

Shasta-Tehama-Trinity Joint
Community College District

CTE Equity and Employment Report 2020



Shasta College
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Introduction

Career and Technical Education (CTE) at Shasta College helps people of all ages and backgrounds fulfill their working potential. The main goal of CTE instruction is to provide students with knowledge that is relevant to the real world and job related skills that increase their employability. In the past five years, Shasta College has offered over 300 different CTE classes and currently offers 76 programs in general areas such as Accounting, Administration of Justice, Agriculture, Allied Health, Auto and Diesel Mechanics, Business, Computer Science, Construction, Culinary Arts, Dental Hygiene, Fire Science, Health Information, Hospitality, Industrial Mechanics, Welding, and Wastewater Treatment, among others.

This report will focus on the demographics of the undergraduate (not high school) Shasta College students with declared CTE programs and also on their employment outcomes. When appropriate and when the data is sufficient, breakdowns will occur in the following demographic groups: ethnicity, first-generation, former foster youth, gender, and low-income. The enrollment demographics of the CTE majors will be compared with Shasta College students in general and with our geographic service area. Persistence and graduation data will also be studied. Finally, this report will look closely at the employment and income of our former CTE students and highlight any trends or patterns related to certain demographic groups and low wage jobs.

Methodology

The state of California has developed three different formulas which are used to identify disproportionate impact within student demographic groups. In order for a sub-group to be counted as disproportionately impacted (DI) they must meet the threshold in two out of the three formulas, one of which must include the formula that takes into account sample size. It should be noted that tracking employment outcomes locally is difficult and the report relies on lagging statewide data and self-reported data. However, when taken together, some trends and patterns can be identified.

General Demographics

In 2019-20, 5,461 students declared a CTE program. This number has increased about one thousand students, or 25%, over the last five years. Programs seeing growth include Early Childhood Education, Business, Administration of Justice, and Fire Technology. Students identified as "skills builders" are those who complete at least 9 units of CTE classes in an academic year. In 2018-19, this was 15% of the student body according to the CCCCO Student Success Metrics.

Although Shasta College attracts students from across the country, its service area is Shasta, Tehama, and Trinity counties. In 2019 the gender breakdown of the college's Tri-County area was almost evenly split between males and females. The latest data for California

Community Colleges shows that more than 53% of the students are female.¹ At Shasta College, the proportion of female students is almost 58% in the 2019-20 academic year and 59.1% for CTE majors. There are some CTE areas like Welding, Fire Science, and Automotive and Diesel Technology that are mostly male, but the overall proportion of CTE majors that are female is similar to the overall Shasta College student population. Many students take CTE classes even though they are not CTE majors. In 2019-20, 5,070 different students took at least one CTE class.

Figure 1: Gender distribution of service area, Shasta College, and CTE majors at Shasta College.

Gender	Tri-County ₂	Shasta College	CTE Majors	CTE Students ₃
Female	50.6%	57.8%	59.1%	51.9%
Male	49.4%	40.6%	40.1%	46.2%
Unknown	0.0%	1.6%	0.8%	1.9%
Total Count	257,449	14,407	5,461	5,070

The ethnic breakdown of CTE Majors is remarkably close to that of the college as a whole. In terms of age, CTE Majors skew slightly older than the general college population when high schools students are excluded from the population. In 2019-20, 49.9% of CTE majors were between the ages of 25 and 49 compared to 45.4% for the Shasta College population as a whole.

Figure 2: Ethnic distribution of service area, Shasta College, and CTE majors at Shasta College.

Ethnic Group	Tri-County ₄	Shasta College	CTE Majors
White	76.3%	60.7%	61.9%
Hispanic	14.2%	18.0%	17.9%
Two or More	4.4%	6.5%	6.0%
Native American	3.3%	2.2%	2.2%
Asian	2.6%	3.7%	3.9%
Black/African American	1.2%	1.6%	2.1%
Hawaiian/Pacific Islander	0.2%	0.3%	0.2%
Total Count	257,449	14,407	5,461

Persistence

In studying possible disproportionate impact (DI) for fall to spring persistence among CTE majors across demographics, the data for academic years 2017-18, 2018-19, and 2019-20 was combined. For context, the overall persistence rate during this period for CTE majors was 70.6% versus 69.1% for non-CTE majors.

Concerning ethnic groups, only Black and African American CTE majors showed Disproportionate Impact in fall to spring persistence. Their persistence rate was 62.7% which met the DI threshold in two of the three metrics.

First-generation college students are identified based on their answers to certain questions on the Free Application for Federal Student Aid (FAFSA). No Disproportionate Impact was found between first-generation and non-first-generation students.

The Shasta College student database only lists genders as male or female. Students who have a non-binary gender or who have declined to state a gender are categorized as 'unknown' CTE majors of unknown gender had a low persistence rate of 47.5% and therefore showed Disproportionate Impact in all three DI metrics.

Disproportionate Impact was also assessed for CTE majors who were Former Foster Youth and also for Low-Income students but no DI was shown in either group.

Figure 3: Summary of Disproportionate Impact for CTE Persistence Rate.

Student Groups with Low Persistence	Persistence Rate	DI
Black/African American	62.7%	Yes
First Generation Students	74.3%	No
Unknown Gender	47.5%	Yes
Former Foster Youth	68.5%	No
Not Low-Income Students	63.5%	No

Completions: Awards-to-Students Ratio

Completion metrics pertain to the number of students earning an award which may be a degree (associates or bachelors₅) or a certificate. In order to study possible disproportionate impact among student groups, the past three years of CTE completion data has been aggregated. Dividing the number of students that earn an award by the number of students enrolled gives an awards-to-students ratio, which can be analyzed to determine if any disproportionate impact exists. For example in 2019-20, 607 out of 5,461 CTE Majors earned some type of award for an 11.1% awards-to-students ratio. Every year in this study, CTE Majors had a higher awards-to-students ratio than non-CTE Majors. This was true even when certificates and degrees were studied separately.

Figure 4: Awards-to-Students Ratios for CTE and non-CTE Majors

Academic Year	CTE Majors		Non-CTE Majors	
	Student Count	% Earning Award	Student Count	% Earning Award
2017-18	5,327	12.3%	5,538	8.3%
2018-19	5,231	13.0%	4,937	8.0%
2019-20	5,461	11.1%	4,774	7.3%
Total/Average	16,019	12.1%	15,249	7.9%

Concerning ethnic groups, no disproportion impact was found. However, both Native American and Black/African American students had low proportions of students earning an award. For Native American CTE majors, 9.6% earned some type of award and for Black/African American CTE majors 7.6% earned an award during the three years under consideration.

Even with a relatively small sample size, there was disproportionate impact for those with unknown gender. The awards-to-student ratio for unknown gender students was only 3.4% which was 8.3 percentage points lower than the other gender categories combined.

Former foster youth did not show DI even though their awards-to-students ratio was 7.4%. This category of students would have shown DI, but their overall student count was low, making the margin of error calculation high.

No disproportionate impact was shown for CTE majors based on whether they were classified as low-income or not. Likewise, First Generation CTE majors did not show disproportionate impact.

Employment

Career Technical Education focuses on giving students the skills they need in order to be employed. Graduating from college and getting a job should always be viewed as a success. However, the salary of a given job should also be considered. For context, in California, Low-wage workers are defined as those making less than \$14.35 per hour.⁶

Shasta College does not have a direct method to track the employment of its graduates or former students. However, there are three sources that can help to paint our CTE employment picture. 1) Perkins funding began in 2006 and currently provides over one billion dollars annually for CTE programs. The California Community Colleges Chancellor's Office tracks Perkins CTE participation and employment using labor market data. 2) The CTE Employment Outcomes Survey (CTEOS) is given annually to students from all 115 California Community Colleges. The survey is sent to students who have either graduated with a CTE award or have earned at least 9 CTE units in a given year and then have not attended college in the subsequent year. 3) California's Strong Workforce Program (SWP) is an initiative to expand CTE programs in California Community Colleges through cross sector collaboration, employer engagement, and regional partnerships. The SWP 'LaunchBoard' web site contains comparative wage data for exiting CTE students.

Perkins Reports

The Perkins Core Indicator Reports⁷ are updated each April and the Employment report data is always lagging by two years. These reports give the percentage of students in various subject areas that attain employment after they graduate. For the years 2015-16 through 2017-18, the average employment rate for Shasta College was 81%. Females had a significantly higher employment rate than males, 83.9% vs. 78.3%. The difference between female and male employment rates was especially high in Family and Consumer sciences (11.1%) and Business and Management (9.6%).

Students graduating with an award in Health had the highest employment rate, at 94.1%. At the other end of the spectrum is Computer Science, with 72.0% of students employed. Across all disciplines there is no significant difference in employment rates based on low-income status. However, the employment rate is nearly 10% higher for low-income students in Computer Science.

Career and Technical Employment Outcomes Survey

The CTE Outcomes Survey⁸ is given to over 150,000 former California community college students every year including over 1,000 from Shasta College. The average response rate for Shasta College is 33% which is slightly higher than the overall state response rate. The CTEOS is highly respected and its results are now part of the Student Centered Funding Formula. The CTEOS research team combines the student survey responses with Chancellor's Office and Labor Market data to produce rich data sets.

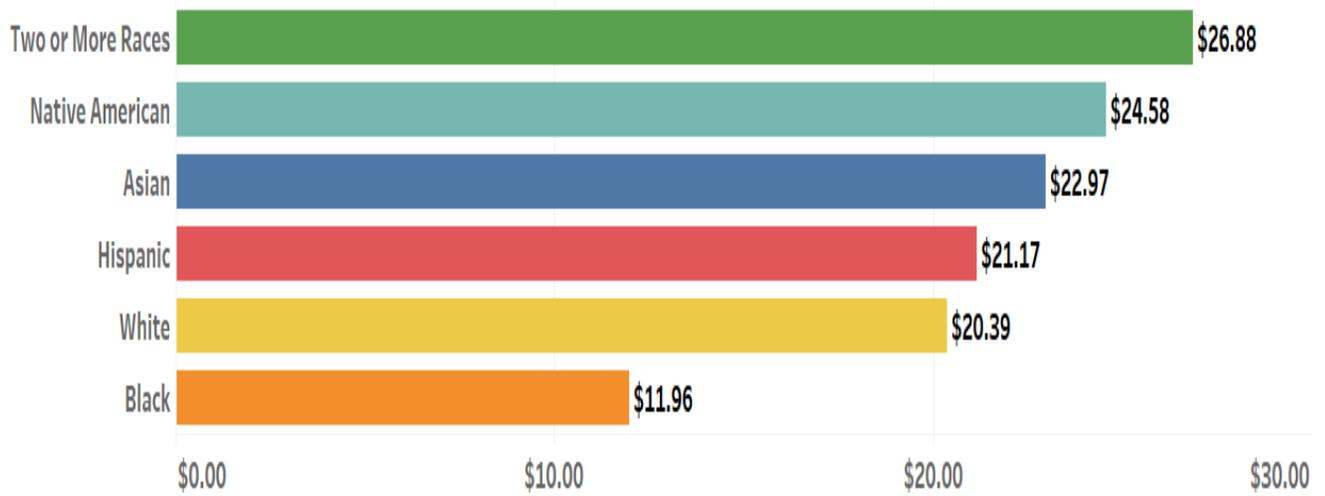
Using the last three years of CTEOS results we can investigate the median hourly wages of Shasta College students based on their subject area and ethnicity. Students are further categorized as Completers - those who earned a degree, or Skills Builders – those who earned at least 9 credits in a given CTE subject area. There were 29 different subject areas listed for Completers and the average median salary for the top ten areas was \$29.66 and \$13.52 for the lowest ten. There were 32 different subject areas listed for Skills Builders and the average median salary for the top ten areas was \$34.19 and was \$14.07 for the lowest ten. The table below is based on a student's program area and not on their area of employment.

Figure 5: Highest and Lowest Median Wages by Program Area and Student Type

Award (Highest 5)	Med. Wage	Award (Lowest 5)	Med. Wage
Student Type: Completers			
1. Dental Hygiene	\$47.00	29. Gen. Studies: Public Safety	\$11.00
2. Nursing	\$37.75	28. Gen. Studies: Human Development	\$12.88
3. Dietetic Supervisor	\$32.75	27. Firefighter I	\$13.00
4. Fire Technology	\$30.75	26. Accounting Clerk/Bookkeeper	\$13.18
5. Agricultural Equipment	\$29.65	25. Univ. Studies: Child Development	\$13.41
Student Type: Skills Builders			
1. Graphic Art and Design	\$49.00	32. Web Administration	\$12.00
2. Water Technology	\$45.00	31. Office Tech/Applications	\$12.00
3. Computer Programming	\$44.00	30. Diesel Technology	\$13.50
4. Business and Commerce	\$35.00	29. Child Development	\$13.56
5. Information Technology	\$35.00	28. Human Services	\$14.13

When all subject areas and all student types are grouped together, an average median hourly wage by ethnicity can be obtained. See Figure 6 below.

Figure 6: Average Median Wage by Ethnicity



Although Black/African American students have the lowest median wage, it is impossible to determine if this is significant without knowing the sample sizes. A good indicator that only a few Black/African American students may have completed the survey is the fact that their data is only present in two different subject areas, Child Development and Human Services. Those two subject areas are also two of the lowest paying areas. Contrast that with White students whose data is present in 41 different subject areas and Hispanics whose data appears in 31 different subject areas. Nonetheless, the data for Black/African American students shows that they are earning less than other ethnicities in their chosen subject area. The figure below shows the subjects containing Black/African American and Native American students and a select number of higher paying subject areas.

Figure 7: Average Median Wage of Selected Subject Areas and Ethnicity



The CTEOS also provides year over year hourly wage gain data based on whether the job attained by the student is Very Close, Close, or Not Close to their field of study. Over the past three years, Shasta College students have seen a general upward trend in wages with students who are employed in a job that is Very Close to their field of study seeing the largest wage gains. For example, the median wage earned by students in 2019 was \$15.69 higher than it was for those same students in the previous year.

Figure 8: Year over Year Average Median Wage Gain by Job Similarity



In addition, the CTEOS also determines student's wages before and after their academic training. This wage gain data can be disaggregated by ethnicity. Combining the last three years and taking averages shows that obtaining a job Very Close to the student's field of study produces the highest average wage gains. The job similarity values of Close and Not Close do not reveal any trends based on ethnicity but there are marked differences in the Very Close category. White students and students of two or more ethnicities have seen large hourly wage gains in the Very Close category while the wages of Black/African American students have actually decreased after receiving their academic training across all job similarity categories.

Figure 9: Before and After Training Wage Gain for 2017, 2018, and 2019 by Job Similarity

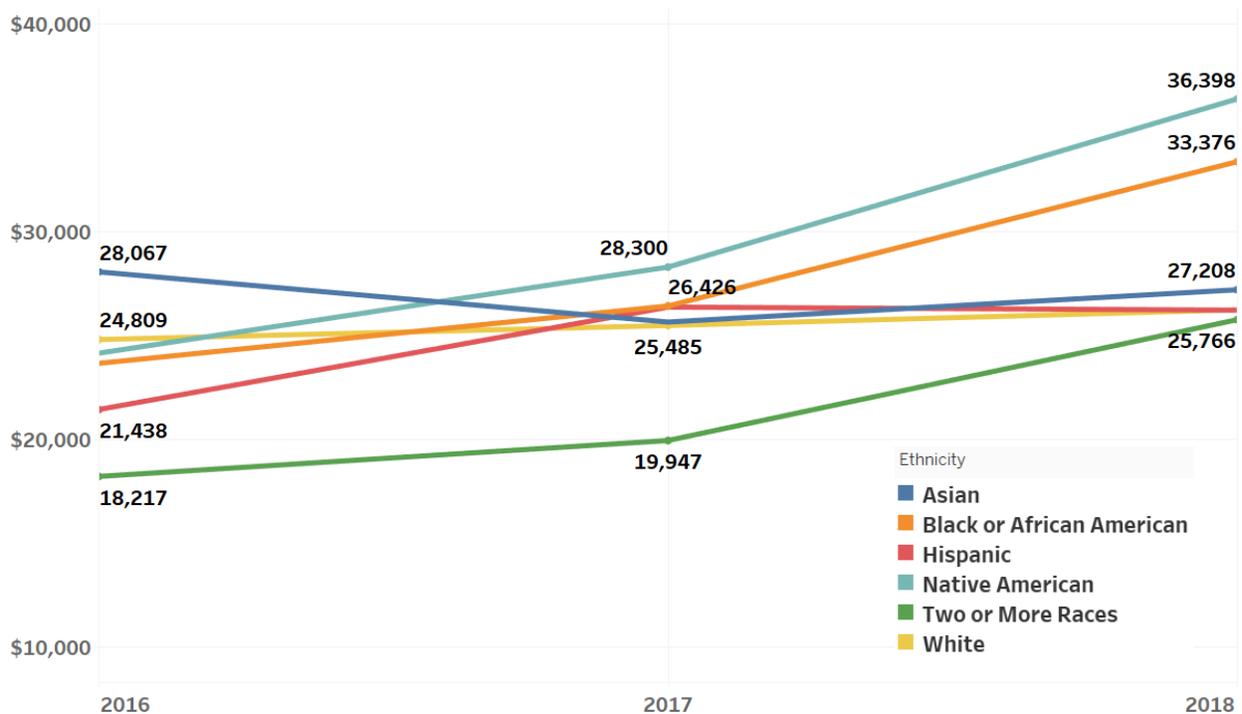
Ethnic Group	Very Close	Close	Not Close
Two or More Ethnicities	\$18.00	\$3.48	\$1.48
White	\$10.96	\$3.48	\$1.48
Hispanic	\$7.95	\$3.98	-\$0.18
Asian	\$7.19	-\$3.96	\$3.62
Native American	\$5.51	\$6.20	\$3.00
Black/African American	-\$0.33	-\$2.38	-\$1.75

Strong Workforce Launchboard

The California Community College's LaunchBoard⁹ web site contains wage data for Strong Workforce Program (SWP) exiting students based on matching social security numbers from the Employment Development Department (EDD) Unemployment Insurance Dataset. These students were enrolled in a CTE program, earned a minimum number of credits and left the college with or without an award and without transferring. Although the Launchboard website uses individual wage values for students, their charts and underlying data sets do not contain data for any categories with less than 10 members. This precludes getting meaningful subject area data by any of the standard demographics.

The most current three years of median wage data for exiting Shasta College students is shown in Figure 10. Native American, Black or African American, and Two or More Ethnicities students have shown a general upward trend in median wage. Median wages for Hispanic and White students have remained almost constant.

Figure 10: Median Wages by Ethnicity for Exiting SWP Students



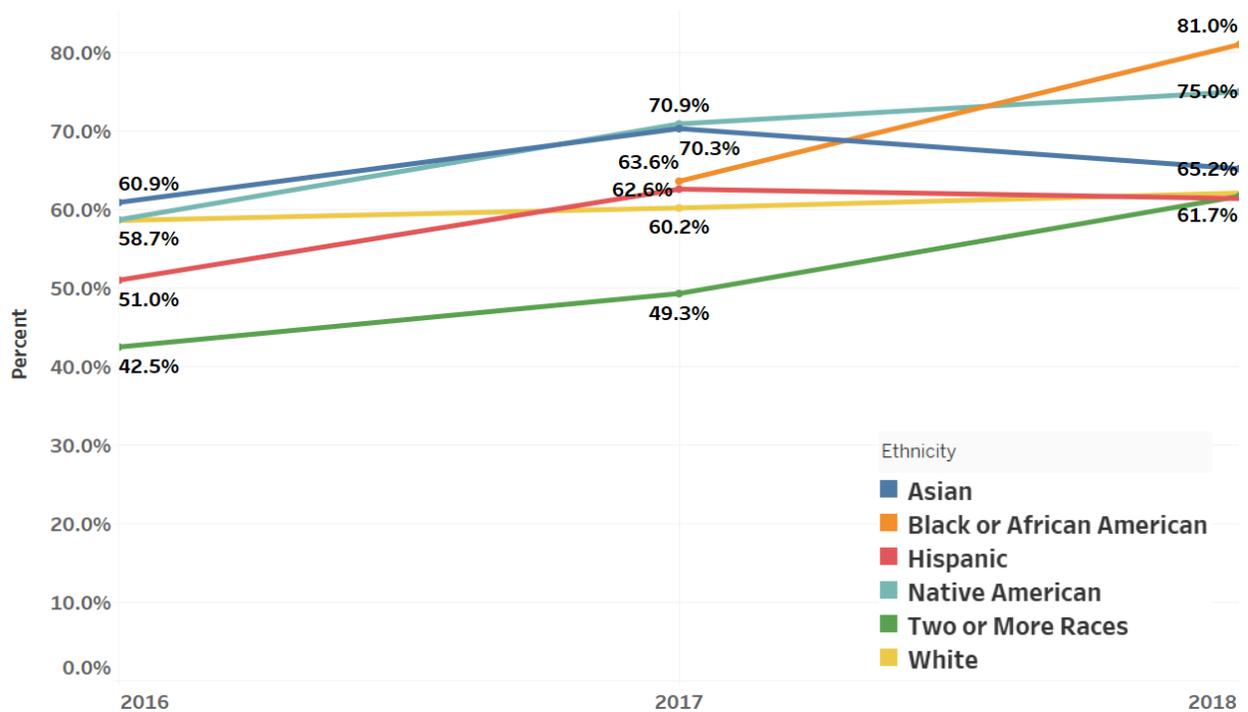
When the most current three years of data is ranked by ethnicity, the highest average wage, belonging to Native American students, is 38% higher than the lowest average wage which belongs to students of Two or More Ethnicities. In regard to gender and economic status, the average median wage for female students was almost \$5,000 less than that of male students and students of low-income had an average median wage of almost \$3000 less than non-low-income students.

Figure 11: Weighted Average of Median Wages by Ethnicity, Gender, and Economic Status

Average Median Wage for 2016, 2017, and 2018						
Ethnic Group			Gender		Economic Status	
Native American	\$29,036		Male	\$28,633	Not Low Income	\$28,176
Black/African American	\$28,076		Female	\$23,993	Low Income	\$25,241
Asian	\$26,752					
White	\$25,507					
Hispanic	\$24,859					
Two or More Ethnicities	\$21,039					

The LaunchBoard website defines the living wage for Shasta County to be \$11.55 per hour or \$21,244 per year. The percentage of exiting Shasta College CTE students who attained the living wage is shown in Figure 12. Native American, Black or African American, White, and Two or More Ethnicities students have all increased over the given time period. Asian and Hispanic students have decreased in the latest year. It should be noted that in 2018 the minimum wage was set at \$11.00 per hour.

Figure 12: Percent of Exiting SWP Students Who Attained the Living Wage



Aggregating the most current three years of data shows that the group with the lowest percent of attaining a living wage are students of Two or More Ethnicities, which are 21.6 percentage points below Black/African American students who have the highest percent. Females are 7.2 percentage points below males. Due to the low proportions of attaining the living wage, Two or More Ethnicities and female students both show disproportionate impact. Students that are low-income are 1.5 percentage points below those that are not low-income.

Figure 13: Weighted Average of Percent of Exiting SWP Students Who Attained the Living Wage

Average Percent Attaining Living Wage for 2016, 2017, and 2018			
Ethnic Group		Gender	
Black/African American	72.1%	Male	64.5%
Native American	67.9%	Female	57.3%
Asian	66.3%		
White	60.3%		
Hispanic	58.7%		
Two or More Ethnicities	50.5%		
		Economic Status	
		Not Low-Income	61.7%
		Low-Income	60.2%

Summary

The intent of this study was to examine CTE majors and determine if certain student groups were not performing as well as others. Related to employment and wages, the following areas are noteworthy.

- Black/African American students had poor outcomes, with lower persistence and completion metrics. Additionally, for those who did complete, there was no positive wage gain seen regardless of the relationship between their employment and field of study.
- Although Perkins data show graduated female students had higher employment rates, when also including those who left with “skill builder” credits, LaunchBoard data show their income was below that of male students (\$23, 993 to \$28,633) and fewer attained a living wage (57.3% to 64.5%).
- Hispanic students were found to be in low-wage jobs according to LaunchBoard data. They had the second lowest median wage among all Ethnic groups (\$24,859) and the second lowest percentage of attaining a living wage (58.7%).
- Students who were identified as low-income while enrolled continued to see lower income levels than their peers after leaving Shasta College, (with or without an award,) according to the median income and living wage LaunchBoard data.
- LaunchBoard data showed that students of two or more ethnicities had the lowest median wage among all Ethnic groups (\$21,039) and the lowest percentage of attaining a living wage (50.5%). In contrast, Perkins data revealed that those who graduated in this demographic saw the highest wage increase for those employed in job Very Close to their field of study.
- Less than half of unknown gender CTE students persisted from fall 2019 to spring 2020, indicating disproportionate impact. This also resulted in less of this population earning awards.

1. Key facts at www.cccco.edu.
2. 2019 population estimates under QuickFacts in www.census.gov.
3. Shasta College students who took at least one CTE course.
4. Advanced Search at <https://data.census.gov>
5. The bachelor's degree in Health Information Management is a CTE award but the program is small. For example, in 2019-20 there were 8 bachelor's degrees awarded compared to 908 associate's degrees and 652 certificates.
6. <https://laborcenter.berkeley.edu/low-wage-work-in-california/#>
7. https://misweb.cccco.edu/perkins/Core_Indicator_Reports/
8. <https://cteos.santarosa.edu/cteos-survey-home>
9. <https://www.calpassplus.org/Launchboard/SWP.aspx>