

# Opportunity Imbalance: Race, Gender, And California's Education-To-Employment Pipeline

## Appendix

### Data Definitions

#### RACIAL/ETHNIC GROUPS

The data sources used for this brief use slightly differing definitions of racial/ethnic groups. We recognize that creating racial/ethnic categories are somewhat problematic in that they cluster peoples with varying origins and cultures. Nevertheless, we utilize and present commonly defined racial/ethnic groups in this brief because revealing trends and differences, even if the groups are imperfectly defined, is crucial to improving outcomes for individual Californians and for the state overall. We use the racial/ethnic groups as they are defined in data sources and combine groups where necessary to make consistency across sources. All groups are mutually exclusive, and we do not include in our analyses people who identify with more than one race or ethnicity. For the purpose of this brief, we use the following definitions of racial/ethnic groups:

RACIAL/ETHNIC GROUP	DESCRIPTION
Latino	Includes anyone of Latino or Hispanic descent, regardless of race
White	Includes any non-Latino people of European, Middle Eastern, or Northern African descent
Asian	Includes any non-Latino people descending from South Asia, Southeast Asia, East Asia, and the Philippines
Black	Includes Black or African American non-Latino (not including those descending from Northern Africa origins)
Native American	Includes non-Latino American Indians and Alaskan Natives of any tribal affiliation
Pacific Islander	Includes non-Latino people descending from Pacific Islands such as Guam, Hawaii, and Samoa

#### REGIONS

We define California's regions as follows:



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

## HIGH SCHOOL

INDICATOR	DEFINITION	SOURCE
On-Time High School Graduation Rate	The percent of students who graduated from high school by the spring of 2016 out of those who first enrolled in 9th grade in 2012	CA Department of Education: <a href="https://data1.cde.ca.gov/dataquest/">https://data1.cde.ca.gov/dataquest/</a>
UC/CSU Eligibility Rate	The percent of all high school graduates in 2016 who completed the necessary courses to be eligible to enroll directly in a UC or CSU. Note that the denominator for the UC/CSU eligibility rate is different from the denominator for On-Time High School Graduation.	CA Department of Education: <a href="https://data1.cde.ca.gov/dataquest/">https://data1.cde.ca.gov/dataquest/</a>

## POSTSECONDARY EDUCATION

INDICATOR	DEFINITION	SOURCE
College Enrollment	Part-time or full-time enrollment at any point in the 2015-16 school year in a public or private college in California. We only include undergraduate enrollment in this analysis. We use the following definitions for segments of postsecondary education: <ul style="list-style-type: none"> <li>• CCC – One of 114 schools in the California Community College system</li> <li>• CSU – One of 23 California State University campuses</li> <li>• UC – One of 9 University of California campuses (UC San Francisco is not included in this analysis because it does not enroll undergraduate students)</li> <li>• Private for-profit – includes 2-year and 4-year institutions</li> <li>• Private non-profit – includes 2-year and 4-year institutions</li> </ul>	A Integrated Postsecondary Education Data System: <a href="https://nces.ed.gov/ipeds/">https://nces.ed.gov/ipeds/</a>
College Completion	The graduation rate status as of August 31, 2016, within 150% of normal, which is within 6 years for students who began four-year programs in 2010 and within 3 years for students who began 2-year programs in 2013. We also include transfer students who complete a bachelor's degree within 3 years of transfer, although these data on transfers are only available from the CSU and UC and not for private colleges.	Integrated Postsecondary Education Data System: <a href="https://nces.ed.gov/ipeds/">https://nces.ed.gov/ipeds/</a> CSU Analytic Studies: <a href="http://www.calstate.edu/as/index.shtml">http://www.calstate.edu/as/index.shtml</a> UC Infocenter: <a href="https://www.universityofcalifornia.edu/infocenter">https://www.universityofcalifornia.edu/infocenter</a>
Adults with a College Degree	The share of adults in various age groups who had earned an associate's degree or higher as of 2016.	Census Bureau American Community Survey 2016 5-year estimates: <a href="https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t">https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t</a>

## WORKFORCE

INDICATOR	DEFINITION	SOURCE
Workforce Participation Rate	The percent of the population aged 25 to 64 who are either employed or seeking employment.	Census Bureau American Community Survey 2016 5-year estimates: <a href="https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t">https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t</a>
Median Wage	The median personal wage in 2016 dollars (adjusted for inflation) for adults in the workforce aged 25 and over.	Census Bureau American Community Survey 2016 5-year estimates: <a href="https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t">https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t</a>
Occupations	Percent of workforce aged 25 and over who reported working part-time or full-time employment in an occupational category. Fields are broad categories that contain many more specific occupations. We use the Bureau of Labor Statistics 2-digit Standard Occupational Category (SOC) codes to classify occupational fields.	Census Bureau American Community Survey 2016 5-year estimates: <a href="https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t">https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t</a>

# Analysis Methodology

## CALIFORNIA DEPARTMENT OF EDUCATION

High school graduation and UC/CSU eligibility data are downloaded from the California Department of Education's DataQuest portal. We use the state's county-wide statistics and aggregate those to the regional level. In order to adhere to other data sources' definitions of racial/ethnic subgroups, we combine data on Asian and Filipino students, which CDE reports separately.

## INTEGRATED POSTSECONDARY EDUCATION DATA SYSTEM

Postsecondary enrollment and completion data are downloaded from the federal Department of Education National Center for Education Statistics Integrated Postsecondary Education Data System (IPEDS) for the 743 institutions in California that report to IPEDS. All data are for the 2015-16 school year. To produce the analyses in this report, we merge the following IPEDS tables:

- Institutional characteristics (hd2016): We use the institutional STATE to limit all analyses to institutions in California (743 total), SECTOR to identify segments (combining private institutions into for-profit and nonprofit, regardless of whether they are 2-year or 4-year), and COUNTY to aggregate data by region.
- Enrollment (effy2016): We limit all enrollment analyses to undergraduate (EFFYLEV=2) and aggregate data by gender and racial/ethnic subgroup.
- Completions (gr2016): We use the 150% completion number (CHRTSTAT=13) divided by the adjusted cohort size (CHRTSTAT= 12) to calculate completion rates for each gender and subgroup. Although IPEDS includes only first-time freshman, we add data for community college transfers reported by the CSU and UC to the first-time freshman completion rates reported in IPEDS. For community college transfers, we use bachelor’s degree completion within three years of transfer. The UC combines Asian and Pacific Islanders in their completion data, so we include the combined Asian/Pacific Islander transfer rate into the Asian completion rate and do not include UC transfers in the Pacific Islander completion rate.

## CENSUS DEMOGRAPHIC AND WORKFORCE DATA

We use the 2016 five-year estimates from the American Community Survey. We aggregate the Public Use Micro Area (PUMA) into regions. Although Census data asks for Hispanic/Latino origin separate from race, we combine these two fields into one mutually exclusive racial/ethnic group, labeling anyone who reports Hispanic or Latino origin as Latino and all non-Hispanic people by their race. All analyses use the person weight (PWGTP) to tabulate the population that belongs to each racial/ethnic group and gender. To produce the analyses in this report, we use the following PUMS data:

- Adults with a College Degree: We combine the highest level of education completed (SCHL) for anyone over the age of 25 who reported either an associate’s, bachelor’s, or graduate degree.
- Workforce Participation: We use the ACS employment status recode (ESR) and include all those between the ages of 25 and 64 not listed as “not in the labor force” in the participation rate.
- Wages: We adjust personal wages (WAGP) by the inflation factor (ADJINC) to convert reported wages to constant 2016 dollars and calculate medians for each group member who reported any wages and was over the age of 25.
- Occupations: We use the first two digits of the Standard Occupation Classification (SOC) codes (SOCP) to classify occupations into one of 23 categories. We include anyone over the age of 25, including those working part-time.

All estimates of population size, workforce representation, and income presented in this report have a margin of error, and this margin is larger for groups that are smaller in size. Confidence intervals for all figures utilizing Census data used in this report are provided below.

### 95% Confidence intervals for PUMS estimates of population size by region

REGION	LATINO	WHITE	ASIAN	BLACK	NATIVE AMERICAN	PACIFIC ISLANDER
Bay Area	1868971 - 1874581	3215417 - 3223005	1863927 - 1877621	449214 - 458160	17056 - 19174	42862 - 45236
Central Coast	888653 - 893053	941523 - 946419	113911 - 118533	35196 - 38384	5179 - 6777	3289 - 4477
Central Sierra	25018 - 26372	145273 - 147157	1582 - 2366	2282 - 3280	3557 - 4843	134 - 598
Inland Empire	2189942 - 2195296	1506050 - 1512476	276977 - 283439	304147 - 312069	15496 - 18130	10164 - 12596
Los Angeles	4859148 - 4864276	2683398 - 2690550	1411318 - 1421726	794666 - 804614	16979 - 19609	22476 - 25440
Northern California	91925 - 93993	531818 - 534736	13226 - 15114	9501 - 11337	18965 - 21549	1046 - 1714
Orange	1069275 - 1071945	1313930 - 1318428	593815 - 601893	45469 - 49153	5588 - 7240	7744 - 9586
Sacramento-Tahoe	517760 - 520292	1292448 - 1296926	298339 - 305411	155735 - 161263	9492 - 11826	17317 - 18825
San Diego-Imperial	1222425 - 1226393	1537310 - 1544380	367051 - 374013	153438 - 159110	12942 - 15026	12538 - 14918
San Joaquin Valley	2078141 - 2082573	1405258 - 1411186	303427 - 309853	176645 - 182253	17789 - 20511	9714 - 11822
Upper Sacramento Valley	73505 - 74587	240747 - 242923	10932 - 12414	3838 - 4886	3303 - 4655	308 - 844

### 95% Confidence intervals for PUMS estimates of college degree or certificate attainment by ethnicity and age group

	LATINO	WHITE	ASIAN	BLACK	NATIVE AMERICAN	PACIFIC ISLANDER
<b>MEN</b>						
25 to 34	16.6% - 17.46%	50.09% - 51.32%	64.76% - 66.35%	26.46% - 28.66%	15.89% - 25.45%	21.1% - 30.38%
35 to 54	14.86% - 15.41%	50.98% - 51.65%	62.76% - 63.83%	30.99% - 32.96%	21.07% - 27.32%	20.69% - 28.72%
55 and over	14.85% - 15.63%	51.07% - 51.69%	48.89% - 50.08%	31.55% - 33.34%	26.95% - 33.28%	19.28% - 28.51%
<b>WOMEN</b>						
25 to 34	23.96% - 24.88%	59.8% - 60.8%	71.9% - 73.55%	34.85% - 37.58%	18.89% - 29.76%	29.24% - 37.67%
35 to 54	18.67% - 19.32%	54.92% - 55.72%	63.16% - 64.26%	36.8% - 38.92%	29.13% - 35.54%	23.71% - 30.9%
55 and over	12.33% - 12.93%	42.6% - 43.18%	40.97% - 42.05%	30.64% - 32.63%	22.95% - 28.89%	16.67% - 24.06%

### 95% Confidence intervals for PUMS estimates of workforce participation rate by ethnicity and gender

	LATINO	WHITE	ASIAN	BLACK	NATIVE AMERICAN	PACIFIC ISLANDER
Men	74.78% - 75.16%	67.19% - 67.51%	68.84% - 69.52%	59.09% - 60.00%	55.47% - 59.01%	66.50% - 70.64%
Women	57.78% - 58.23%	55.42% - 55.79%	57.50% - 58.13%	58.14% - 59.15%	48.88% - 52.79%	61.63% - 65.84%

### 95% Confidence intervals for PUMS estimates of median wage by ethnicity and gender

	LATINO	WHITE	ASIAN	BLACK	NATIVE AMERICAN	PACIFIC ISLANDER
Men	\$28658 - \$29136	\$58938 - \$59415	\$49373 - \$51003	\$37918 - \$39141	\$33614 - \$37844	\$35768 - \$39987
Women	\$22452 - \$22917	\$39577 - \$39820	\$38834 - \$39418	\$32552 - \$33962	\$25474 - \$29411	\$28438 - \$32599

### 95% Confidence intervals for PUMS estimates of occupations by ethnicity for men

OCCUPATION	LATINO	WHITE	ASIAN	BLACK	NATIVE AMERICAN	PACIFIC ISLANDER
Architecture and Engineering	1.07% - 1.18%	3.76% - 3.92%	6.64% - 7.04%	1.35% - 1.75%	1.4% - 3.32%	1.16% - 2.42%
Arts, Design, Entertainment, Sports, and Media	1.4% - 1.54%	4.69% - 4.9%	2.27% - 2.53%	3.15% - 3.7%	1.43% - 2.98%	0.64% - 1.82%
Building and Grounds Cleaning and Maintenance	8.32% - 8.65%	2.43% - 2.59%	1.81% - 2.06%	4.31% - 4.91%	5.5% - 7.82%	3.22% - 5.39%
Business and Financial Operations	1.67% - 1.8%	5.26% - 5.44%	5.6% - 5.97%	3.48% - 4.1%	1.74% - 3.87%	2.21% - 4.56%
Community and Social Service	0.59% - 0.69%	0.99% - 1.08%	0.9% - 1.05%	2.04% - 2.44%	0.79% - 2.03%	0.43% - 1.37%
Computer and Mathematical	1.05% - 1.17%	4.65% - 4.83%	10.42% - 10.99%	2.43% - 2.91%	1.13% - 2.53%	1.73% - 3.35%
Construction and Extraction	13.49% - 13.91%	7.34% - 7.59%	2.31% - 2.56%	5% - 5.76%	9.75% - 12.48%	6.99% - 10.43%
Education, Training, and Library	1.61% - 1.75%	4.22% - 4.39%	2.75% - 3%	3.48% - 4.12%	1.65% - 3.17%	0.94% - 2.73%
Farming, Fishing, and Forestry	5.27% - 5.55%	0.46% - 0.53%	0.25% - 0.34%	0.17% - 0.3%	2.02% - 3.71%	-0.03% - 0.34%
Food Preparation and Serving	7.59% - 7.89%	3.39% - 3.57%	5.35% - 5.73%	3.59% - 4.27%	4.22% - 6.89%	3.35% - 5.52%
Healthcare Practitioners and Technical	1.02% - 1.14%	2.75% - 2.88%	5.24% - 5.61%	2.51% - 3.06%	0.5% - 1.44%	0.76% - 2.22%
Healthcare Support	0.59% - 0.68%	0.39% - 0.46%	1.18% - 1.38%	1.11% - 1.41%	0.29% - 1.05%	0.44% - 1.4%
Installation, Maintenance, and Repair	5.51% - 5.82%	4.82% - 5.05%	3.28% - 3.55%	3.53% - 4.31%	4.68% - 6.92%	5.84% - 8.75%
Legal	0.29% - 0.35%	1.87% - 1.98%	0.65% - 0.77%	0.57% - 0.87%	0.04% - 0.52%	0.01% - 0.47%
Life, Physical, and Social Science	0.29% - 0.36%	1.24% - 1.35%	1.48% - 1.7%	0.32% - 0.52%	0.29% - 1.09%	0.17% - 1.06%
Management	5.13% - 5.38%	15.54% - 15.86%	11.48% - 12%	7.19% - 8.06%	8.61% - 11.65%	4.94% - 7.53%
Military	0.26% - 0.33%	0.78% - 0.87%	0.22% - 0.31%	0.84% - 1.15%	1.04% - 2.7%	0.46% - 1.48%
Office and Administrative Support	7.44% - 7.73%	6.25% - 6.47%	8.62% - 9.14%	11.05% - 12.15%	6.3% - 9.24%	9.66% - 12.62%
Personal Care and Service	1.55% - 1.69%	1.84% - 1.99%	2.8% - 3.1%	3.52% - 4.14%	1.92% - 3.58%	2.68% - 4.6%
Production Occupations	9.45% - 9.77%	4.12% - 4.29%	6.17% - 6.6%	3.63% - 4.25%	5.52% - 8.25%	6.48% - 9.65%

## 95% Confidence intervals for PUMS estimates of occupations by ethnicity for women

OCCUPATION	LATINO	WHITE	ASIAN	BLACK	NATIVE AMERICAN	PACIFIC ISLANDER
Architecture and Engineering	0.26% - 0.33%	0.70% - 0.77%	1.68% - 1.94%	0.26% - 0.41%	0.22% - 0.81%	0.21% - 1.15%
Arts, Design, Entertainment, Sports, and Media	1.23% - 1.36%	4.10% - 4.34%	2.32% - 2.54%	1.41% - 1.77%	1.41% - 3.21%	0.94% - 2.07%
Building and Grounds Cleaning and Maintenance	8.53% - 8.87%	1.15% - 1.26%	1.25% - 1.44%	1.54% - 1.89%	2.46% - 4.23%	1.47% - 3.43%
Business and Financial Operations	3.00% - 3.21%	6.60% - 6.84%	8.63% - 9.05%	5.10% - 5.75%	3.16% - 5.04%	4.33% - 7.1%
Community and Social Service	1.77% - 1.93%	2.16% - 2.29%	1.15% - 1.35%	3.56% - 4.03%	1.61% - 2.97%	0.80% - 2.22%
Computer and Mathematical	0.46% - 0.55%	1.44% - 1.55%	4.27% - 4.6%	0.98% - 1.30%	0.27% - 1.31%	0.30% - 1.25%
Construction and Extraction	0.26% - 0.33%	0.24% - 0.29%	0.10% - 0.15%	0.12% - 0.26%	0.58% - 1.94%	0.00% - 0.90%
Education, Training, and Library	5.56% - 5.84%	10.96% - 11.28%	5.76% - 6.17%	6.93% - 7.76%	6.5% - 9.19%	2.05% - 3.99%
Farming, Fishing, and Forestry	3.6% - 3.84%	0.13% - 0.17%	0.17% - 0.25%	0.08% - 0.21%	0.23% - 0.90%	0.00% - 0.29%
Food Preparation and Serving	8.21% - 8.55%	5.12% - 5.36%	4.96% - 5.32%	3.72% - 4.26%	4.75% - 7.11%	3.86% - 6.90%
Healthcare Practitioners and Technical	3.24% - 3.42%	7.33% - 7.62%	11.58% - 12.05%	6.80% - 7.62%	3.92% - 6.16%	4.58% - 7.53%
Healthcare Support	4.01% - 4.29%	2.3% - 2.47%	3.36% - 3.69%	4.53% - 5.20%	2.37% - 4.29%	4.17% - 7.17%
Installation, Maintenance, and Repair	0.21% - 0.26%	0.21% - 0.27%	0.17% - 0.25%	0.28% - 0.45%	0.14% - 1.20%	0.03% - 0.76%
Legal	0.61% - 0.71%	1.70% - 1.84%	1.00% - 1.17%	0.96% - 1.30%	0.15% - 1.34%	0.19% - 1.19%
Life, Physical, and Social Science	0.32% - 0.38%	1.31% - 1.43%	1.67% - 1.88%	0.30% - 0.50%	0.47% - 1.59%	0.00% - 0.39%
Management	4.67% - 4.9%	11.05% - 11.32%	8.41% - 8.88%	7.26% - 8.09%	7.22% - 9.91%	5.40% - 8.39%
Military	0.03% - 0.06%	0.08% - 0.11%	0.01% - 0.04%	0.16% - 0.32%	0.02% - 0.51%	0.00% - 0.23%
Office and Administrative Support	19.05% - 19.52%	19.45% - 19.83%	15.67% - 16.22%	22.02% - 23.32%	20.67% - 24.63%	23.84% - 28.39%
Personal Care and Service	8.34% - 8.67%	6.84% - 7.13%	8.85% - 9.36%	10.27% - 11.30%	8.19% - 11.27%	11.19% - 15.17%
Production Occupations	6.24% - 6.53%	1.29% - 1.42%	4.37% - 4.71%	1.32% - 1.68%	1.35% - 3.17%	2.14% - 4.47%