SOUTH CENTRAL COAST

TOP JOBS AND EQUITY ASSESSMENT

2025

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EXECUTIVE SUMMARY

Community colleges play a pivotal role in preparing the workforce for high-quality, middle-skill jobs, thanks to their accessibility, affordability, and partnerships with regional employers. This study highlights the opportunities for these institutions to address labor market demand and bridge equity gaps in the South Central Coast (SCC) region's workforce by aligning educational pathways with labor market needs. Specifically, this report identifies "Top Jobs" and examines the demographic disparities among workers in these jobs, as well as students in vocational programs designed to prepare them for these roles. The goal is to identify Top Jobs, as well as equity gaps in representation within both the workforce and educational pipeline, providing a foundation for targeted interventions.

Key Findings

Top Jobs

Across the South Central Coast region, there are 37 occupations that meet the criteria to be considered Top Jobs. Collectively, these Top Jobs:

- Accounted for nearly 80,000 jobs throughout the region in 2023

- Are projected to grow 5% through 2028

- Are projected to have nearly 7,000 annual job openings per year between 2023 and 2028

- Have typical entry-level wages of $37.80, which is above the SCC regional living wage of $25.12

- Span nine occupational sectors, with Health accounting for the most Top Jobs (9)

Race and Ethnicity

When analyzing race and ethnicity data for the SCC labor force, Top Jobs, and Top Job vocational programs, several trends emerge:

- Hispanic or Latinos are significantly underrepresented in 24 Top Jobs but only 6 Top Job vocational programs. However, they tend to be underrepresented in higher-paying Top Jobs.

  o Typical entry-level hourly wages for the 24 occupations where Hispanic or Latino workers are significantly underrepresented are $41.59, which is substantially higher compared to the 13 occupations in which Hispanic or Latino workers are well represented ($29.82).

    ▪ This discrepancy can partially be explained by the fact that Hispanic or Latino workers are underrepresented in high-paying occupations, such as *Registered Nurses (29-1141)* and *Police and Sheriff's Patrol Officers (33-3051)*.

    ▪ Conversely, Hispanic or Latino workers are well represented in lower-paying occupations, such as *First-Line Supervisors of Production and Operating Workers (51-1011)* and *Legal Support Workers, All Other (23-2099)*.

  o Though Hispanic or Latino students are significantly underrepresented in only 6 Top Job vocational programs, these students have substantially lower median annual earnings after exiting these programs compared to all students.

  o These wage differences are present only for Hispanic or Latino workers and students. Additional research would be required to better understand these earnings dynamics.

- Black or African Americans are significantly underrepresented in 22 Top Jobs but only 2 Top Job vocational programs.

- Asian or Pacific Islanders are significantly underrepresented in 18 Top Jobs but only 8 Top Job vocational programs.

Age

When examining age data, the following trends emerge:

- Pre-Career/College Age workers are significantly underrepresented in 33 of the 37 Top Jobs but are well represented in Top Job vocational programs. This is largely because regional community colleges generally serve a younger population.

- There are only four occupations in which at least three age groups are underrepresented: Legal Support Workers, All Other (23-2099), Paramedics (29-2043), First-Line Supervisors of Mechanics, Installers, and Repairers (49-1011), and Bus and Truck Mechanics and Diesel Engine Specialists (49-3031).

Sex and Gender

When examining sex and gender data, the following trends emerge:

- Women are significantly underrepresented in 23 of the 37 Top Jobs, but only 15 of the 44 Top Job vocational programs. These jobs and programs are concentrated in traditional trades such as construction, manufacturing, public safety, and transportation.
    - Female workers are primarily underrepresented in Advanced Transportation and Logistics (7), Energy, Construction and Utilities (6), and Public Safety (4) occupations
    - Female students are primarily underrepresented in Advanced Manufacturing (4), Energy, Construction, and Utilities (4), and Public Safety programs
    - Female students have substantially lower median annual earnings in Public Safety programs where they are significantly underrepresented, including Police Academy (2105.50) and Fire Technology (2133.00), compared to median annual earnings for all students in these programs.

- Male workers are underrepresented in 11 of the 37 Top Jobs but 17 of the 44 Top Job vocational programs. These jobs and programs are concentrated in the Health sector.
    - Male students have substantially lower median annual earnings in Health programs where they are significantly underrepresented, including Nursing (1230.00) and Registered Nursing (1230.10).

These findings have several implications for practice and further analysis. Though Hispanic or Latino workers have high employment rates nationally, their earnings tend to be lower compared to other demographic groups and they are more occupationally segregated than any other ethnic group.[1] Though most recommendations to address this problem focus on policy changes and labor standards enforcement[2], regional community colleges may be able to address occupational segregation by connecting Hispanic or Latino students to programs that lead to high wage jobs. Similar actions could also lead to higher representation of Black or African American and other underrepresented workers in these Top Jobs.[3]

Additionally, women are underrepresented in traditional trades such as construction, where wages tend to be higher and where work-based learning opportunities such as apprenticeships are prevalent. Regional community colleges could develop strategies to increase female participation in programs that train for these occupations, including providing supportive services such as mentoring, childcare, and transportation.[4]

Research underscores the significance of gender and cultural competence in healthcare, especially given the underrepresentation of men. Culturally competent care enables providers to understand and respect the cultural backgrounds of their patients, which is crucial for fostering trust, effective communication, and improved patient outcomes.[5]

Though the remainder of this report focuses on Top Jobs and a demographic analysis of the Top Jobs workforce and students in Top Job vocational programs, the South Central Coast Center of Excellence (SCC COE) plans to release a companion report that further explores strategies to address the equity gaps identified in this report.

[1] Carmen Sanchez Cumming, "Latino Workers Are Often Segregated into Bad Jobs, but a Strong U.S. Labor Movement Can Boost Job Quality and U.S. Economic Growth," Equitable Growth, last modified October 12, 2022, https://equitablegrowth.org/latino-workers-are-often-segregated-into-bad-jobs-but-a-strong-u-s-labor-movement-can-boost-job-quality-and-u-s-economic-growth/.
[2] Rebecca Dixon, "Racism and the Economy Focus on Employment: Occupational Segregation," Federal Reserve Bank of Minneapolis, accessed March 13, 2025, https://www.minneapolisfed.org/~/media/assets/events/2020/racism-and-the-economy-focus-on-employment/racism-and-the-economy-employment-proposal-dixon.pdf?la=en.
[3] "Occupational Segregation," Opportunity@Work, last modified September 4, 2023, https://opportunityatwork.org/our-solutions/stars-insights/occupational-segregation/.
[4] "Discover Apprenticeship: Women in Apprenticeship," Apprenticeship.gov, accessed March 14, 2025, https://www.apprenticeship.gov/sites/default/files/women-in-apprenticeship-fact-sheet_0.pdf.
[5] Salsberg E, Richwine C, Westergaard S, et al. Estimation and Comparison of Current and Future Racial/Ethnic Representation in the US Health Care Workforce. JAMA Netw Open. 2021;4(3):e213789. doi:10.1001/jamanetworkopen.2021.3789

INTRODUCTION

Community colleges are uniquely positioned to prepare workers for middle-skill jobs due to their accessibility, affordability, and connections with local employers and regional workforce development agencies. Bridging these foundational strengths with targeted research, this study aims to provide labor market data related to Top Jobs in the South Centra Coast (SCC) Region, as well as data related to equity gaps between these Top Jobs, the SCC Labor Force, and regional community college career education programs that train for these Top Jobs.

The purpose of this study is to:

- Identify good-paying, middle-skill jobs, hereafter referred to as "Top Jobs," that offer economic opportunity and career growth for SCC region residents

- Understand the current demographics (e.g., race/ethnicity, age, and sex and gender) of workers in these Top Jobs compared to the labor force overall

- Examine the demographic (e.g., race/ethnicity, age, and sex and gender[6]) composition of community college students in relation to workers in these jobs, hereafter referred to as "Top Job vocational programs."

Through a comparison of student demographics with workforce demographic data, this research has uncovered significant underrepresentation of workers in Top Jobs and students enrolled in Top Job vocational programs. This analysis provides valuable insights that can help regional community colleges and other workforce development stakeholders develop strategies to ensure that all students have equitable access to career pathways leading to economic mobility. By identifying underrepresentation of both workers in Top Jobs and students in related programs, community colleges can target their efforts to address the identified demographic gaps, potentially leading to more equitable representation in Top Jobs within the region.

> **Definitions for the purpose of this study:**
>
> - Significant underrepresentation in Top Jobs means that there is a statistically significant lower percentage of workers in Top Jobs in the region compared to the SCC labor force overall.
>
> - Significant underrepresentation in Top Job vocational programs means that there is a statistically significant lower percentage of students in programs that train for one or more of the Top Jobs compared to the SCC labor force overall.

Fundamentally, this report lays out to what extent specific groups of students and workers – by race/ethnicity, age, and sex and gender – are underrepresented at different points along the community college pathway to Top Jobs in the SCC region.

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[6] Since the inception of the American Community Survey in 2005, the United States Census Bureau has included a question about the sex of each person. In 2024, the Census Bureau developed proposed questions related to gender identity to be included on the 2027 version of the American Community Survey. As of March 2025, it is unclear if these questions will be included due to a change in administration. However, the California Community College Chancellor's Office categorizes student data by gender. For these reasons, this group is called sex and gender to recognize the different data collection and reporting methods from various agencies.
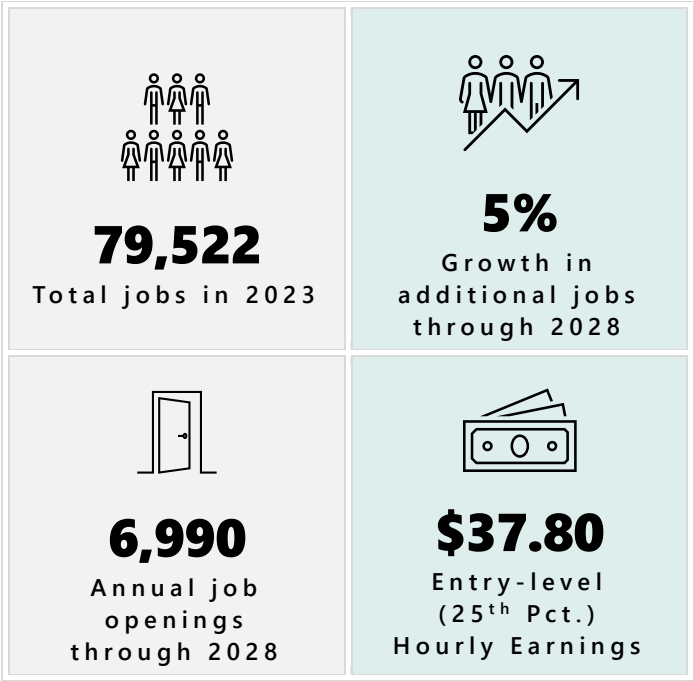
TOP JOBS IN THE SOUTH CENTRAL COAST REGION

For the purposes of this report, Top Jobs in the SCC region were identified based on the following criteria:

- **Middle skill**: occupations that typically require more than a high school diploma but less than a bachelor's degree

- **Demand**: at least 36 annual job openings, which is the median across all occupations, throughout the region from 2023 to 2028

- **Growth**: projected positive job growth through 2028 in the region

- **Living wage**: typical entry-level hourly earnings at or above the South Central Coast regional living wage of $25.12[7]

Middle-skill occupations, or those that typically require more than a high school diploma but less than a four-year degree, often represent opportunities for economic mobility for a broad range of students and residents.

The Top Jobs analyzed in this report are in-demand, growing, and offer competitive wages.
Based on the above criteria, 37 of the 798 occupations in the Standard Occupational Classification (SOC)[1] system met these criteria in the South Central Coast region. Collectively, these 37 Top Jobs were projected to grow 5% and offer nearly 7,000 annual job openings per year between 2023 and 2028.

79,522 Total jobs in 2023	**5%** Growth in additional jobs through 2028
6,990 Annual job openings through 2028	**$37.80** Entry-level (25th Pct.) Hourly Earnings

The 37 Top Jobs identified in this study span 10 occupational sectors, with the Health sector accounting for nine Top Jobs, the most of any sector. The Health sector also has the highest number of jobs (26,348), projected change in jobs (7%), annual job openings (2,057), and typical entry-level hourly wages ($44.80) of all sectors. Exhibit 1 shows the sectors represented by these 37 Top Jobs, sorted alphabetically by sector.

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[7] This report uses the University of Washington's Center for Women's Welfare Self-Sufficiency Standard (last updated in March 2024), which the COE refers to as a living wage. To determine the regional living wage, the SCC COE calculated the average living wage of all four counties (Northern Los Angeles, San Luis Obispo, Santa Barbara, and Ventura) in the region, weighted by the population of each area.

Exhibit 1: Top Job Sectors in the South Central Coast Region

Sector	# of Top Jobs	2023 Jobs	2028 Jobs	5-Year Change	5-Year % Change	Annual Openings	Entry-Level Hourly Wage
Advanced Manufacturing	2	3,467	3,559	92	3%	355	$26.44
Advanced Transportation & Logistics	7	9,565	9,997	433	5%	909	$31.14
Agriculture, Water & Environmental Technologies	1	334	341	7	2%	44	$25.37
Business & Entrepreneurship	4	17,752	18,501	749	4%	1,592	$37.02
Education & Human Development	1	446	466	21	5%	55	$34.45
Energy, Construction & Utilities	6	12,158	12,536	378	3%	1,156	$29.07
Health	9	26,348	28,266	1,917	7%	2,057	$44.80
Information and Communication Technologies (ICT)/Digital Media	1	799	817	18	2%	63	$27.84
Other	1	352	353	2	0%	39	$25.93
Public Safety	5	8,302	8,596	294	4%	722	$44.59
Total	**37**	**79,522**	**83,432**	**3,910**	**5%**	**6,990**	**$37.80**

Across all 37 Top Jobs, *Registered Nurses (29-1141)* accounted for the most jobs (16,745) and annual openings (1,169), while *Paramedics (29-2043)* is projected to grow the fastest (18%). *First-Line Supervisors of Police and Detectives (33-1012)* has the highest entry-level hourly wages ($65.88). Exhibit 2 lists the 37 occupations that met the Top Jobs definition for this study, sorted by occupational sector, then annual openings.

Exhibit 2: Top Jobs in South Central Coast Region

Sector	Occupation (SOC)	2023 Jobs	2028 Jobs	5-Year Change	5-Year % Change	Annual Openings	Entry-Level Hourly Wage
Adv. Manufacturing	First-Line Supervisors of Production and Operating Workers (51-1011)	2,791	2,877	87	3%	289	$25.53
	Engineering Technologists and Technicians, Except Drafters, All Other (17-3029)	676	682	6	1%	66	$30.16
Adv. Transportation and Logistics	First-Line Supervisors of Mechanics, Installers, and Repairers (49-1011)	2,880	2,972	92	3%	263	$30.44
	Logisticians (13-1081)	1,730	1,851	120	7%	167	$33.79
	Bus and Truck Mechanics and Diesel Engine Specialists (49-3031)	1,163	1,188	24	2%	106	$27.03
	Transportation, Storage, and Distribution Managers (11-3071)	1,170	1,206	35	3%	102	$35.47
	Mobile Heavy Equipment Mechanics, Except Engines (49-3042)	1,116	1,140	24	2%	101	$28.12
	Aircraft Mechanics and Service Technicians (49-3011)	978	1,056	78	8%	94	$28.85
	Commercial Pilots (53-2012)	527	585	58	11%	77	$36.38

Sector	Occupation (SOC)	2023 Jobs	2028 Jobs	5-Year Change	5-Year % Change	Annual Openings	Entry-Level Hourly Wage
Ag., Water and Env. Technologies	Forest and Conservation Technicians (19-4071)	334	341	7	2%	44	$25.37
Business and Entrepreneurship	General and Operations Managers (11-1021)	13,743	14,402	659	5%	1,250	$37.74
	Administrative Services Managers (11-3012)	1,728	1,760	31	2%	142	$39.03
	Cost Estimators (13-1051)	1,373	1,395	22	2%	121	$27.36
	Facilities Managers (11-3013)	908	944	37	4%	78	$36.96
Education and Human Development	Kindergarten Teachers, Except Special Education (25-2012)	446	466	21	5%	55	$34.45
Energy, Construction and Utilities	First-Line Supervisors of Construction Trades and Extraction Workers (47-1011)	4,292	4,413	121	3%	385	$30.57
	Electricians (47-2111)	3,889	4,044	154	4%	381	$25.28
	Operating Engineers and Other Construction Equipment Operators (47-2073)	2,192	2,261	69	3%	205	$28.93
	Construction and Building Inspectors (47-4011)	793	794	1	0%	94	$30.12
	Electrical Power-Line Installers and Repairers (49-9051)	604	637	32	5%	55	$41.01
	Civil Engineering Technologists and Technicians (17-3022)	388	388	0	0%	37	$30.47
Health	Registered Nurses (29-1141)	16,746	17,865	1,119	7%	1,169	$50.17
	Licensed Practical and Licensed Vocational Nurses (29-2061)	3,703	4,002	299	8%	356	$30.93
	Dental Hygienists (29-1292)	1,491	1,565	74	5%	123	$52.09
	Psychiatric Technicians (29-2053)	991	1,037	46	5%	96	$35.99
	Physical Therapist Assistants (31-2021)	531	616	85	16%	95	$33.12
	Radiologic Technologists and Technicians (29-2034)	1,029	1,103	74	7%	72	$33.92
	Paramedics (29-2043)	604	710	107	18%	52	$29.27
	Respiratory Therapists (29-1126)	644	715	71	11%	48	$39.41
	Surgical Technologists (29-2055)	610	653	43	7%	47	$27.39
ICT/ Digital Media	Web and Digital Interface Designers (15-1255)	799	817	18	2%	63	$27.84

Sector	Occupation (SOC)	2023 Jobs	2028 Jobs	5-Year Change	5-Year % Change	Annual Openings	Entry-Level Hourly Wage
Other	Legal Support Workers, All Other (23-2099)	352	353	2	0%	39	$25.93
Public Safety	Police and Sheriff's Patrol Officers (33-3051)	4,674	4,803	129	3%	405	$47.45
	Firefighters (33-2011)	1,847	1,934	87	5%	162	$31.52
	Public Safety Telecommunicators (43-5031)	493	524	31	6%	58	$31.21
	First-Line Supervisors of Police and Detectives (33-1012)	715	738	23	3%	55	$65.89
	First-Line Supervisors of Firefighting and Prevention Workers (33-1021)	573	597	24	4%	42	$48.32

To better understand potential equity gaps in the region, the remainder of this report analyzes demographic data for the SCC labor force, these 37 Top Jobs, and community college students enrolled in Top Job vocational programs that can lead to employment in these Top Jobs.

EQUITY ANALYSIS: SCC LABOR FORCE VS. TOP JOBS
South Central Coast Labor Force

This section compares the demographics of the SCC labor force to the demographics of workers in the 37 Top Jobs described in the previous section.[8] Exhibit 3 shows the race and ethnicity distribution for both the SCC labor force compared to the Top Jobs workforce.

The shares of white (52%) and Asian or Pacific Islander workers (9%) in Top Jobs are greater than their shares of the SCC labor force (44% and 6%, respectively). Conversely, the percentage of Hispanic or Latino (31%) workers in Top Jobs is substantially lower than the SCC labor force overall (42%). The shares of Black or African American (4.4%) and Other Race/Ethnicity workers (4.1%) in the Top Jobs workforce are comparable to the SCC labor force overall (4% each).

Exhibit 3: South Central Coast Labor Force and Top Jobs Workforce Race and Ethnicity Distribution

	Asian or Pacific Islander	Black or African American	Hispanic or Latino	White	Other Race/Ethnicity
SCC Labor Force	6%	4%	42%	44%	4%
Top Jobs Workforce	9%	4.4%	31%	52%	4.1%

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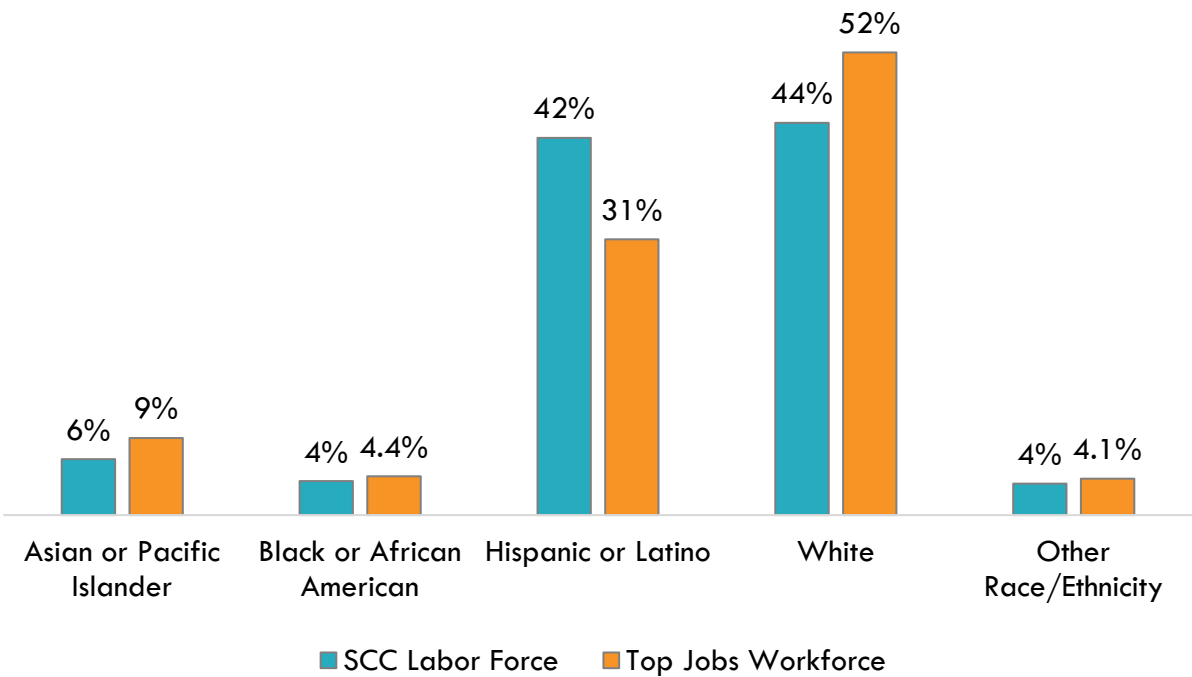
[8] Labor force is defined as individuals 16 years and older that are classified as either employed or unemployed, as defined by the federal Bureau of Labor Statistics. For more information, see: https://www.bls.gov/cps/definitions.htm#laborforce.

Exhibit 3 presents the age distribution for both SCC labor force participants as well as workers in Top Jobs. This report used groupings based on typical stages of progression through education, career, and retirement. Pre-Career/College Age (24 or younger) individuals make up 16% of the SCC Labor Force, but only 9% of the Top Jobs workforce. The percentages for all other groups are relatively similar to each other.

Exhibit 3: South Central Coast Labor Force and Top Jobs Workforce Age Category Distribution

	SCC Labor Force	Top Jobs Workforce
Pre-Career/College Age (24 or Younger)	16%	7%
Early Career (25-34)	22%	24%
Mid-Career (35-54)	30%	34%
Later Career/Retirement (55 and Older)	33%	34%
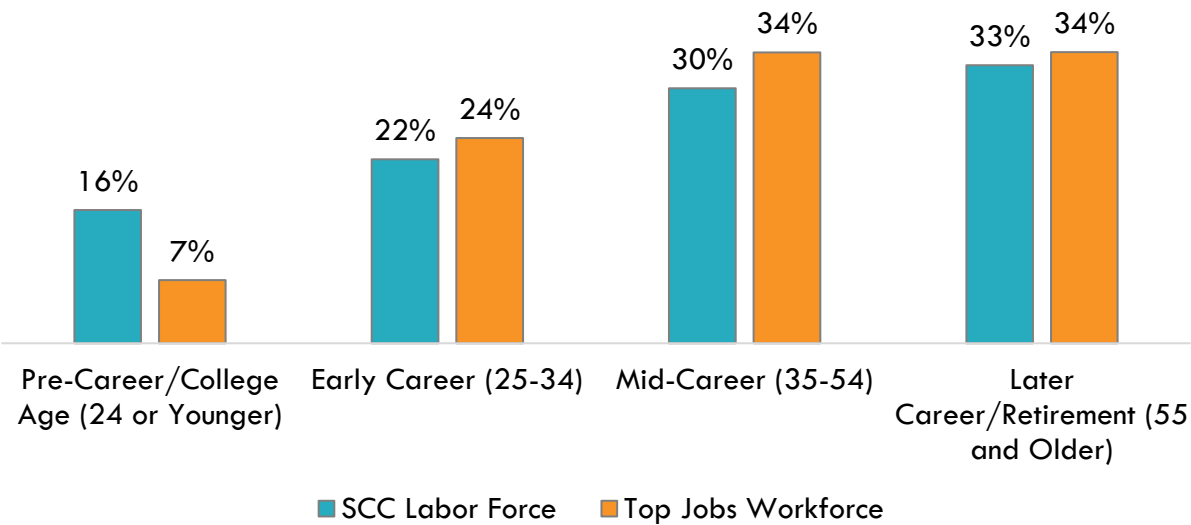
Exhibit 4 presents the sex and gender distribution for both SCC labor force participants as well as the Top Jobs workforce. The share of women in top jobs (43%) was slightly less when compared to the SCC labor force (45%). The share of male workers in top jobs (57%) was 2% greater than males in the SCC labor force (55%).

Exhibit 4: South Central Coast Labor Force and Top Jobs Workforce Sex and Gender Distribution

	SCC Labor Force	Top Jobs Workforce
Male	55%	57%
Female	45%	43%
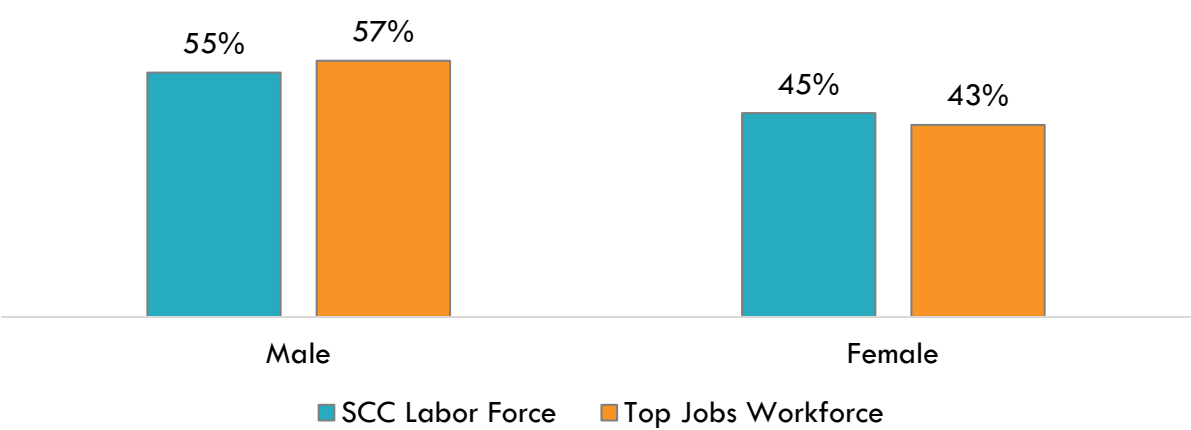
Exhibit 5 provides the number of Top Jobs in which workers from various demographic groups are highly underrepresented compared to SCC labor force participants. Notably, Pre-Career/College Age workers are significantly underrepresented in 33 Top Jobs, Hispanic or Latino workers are highly underrepresented in 24 Top Jobs, women in 23 Top Jobs, and Black or African American workers in 22 Top Jobs.

Exhibit 5: Top Jobs with Significant Underrepresentation

Demographic Category	Top Jobs with Underrepresentation
Hispanic or Latino	24
Black or African American	22
White	5
Asian or Pacific Islander	18
Other Race/Ethnicity	18
Females	23
Males	11
Pre-career/College (≤ 24)	33
Early career (25-34)	11
Mid-career (35-54)	8
Late career/retirement (55+)	12

The following sections will further examine the demographic groups that are highly underrepresented in these Top Jobs.

Race and Ethnicity

When examining race/ethnicity data for these 37 top jobs compared to the SCC labor force, Hispanic or Latino workers are underrepresented in the most Top Jobs (24), closely followed by Black or African American workers (22), Asian or Pacific Islander workers (18), and Other Race/Ethnicity workers (18). Notably, white workers are underrepresented in only five top jobs. Other findings for race/ethnicity gaps are listed in Exhibit 6.

Exhibit 6: Underrepresentation in Top Jobs by Race and Ethnicity

Hispanic or Latino
- Underrepresented in *24 Top Jobs* across 8 sectors
- Primarily underrepresented in Health (5) and Public Safety (5) occupations

Black or African American
- Underrepresented in *22 Top Jobs* across 8 sectors
- Primarily underrepresented in Energy, Construction, and Utilities (6) and Health (5) occupations

Asian or Pacific Islander
- Underrepresented in *18 Top Jobs* across 6 sectors
- Primarily underrepresented in Advanced Transportation and Logistics (6) and Energy, Construction, and Utilities (5) occupations

Other Race/Ethnicity
- Underrepresented in *18 Top Jobs* across 8 sectors
- Primarily underrepresented in Energy, Construction, and Utilities (5) and Public Safety (4) occupations

White
- Underrepresented in *5 Top Jobs* across 4 sectors
- Primarily underrepresented in Health (2) occupations

Notably, Hispanic or Latino workers are underrepresented in the most Top Jobs. Additionally, though all Top Jobs analyzed in this report have entry-level wages above the living wage, typically entry-level wages for the 24 occupations where Hispanic or Latino workers are highly underrepresented are substantially lower than the13 occupations in which Hispanic or Latino workers are well represented, indicating that Hispanic or Latino workers tend to be well represented in lower paying jobs and underrepresented in higher paying jobs.

This discrepancy can be attributed to the fact that Hispanic or Latino workers are significantly underrepresented in particularly high-paying occupations, including Health occupations such as *Respiratory Therapists (29-1126)* and *Registered Nurses (29-1141),* as well as Public Safety occupations such as *First-Line Supervisors of Police and Detectives (33-1012)* and *Police and Sheriff's Patrol Officers (33-3051).* Conversely, Hispanic or Latino workers are well represented in lower paying occupations such as *First-Line Supervisors of Production and Operating Workers (51-1011)* and *Legal Support Workers, All Other (23-2099).*

This discrepancy only exists for Hispanic or Latino workers. For all other groups, typical entry-level earnings are lower in occupations where they are highly underrepresented compared to occupations where they are well represented, as shown in Exhibit 7.

Exhibit 7: Entry-Level Wages for Significantly Underrepresented vs. Well Represented Occupations by Race/Ethnicity
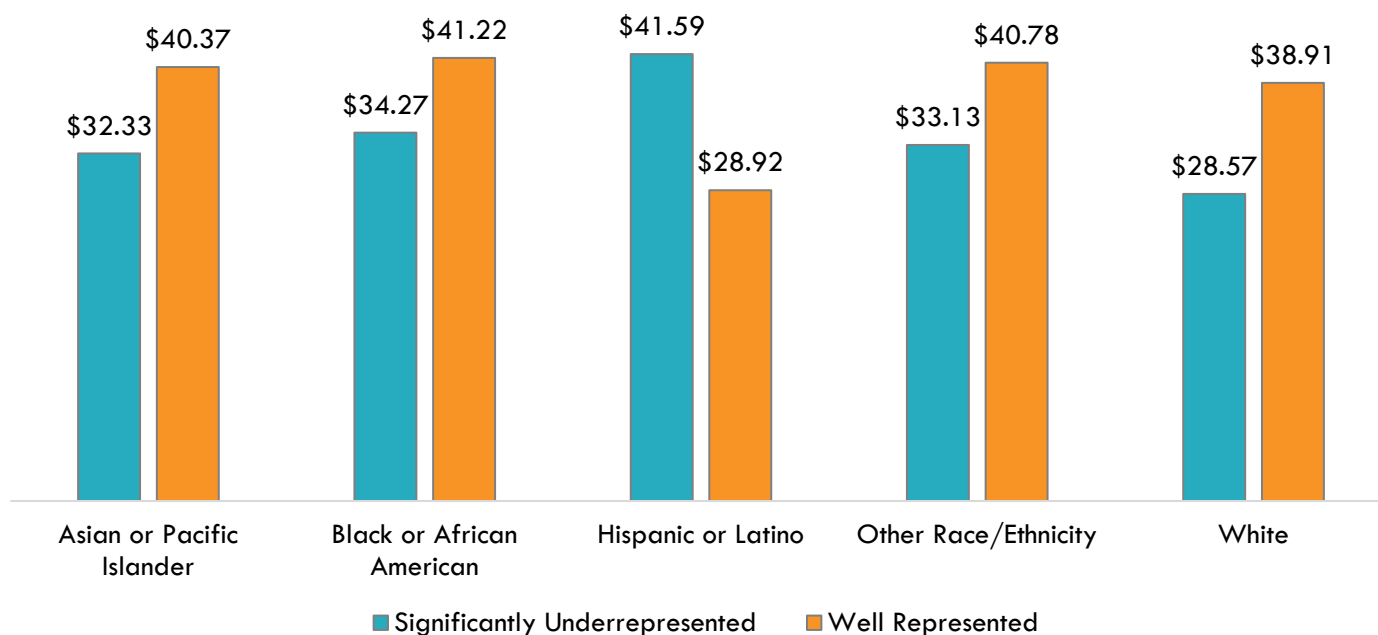
	Significantly Underrepresented	Well Represented
Asian or Pacific Islander	$32.33	$40.37
Black or African American	$34.27	$41.22
Hispanic or Latino	$41.59	$28.92
Other Race/Ethnicity	$33.13	$40.78
White	$28.57	$38.91

To better understand the top jobs for which multiple groups are underrepresented, Exhibit 8 shows all 37 Top Jobs and which race/ethnicity groups are significantly underrepresented. Notably, there are five Top Jobs for which four groups are underrepresented:

- *Administrative Services Managers (11-3012)*
- *Operating Engineers and Other Construction Equipment Operators (47-2073)*
- *Electrical Power-Line Installers and Repairers (49-9051)*
- *First-Line Supervisors of Firefighting and Prevention Workers (33-1021)*
- *Public Safety Telecommunicators (43-5031)*

For all five occupations, white workers are the only group that are not significantly underrepresented.

Exhibit 8: Top Jobs with Significant Underrepresentation

Sector	SOC	Occupation	Asian or Pacific Islander	Black or African American	Hispanic	Other Race/ Ethnicity	White
Adv. Manufacturing	17-3029	Engineering Technologists and Technicians, Except Drafters, All Other		X	X	X	
	51-1011	First-Line Supervisors of Production and Operating Workers				X	X
Adv. Transportation and Logistics	11-3071	Transportation, Storage, and Distribution Managers	X	X	X		
	13-1081	Logisticians			X	X	
	49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	X			X	
	49-3011	Aircraft Mechanics and Service Technicians	X				
	49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	X	X			X
	49-3042	Mobile Heavy Equipment Mechanics, Except Engines	X	X			
	53-2012	Commercial Pilots	X	X	X		
Ag., Water & Env. Technologies	19-4071	Forest and Conservation Technicians			X	X	
Business and Entrepreneurship	11-1021	General and Operations Managers		X	X		
	11-3012	Administrative Services Managers	X	X	X	X	
	11-3013	Facilities Managers	X		X	X	
	13-1051	Cost Estimators			X		
Education and Human Development	25-2012	Kindergarten Teachers, Except Special Education	X				
Energy, Construction and Utilities	17-3022	Civil Engineering Technologists and Technicians		X	X	X	
	47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	X	X		X	
	47-2073	Operating Engineers and Other Construction Equipment Operators	X	X	X	X	
	47-2111	Electricians	X	X		X	
	47-4011	Construction and Building Inspectors	X	X	X		

Sector	SOC	Occupation	Asian or Pacific Islander	Black or African American	Hispanic	Other Race/ Ethnicity	White
	49-9051	Electrical Power-Line Installers and Repairers	X	X	X	X	
Health	29-1126	Respiratory Therapists			X		
	29-1141	Registered Nurses			X		
	29-1292	Dental Hygienists		X	X		
	29-2034	Radiologic Technologists and Technicians		X			
	29-2043	Paramedics		X	X		
	29-2053	Psychiatric Technicians	X	X	X		
	29-2055	Surgical Technologists				X	
	29-2061	Licensed Practical and Licensed Vocational Nurses					X
	31-2021	Physical Therapist Assistants		X			X
ICT/ Digital Media	15-1255	Web and Digital Interface Designers		X	X		
Other	23-2099	Legal Support Workers, All Other		X		X	X
Public Safety	33-1012	First-Line Supervisors of Police and Detectives	X		X		
	33-1021	First-Line Supervisors of Firefighting and Prevention Workers	X	X	X	X	
	33-2011	Firefighters			X	X	
	33-3051	Police and Sheriff's Patrol Officers			X	X	
	43-5031	Public Safety Telecommunicators	X	X	X	X	

Age

When examining age data for these 37 top jobs compared to the SCC Region labor force, Pre-Career/College Age workers are significantly underrepresented in 33 of the 37 Top Jobs. There are only four occupations for which Pre-Career/College Age workers are well represented:

- *Forest and Conservation Technicians (19-4071)*
- *Psychiatric Technicians (29-2053)*
- *Physical Therapist Assistants (31-2021)*
- *Police and Sheriff's Patrol Officers (33-3051)*

Other findings for age gaps are listed below in Exhibit 9.

Exhibit 9: Underrepresentation in Top Jobs by Age

Pre-Career/College Age (24 or Younger)

- Underrepresented in **33 Top Jobs** across 9 sectors
- Primarily underepresented in Advanced Transportation and Logistics (7), Health (7), and Energy, Construction, and Utilities (6) occupations

Early Career (25 - 34)

- Underrepresented in **11 Top Jobs** across 6 sectors
- Primarily underrepresented in Advanced Transportation and Logistics (3) and Business and Entrepreneurship (3) occupations

Mid-Career (35 - 54)

- Underrepresented in **8 Top Jobs** across 5 sectors
- Primarily underrepresented in Health (3) occupations

Later Career/Retirement (55 and Older)

- Underrepresented in **12 Top Jobs** across 6 sectors
- Primarily underrepresented in Health (5) and Public Safety (3) occupations

To better understand the top jobs for which multiple groups are underrepresented, Exhibit 10 shows all 37 top jobs and which age groups are significantly underrepresented. There are only four occupations in which at least three age groups are underrepresented:

- *First-Line Supervisors of Mechanics, Installers, and Repairers (49-1011)*
- *Bus and Truck Mechanics and Diesel Engine Specialists (49-3031)*
- *Paramedics (29-2043)*
- *Legal Support Workers, All Other (23-2099)*

Exhibit 10: Top Jobs with Significant Underrepresentation by Age

Sector	SOC	Occupation	Early Career	Later Career/ Retirement	Mid-Career	Pre-Career/ College Age
Adv. Manufacturing	17-3029	Engineering Technologists and Technicians, Except Drafters, All Other			X	X
Adv. Manufacturing	51-1011	First-Line Supervisors of Production and Operating Workers				X
Adv. Transportation and Logistics	11-3071	Transportation, Storage, and Distribution Managers	X			X
Adv. Transportation and Logistics	13-1081	Logisticians				X
Adv. Transportation and Logistics	49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	X		X	X
Adv. Transportation and Logistics	49-3011	Aircraft Mechanics and Service Technicians				X
Adv. Transportation and Logistics	49-3031	Bus and Truck Mechanics and Diesel Engine Specialists		X	X	X
Adv. Transportation and Logistics	49-3042	Mobile Heavy Equipment Mechanics, Except Engines				X
Adv. Transportation and Logistics	53-2012	Commercial Pilots	X			X
Ag., Water and Env. Technologies	19-4071	Forest and Conservation Technicians		X	X	
Business and Entrepreneurship	11-1021	General and Operations Managers	X			X
Business and Entrepreneurship	11-3012	Administrative Services Managers	X			X
Business and Entrepreneurship	11-3013	Facilities Managers	X			X
Business and Entrepreneurship	13-1051	Cost Estimators				X
Education and Human Development	25-2012	Kindergarten Teachers, Except Special Education				X

Sector	SOC	Occupation	Early Career	Later Career/ Retirement	Mid-Career	Pre-Career/ College Age
Energy, Construction and Utilities	17-3022	Civil Engineering Technologists and Technicians			X	X
	47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	X			X
	47-2073	Operating Engineers and Other Construction Equipment Operators				X
	47-2111	Electricians				X
	47-4011	Construction and Building Inspectors				X
	49-9051	Electrical Power-Line Installers and Repairers				X
Health	29-1126	Respiratory Therapists	X			X
	29-1141	Registered Nurses				X
	29-1292	Dental Hygienists			X	X
	29-2034	Radiologic Technologists and Technicians		X		X
	29-2043	Paramedics		X	X	X
	29-2053	Psychiatric Technicians		X		
	29-2055	Surgical Technologists		X		X
	29-2061	Licensed Practical and Licensed Vocational Nurses				X
	31-2021	Physical Therapist Assistants		X	X	
ICT/ Digital Media	15-1255	Web and Digital Interface Designers		X		X
Other	23-2099	Legal Support Workers, All Other	X	X		X
Public Safety	33-1012	First-Line Supervisors of Police and Detectives	X			X
	33-1021	First-Line Supervisors of Firefighting and Prevention Workers	X			X
	33-2011	Firefighters		X		X
	33-3051	Police and Sheriff's Patrol Officers		X		
	43-5031	Public Safety Telecommunicators		X		X

Sex and Gender

Female workers are significantly underrepresented in 23 of the 37 Top Jobs. Top Jobs in which female worker are underrepresented span 6 of the 12 sectors as classified by the California Community College's Chancellor's Office. The majority of these 23 jobs are concentrated in three main sectors: Advanced Transportation and Logistics Occupations (7 jobs); Energy, Construction and Utilities Occupations (6 jobs); and Public Safety Occupations (4 jobs).

Exhibit 11: Underrepresentation in Top Jobs by Sex and Gender

Female

- Underrepresented in *23 Top Jobs* across 6 sectors
- Primarily underrepresented in Advanced Transportation and Logistics (7), Energy, Construction and Utilities (6), and Public Safety (4) occupations

Male

- Underrepresented in *11 Top Jobs* across 6 sectors
- Primarily underrepresented in Health (6) occupations

Conversely, male workers are underrepresented in only 11 of the 37 top jobs. Exhibit 12 outlines this disparity, grouping by sector and specific jobs where female and male workers are significantly underrepresented.

Exhibit 12: Top Jobs with Significant Underrepresentation by Sex and Gender

Sector	SOC	Occupation	Female	Male
Adv. Manufacturing	17-3029	Engineering Technologists and Technicians, Except Drafters, All Other	X	
	51-1011	First-Line Supervisors of Production and Operating Workers	X	
Adv. Transportation and Logistics	11-3071	Transportation, Storage, and Distribution Managers	X	
	13-1081	Logisticians	X	
	49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	X	
	49-3011	Aircraft Mechanics and Service Technicians	X	
	49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	X	
	49-3042	Mobile Heavy Equipment Mechanics, Except Engines	X	
	53-2012	Commercial Pilots	X	
Ag., Water and Env. Technologies	19-4071	Forest and Conservation Technicians		X

Sector	SOC	Occupation	Female	Male
Business and Entrepreneurship	11-1021	General and Operations Managers	X	
	11-3012	Administrative Services Managers		X
	11-3013	Facilities Managers	X	
	13-1051	Cost Estimators	X	
Education and Human Development	25-2012	Kindergarten Teachers, Except Special Education		X
Energy, Construction and Utilities	17-3022	Civil Engineering Technologists and Technicians	X	
	47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	X	
	47-2073	Operating Engineers and Other Construction Equipment Operators	X	
	47-2111	Electricians	X	
	47-4011	Construction and Building Inspectors	X	
	49-9051	Electrical Power-Line Installers and Repairers	X	
Health	29-1141	Registered Nurses		X
	29-1292	Dental Hygienists		X
	29-2043	Paramedics	X	
	29-2053	Psychiatric Technicians		X
	29-2055	Surgical Technologists		X
	29-2061	Licensed Practical and Licensed Vocational Nurses		X
	31-2021	Physical Therapist Assistants		X
Other	23-2099	Legal Support Workers, All Other		X
Public Safety	33-1012	First-Line Supervisors of Police and Detectives	X	
	33-1021	First-Line Supervisors of Firefighting and Prevention Workers	X	
	33-2011	Firefighters	X	
	33-3051	Police and Sheriff's Patrol Officers	X	
	43-5031	Public Safety Telecommunicators		X

TOP JOB VOCATIONAL PROGRAMS

This study identified 44 vocational programs offered by community colleges in the SCC region that that prepare students for the Top Jobs identified in this study and had student enrollment in 2022-23.[9] Exhibit 13 displays the 44 Top Job vocational programs grouped by the sectors established by the California Community College Chancellor's Office.[10]

The Health sector accounted for the highest number of programs (8), followed by Business and Entrepreneurship (6), Energy, Construction, and Utilities (6), and Public Safety (6).

Exhibit 13: Top Jobs Vocational Programs in South Central Coast Region

Advanced Manufacturing

- Aeronautical and Aviation Technology (0950.00)
- Aircraft Fabrication (0950.50)
- Electronics and Electric Technology (0934.00)
- Engineering Technology, General (requires Trigonometry) (0924.00)

Advanced Transportation and Logistics

- Aviation Powerplant Mechanics (0950.20)
- Diesel Technology (0947.00)

Business and Entrepreneurship

- Banking and Finance (0504.00)
- Business Administration (0505.00)
- Business and Commerce, General (0501.00)
- Business Management (0506.00)
- Management Development and Supervision (0506.30)
- Small Business and Entrepreneurship (0506.40)

Education and Human Development

- Child Development/Early Care and Education (1305.00)
- Infants and Toddlers (1305.90)
- Preschool Age Children (1305.40)
- The School Age Child (1305.50)

Energy, Construction and Utilities

- Architecture and Architectural Technology (0201.00)
- Carpentry (0952.10)
- Civil and Construction Management Technology (0957.00)
- Construction Crafts Technology (0952.00)
- Construction Inspection (0957.20)
- Electrical (0952.20)

Health

- Dental Hygienist (1240.20)
- Licensed Vocational Nursing (1230.20)
- Nursing (1230.00)
- Paramedic (1251.00)
- Psychiatric Technician (1239.00)
- Radiologic Technology (1225.00)
- Registered Nursing (1230.10)
- Respiratory Care/Therapy (1210.00)

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[9] Student data was sourced from DataVista, a data and metrics platform from the California Community Colleges Chancellor's Office.
[10] California Community Colleges Chancellor's Office. (n.d.). CTE TOP Codes to Sectors. https://datavista.cccco.edu/resources/8.

ICT/Digital Media

- Computer Programming (0707.10)
- Computer Software Development (0707.00)
- Digital Media (0614.00)
- Software Applications (0702.10)
- Website Design and Development (0614.30)

Public Safety

- Administration of Justice (2105.00)
- Corrections (2105.10)
- Fire Academy (2133.50)
- Fire Technology (2133.00)
- Police Academy (2105.50)
- Wildland Fire Technology (2133.10)

Retail, Hospitality and Tourism

- Office Management (0514.40)
- Retail Store Operations and Management (0506.50)

Unassigned

- Paralegal (1402.00)

EQUITY ANALYSIS: SCC LABOR FORCE, TOP JOBS, AND TOP JOB VOCATIONAL PROGRAMS

The following section provides a detailed examination of the representation of students by key demographic categories, including race/ethnicity, age, and sex and gender, and age compared to the SCC labor force. The charts and narrative highlight significant underrepresentation within these categories across the identified programs. These insights are crucial for understanding how different student populations are participating in vocational programs, providing a basis for targeted interventions aimed at addressing equity gaps and ensuring all students have access to programs leading to Top Jobs.

During the academic year 2022, the community colleges in the South Central Coast region enrolled over 75,000 students into community college career technical education programs. Due to the release timing of program and student data, this study was confined to the 2022-23 academic year.

To assess equitable representation, its essential to examine how closely student demographics in Top Job vocational programs align with those of the SCC labor force. Exhibit 15, shows college programs are enrolling a significantly higher share of Hispanic or Latino students in Top Job vocational programs (49%) compared to the share of Hispanic or Latinos in the both the SCC labor force (42%) and Top Jobs workforce (31%).

White students (28%) made up a smaller share of students in Top Job vocational programs as compared to both white individuals in the SCC labor force (44%) and Top Jobs workforce (52%). A slightly smaller share of Asian or Pacific Islander (5%) students were enrolled in community college Top Job vocational programs as compared to Asian (6%) individuals in the South Central Coast labor force.

Exhibit 14: Race/Ethnicity of Students Enrolled in Top Job Vocational Programs
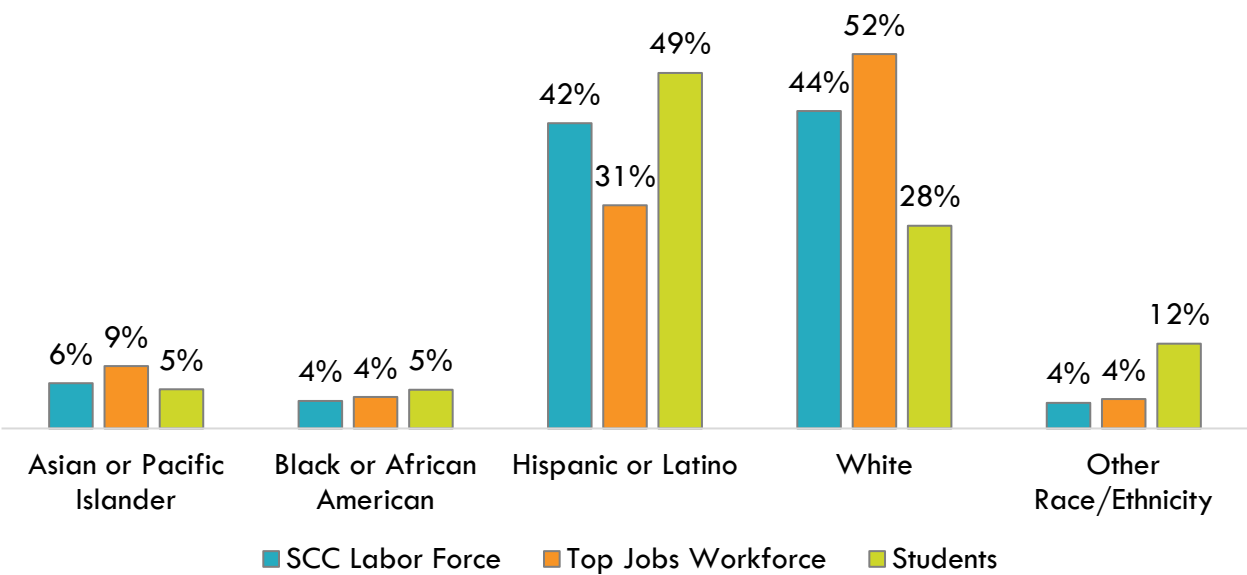
Exhibit 15 presents the age distribution for students enrolled in Top Job vocational programs, individuals in the SCC labor force and workers in top jobs. For the ease of analyzing and comparing the age of each population data is grouped based on typical stages of progression through education and career.

The percentage of Pre-career/College (24 or younger) students enrolled in Top Job vocational programs (47%) is significantly higher than the share of Pre-career/College (24 or younger) individuals in the SCC labor force (16%) and workers in Top Jobs (7%). The share of Early Career (25-34) students (22%), individuals in the SCC labor force (22%), and workers in Top Jobs (24%) are similar to each other. Conversely, the share of mid-career (35 – 54) individuals in the SCC labor force (30%) and workers in top jobs (34%) is significantly greater than mid-career (35 – 54) students enrolled in Top Job vocational programs (21%).

Exhibit 15: Age Category of Students Enrolled in Top Job Vocational Programs
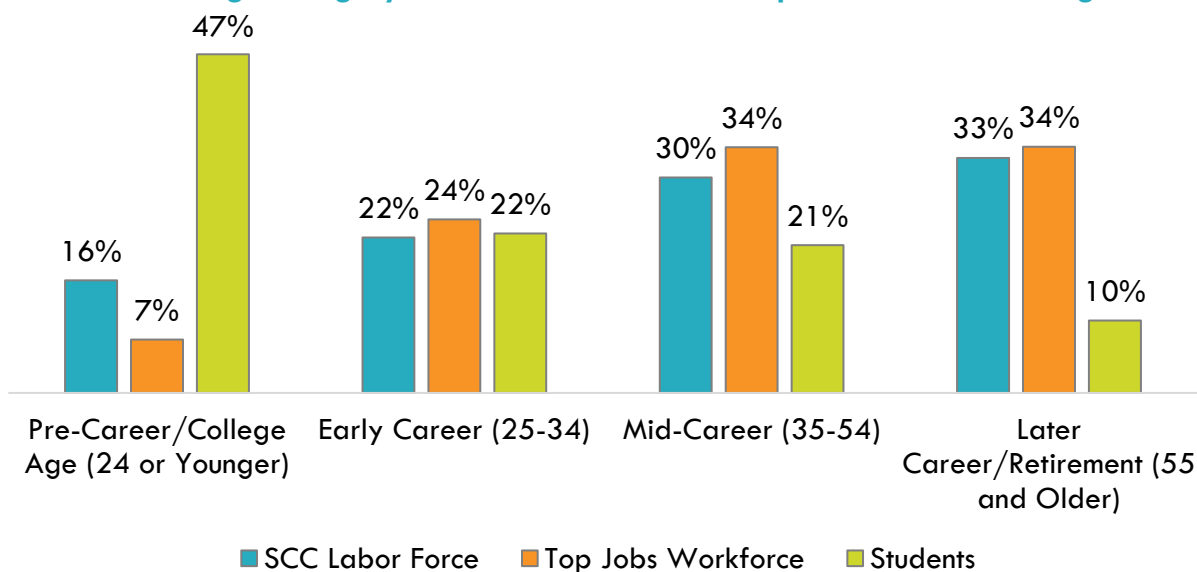
Exhibit 16 shows the sex and gender distribution for students enrolled in Top Job vocational programs, individuals in the SCC labor force and workers in Top Jobs. The share of female students enrolled in Top Job vocational programs (44%) is similar to the share of female workers in top jobs (43%) and female SCC labor force participants (45%). A similar trend exists for male students (56%), workers (57%), and SCC labor force participants (55%).

Exhibit 16: Sex and Gender of Students Enrolled in TJ Vocational Programs
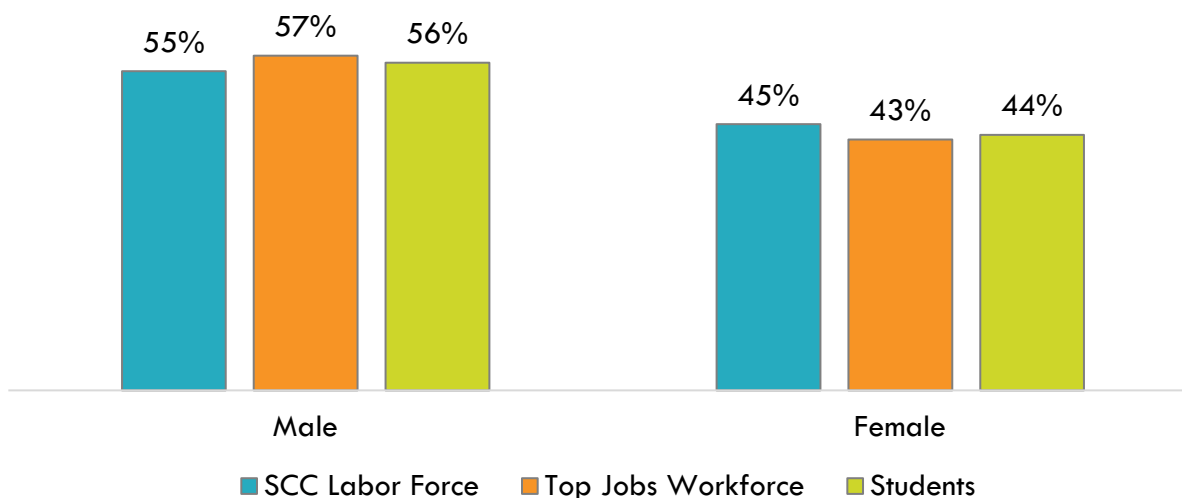
Exhibit 17 provides the number of Top Job vocational programs with significant underrepresentation in each of the demographic categories as compared to workers in Top Jobs. At least one demographic group is significantly underrepresented in 86% (38) of these 44 Top Job vocational programs.

Exhibit 17: Top Job Vocational Programs with Significant Underrepresentation

Demographic Category	Top Jobs Vocational Programs with Underrepresentation
Hispanic or Latino	6
Black or African American	2
White	31
Asian or Pacific Islander	8
Females	15
Males	17
Pre-career/College (≤ 24)	1
Early career (25-34)	7
Mid-career (35 - 54)	25
Late career/retirement (55+)	26

Race and Ethnicity

In contrast to the Top Jobs data analyzed in the previous sections, Hispanic or Latino students are well represented across most Top Job vocational programs and are significantly underrepresented in only six programs. Similarly, Black or African American students are significantly underrepresented in only two Top Job vocational programs. Conversely, white students are significantly underrepresented in 31 Top Job vocational programs. This analysis suggests that regional community colleges serve a more diverse set of individuals when compared to the overall SCC labor force and the Top Jobs workforce. Exhibit 18 shows other findings for race/ethnicity in Top Job vocational programs.

Exhibit 18: Underrepresentation in Top Job Vocational Programs by Race and Ethnicity

White

- Underrepresented in **31 Top Job vocational programs** across 9 sectors
- Primarily underrepresented in Health (6) and Business and Entrepreneurship (6) programs

Asian or Pacific Islander

- Underrepresented in **8 Top Job vocational programs** across 6 sectors
- Primarily underrperesented in Business and Entrepreneurship (2) and Public Safety (2) programs

Hispanic or Latino

- Underrepresented in **6 Top Job vocational programs** across 6 sectors
- Primarily underrepresented in Business and Entrepreneurship (2) programs

Black or African American

- Underrepresented in **2 Top Job vocational programs** 2 sectors
- Underrepresented in Health (1) and Public Safety (1) programs

Other Race/Ethnicity

- Not underrepresented in any Top Job vocational programs

Additionally, earnings outcomes for students vary. Analyzing data on median annual earnings after exiting shows that Hispanic or Latino students have substantially lower earnings after exiting programs where they are significantly underrepresented. This discrepancy only exists for Hispanic or Latino students. Most notably, Hispanic or Latino students make $72,000 less after exiting Fire Technology programs when compared to all students in these programs. There is only one program — Paramedic (1251.00) — in which Hispanic or Latino students are underrepresented but have higher median annual earnings after exiting when compared to all students. However, the difference is only about $1,500. Additional research would be needed to further understand the underlying reasons for these discrepancies.

Median annual earnings after exiting for the Top Job vocational programs with significant Hispanic or Latino underrepresentation are shown in Exhibit 19.

Exhibit 19: Median Annual Earnings After Exiting for Top Job Vocational Programs with Significant Hispanic or Latino Underrepresentation

Program	All Students	Hispanic or Latino Students
Fire Technology - 2133.00	$134,080	$61,992
Management Development and Supervision - 0506.30	$61,308	$44,532
Paramedic - 1251.00	$59,878	$61,420
Construction Crafts Technology - 0952.00	$47,736	$45,464
Computer Software Development - 0707.00	$37,864	$28,412
Banking and Finance - 0504.00	$32,858	$30,340
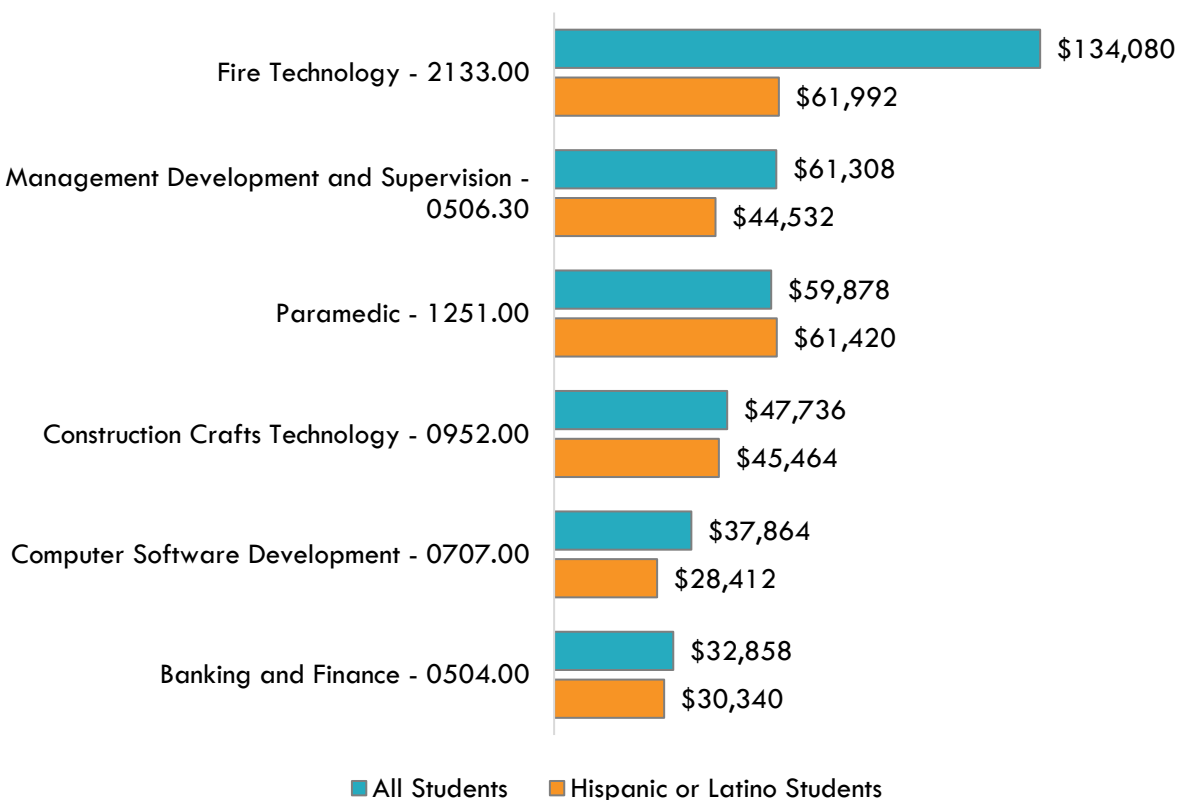
In the South Central Coast region, though white individuals constitute 44% of the labor force and account for 52% of workers in top jobs, they represent only 28% of the students enrolled in community college programs during the academic year 2022-23 and are significantly underrepresented in 31 of the 44 Top Job vocational programs. Compared to all students, white students have generally higher median annual earnings after exiting compared to all students regardless of whether they are significantly underrepresented or well represented.

Exhibit 20 outlines the 33 programs, which span 9 of the 12 CCCCO sectors. The highest number of programs are in Health (7 programs) and Business and Entrepreneurship (6 programs).

Exhibit 20: Top Job Vocational Programs with Significant Underrepresentation by Race and Ethnicity

Sector	Program - TOP	Asian or Pacific Islander	Black or African American	Hispanic	Other Race/Ethnicity	White
Adv. Manufacturing	Aeronautical and Aviation Technology – 0950.00					X
	Aircraft Fabrication – 0950.50	X				X
	Electronics and Electric Technology – 0934.00					X
	Engineering Technology, General (requires Trigonometry) – 0924.00					X

Sector	Program - TOP	Asian or Pacific Islander	Black or African American	Hispanic	Other Race/Ethnicity	White
Business and Entrepreneurship	Banking and Finance – 0504.00	X		X		X
	Business Administration – 0505.00	X				X
	Business and Commerce, General – 0501.00					X
	Business Management – 0506.00					X
	Management Development and Supervision – 0506.30			X		X
	Small Business and Entrepreneurship – 0506.40					X
Education and Human Development	Child Development/Early Care and Education – 1305.00	X				X
	Infants and Toddlers – 1305.90					X
	Preschool Age Children – 1305.40					X
Energy, Construction and Utilities	Civil and Construction Management Technology – 0957.00					X
	Construction Crafts Technology – 0952.00			X		X
	Electrical – 0952.20					X
Health	Dental Hygienist – 1240.20					X
	Licensed Vocational Nursing – 1230.20					X
	Nursing – 1230.00					X
	Paramedic – 1251.00			X		
	Psychiatric Technician – 1239.00					X
	Radiologic Technology – 1225.00					X
	Registered Nursing – 1230.10		X			X
ICT/Digital Media	Computer Programming – 0707.10					X
	Computer Software Development – 0707.00			X		X
	Digital Media – 0614.00	X				X
	Software Applications – 0702.10					X
	Website Design and Development – 0614.30					X

Sector	Program - TOP	Asian or Pacific Islander	Black or African American	Hispanic	Other Race/Ethnicity	White
Public Safety	Administration of Justice – 2105.00	X				X
	Fire Technology – 2133.00	X	X	X		
	Police Academy – 2105.50					X
Retail, Hospitality and Tourism	Office Management – 0514.40					X
Unassigned	Paralegal – 1402.00	X				X

Age

In the SCC region, Mid-Career (35-54) individuals constitute 30% of the labor force and account for 34% of workers in Top Jobs but represented 21% of the students enrolled in community college programs during the 2022-23 academic year and are significantly underrepresented in 25 of the 44 Top Job vocational programs. Generally, Mid-Career and Later Career/Retirement age students are underrepresented in the most Top Job vocational programs because community colleges typically serve a younger audience. Exhibit 21 shows other findings for age in Top Job vocational programs.

Exhibit 21: Underrepresentation in Top Job Vocational Programs by Age

Pre-Career/College Age (24 or Younger)

• Underrepresented in *1 Top Job vocational program,* which is in the Public Safety sector

Early Career (25 - 34)

• Underrepresented in *7 Top Job vocational programs* across 1 sectors
• Primarily underrepresented in Business and Entrepreneurship (3) programs

Mid-Career (35 - 54)

• Underrepresented in *25 Top Job vocational programs* across 8 sectors
• Primarily underrepresented in Business and Entrepreneurship (5) and Health (5) programs

Later Career/Retirement (55 and Older)

• Underrepresented in *26 Top Job vocational programs* across 9 sectors
• Primarily underrepresented in Business and Entrepreneurship (6) and ICT/Digital Media (5) programs

Exhibit 22 outlines the 32 Top Job vocational programs where at least one age group is underrepresented. These programs span 9 of the 12 CCCCO Sectors, with most of the programs concentrated in Business and Entrepreneurship (6), Health (5), and ICT/Digital Media (5).

<p style="text-align:center; color:#1A9CB0;">Exhibit 22: Top Job Vocational Programs with
Significant Underrepresentation by Age</p>

Sector	Program - TOP	Early Career	Later Career/ Retirement	Mid-Career	Pre-Career/ College Age
Adv. Manufacturing	Aeronautical and Aviation Technology – 0950.00			X	
Adv. Manufacturing	Aircraft Fabrication – 0950.50		X	X	
Adv. Manufacturing	Electronics and Electric Technology – 0934.00		X	X	
Adv. Manufacturing	Engineering Technology, General (requires Trigonometry) – 0924.00	X	X	X	
Business and Entrepreneurship	Banking and Finance – 0504.00	X	X	X	
Business and Entrepreneurship	Business Administration – 0505.00	X	X	X	
Business and Entrepreneurship	Business and Commerce, General – 0501.00	X	X	X	
Business and Entrepreneurship	Business Management – 0506.00		X	X	
Business and Entrepreneurship	Management Development and Supervision – 0506.30		X		
Business and Entrepreneurship	Small Business and Entrepreneurship – 0506.40		X	X	
Education and Human Development	Child Development/Early Care and Education – 1305.00		X	X	
Education and Human Development	Infants and Toddlers – 1305.90		X		
Education and Human Development	Preschool Age Children – 1305.40		X		
Energy, Construction and Utilities	Civil and Construction Management Technology – 0957.00		X	X	
Energy, Construction and Utilities	Construction Crafts Technology – 0952.00		X	X	
Energy, Construction and Utilities	Electrical – 0952.20		X	X	
Health	Licensed Vocational Nursing – 1230.20			X	
Health	Nursing – 1230.00			X	
Health	Paramedic – 1251.00			X	
Health	Radiologic Technology – 1225.00			X	
Health	Registered Nursing – 1230.10		X	X	

Sector	Program - TOP	Early Career	Later Career/ Retirement	Mid-Career	Pre-Career/ College Age
ICT/ Digital Media	Computer Programming – 0707.10	X	X	X	
	Computer Software Development – 0707.00		X	X	
	Digital Media – 0614.00	X	X	X	
	Software Applications – 0702.10		X	X	
	Website Design and Development – 0614.30		X		
Public Safety	Administration of Justice – 2105.00	X	X	X	
	Fire Technology – 2133.00		X		
	Police Academy – 2105.50		X		X
	Wildland Fire Technology – 2133.10			X	
Retail, Hospitality and Tourism	Office Management – 0514.40		X	X	
Unassigned	Paralegal – 1402.00		X		

Sex and Gender

In the SCC region, female individuals constitute 45% of the labor force, account for 43% of workers in Top Jobs, represent 44% of students in Top Job vocational programs during the 2022-23 academic year, and are significantly underrepresented in 15 of the 44 Top Jobs Vocational Programs. Notably, female students are significantly underrepresented in Advanced Manufacturing (4), Energy, Construction, and Utilities (4), and Public Safety programs. Exhibit 23 shows other findings for sex and gender in Top Job vocational programs.

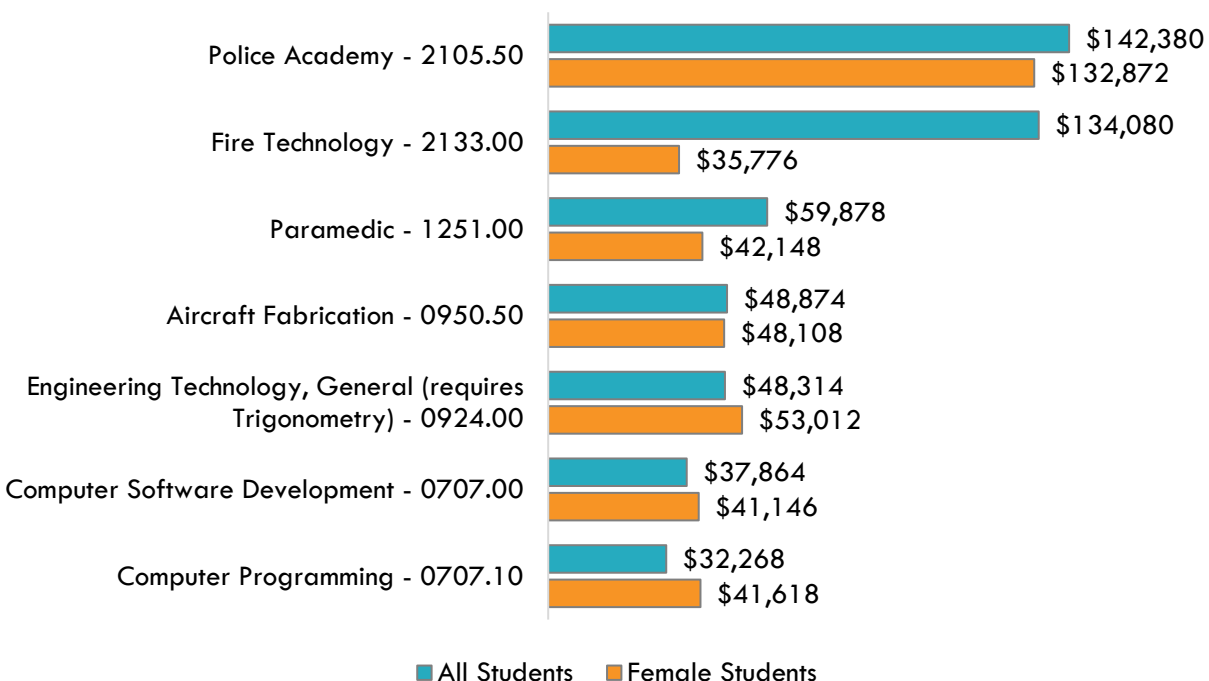**Exhibit 23: Underrepresentation in Top Job Vocational Programs by Sex and Gender**

Male

- Underrepresented in *17 Top Job vocational programs* across 7 sectors
- Primarily underrepresented in Health (7) programs

Female

- Underrepresented in *15 Top Job vocational programs* across 6 sectors
- Primarily underrpepresented in Advanced Manufacturing (4), Energy, Construction, and Utilities (4), and Public Safety programs

Though female students have higher median annual earnings after exiting in some programs where they are significantly underrepresented, their earnings after exiting are substantially lower in Public Safety programs such as Police Academy (2105.50) and Fire Technology (2133.00), as well as Paramedic (1251.00). Exhibit 24 shows the median annual earnings after exiting for female students in programs where they are underrepresented and for which data is available.

Exhibit 24: Median Annual Earnings After Exiting for Top Job Vocational Programs with Significant Female Underrepresentation

Program	All Students	Female Students
Police Academy - 2105.50	$142,380	$132,872
Fire Technology - 2133.00	$134,080	$35,776
Paramedic - 1251.00	$59,878	$42,148
Aircraft Fabrication - 0950.50	$48,874	$48,108
Engineering Technology, General (requires Trigonometry) - 0924.00	$48,314	$53,012
Computer Software Development - 0707.00	$37,864	$41,146
Computer Programming - 0707.10	$32,268	$41,618

■ All Students   ■ Female Students

Additionally, men are significantly underrepresented in 17 Top Job vocational programs, with 41% (7) of those in the Health sector. In Health programs where they are significantly underrepresented (and for which data is available), men typically have lower median annual earnings after exiting compared to all students, as shown in Exhibit 25.

Exhibit 25: Median Annual Earnings After Exiting for Top Job Health Vocational Programs with Significant Male Underrepresentation

Legend: ■ All Students ■ Male Students

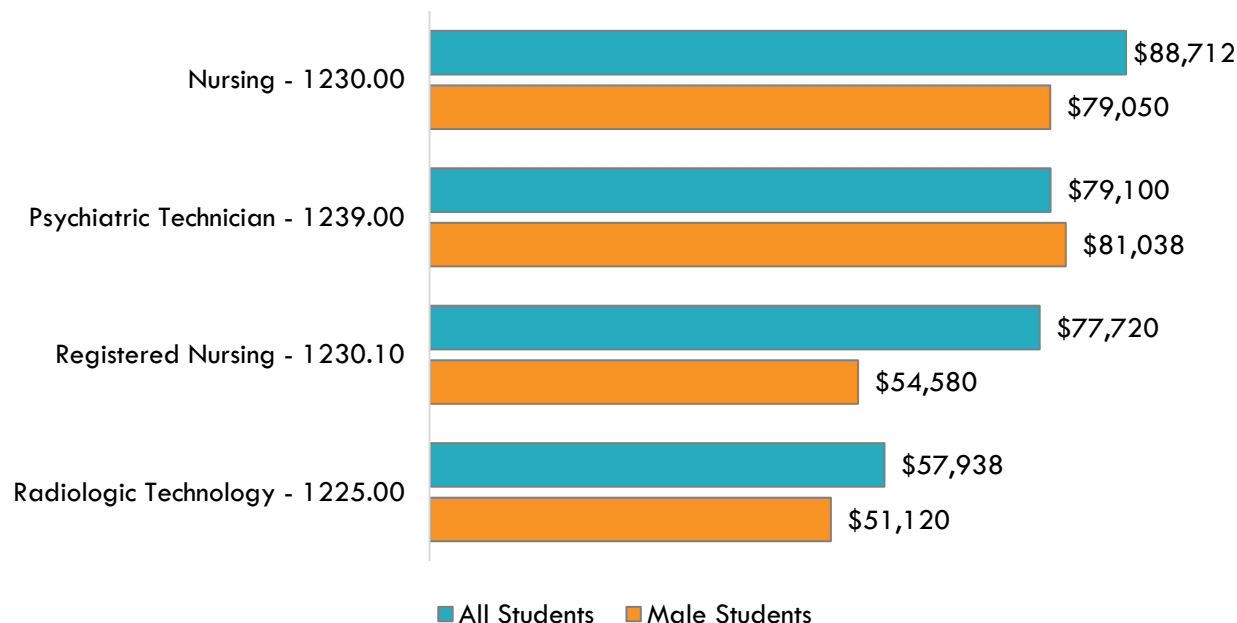| Program	All Students	Male Students
Nursing - 1230.00	$88,712	$79,050
Psychiatric Technician - 1239.00	$79,100	$81,038
Registered Nursing - 1230.10	$77,720	$54,580
Radiologic Technology - 1225.00	$57,938	$51,120

Exhibit 26 outlines the 32 programs where female or male students are significantly underrepresented. These programs span 9 of the 12 CCCCO Sectors, with most of the programs concentrated in the Health sector (8 programs). This sector represents a critical area where efforts to boost male participation could be highly effective (7 of the 8 show high underrepresentation). Female participation could be increased in Advanced Manufacturing; Energy, Construction and Utilities; and Public Safety.

Exhibit 26: Top Job Vocational Programs with Significant Underrepresentation by Sex and Gender

Sector	Program - TOP	Female	Male
Adv. Manufacturing	Aeronautical and Aviation Technology – 0950.00	X	
	Aircraft Fabrication – 0950.50	X	
	Electronics and Electric Technology – 0934.00	X	
	Engineering Technology, General (requires Trigonometry) – 0924.00	X	
Business and Entrepreneurship	Management Development and Supervision – 0506.30		X
	Small Business and Entrepreneurship – 0506.40		X

Sector	Program - TOP	Female	Male
Education and Human Development	Child Development/Early Care and Education – 1305.00		X
	Infants and Toddlers – 1305.90		X
Energy, Construction and Utilities	Architecture and Architectural Technology – 0201.00	X	
	Civil and Construction Management Technology – 0957.00	X	
	Construction Crafts Technology – 0952.00	X	
	Electrical – 0952.20	X	
Health	Dental Hygienist – 1240.20		X
	Licensed Vocational Nursing – 1230.20		X
	Nursing – 1230.00		X
	Paramedic – 1251.00	X	
	Psychiatric Technician – 1239.00		X
	Radiologic Technology – 1225.00		X
	Registered Nursing – 1230.10		X
	Respiratory Care/Therapy – 1210.00		X
ICT/ Digital Media	Computer Programming – 0707.10	X	
	Computer Software Development – 0707.00	X	
	Digital Media – 0614.00		X
	Software Applications – 0702.10		X
Public Safety	Administration of Justice – 2105.00		X
	Fire Academy – 2133.50	X	
	Fire Technology – 2133.00	X	
	Police Academy – 2105.50	X	
	Wildland Fire Technology – 2133.10	X	
Retail, Hospitality and Tourism	Office Management – 0514.40		X
	Retail Store Operations and Management – 0506.50		X
Unassigned	Paralegal – 1402.00		X

CONCLUSION

This report identified Top Jobs and equity gaps between the Top Jobs workforce, Top Job vocational programs, and the SCC labor force. The data presented throughout this report provides a base understanding of equity gaps within the SCC region and shows areas where regional community colleges and other workforce development stakeholders could target interventions to close these equity gaps. The key findings presented at the beginning of this report highlight the most significant gaps, including underrepresentation of Hispanic or Latino workers in higher paying Top Jobs, female underrepresentation in traditional trades such as construction and manufacturing (as well as public safety) and male underrepresentation in health jobs and programs.

Occupational segregation is defined as "the overrepresentation or underrepresentation of a demographic group in a certain occupation or field."[11] Though the causes of occupational segregation are beyond the scope of this analysis, it is important to note that this form of segregation can lead to pay inequities, fewer benefits, and higher unemployment rates for underrepresented groups.[12]

When reviewing the data in this report, regional community colleges could consider the following questions:

- Has your college worked with industry and local employers to promote hiring individuals from underrepresented groups?

- How could your college design programs to recruit, retain, and promote equitable outcomes for underrepresented groups?

- What successes has your college experienced with targeted marketing campaigns for specific demographic groups (e.g., women, youth)?

- How could you apply those strategies to promote Top Job vocational programs to underrepresented groups?

The SCC COE plans to release a companion report that will further explore the key findings from this report and identify potential strategies to close these gaps.

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[11] Rebecca Dixon and Amy Traub, "Desegregating Opportunity: Why Uprooting Occupational Segregation is Critical to Building A Good-Jobs Economy," National Employment Law Project, last modified May 16, 2024, https://www.nelp.org/insights-research/desegregating-opportunity-why-uprooting-occupational-segregation-is-critical-to-building-a-good-jobs-economy/.
[12] *Ibid.*

APPENDICES

Appendix A: Top Jobs Demographic Data

Exhibit 27 shows the percentage of workers in Top Jobs by demographic group. Groups that are significantly underrepresented are highlighted in orange.

Exhibit 27: Percentage of Workers in Top Jobs by Demographic Group

Sector	SOC	Occupation	Asian or Pacific Islander	Black or African American	Hispanic	Other Race/ Ethnicity	White	Pre-Career/ College Age	Early Career	Mid-Career	Later Career/ Retirement	Female	Male
Advanced Manufacturing	17-3029	Engineering Technologists and Technicians, Except Drafters, All Other	13%	3%	29%	2%	53%	13%	25%	25%	38%	17%	84%
Advanced Manufacturing	51-1011	First-Line Supervisors of Production and Operating Workers	6%	4%	58%	0%	33%	2%	24%	40%	34%	32%	68%
Advanced Transportation and Logistics	11-3071	Transportation, Storage, and Distribution Managers	5%	0%	29%	3%	63%	2%	18%	44%	36%	26%	74%
Advanced Transportation and Logistics	13-1081	Logisticians	8%	25%	27%	2%	38%	2%	36%	26%	35%	27%	73%
Advanced Transportation and Logistics	49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	4%	6%	41%	3%	47%	3%	10%	22%	66%	15%	85%
Advanced Transportation and Logistics	49-3011	Aircraft Mechanics and Service Technicians	3%	9%	44%	5%	39%	12%	31%	27%	30%	4%	96%
Advanced Transportation and Logistics	49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	2%	2%	65%	4%	28%	10%	38%	25%	26%	4%	96%
Advanced Transportation and Logistics	49-3042	Mobile Heavy Equipment Mechanics, Except Engines	0%	0%	52%	5%	43%	8%	22%	39%	30%	2%	98%
Advanced Transportation and Logistics	53-2012	Commercial Pilots	1%	1%	8%	3%	87%	2%	8%	34%	56%	7%	93%
Agriculture, Water and Environmental Technologies	19-4071	Forest and Conservation Technicians	16%	4%	33%	0%	46%	43%	22%	24%	11%	65%	35%

Sector	SOC	Occupation	Asian or Pacific Islander	Black or African American	Hispanic	Other Race/ Ethnicity	White	Pre-Career/ College Age	Early Career	Mid-Career	Later Career/ Retirement	Female	Male
Business and Entrepreneurship	11-1021	General and Operations Managers	7%	0%	30%	8%	55%	5%	17%	37%	41%	33%	67%
	11-3012	Administrative Services Managers	3%	0%	34%	0%	63%	0%	15%	45%	40%	72%	28%
	11-3013	Facilities Managers	1%	3%	25%	1%	71%	0%	12%	25%	63%	7%	93%
	13-1051	Cost Estimators	6%	3%	27%	4%	60%	0%	29%	32%	38%	15%	85%
Education and Human Development	25-2012	Kindergarten Teachers, Except Special Education	4%	6%	37%	4%	48%	12%	32%	26%	30%	99%	1%
Energy, Construction and Utilities	17-3022	Civil Engineering Technologists and Technicians	13%	3%	29%	2%	53%	13%	25%	25%	38%	17%	84%
	47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	0%	1%	46%	2%	52%	2%	12%	31%	55%	2%	98%
	47-2073	Operating Engineers and Other Construction Equipment Operators	1%	1%	30%	1%	68%	7%	19%	40%	35%	4%	96%
	47-2111	Electricians	2%	0%	42%	3%	52%	9%	33%	29%	29%	4%	96%
	47-4011	Construction and Building Inspectors	0%	1%	19%	6%	74%	4%	21%	30%	46%	4%	96%
	49-9051	Electrical Power-Line Installers and Repairers	2%	2%	30%	0%	66%	2%	22%	30%	46%	0%	100%
Health	29-1126	Respiratory Therapists	10%	13%	8%	11%	58%	0%	10%	39%	51%	54%	46%
	29-1141	Registered Nurses	18%	5%	18%	7%	52%	3%	24%	37%	35%	86%	14%
	29-1292	Dental Hygienists	8%	0%	15%	3%	74%	6%	29%	21%	44%	88%	12%
	29-2034	Radiologic Technologists and Technicians	8%	1%	37%	4%	51%	1%	31%	41%	27%	48%	52%
	29-2043	Paramedics	9%	0%	8%	10%	73%	10%	60%	13%	17%	9%	91%
	29-2053	Psychiatric Technicians	3%	0%	33%	12%	52%	32%	28%	29%	12%	72%	28%

Sector	SOC	Occupation	Asian or Pacific Islander	Black or African American	Hispanic	Other Race/ Ethnicity	White	Pre-Career/ College Age	Early Career	Mid-Career	Later Career/ Retirement	Female	Male
	29-2055	Surgical Technologists	8%	3%	45%	0%	44%	3%	43%	49%	5%	60%	40%
	29-2061	Licensed Practical and Licensed Vocational Nurses	11%	17%	38%	4%	31%	2%	26%	43%	29%	91%	9%
	31-2021	Physical Therapist Assistants	14%	2%	44%	5%	35%	49%	23%	8%	20%	71%	29%
ICT/Digital Media	15-1255	Web and Digital Interface Designers	8%	0%	9%	14%	69%	8%	46%	29%	17%	48%	52%
Public Safety	33-1012	First-Line Supervisors of Police and Detectives	0%	3%	13%	5%	79%	4%	6%	47%	42%	10%	90%
	33-1021	First-Line Supervisors of Firefighting and Prevention Workers	0%	0%	23%	0%	77%	0%	0%	54%	46%	4%	96%
	33-2011	Firefighters	7%	8%	22%	1%	62%	10%	32%	40%	18%	5%	95%
	33-3051	Police and Sheriff's Patrol Officers	8%	8%	29%	3%	53%	14%	26%	41%	20%	15%	85%
	43-5031	Public Safety Telecommunicators	3%	0%	15%	1%	81%	0%	51%	30%	19%	85%	15%
Unassigned	23-2099	Legal Support Workers, All Other	3%	0%	60%	0%	37%	7%	11%	62%	20%	80%	20%

Appendix B: Top Job Vocational Programs Demographic Data

Exhibit 28 shows the percentage of students in Top Job vocational programs by demographic group. Groups that are significantly underrepresented are highlighted in orange.

Exhibit 28: Percentage of Students in Top Job Vocational Programs by Demographic Group

Sector	Program - TOP	Asian or Pacific Islander	Black or African American	Hispanic	Other Race/Ethnicity	White	Early Career	Later Career/ Retirement	Mid-Career	Pre-Career/ College Age	Female	Male
Advanced Manufacturing	Aeronautical and Aviation Technology - 0950.00	N/A	N/A	75%	N/A	25%	31%	N/A	9%	59%	22%	78%
	Aircraft Fabrication - 0950.50	2%	8%	77%	3%	10%	27%	1%	7%	64%	19%	81%
	Electronics and Electric Technology - 0934.00	N/A	5%	61%	3%	30%	25%	5%	11%	59%	16%	84%
	Engineering Technology, General (requires Trigonometry) - 0924.00	11%	N/A	45%	8%	37%	12%	1%	3%	84%	21%	79%
Advanced Transportation and Logistics	Aviation Powerplant Mechanics - 0950.20	N/A	N/A	100%	N/A	N/A	N/A	N/A	N/A	100%	N/A	N/A
	Diesel Technology - 0947.00	N/A	N/A	63%	N/A	37%	N/A	N/A	N/A	100%	N/A	100%
Business and Entrepreneurship	Banking and Finance - 0504.00	2%	3%	34%	24%	37%	14%	6%	7%	73%	45%	54%
	Business Administration - 0505.00	4%	5%	43%	15%	32%	13%	2%	6%	79%	47%	52%
	Business and Commerce, General - 0501.00	6%	7%	52%	10%	26%	15%	3%	9%	72%	47%	53%
	Business Management - 0506.00	6%	5%	51%	11%	27%	19%	4%	12%	64%	51%	49%
	Management Development and Supervision - 0506.30	N/A	N/A	25%	58%	17%	39%	20%	41%	N/A	50%	44%
	Small Business and Entrepreneurship - 0506.40	N/A	12%	58%	5%	25%	22%	4%	17%	58%	60%	40%

Sector	Program - TOP	Asian or Pacific Islander	Black or African American	Hispanic	Other Race/Ethnicity	White	Early Career	Later Career/ Retirement	Mid-Career	Pre-Career/ College Age	Female	Male
Education and Human Development	Child Development/Early Care and Education - 1305.00	4%	5%	57%	8%	26%	22%	5%	14%	60%	87%	13%
	Infants and Toddlers - 1305.90	N/A	3%	39%	43%	15%	33%	5%	32%	30%	89%	7%
	Preschool Age Children - 1305.40	N/A	N/A	53%	23%	24%	24%	10%	36%	29%	100%	N/A
	The School Age Child - 1305.50	N/A	N/A	100%	N/A	N/A	N/A	N/A	N/A	100%	100%	N/A
Energy, Construction and Utilities	Architecture and Architectural Technology - 0201.00	N/A	N/A	42%	8%	50%	N/A	N/A	N/A	100%	34%	66%
	Carpentry - 0952.10	N/A	N/A	100%	N/A	N/A	N/A	N/A	N/A	100%	N/A	100%
	Civil and Construction Management Technology - 0957.00	N/A	4%	68%	3%	25%	32%	8%	19%	41%	19%	77%
	Construction Crafts Technology - 0952.00	N/A	N/A	36%	34%	30%	19%	14%	18%	50%	14%	83%
	Construction Inspection - 0957.20	N/A	N/A	100%	N/A	N/A	50%	N/A	50%	N/A	N/A	100%
	Electrical - 0952.20	N/A	3%	67%	3%	26%	31%	4%	18%	47%	5%	95%
Health	Dental Hygienist - 1240.20	N/A	N/A	84%	N/A	16%	46%	N/A	N/A	54%	89%	11%
	Licensed Vocational Nursing - 1230.20	7%	N/A	66%	N/A	28%	63%	N/A	14%	23%	83%	17%
	Nursing - 1230.00	15%	N/A	44%	6%	36%	38%	N/A	20%	43%	78%	22%
	Paramedic - 1251.00	N/A	N/A	31%	7%	63%	31%	N/A	4%	64%	22%	78%
	Psychiatric Technician - 1239.00	9%	16%	41%	N/A	34%	43%	N/A	35%	22%	60%	40%
	Radiologic Technology - 1225.00	13%	N/A	60%	5%	22%	47%	N/A	10%	43%	62%	38%
	Registered Nursing - 1230.10	9%	2%	48%	14%	27%	39%	2%	16%	44%	77%	22%
	Respiratory Care/Therapy - 1210.00	N/A	N/A	100%	N/A	N/A	100%	N/A	N/A	N/A	63%	37%

Sector	Program - TOP	Asian or Pacific Islander	Black or African American	Hispanic	Other Race/Ethnicity	White	Early Career	Later Career/ Retirement	Mid-Career	Pre-Career/ College Age	Female	Male
ICT/Digital Media	Computer Programming - 0707.10	10%	3%	44%	22%	20%	15%	1%	4%	79%	22%	76%
	Computer Software Development - 0707.00	6%	N/A	32%	27%	35%	20%	4%	5%	71%	27%	69%
	Digital Media - 0614.00	5%	6%	46%	21%	22%	14%	17%	6%	62%	54%	46%
	Software Applications - 0702.10	7%	10%	53%	10%	20%	20%	13%	17%	50%	55%	45%
	Website Design and Development - 0614.30	4%	4%	51%	6%	35%	26%	10%	N/A	64%	49%	51%
Public Safety	Administration of Justice - 2105.00	3%	6%	54%	11%	27%	12%	4%	9%	74%	56%	44%
	Corrections - 2105.10	N/A	N/A	100%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Fire Academy - 2133.50	N/A	N/A	56%	N/A	44%	45%	N/A	N/A	55%	11%	89%
	Fire Technology - 2133.00	3%	3%	31%	18%	45%	21%	25%	32%	23%	7%	93%
	Police Academy - 2105.50	9%	8%	49%	9%	26%	29%	22%	44%	4%	18%	82%
	Wildland Fire Technology - 2133.10	N/A	N/A	47%	6%	47%	31%	N/A	7%	62%	14%	86%
Retail, Hospitality and Tourism	Office Management - 0514.40	N/A	28%	53%	N/A	19%	25%	10%	24%	41%	72%	28%
	Retail Store Operations and Management - 0506.50	N/A	N/A	52%	N/A	48%	N/A	N/A	N/A	N/A	65%	35%
Unassigned	Paralegal - 1402.00	3%	4%	57%	4%	33%	29%	9%	28%	33%	78%	20%

Appendix C: Methodology and Data Sources

Traditional Labor Market Data

This report uses labor market data on job growth, education requirements, and wages to identify occupations in the South Central Coast (SCC) region that provide economic opportunity for jobseekers.

The data sources used in this study include data from Lightcast (Datarun 2024.4), a labor market analytics firm that specializes in providing insights for workforce development, economic planning, and education. Lightcast compiles its regional and occupational datasets from a variety of federal and state sources. Among these are the Quarterly Census of Employment and Wages (QCEW), which offers detailed industry employment and wage data, and other critical sources such as the U.S. Census Bureau's American Community Survey (ACS) and Quarterly Workforce Indicators, the Bureau of Labor Statistics' Occupational Employment and Wage Statistics and Current Population Survey, and data from the Bureau of Economic Analysis.[13] These combined resources provide comprehensive insights into employment trends, wage patterns, and industry-specific workforce characteristics across the region.

The traditional labor market data analyzed in this report includes:

- **2023 Jobs:** the number of jobs by occupation in 2023.

- **2028 Jobs:** the projected number of jobs by occupation in 2028. Projections are based on the assumption that past trends will continue into the future, including the assumption that the economy, during the projection period, will be at approximately full employment. Projections do not consider potential recessions or labor shocks, such as natural disasters or pandemics, and are intended to capture structural change in the economy over time.

- **Change:** the projected change in the number of jobs expressed as an actual number and a percentage.

- **Average Annual Openings (Demand):** the projected number of annual job openings. This figure is the sum of job growth and replacement jobs. Job growth is the result of job creation while replacement jobs are the result of retirements and workers leaving the field, creating the need to hire a replacement.

- **Entry-level (25th percentile) Hourly Wages:** the typical entry-level wages for an occupation; 25% of workers earn less than this amount and 75% earn more.

- **Typical Entry-Level Education**: represents the typical education level workers need to enter an occupation.

- **Educational Attainment:** the percentage of workers employed in an occupation by their highest level of education attained.

This report analyzed data for middle-skill occupations, which are defined as:

- All occupations that require an educational requirement of some college, associate degree or apprenticeship

- All occupations that require a bachelor's degree, but also have more than one-third of their existing labor force with an educational attainment of some college or associate degree

- All occupations that require a high school diploma or equivalent or no formal education but also require short- to long-term on-the-job training where multiple community colleges have existing programs.

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[13] Lightcast (2022). Version 2024.4. Retrieved from https://lightcast.io/ in January 2025.

To identify Top Job vocational programs, the SCC COE used a crosswalk created by the Centers of Excellence to determine alignment between Top Jobs and Taxonomy of Program (TOP) codes that train for these occupations. From that list, we identified 44 TOP codes for which student data was available in DataVista, a statewide data system supported by the California Community Colleges Chancellor's Office (CCCCO) that provides data on progress, success, employment, and earnings outcomes for California community college students.

TOP codes are used to categorize instructional programs offered at community colleges across the state. They are also used to organize and report on program offerings, which enables consistent tracking of enrollment, completion, and other performance metrics. Each TOP code represents a specific discipline or field of study, and colleges assign these codes to their programs to ensure alignment with state reporting requirements and to facilitate analysis of educational trends which aligns each program with a Classification of Instructional Programs (CIP) code.

Demographic Data

Additionally, this report utilizes data from IPUMS USA, which preserves and harmonizes Census Bureau microdata, specifically using 2022 ACS data. This dataset provides granular, disaggregated information, which is crucial for producing detailed reports on workforce demographics. It allows for the breakdown of occupational workforce characteristics by race, gender, age, and education level, enabling deeper analysis of equity gaps and workforce diversity.[14] Both labor force and occupational demographic data was sourced via IPUMS.

Student demographic data was sourced from DataVista, which includes the CCCCO's sector definitions, based on TOP codes, for the purposes of collecting and reporting data.

Gap Analysis Methodology

To analyze the demographic distribution of these groups, two types of statistical analyses were used: the Proportionality Index and Proportion Gap.[15] These methods allowed us to compare the representation of different demographic groups within each population. The analysis was conducted with a 95% confidence level, which means there is high confidence that the results reflect actual trends rather than random chance, and that there was enough data to support our conclusions.

In this analysis, the percentages of gender, age, and race/ethnicity in the labor force within the South Central Coast region served as a baseline to assess equity gaps of worker demographics in Top Jobs. Similarly, the demographic percentages for the labor force within the region served as a baseline when assessing equity gaps among students enrolled in vocational programs that prepare workers for Top Jobs. Throughout the report, the terms 'overrepresentation' and 'underrepresentation' are referencing the results of these statistical methods to quantify how significantly a demographic group's percentage in a particular setting, like the workers in Top Jobs or students in community college programs, deviates from that group's percentage in a broader baseline, such as the regional labor force. As an example, understanding these terms helps us recognize that overrepresentation, such as more Hispanics or Males in specific educational programs, is not inherently negative but reflects the program's alignment with labor force and demographic trends.

[14] IPUMS USA, University of Minnesota. (n.d.). IPUMS USA dataset. live.usa.datadownload.ipums.org/web/extracts/usa/2347594/usa_00014.xml
[15] The RP Group (2018). Using Disproportionate Impact Methods to Identify Equity Gaps. https://www.cccco.edu/-/media/CCCCO-Website/About-Us/Divisions/Educational-Services-and-Support/Academic-Affairs/What-we-do/Curriculum-and-Instruction-Unit/Files/TOPmanual6200909corrected12513pdf.ashx

Statistical Analysis

We applied multiple statistical methods, including the proportionality index, z-score, and p-value, to accurately assess demographic representation within the cohorts and to quantify the strength and significance of observed differences. These methods enhance confidence in the data by allowing precise comparisons of demographic percentages and determining the statistical relevance of any disparities.

Z-Score: A z-score measures how many standard deviations a data point is from the mean (average) of a dataset. It is calculated by subtracting the mean from the value and dividing by the standard deviation. A positive z-score indicates a value above the mean, while a negative z-score indicates a value below the mean. Z-scores are commonly used to understand the position of a data point within a normal distribution and to compare values across different datasets. As an example, a z-score of 1.5 means the value is 1.5 standard deviations above the mean, suggesting it is moderately above average compared to the rest of the data.

P-Value: The p-value represents the probability of observing a result as extreme as, or more extreme than, the actual observed results, assuming the null hypothesis is true. In hypothesis testing, it helps determine the statistical significance of the results. A small p-value (e.g., < 0.05) indicates strong evidence against the null hypothesis, suggesting that the observed results are unlikely to have occurred by random chance. Conversely, a large p-value implies the results could be due to random variation. As an example, a test with a p-value of 0.03, there is a 3% chance that the observed results are due to random chance if the null hypothesis is true, often suggesting statistical significance at the 5% level ($p < 0.05$) resulting in a 95% confidence level.

Proportionality Index is a statistical method used to evaluate the representation of a specific subgroup within a population relative to its representation in a reference group, such as a regional workforce or general population. It is calculated by dividing the proportion of the subgroup in the target population (e.g., students or workers in good jobs) by the proportion of the subgroup in the reference population or the labor force in IE/D regions for this report.

To interpret the data, a Proportionality Index of 1 indicates perfect proportionality, meaning the subgroup is equally represented in both groups. An index greater than 1 suggests overrepresentation, while an index less than 1 suggests underrepresentation. To further study the magnitude of the representation, we defined "highly" over or under representation where there was positive or negative 0.15 difference from 1.

Proportion Gap is a statistical method that we used to provide a second method of comparison to the proportionality index. The proportion gap is calculated by subtracting the proportion of a specific subgroup from the proportion of a reference group. For example, if there were 70% of Hispanics or Latinos in the reference group (IE/D Labor force as an example) but there were only 50% Hispanics or Latinos in GJ Vocational programs, the proportion gap is 20 percentage points (70% - 50%). A positive gap (when the reference group's percentage is higher than the subgroup's percentage) indicates an equity gap or underrepresentation. It suggests that the subgroup is represented at a lower percentage than the reference group. A negative gap (if the subgroup's percentage is higher than the reference group's percentage) indicates overrepresentation.