

California's Economic Payoff

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Investing in College Access & Completion

EXECUTIVE SUMMARY

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\$4.50
NET ROI

HIGHER
EDUCATION

UC & CSU
GRADUATES
RETURN

\$12 BILLION
ANNUALLY

\$2.40
RETURN ON

STUDENTS WITH
SOME COLLEGE

INCREASED
LIFETIME
EARNINGS



\$1,340,000

\$4.80

RETURN ON

COLLEGE
GRADUATES

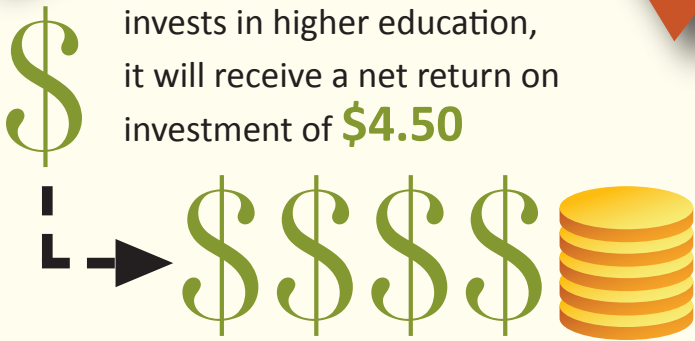
The benefits of higher education extend well beyond the direct payoff for students and include substantial gains to the state

Californians with a college degree will earn

\$1,340,000

more than their peers with only a high school diploma

For every **\$1** California invests in higher education, it will receive a net return on investment of **\$4.50**



The state would have to increase its investment in higher education

←----- **3X**

before it would **fail to return** its original investment

The return is double for those who **COMPLETE COLLEGE—\$4.80** than for those who enter but fail to complete college—**\$2.40**



Past graduates of UC and CSU return **\$12 billion** annually to the state

By entering and completing college, the average Californian will spend **4 years less in poverty**, reducing the expected number of years they receive cash aid by more than 2 years

ECONOMIC WELL-BEING



By the time a graduate reaches **38 years old**, the state's initial investment is repaid in full

California's Economic Payoff

Investing in College Access & Completion

The State of California is looking to resolve the ongoing budget crisis in order to secure our economic future and the opportunity for all citizens to realize the California Dream. The continued budgetary challenges raise many questions about the most effective ways to secure these goals.

In this report, conducted by researchers at the Institute for the Study of Societal Issues at the University of California, Berkeley, two of these questions are addressed: **What are the benefits of investing in higher education? And, is it worth it for Californians?**

This study concludes that the benefits of higher education extend well beyond the direct payoff for students and include substantial gains to the state. California's higher education investments pay off for all of California.

Investment in higher education pays off not only for the individuals who receive a college education through increased lifetime earnings, but for the state in increased tax revenue and reduced costs for social welfare programs and incarceration.

The benefit of the state's investment in higher education is substantial: **For every dollar California invests in students who go to college, it will receive a net return on investment of four dollars and fifty cents** as the increased and higher earnings of graduates are taxed in ensuing years and the state saves money in social services and incarceration costs.

Importantly, those who complete college show the highest gains: double the return for those who attended but did not graduate. Based on these findings, college completion would represent far and away the best investment return for both individuals and the state.

The next generation of college graduates will contribute significantly to the future of the state and its residents. By the time today's college graduates reach age 50 they will have repaid the nearly \$4.5 billion dollars the state originally invested in them, plus an additional \$10 billion.

The nearly 2.8 million young adults in their prime college-going years (ages 20-24) is one of the largest age groups counted in California in the 2010 Census, outnumbered only by those aged 15-19, on whom future decisions about college-going weigh most heavily. Together, **the sheer size of these two young population groups highlight the urgency of higher education access and success in California.** Notably, these two groups also represent the future of California's ethnic composition, with Latinos¹ representing more than 45% of the total and non-Hispanic whites falling to less than a third of the group.²

As the state seeks to balance the budget, it must consider the investment value, the rate of return that is inherent in certain expenditures; in this case, the funding of higher education.

This report concludes that the investment in education is critical to the ultimate success of California. Tough decisions today will reap significant rewards in the future, helping to ensure the long-term prosperity of the state and its citizens.

¹ In this report, we use the terms Latino, which is more commonly preferred in California, and Hispanic, which is broadly used by the Census Bureau and statistical agencies, interchangeably.

² The employment status of 19-24 year-old Californians is strongly shaped by both educational attainment and ethnicity: unemployment rates in this group range from around 12-14% for non-Hispanic whites and Asians, to 16-17% among Latinos, and around 29% for African-Americans. The range by educational attainment is similar, rising from 13% among those who had some post-secondary education, to 21% among those who stopped with a high school degree, to more than 30% among those who failed to finish high school.

In Good Times and Bad

In hard times, it is the least educated who experience the greatest declines in employment and earnings, which act both to depress state revenues and put stress on the public resources required to ameliorate the worst effects of the recession for our citizens.

Below we contrast the lifetime effects of educational attainment in California in 2005 and 2010, from the boom era to the depth of the recession.

Table 1 Californians with a college education are significantly better off
Lifetime outcomes 2010

	Less than High School	High School	College, No BA	BA or more
Years Unemployed	+ 0.7 years	4 years	- 0.4 years	- 1.5 years
Years Employed	- 7 years	25 years	+ 3 years	+ 6.8 years
Earnings, 25-64	- \$380,000	\$856,000	+ \$340,000	+ \$1,340,000
Income, 25-64	- \$400,000	\$1,073,000	+ \$377,000	+ \$1,511,000
Years in Poverty	+ 4.8 years	5.9 years	- 1.7 years	- 3.9 years
Years on Cash Aid	+ 3.7 years	2.8 years	- 0.9 years	- 2.1 years
Incarcerated	+ 1.5 years	0.9 years	- 0.5 years	- 0.8 years

Quite simply, college pays off for every Californian, regardless of ethnicity. The advantage for earning a baccalaureate degree, relative to a native-born non-Hispanic white high school graduate, yields about \$1.2 million for African Americans, \$1.5 million more for native-born Asians, and about \$1.1 million dollars more for native-born Latinos.

Table 2 College Education—The Million Dollar Pay Off

Income Relative to NH White with a High School Diploma, 2010

	Less than High School	High School	College, No BA	BA or more
Native Born				
Non-Hispanic White	- \$416,000	\$0	\$431,000	\$1,921,000
Non-Hispanic Black	- \$749,000	- \$322,000	\$73,000	\$1,169,000
Asian/Pacific Islander	- \$491,000	- \$230,000	\$259,000	\$1,525,000
Hispanic/Latino	- \$508,000	- \$186,000	\$176,000	\$1,178,000
Foreign Born				
Non-Hispanic White	- \$594,000	- \$195,000	\$458,000	\$1,754,000
Asian/Pacific Islander	- \$626,000	- \$437,000	- \$194,000	\$731,000
Hispanic/Latino	- \$572,000	- \$257,000	\$31,000	\$602,000

With greater lifetime income, one can also expect that individuals will spend less time in poverty. **Native-born, non-Hispanic whites who fail to finish high school can expect more than five additional years in poverty relative to their non-Hispanic white peers who do finish high school, a gap which grows to more than 12 years for African Americans who fail to finish high school when compared to those same native white high school graduates.**

Table 3 **Californians with a college education spend significantly less time in poverty**
Years in Poverty Relative to NH White with a High School Diploma, 2010

	Less than High School	High School	College, No BA	BA or more
Native Born				
Non-Hispanic White	5.12	0.00	- 1.59	- 3.49
Non-Hispanic Black	12.04	3.76	1.59	- 2.17
Asian/Pacific Islander	2.86	- 0.39	- 2.28	- 3.71
Hispanic/Latino	3.43	0.09	- 1.60	- 3.65
Foreign Born				
Non-Hispanic White	0.49	- 0.45	- 1.53	- 2.83
Asian/Pacific Islander	3.66	- 0.16	0.50	- 3.12
Hispanic/Latino	4.78	3.05	- 0.54	- 3.97

Reaping the Tax Benefits of an Education Citizenry

The state relies on taxes to provide services and create and maintain the infrastructure that support the economic and physical well-being of its citizens and businesses. When average incomes for Californians increase as a result of more-skilled and better paid workers, we expect that available tax revenues can also increase.

Translating the income advantage earned through college entry and completion into revenue suggests that **transitioning between high school graduation into college yields the state nearly \$30,000 more in revenue over the course of the individual's work-life. If that person earns a BA or higher degree, it garners the state \$108,000.¹**

The state also reaps savings, with differences in lifetime years in poverty with college attendance yielding savings of around \$5,000, and a college degree yielding savings of \$11,000 over the course of an individual's work-life. Savings from decreased incarceration rates provide savings roughly double that in size, with a \$10,000 difference between high school graduates and those with some college, increasing to a \$23,000 difference for those who earn their BAs.

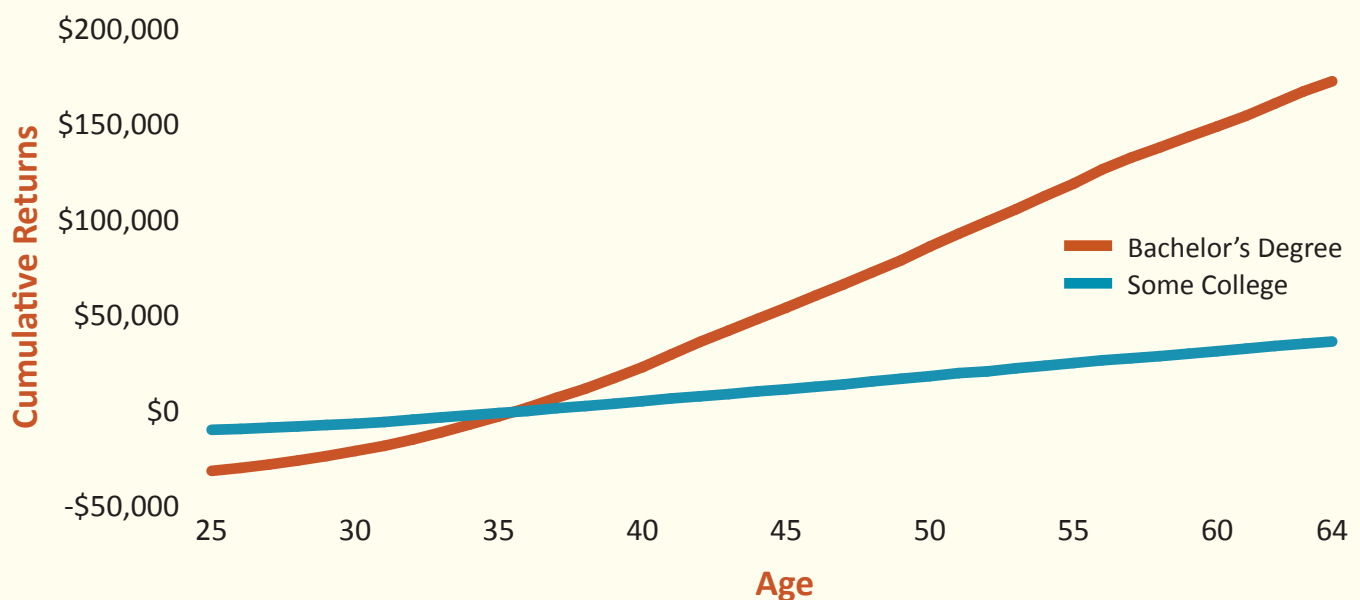
In total, including lower expenditures and higher revenues, college entry ultimately yields around \$45,000 to the state, and a bachelor's degree yields the state more than \$140,000 per individual.

¹ Based on a simple tax of 7.5% on the difference in income.

Completion delivers the highest rewards for the individual and the state

Both rewards and costs differ for those who enter college from those who complete their baccalaureate degree. On average, those who complete college spend 2.3 years more in school attaining their degree, and consequently cost the state 2.6 times more (slightly more than \$20,000) than those who fail to complete their degree. As shown earlier, **completers also provide much larger returns to the state, and effectively return five dollars to the state for every additional dollar invested in their completion, a rate of return double that of those who fail to finish.**¹

The return is double for those who **complete college—\$4.80**—than for those who enter but fail to complete college—\$2.40



Discounting the Future: Is money tomorrow less valuable than today?

Even though an investment may bring in more than it costs, individuals and institutions may choose to forgo those investments to devote spending on more pressing or immediate needs. While the investments made by the state in education seem particularly attractive, they also pay back over a fairly long time frame. To adjust for the lag in time between when an investment is made and when

¹ Returns are estimates based on the current tax model.

it pays off, analysts usually discount the returns by a certain rate each year.² **Using the 2% discount rate, we find that costs would need to more than triple for the same outcome before they failed to return the state's original investment.**

The \$12 billion revenue source for California

Our current investments in education are part of a continued and long-term strategy in building state infrastructure. They are not only an investment in the future—they are an investment made possible by the state's returns on our past educational investments. The hole that would exist in California's budget, absent those past investments, exceeds the current levels of general funds directed toward higher education in California. **In other words, decreasing investments in higher education today is likely to substantially decrease state revenues in the years to come.**

Applying contemporary age-specific returns to the past streams of graduates from the UCs and CSUs suggest ongoing returns to the state averaging around \$12 billion dollars annually, considering only the returns from those who completed baccalaureates at UCs and CSUs.³ This is well above the general fund expenditures for the UC, CSU, and the CCC systems combined.⁴ **The returns to the state's original investments in those graduates more than supports a substantially larger system from which those original graduates benefited.**

Supporting funding for higher education is not a single year budget line item, but an **investment in our human capital** that yields significant returns and promises to provide Californians with continued opportunity and **hope for a better economic future.**

² Applying a discount rate to the stream of returns an investment earns of its lifetime, and summing those discounted returns less the investment, will yield the investments Net Present Value (NPV). Calculating a NPV requires selection of a discount rate—how much we want to disregard returns that occur later in time rather than sooner—and identifies how good an investment is at that level of discounting. For any discount rate chosen, a NPV of zero indicates that the investment neither gains nor loses money. As Table 6 shows, the NPV for investment which educational investments which are not discounted at all are high, yielding 3.6 dollars over and above each original dollar invested, returns more than two additional dollars for each invested when discounting at 2%, and still more than doubles the original investment at a 4% discount rate. Traditionally, forensic economists (economists who specialize in valuation of lost earnings over an individual's life) use a real discount rate between 1% and 3% per year.

³ California gains, as well, from the ability to attract highly credentialed and qualified workers, but these estimates consider only baccalaureates granted from UCs and CSUs. The estimates also ignore the returns from those who attended, but stopped short of a baccalaureate.

⁴ Annual general fund expenditures on the UC, CSU, and CCC systems have averaged about 9.3 billion dollars over the last 5 years.

Methodology & Method for Calculating the Return on Investment

Estimates for this report are based on a variety of data sources, and modelled using a synthetic work-life model. Summaries of the characteristics associated with education in California were estimated by age, ethnicity, and education for Californians from the decennial censuses and the American Community Surveys, and expected revenues and costs to the state were attributed based on poverty status, income, and incarceration levels. Tax revenues were attributed from three sources: personal income taxes, attributed from Franchise Tax Board statistical tables by household structure and income, and sales and corporate taxes, based on family income and linked and from the Institute on Taxation and Economic Policy. Costs were attributed based on poverty status and LAO reports of state programs costs for social welfare programs. State investments were based on historic averages for general fund support per student “full-time-equivalent” enrollment (FTE) in the UC and CSU systems from CPEC’s Fiscal Profiles, and FTEs per enrollee until completion or attrition for first-time freshmen and transfer students were based on progression and completion reports from UC’s Statfinder and the CSU’s Consortium for Student Retention Data Exchange (CSRDE). A more detailed description of the methodology can be found in *California’s Economic Payoff: Investing in College Access & Completion* and our earlier 2005 report, *Return on investment: Educational choices and Demographic change in California’s future*.

Acknowledgements

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The full report can be found online at www.collegecampaign.org



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