performance on Indicators in *Measuring Up*

Preparation:					
	California A Decade Ago	California 2000	California 2002	California 2004	Top States 2004
High School Completion (20%) <ul style="list-style-type: none"> • 18-to-24-year-olds with a high school credential 	78%	81%	83%	87%	94%
K-12 Course Taking (35%) <ul style="list-style-type: none"> • 9th to 12th graders taking at least one upper level math course • 9th to 12th graders taking at least one upper level science course • 8th grade students taking Algebra • 12th graders taking at least one upper level math course 	29%	36%	34%	33%	59%
	16%	20%	18%	18%	41%
	14%	21%	33%	39%	35%
	-	-	26%	26%	66%
K-12 Student Achievement (35%) <ul style="list-style-type: none"> • 8th graders scoring at or above “proficient” on the NAEP: <ul style="list-style-type: none"> ○ in math ○ in reading ○ in science ○ in writing • Low-income 8th graders scoring at or above “proficient” on the NAEP in math • Number of scores in the top 20% nationally on SAT/ACT college entrance exams per 1,000 high school graduates • Number of scores that are 3 or higher on an Advanced Placement subject test per 1,000 high school juniors and seniors 	16%	17%	18%	22%	36%
	22%	22%	22%	22%	39%
	20%	-	15%	15%	42%
	20%	20%	20%	23%	41%
	5%	5%	4%	9%	23%
	98	123	135	137	227
	104	144	169	186	219
Teacher Quality (10%) <ul style="list-style-type: none"> • 7th to 12th graders taught by a teacher with a major in their subject 	51%	-	-	68%	81%
Participation:					
	California A Decade Ago	California 2000	California 2002	California 2004	Top States 2004
Young Adults (60%) <ul style="list-style-type: none"> • High school freshmen enrolling in college within 4 years in any state • 18- to 24-year-olds enrolling in college 	35%	43%	34%	32%	52%
	32%	38%	36%	38%	40%
Working-Age Adults (40%) <ul style="list-style-type: none"> • 25- to 49-year olds enrolled part-time in some type of postsecondary education[†] 	5.3%	4.3%	4.9%	5.8%	5.4%

[†] Data for 2000 are for 25- to 44-year olds

Affordability:					
	California A Decade Ago	California 2000	California 2002	California 2004	Top States 2004
Family Ability to Pay (50%) <ul style="list-style-type: none"> • Percent of income (average of all income groups) needed to pay for college expenses minus financial aid: <ul style="list-style-type: none"> ○ At community colleges ○ At public 4-year colleges/universities ○ At private 4-year colleges/universities 	31%	26%	24%	25%	15%
	37%	31%	28%	32%	16%
	70%	73%	77%	71%	32%
Strategies for Affordability (40%) <ul style="list-style-type: none"> • State grant aid targeted to low-income families as a percent of federal Pell Grant aid to low-income families • Share of income that poorest families need to pay for tuition at lowest priced colleges 	27%	37%	47%	48%	89%
	2%	4%	3%	4%	7%
Reliance on Loans (10%) <ul style="list-style-type: none"> • Average loan amount that undergraduate students borrow each year[†] 	\$3,280	\$4,361	\$3,543	\$3,710	\$2,619
† Data for 2000 include all students, not just undergraduates					
Completion:					
	California A Decade Ago	California 2000	California 2002	California 2004	Top States 2004
Persistence (20%) <ul style="list-style-type: none"> • 1st year, full-time community college students returning their 2nd year • Freshmen at 4-year colleges/universities returning their sophomore year 	45%	48%	48%	48%	63%
	81%	83%	84%	84%	84%
Completion (80%) <ul style="list-style-type: none"> • First-time, full-time students completing a bachelor's degree within 5 years of high school completion • First-time, full-time students completing a bachelor's degree within 6 years of college entrance • Certificates, degrees and diplomas awarded at all colleges and universities per 100 undergraduate students 	-	53%	53%	-	-
	58%	-	60%	59%	64%
	10	13	14	12	21

Benefits:					
	California A Decade Ago	California 2000	California 2002	California 2004	Top States 2004
Educational Achievement (37.5%) <ul style="list-style-type: none"> Population Aged 25 to 65 with bachelor's degree or higher 	26%	29%	30%	31%	36%
Economic Benefits (31.25%) <ul style="list-style-type: none"> Increase in total personal income as a result of the percentage of the population holding a bachelor's degree Increase in total personal income as a result of the percentage of the population with some college (including an associate's degree) but not a bachelor's degree 	9%	11%	11%	12%	12%
	3%	-	4%	3%	3%
Civic Benefits (31.25%) <ul style="list-style-type: none"> Residents voting in national elections Of those who itemize on federal income taxes, the percentage declaring charitable gifts Increase in volunteering rate as a result of college education 	48%	44%	44%	44%	60%
	89%	89%	89%	89%	92%
	-	-	-	14%	22%
Adult Skill Levels (0%) <ul style="list-style-type: none"> Adults demonstrating high-level literacy skills: <ul style="list-style-type: none"> Quantitative Prose Document 	23%	24%	24%	24%	33%
	23%	24%	24%	25%	33%
	19%	21%	21%	21%	28%
† Adult skill levels for 2004 are estimated and not used to calculate grades					

Appendix 3

List of Counties by Region*

Region	Counties in Region
North Coast	Del Norte, Humboldt, Lake, Mendocino
Superior California	Lassen, Modoc, Shasta, Siskiyou, Trinity
Upper Sacramento Valley	Butte, Colusa, Glenn, Plumas, Sierra, Tehama
Sacramento-Tahoe	Alpine, Amador, El Dorado, Nevada, Placer, Sacramento, Sutter, Yolo, Yuba
San Francisco Bay	Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma
Monterey Bay	Monterey, San Benito, Santa Cruz
North San Joaquin Valley	Calaveras, Fresno, Madera, Mariposa, Merced, San Joaquin, Stanislaus, Tuolumne
South San Joaquin Valley	Kern, Kings, Tulare
Inyo-Mono	Inyo, Mono
Central Coast	San Luis Obispo, Santa Barbara, Ventura
Los Angeles County	Los Angeles
Orange County	Orange
Inland Empire	Riverside, San Bernardino
San Diego/Imperial	Imperial, San Diego

* There are many definitions of California's "regions." This combination of counties into regions is the definition used by the California Postsecondary Education Commission.

Appendix 4

Methods for Calculating Measures by Region and by Race/Ethnicity

Following are summaries of the calculations made for each measure, with the calculations done using data by county (aggregated into regions) or by race/ethnicity.

Preparation (all measures include only public school students)

1. Share of 8th Graders at or above “Proficient” in Language Arts
 - Source: California Department of Education on-line Dataquest
 - Calculation:
Numerator: number of 8th grade students scoring “proficient” or “advanced” on the California Standards Test for English-Language Arts, 2003-04
Denominator: total number of 8th grade students taking the test, 2003-04

2. Share of 8th Graders at or above “Proficient” in Math
 - Source: California Department of Education on-line Dataquest
 - Calculation:
Numerator: number of 8th grade students scoring “proficient” or “advanced” on the California Standards Test for General Mathematics (Grades 6 & 7 Standards), 2003-04
Denominator: total number of 8th grade students taking the test, 2003-04
Notes: Performance on the General Mathematics test was used because it is the test taken by a majority of 8th grade students, with the exception of Asian students who are more likely to enroll in Algebra I and be tested on those standards.

3. Number of Advanced Placement (AP) Scores ≥ 3 per 1,000 11th and 12th Graders
 - Source: California Department of Education on-line Dataquest
 - Calculation:
Numerator: Number of students scoring a 3 or greater on an AP test, 2003-04
Denominator: Total enrollment in 11th and 12th grade, 2003-04
Result multiplied by 1,000

4. Number of Scores on SAT ≥ 1000 and on ACT ≥ 21 per 1,000 High School Seniors
 - Source: California Department of Education on-line Dataquest
 - Calculation:
Numerator: Number of students scoring 1000 or greater on the SAT + number of students scoring 21 or greater on the ACT, 2003-04
Denominator: Total 12th grade enrollment, 2003-04
Result multiplied by 1,000

5. Enrollment in Chemistry/Physics as a Share of 11th-12th Grade Enrollment
 - Source: California Department of Education on-line Dataquest
 - Calculation:
 - Numerator: Number of students enrolled in 1st year chemistry or 1st year physics, 2003-04
 - Denominator: Total enrollment in 11th and 12th grade, 2003-04

6. Enrollment in Advanced Math Courses as a Share of 11th-12th Grade Enrollment
 - Source: California Department of Education on-line Dataquest
 - Calculation:
 - Numerator: Number of students enrolled in Advanced Math, 2003-04
 - Denominator: Total enrollment in 11th and 12th grade, 2003-04

7. Share of 8th Graders taking Algebra
 - Source: California Department of Education on-line Dataquest
 - Calculation:
 - Numerator: Number of 8th grade students tested on the Algebra I standards in the California Standards Test, 2003-04
 - Denominator: Total enrollment in 8th grade, 2003-04

8. Share of High School Graduates Completing the A through G Curriculum
 - Source: California Department of Education on-line Dataquest
 - Calculation:
 - Numerator: Number of graduates completing A-G curriculum, 2002-03
 - Denominator: Total number of high school graduates, 2002-03

Participation

1. Percent of 18 to 24 year-olds Enrolled in College
 - Source: US Census 2000 Summary File 4, Table PCT63
 - Calculation:
 - Numerator: Number of people ages 18 to 24 enrolled in college or graduate school
 - Denominator: Total number of people ages 18-24

2. Percent of Adults Ages 25 and over Enrolled in College
 - Source: US Census 2000 Summary File 4, Table PCT63
 - Calculation:
 - Numerator: Number of people ages 25 and older enrolled in college or graduate school
 - Denominator: Total number of people ages 25 and older

3. College Going Rate

- Source: California Department of Education on-line Dataquest and California Postsecondary Education Commission on-line data
- Calculation:
Numerator: Number of first-time freshmen ages 19 and under enrolled in public institutions (program type=regular) Fall 2003 + number of first-time freshmen ages 19 and under enrolled in private institutions Fall 2001 (most recent year for private institution data, but a very small share of overall enrollment)
Denominator: Total number of high school graduates, 2002-03.
Notes: For data by region, the numerator includes freshmen age 19 and under *who graduated from high school in that region*, and the denominator includes all high school graduates from the region.

4. 9th Graders Enrolling in College within 4 Years

- Source: California Department of Education on-line Dataquest and California Postsecondary Education Commission on-line data
- Calculation:
Step 1: High School Completion Rate
Numerator: Number of high school graduates 2002-03
Denominator: Number of 9th graders in 1999-2000
Step 2: College Going Rate (see calculation in #3 above)
Step 3: Multiply the high school completion rate by the college going rate

Completion

1. Number of BA Degrees Awarded per 100 Undergraduates Enrolled (UC/CSU)

- Source: California Postsecondary Education Commission on-line data
- Calculation:
Numerator: Number of bachelor's degrees awarded at UC and CSU
Denominator: Total undergraduate enrollment at UC and CSU
Notes: For data by region, the numerator includes number of degrees awarded to students whose high school of origin is in the region and the denominator includes all students enrolled whose high school of origin is in the region. While data for 2003 were used for indicators by race/ethnicity, 2001 data were used for the regional breakdowns because that was the most recent year for data by the location of the students' high school of origin.

2. Number of Certificates and Degrees Awarded per 100 Undergraduates Enrolled (CCC)

- Source: California Postsecondary Education Commission on-line data
- Calculation:
Numerator: Total number of certificates and degrees awarded at community colleges, 2003
Denominator: Total enrollment at community colleges (excluding high school students and students already possessing a BA), 2003

Notes: The numerator includes the number of certificates/degrees awarded by community colleges located in the region and the denominator includes all students enrolled in community colleges in the region. Community colleges only gather information on the high school attended for recent high school graduates, and not for the many older students who attend those institutions and earn certificates and degrees. However, community colleges primarily serve local students, so calculations based on the location of the college should reasonably represent the completion rates for the residents of each region.

Benefits

1. Share of the Population Aged 25-64 with a BA Degree
 - Source: US Census 2000 Summary File 3, Table P148 (for data by race/ethnicity) and Summary File 4, Table PCT25 (for data by county)
 - Calculation:
Numerator: Number of people ages 25 to 64 possessing a BA degree or higher
Denominator: Total population ages 25 to 64

2. Per Capita Income
 - Source: US Census 2000 Summary File 3, Tables P1 and P83 (for data by county) and Summary File 4, Tables PCT1 and PCT131 (for data by race/ethnicity)
 - Calculation:
Numerator: Aggregate income for ages 15 and over
Denominator: Total population