



**TIPPING  
POINT  
COMMUNITY**

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# Supporting Career Service Providers and Poverty Alleviation Efforts in the Bay Area with Detailed Data on Jobs, Skills, and Career Pathways

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# Executive Summary

To help workers enter and succeed in the job market, they need support in identifying and acquiring the specific skills and competencies needed for in-demand living-wage occupations. In today's dynamic environment, organizations that provide skills training and job placement services can find it difficult to align programs to future labor market needs, identify new career pathways, and build responsive programs that lead to quality jobs.

Tipping Point Community, its grantee organizations, and Emsi Burning Glass entered into a partnership to analyze local labor market data at a time when the COVID-19 pandemic has transformed career pathway trends, employer hiring practices, how people work, and ultimately, employment opportunities. The importance of maintaining relevant and meaningful skills training and career services programs took on greater importance as service providers sought to meet the needs of their clients during these challenging times. The detailed labor market information on jobs, skills, credentials, and career pathways along with the technical assistance sessions related to curriculum auditing, career coaching, and diversity, equity, and inclusion (DEI) and engaging employers provided by Emsi Burning Glass gave Tipping Point grantees an introduction to skills-based career pathways and more information on how to refine their offerings to continue to meet their clients' needs.





## A Skills-Based Approach to Career Services

There is broad appeal to structuring employment matches around skills as much as possible, and employers typically proxy for skill match by listing degree requirements, looking for sector experience, or hiring from a referral pool. These proxies can yield successful matches, but they limit the talent pool to those individuals who have earned a degree or who have work experience in a given sector. There is a larger group of individuals who have relevant skills but are unable to indicate readiness using the traditional signals, and there is an even larger group of individuals who could learn the relevant skills through career service providers but would still not have the traditional signals such as a degree or years of work experience.

A skills-based approach to career services builds career trajectories around skill overlaps, skill gaps, and training that can bridge skill gaps effectively. This dynamic model connects jobs based on overlaps in knowledge, skills, and abilities between roles, even if those roles are in different occupation families or functional areas. A skills-based approach connects job candidates to good jobs based on the foundational skills that they possess and the skills training services to which they have access, instead of conditioning employment opportunities on experience in an industry, sector, or job family.

Skills-based approaches to career services have many advantages. The greatest advantage for career service providers such as Tipping Point grantees is that the clientele that they serve benefit from a focus on skill development, short term training, and raising awareness of non-degree signals of job readiness. Not everyone can return to school for a degree, and not everyone is looking to stay in the sectors where they have previously worked. People with career histories in food service and accommodation, for example, benefit from career pathways into sectors with higher wages.

There are other advantages, as well. A skills-based approach to career services effectively matches job candidates to a wider range of employment opportunities than traditional career services, because the matches are based on where a candidate can apply their skills instead of where they have work or education experience. A skills-based approach combats occupational segregation and crowding by revealing non-traditional pathways into good jobs. These pathways rely less on pedigree, degree attainment, or industry experience, and more on the ability of the individual to meet the demands of a new position. Finally, the skills-based approach empowers job seekers, incumbent workers, students, and career service providers with intelligence on the intersection of jobs and skills, uncovering career opportunities that individuals may not have considered, and elucidating the skill gaps that will have to be bridged to enable individuals to transition into careers that benefit themselves, their families, and their communities.



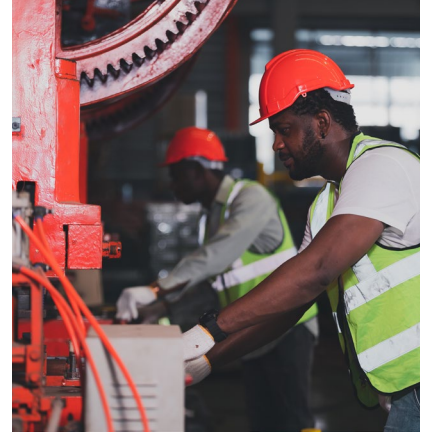
Skills-based hiring is gaining traction in workforce development and talent management. President Biden announced a skills-based hiring initiative in his State of the Union.<sup>1</sup> The AFL-CIO has supported skills-based hiring.<sup>2</sup> The Harvard Business Review published an article earlier this year arguing that skills-based hiring is on the rise.<sup>3</sup> Career service providers, then, can double down on skills training with the expectation that employers will increasingly be looking for non-degree signals of job readiness.

## Labor Market Data and Technical Assistance

One challenge to skills-based approaches is that they require detailed skill-level data for both the target occupations in which career service organizations hope to help individuals secure employment, and for the suboptimal source occupations in which many of these individuals are currently employed. The engagement between Tipping Point and Emsi Burning Glass explored how organizations in the Bay Area can take advantage of such labor market data.

Emsi Burning Glass collaborated directly with Tipping Point grantees including Apprenti, JobTrain, Year Up, Canal Alliance, JVS, Opportunity Junction, Growth Sector, First Place for Youth, and Upwardly Global. Tipping Point grantees provided input that informed the engagement, and the work concluded with three technical assistance workshops that expounded on how to incorporate skills-level data into career coaching, curriculum auditing, and diversity and inclusivity initiatives.

The partnership between Tipping Point and Emsi Burning Glass resulted in a resource toolkit that grantees can use going forward.



### *Tipping Point and Emsi Burning Glass Engagement Toolkit*

LABOR INSIGHT PRODUCT LICENSE	FOUR SUPPORTING DATASETS	TECHNICAL ASSISTANCE SESSIONS
<p>Labor Insight is a web application that provides education, business, and government with real-time labor market analysis. Labor Insight provides job market data to enable the identification of opportunities for training programs, closer alignment of education and training initiatives with employer demand, and improved site selection and recruiting decisions.</p>	<p>The research developed four supplemental datasets:</p> <ul style="list-style-type: none"> <li>① Occupation Profiles, including projected growth, average salary, automation vulnerability, average annual demand, and entry-level eligibility</li> <li>② Skill Profiles, including the necessary and defining skills for the occupation</li> <li>③ Career Pathways, including the skill overlaps and gaps between source and next-step occupations</li> <li>④ Demographics at the job-title level, including crosstabs at the race/ethnicity and gender level</li> </ul>	<p>Project overview and use cases for the following technical assistance sessions:</p> <ul style="list-style-type: none"> <li>① Curriculum Auditing, to ensure that job training programs are aligned with local labor market demand in stable, living-wage jobs</li> <li>② Career Coaching, to help clients highlight their strengths and learn about new jobs where they can apply what they are interested in doing</li> <li>③ Diversity, Equity and Inclusion and Engaging Employers, to work with employer partners on best practices in talent acquisition and management</li> </ul>

1 Fact sheet on President Biden’s remarks during the 2022 State of the Union Address, retrieved from <https://www.whitehouse.gov/briefing-room/statements-releases/2022/02/28/fact-sheet-background-on-president-bidens-remarks-on-the-economy-during-his-first-state-of-the-union-address/>

2 AFL-CIO response to the 2022 State of the Union Address, retrieved from <https://aflcio.org/2022/3/2/working-people-respond-state-union>

3 Fuller, J., Langer C., Sigelman, M. (2022, Feb 11). Skills-Based Hiring Is on the Rise. Harvard Business Review. Retrieved from <https://hbr.org/2022/02/skills-based-hiring-is-on-the-rise>

## Conclusion

### *Key Findings: Labor Market Data*

Emsi Burning Glass provided information on the state of the Bay area workforce, which is detailed in the first section of the report. The Bay Area economy is growing quickly, but the cost of living is more than 60% higher than the national average. Jobs grew by 34,548 over the last 5 years and are projected to grow by 158,842 over the next 5 years. Job growth in the Bay Area outpaced the national growth rate. With respect to demographic change, since 2010, the Asian population is the fastest growing demographic cohort by race/ethnicity, followed by the Latinx community. The non-Hispanic Black population declined over this period.

Tipping Point grantees work closely with youth, the unemployed, and the underemployed. The labor market research revealed the following facts about unemployment:

- ① There are nearly 20,000 unemployed individuals under 25 years old.
- ① Unemployment is greatest among those 25-34 years old.
- ① More women than men in the Bay Area are unemployed.
- ① There are large race/ethnicity disparities in unemployment, with Black and Asian individuals overrepresented among the unemployed. Despite accounting for only 6% of the Bay Area population, Black or African American people account for 17% of the unemployed population. Asian individuals account for 29% of the Bay Area population but 35% of the unemployed population. White people account for 58% of the population but only 47% of the unemployed population.
- ① As of September 2021, the effects of the Covid-19 pandemic on joblessness were lingering: the labor force participation was down compared to pre-pandemic levels, and the unemployment rate was higher than pre-pandemic levels.

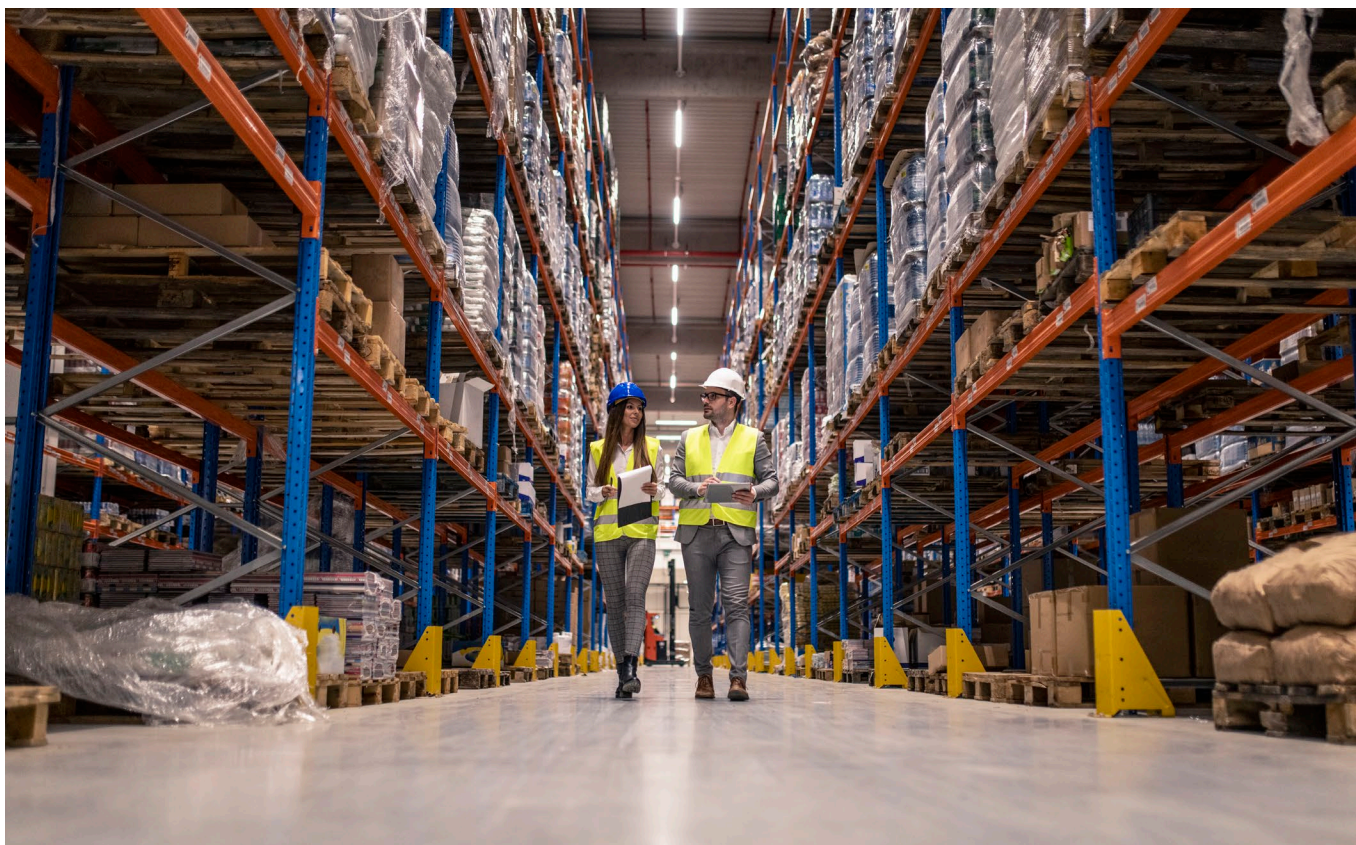
Emsi Burning Glass and Tipping Point grantees defined target occupations and target sectors. Target occupations were those that meet the living wage threshold (>\$47,590 estimated market salary), are projected to grow, and have significant demand (at least 100 job postings annually, which is large enough to support career service infrastructure). Special attention was paid to occupations that show demand for certificates that Tipping Point grantees can help individuals earn. Target sectors were Business, Finance, Healthcare, IT, and Manufacturing. Tipping Point grantees have programming that supports these sectors.



## Key Findings: Using Data to Inform Workforce Development

After reviewing the resources in the toolkit referenced above, Tipping Point reflected on how to incorporate data on jobs, skills, and career pathways into workforce development. These recommendations are detailed in the final section of the report:

- ① Use detailed data on jobs, skills, and credentials along with a skills-based approach to give career coaches a wider range of options to guide clients who are looking for career pathways that match their skill level and interests.
- ① Use updated labor market data to refresh existing programs and develop new skills trainings based on promising career pathways.
- ① Help clients appreciate the full range of their employment options and understand how to work towards long-term mobility.
- ① Emphasize upward mobility from the start.
- ① Use employer-level data to inform job placement targets and employer partnerships.
- ① Incorporate demographic information into career services that support recruitment, hiring, and retention in order to address occupational crowding and occupational segregation.



# State of the Bay Area Workforce







**F**ROM THE FUTURE OF WORK TO INCOME INEQUALITY, the front-page trends of the modern workforce come to a head in the Bay Area. Silicon Valley is synonymous with innovation, and the Bay Area is home to influential tech companies with soaring demand for digital skills and the resources to compensate professional workers handsomely. At the same time, San Francisco ranks fifth and San Jose tenth among the 250 largest metropolitan areas in terms of income inequality, defined as the ratio between the 95th percentile earners and the 20th percentile earners.<sup>1</sup> The high wages for professional and managerial workers in the Bay Area have contributed to the San Francisco metro area having the highest cost of living out of all metros in the United States.<sup>2</sup>

A recent report by Tipping Point took this context into account when measuring poverty in the Bay Area. The report, titled *Taking Count*,<sup>3</sup> found that poverty was experienced multidimensionally across the Bay Area: 50% of Bay Area residents are unable to pay their bills at least once during the year, 1 in 3 Bay Area residents consistently run out of money before the end of the month, 77% of Black residents and 43% of Latinx residents have less than \$400 saved up, and low-wage workers are less than half as likely as their high-wage counterparts to have employer-provided health insurance, paid vacations, parental leave, or remote work availability, and two-thirds as likely to have paid sick leave.

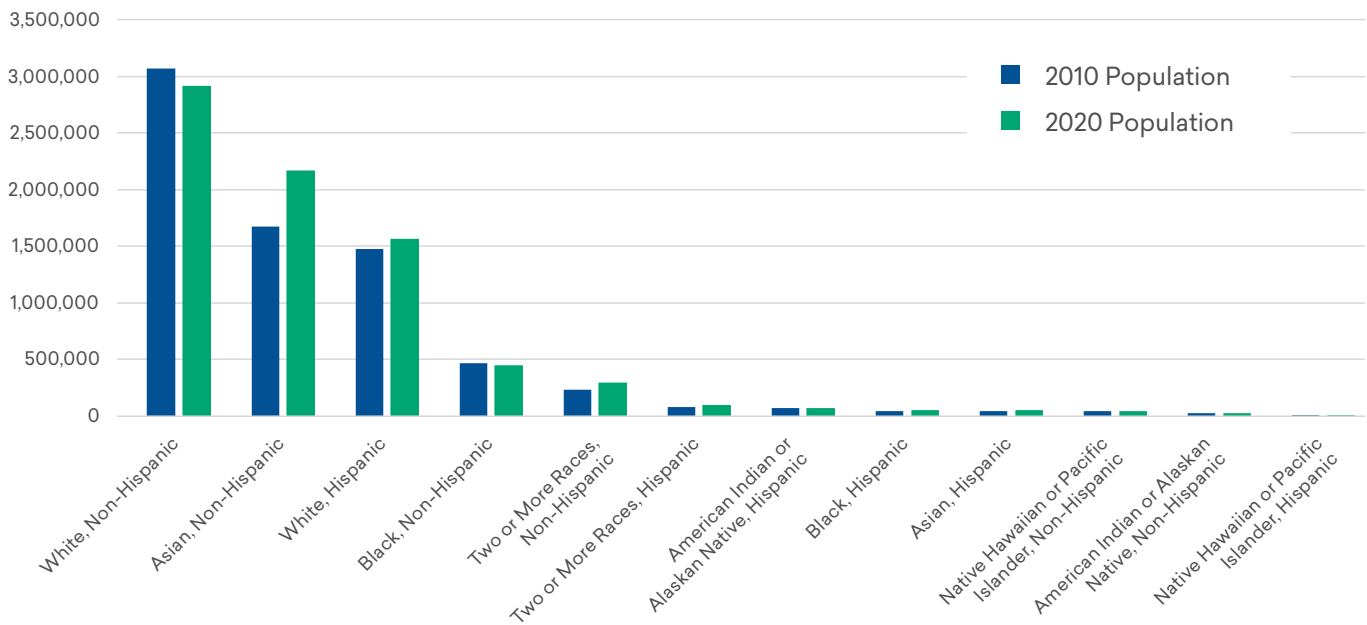
The National Equity Atlas and Emsi Burning Glass also published a report recently that analyzed the structural underpinnings of employment inequality. That report, titled *Advancing Workforce Equity in the Bay Area*,<sup>4</sup> found that racial gaps in wages and employment for working-age people cost the region \$348 billion in unrealized GDP. With racial equity in income, the average income of Latinx workers would be 173% higher, while the average annual income of Black workers would more than double, and the region's GDP would increase by 37%. Occupational crowding and occupational segregation by race/ethnicity were among the greatest contributors to these disparities.

Tipping Point grantees understand the plight of low-wage workers in the Bay Area, especially low-wage workers of color, who disproportionately face discrimination in hiring practices, staffing patterns that crowd them in precarious jobs, and who contend with compounding inequalities in health, education, housing, transportation, and childcare.

The career services that Tipping Point grantees provide benefit from labor market information on jobs and job sectors in the region. The data analyses below summarize the state of the workforce in the Bay Area.

## Demographic Trends in the Bay Area

### Population by Race/Ethnicity



4 PolicyLink and the USC Equity Research Institute; National Equity Atlas, retrieved from [https://nationalequityatlas.org/indicators/Income\\_inequality/#/?breakdown=3&geo=03000000000041860](https://nationalequityatlas.org/indicators/Income_inequality/#/?breakdown=3&geo=03000000000041860)

5 Federal Reserve Bank of St. Louis, retrieved from [https://geofred.stlouisfed.org/map/?th=pubugn&cc=5&rc=false&im=fractile&sb&lng=-116.46&lat=48.95&zm=4&sl&sv&rt=msa&sti=134638&at=Not%20Seasonally%20Adjusted,%20Annual,%20Index,%20No\\_no\\_period\\_desc&fq=Annual&am=Average&un=lin&dt=2020-01-01](https://geofred.stlouisfed.org/map/?th=pubugn&cc=5&rc=false&im=fractile&sb&lng=-116.46&lat=48.95&zm=4&sl&sv&rt=msa&sti=134638&at=Not%20Seasonally%20Adjusted,%20Annual,%20Index,%20No_no_period_desc&fq=Annual&am=Average&un=lin&dt=2020-01-01)

6 Tipping Point Community. (2020). Taking Count, retrieved from <https://tippingpoint.org/wp-content/uploads/2020/07/Taking-Count-2020-A-Study-on-Poverty-in-the-Bay-Area.pdf>

7 Langston, A., Scoggins, J., Walsh, M. (2021). Advancing Workforce Equity in Boston: A Blueprint for Action, retrieved from <https://www.policylink.org/research/workforce-equity-boston>

Since 2010, non-Hispanic Asians are the fastest-growing demographic cohort, followed by the Latinx or Hispanic population. The Black non-Hispanic population has declined by 3% and the white non-Hispanic population has declined by 5%.

*Population, Workers, and Cost of Living*

<b>7,740,781</b>	<b>4,265,180</b>	<b>1.6x</b>
Population (2020)	Total Regional Employment (2020)	Cost of Living Index

The total population in the region increased by 519,960 since 2010. Population is expected to increase by 2.5% between 2020 and 2025, adding 193,807 people.

Jobs grew by 34,548 over the last 5 years and are projected to grow by 158,842 over the next 5 years. Job growth in the Bay Area slightly outpaced the national growth rate. Yet, as the number of jobs increased, the labor force participation rate decreased from 64.9% to 63.1% between 2015 and 2020. The cost of living—or consumer expenditure prices for six major categories including grocery items, housing, utilities, transportation, healthcare, and miscellaneous goods and services—in the Bay Area is 1.6 times the average cost of living in the United States. This high cost of living exacerbates the experience of poverty by those at the lower end of the income distribution.

*Population by Level of Educational Attainment*

Level of Education	Percent	Population
Less Than 9th Grade	6%	345,762
9th Grade to 12th Grade	5%	275,218
High School Diploma	16%	880,278
Some College	18%	982,298
Associate Degree	7%	396,558
Bachelor's Degree	28%	1,558,913
Graduate Degree and Higher	21%	1,149,497

The Bay Area also has a higher level of educational attainment than most metropolitan areas in the United States. This trend means that it may be more difficult to convince employers in the Bay Area to reduce degree requirements for jobs, since a greater fraction of the available workforce has a Bachelor's degree or higher. Concerning degree attainment, 27.9% of Bay Area residents possess a Bachelor's Degree, which is 7.8% above the national average. At the same time, more than half a million people have less than a high school diploma and close to a million more individuals have no more than a high school diploma. Almost 1.4 million individuals have postsecondary experience short of a Bachelor's degree.



Demographics of the Unemployed Population

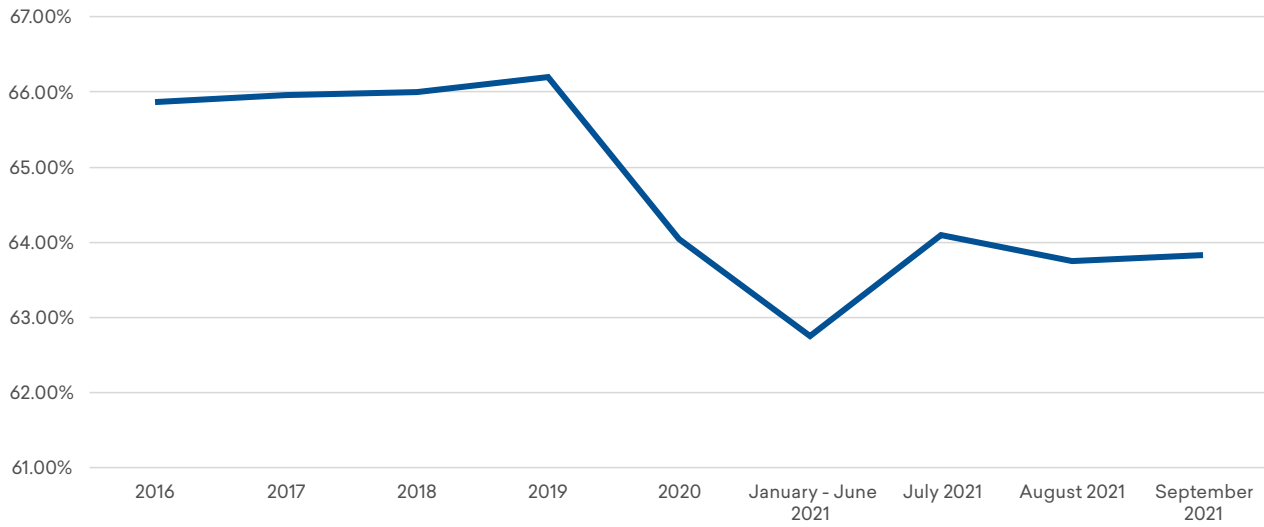
Category	Element	Bay Area Unemployed Population
Age	< 22	5,876
	22-24	12,873
	25-34	55,040
	35-44	38,927
	45-54	32,300
	55-59	14,858
	60-64	15,518
	65+	10,893
Gender	Females	95,613
	Males	90,673
Race	American Indian or Alaskan Native	2,930
	Asian	64,522
	Black or African American	31,193
	Native Hawaiian or Other Pacific Islander	**
	White	87,642
Ethnicity	Hispanic or Latino	53,763
	Not Hispanic or Latino	132,523

Unemployment touches all demographic cohorts in the Bay Area. Slightly over half of the unemployed population is between the ages of 25 and 44. Young people (under 25 years old) account for 10% of the unemployed population. Unemployment is felt slightly more acutely among women than men, as unemployed women outnumber unemployed men by close to 5,000.

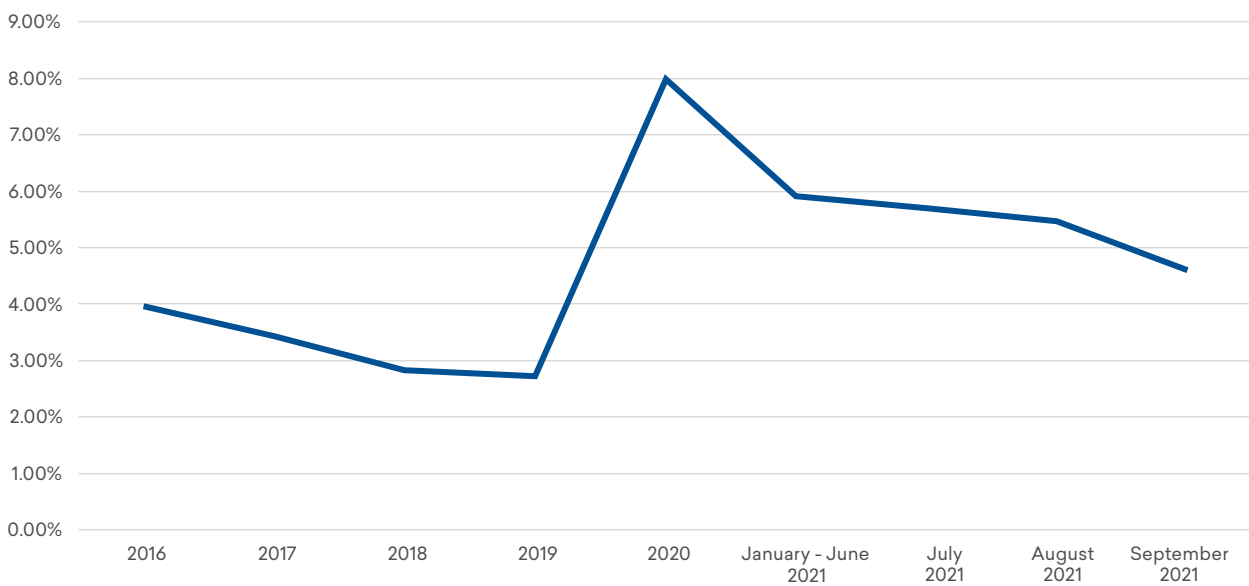
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# Labor Force Participation Rate and Unemployment Rate

## Labor Force Participation Rate

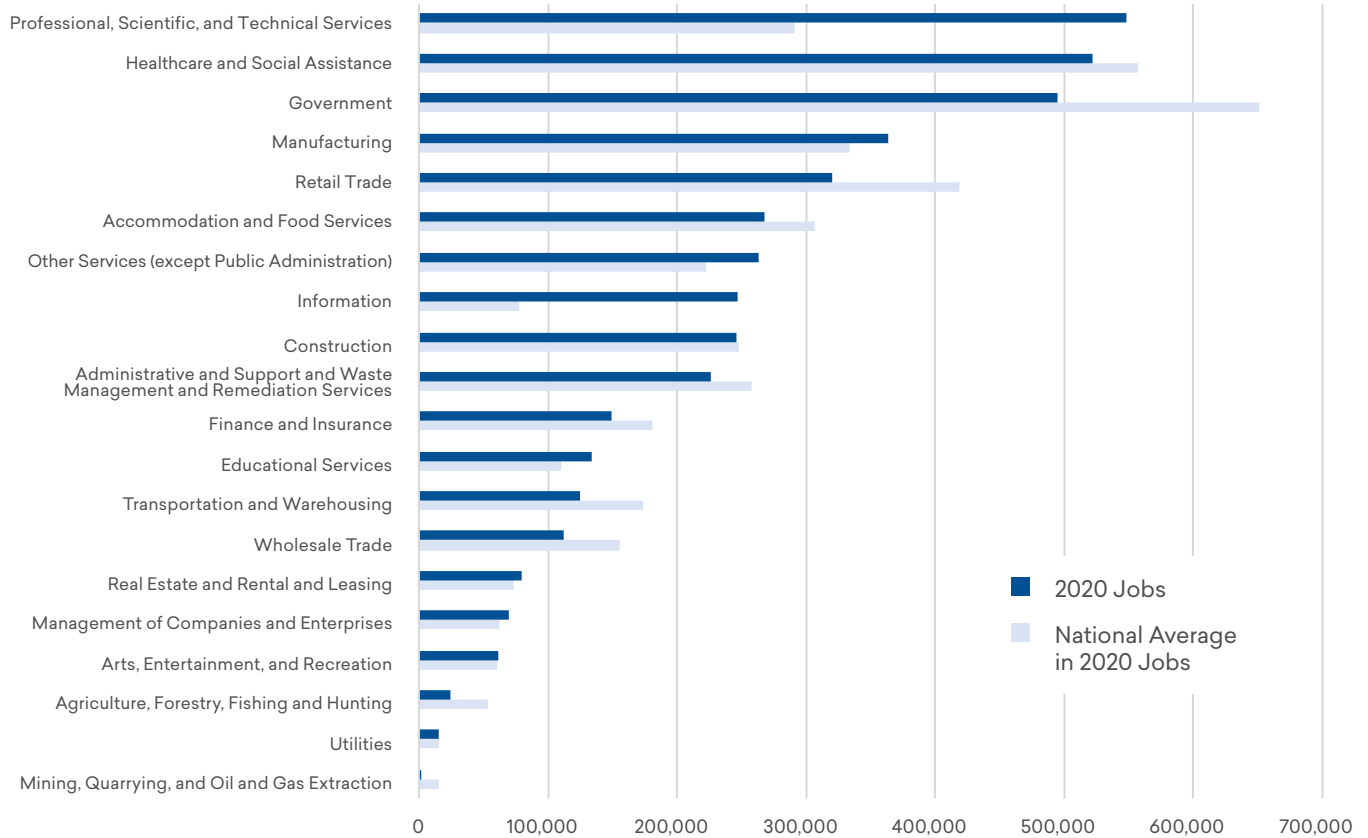


## Unemployment Rate



Covid-19 had a large effect on the labor force participation rate and unemployment rate in the Bay Area. In 2020, labor force participation dropped two percentage points as thousands of people opted to leave the workforce to address other areas of their life. Many more individuals did not leave the labor force but found themselves unemployed, as over the same timespan the unemployment rate increased by more than 250% to 8%. Over the course of 2021, the labor force participation rate dipped and then stabilized at the 2020 level, while unemployment trended steadily downward to 4.5%.

## Largest Industries in the Bay Area Compared to National Averages



### Detailed Industry Data for the Bay Area

NAICS Code	Description	2020 Jobs	2015 - 2020 Change	2015 - 2020 % Change	2020 Location Quotient	Avg. Earnings Per Job
	<b>Total</b>	<b>4,265,180</b>	<b>34,548</b>	<b>1%</b>		<b>\$134,595</b>
54	Professional, Scientific, and Technical Services	548,261	51,258	10%	1.89	\$204,876
62	Healthcare and Social Assistance	522,482	42,776	9%	0.94	\$85,063
90	Government	494,618	526	0%	0.76	\$124,978
31	Manufacturing	363,481	22,360	7%	1.09	\$221,032
44	Retail Trade	319,772	-46,380	-13%	0.76	\$59,724
72	Accommodation and Food Services	267,740	-87,891	-25%	0.87	\$52,095
81	Other Services (except Public Administration)	263,447	-11,769	-4%	1.19	\$39,635
51	Information	246,650	76,184	45%	3.19	\$331,271
23	Construction	245,790	22,578	10%	0.99	\$100,014
56	Administrative and Support and Waste Management and Remediation Services	225,765	-9,559	-4%	0.88	\$76,463
52	Finance and Insurance	149,033	12,001	9%	0.82	\$245,153
61	Educational Services	133,206	2,506	2%	1.21	\$73,188
48	Transportation and Warehousing	124,798	21,531	21%	0.72	\$106,646
42	Wholesale Trade	111,658	-19,655	-15%	0.72	\$129,082
53	Real Estate and Rental and Leasing	78,907	2,435	3%	1.08	\$102,089
55	Management of Companies and Enterprises	69,036	-7,320	-10%	1.1	\$254,021
71	Arts, Entertainment, and Recreation	60,828	-17,458	-22%	1.01	\$61,968
11	Agriculture, Forestry, Fishing and Hunting	23,988	-262	-1%	0.46	\$61,150
22	Utilities	14,592	-160	-1%	0.98	\$214,428
21	Mining, Quarrying, and Oil and Gas Extraction	1,122	-596	-35%	0.08	\$125,224



The Professional Services sector—which includes a range of services, such as legal advice, accounting and payroll services, computer services, consulting or research, advertising, and many other technical services—employs the greatest number of people in the Bay Area, followed by Healthcare, Government, Manufacturing, and Retail Trade.

The Information sector employs only around half as many people as the Professional Services sector, but these jobs are very highly concentrated in the Bay Area. Concentration is measured using a metric called location quotient. Location quotient is calculated by dividing an industry's employment share in a region by that industry's employment share in the broader US workforce. Location quotients are calculated so that the nationwide quotient is equal to one. If an industry has a location quotient of 1.9 in the Bay Area, that means that local employment is 90 percent higher than it would be in an average region with the same workforce size. The Information sector has a location quotient of 3.2 in the Bay Area, meaning that jobs are 3.2 times more concentrated in the Bay Area than the US average. Professional Service jobs are 1.9 times as concentrated in the Bay Area. Other large sectors like Healthcare, Government, Manufacturing, and Retail Trade are similarly concentrated or less concentrated than the national average.

Many tech jobs are spread between the Information sector, which includes software publishing companies, data processing companies, and information services companies, and the Professional Services sector, which includes computer services, consulting services, and specialized design services. These sectors are also the fastest-growing in the region, contribute the most revenue to the regional GRP, and have average salaries over \$200,000. Organizations concerned with poverty alleviation in the Bay Area will not be able to ignore the concentration of jobs and income in these two sectors.



Occupation Family Data for the Bay Area

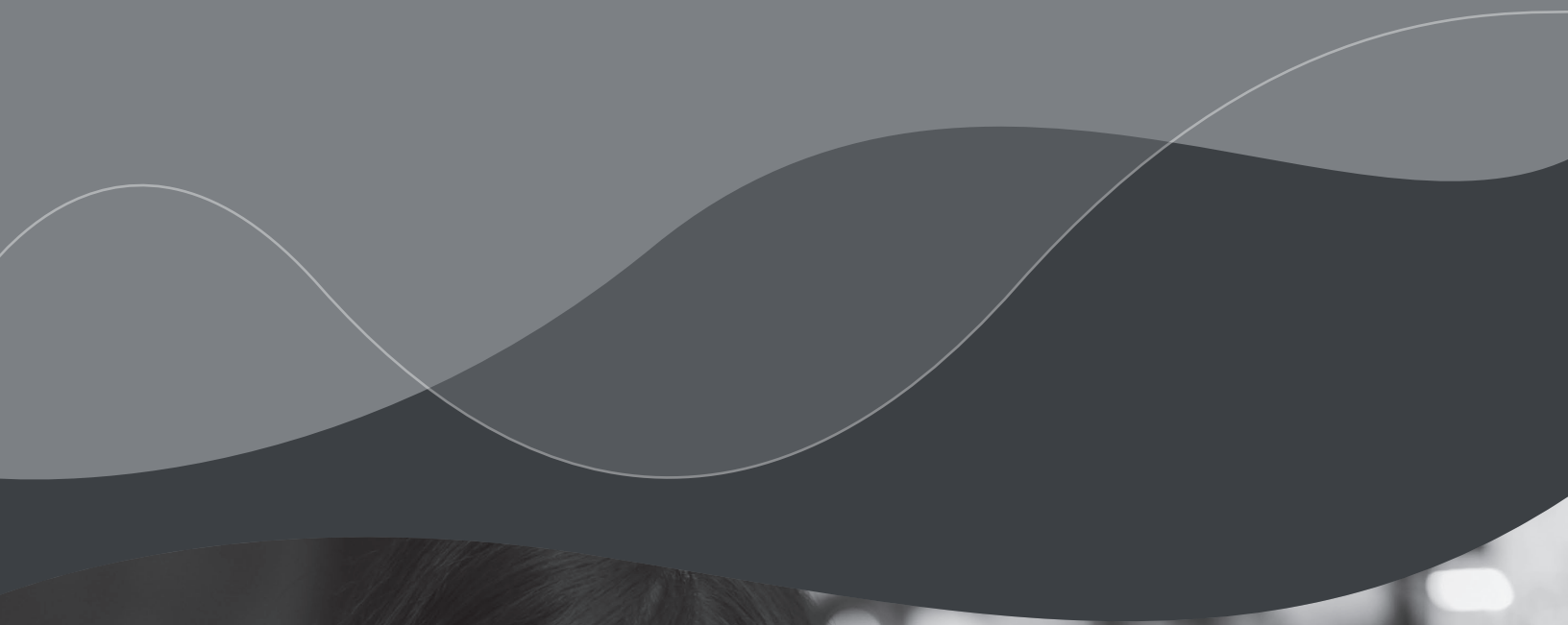
SOC Code	Description	2020 Jobs	2015 - 2020 Openings	Avg. Annual Openings	Percent Non-White	2020 Turnover Rate
<b>Total</b>		<b>4,265,180</b>	<b>3,168,268</b>	<b>633,654</b>	<b>59%</b>	<b>56%</b>
43-0000	Office and Administrative Support Occupations	440,345	309,052	61,810	55%	60%
11-0000	Management Occupations	368,143	221,634	44,327	48%	36%
41-0000	Sales and Related Occupations	354,308	293,768	58,754	53%	65%
13-0000	Business and Financial Operations Occupations	324,098	195,025	39,005	52%	41%
15-0000	Computer and Mathematical Occupations	305,811	167,933	33,587	68%	32%
35-0000	Food Preparation and Serving Related Occupations	274,755	344,426	68,885	65%	125%
53-0000	Transportation and Material Moving Occupations	266,531	226,013	45,203	65%	74%
25-0000	Educational Instruction and Library Occupations	247,090	169,323	33,865	49%	45%
31-0000	Healthcare Support Occupations	223,341	208,518	41,704	76%	63%
29-0000	Healthcare Practitioners and Technical Occupations	192,398	88,701	17,740	61%	23%
47-0000	Construction and Extraction Occupations	184,091	126,403	25,281	60%	66%
37-0000	Building and Grounds Cleaning and Maintenance Occupations	168,316	135,422	27,084	77%	57%
51-0000	Production Occupations	164,187	130,561	26,112	66%	53%
39-0000	Personal Care and Service Occupations	134,285	132,260	26,452	60%	73%
49-0000	Installation, Maintenance, and Repair Occupations	118,925	84,066	16,813	53%	49%
17-0000	Architecture and Engineering Occupations	112,921	62,656	12,531	59%	29%
27-0000	Arts, Design, Entertainment, Sports, and Media Occupations	100,643	75,525	15,105	42%	42%
33-0000	Protective Service Occupations	74,684	58,186	11,637	63%	66%
21-0000	Community and Social Service Occupations	71,246	49,663	9,933	60%	45%
19-0000	Life, Physical, and Social Science Occupations	63,536	43,205	8,641	54%	36%
23-0000	Legal Occupations	44,331	19,171	3,834	40%	24%
45-0000	Farming, Fishing, and Forestry Occupations	20,179	20,162	4,032	73%	149%
55-0000	Military-only occupations	11,018	6,595	1,319	49%	35%

While industry sector is a function of the employer, occupation families are defined around roles. For example, most industry sectors employ workers from the Sales and Related Occupations job family. The cross-cutting nature of occupation families provides a way for workers to leverage their career experience to transition into higher-paying industries while remaining within their occupation family. The skills-based approaches outlined in this report go one step further, encouraging transitions across industries and occupation families as long as there are underlying skill similarities or available job training programs that can provide an individual the necessary and defining skills for a new role.





# Developing Skills-Based Pathways





**THE GOAL OF THE WORK BETWEEN** Tipping Point and Emsi Burning Glass is to examine skills-based pathways into stable, entry-level occupations that pay a living wage in five target sectors. In addition to providing clear pathways into these roles, this engagement is also meant to spark a conversation about how training centers, worker advocacy groups, and education partners can use skill-level data. The project phases are detailed below.

### PHASE 1

Identify good entry-level occupations in five target sectors

#### TARGET SECTORS



healthcare, business and operations, finance, information technology, and manufacturing

#### DESIRABLE JOB CHARACTERISTICS



target roles must be accessible to workers without a college education, optimizing for jobs with many placement opportunities, family-sustaining stability through a living wage and long-run growth, the availability of employer partnerships, and the ability to signal aptitude in key skills with recognized certificates

### PHASE 2

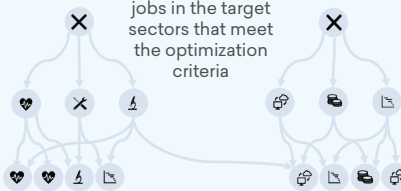
Scope skill-based pathways into entry-level roles and next-step jobs for these workers

#### FEEDER OCCUPATIONS

jobs where low-income people of color are concentrated

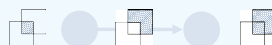
#### DESTINATION OCCUPATIONS

jobs in the target sectors that meet the optimization criteria



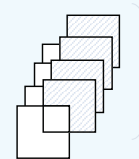
**NEXT-STEP OCCUPATIONS**  
advancement opportunities within and outside of the sector

**SKILL GAPS AND OVERLAPS BETWEEN OCCUPATIONS**  
advancement opportunities within and outside of the sector



### PHASE 3

Technical assistance to develop a work plan for integrating skill-level data into workforce development



How can service providers best use detailed data on skills and credentials that unlock career pathways?

Put together a strategy document that details the collective findings. What strategies do we recommend?



- ② Disseminating competency frameworks?
- ② Auditing job postings for skill and education requirements?
- ② Developing employer partnerships?
- ② Facilitating education credits for existing knowledge?
- ② Shortening the time it takes to earn credentials?

It may help to see how the pathways data can be used. Here is a sample selection of top five pathways:

*Pathways with Low Educational Requirements*

Occupation (Origin)	Black-Latinx-AIAN %	Occupation (Origin) Sector	Occupation (Origin) Salary	Occupation (Next-Step)	Black-Latinx-AIAN %	Occupation (Next-Step) Sector	Occupation (Next-Step) Salary
Retail Security Officer	41%	Not in target sector	\$33,172	Title Clerk (General)	21%	Business	\$53,154
Esthetician	22%	Not in target sector	\$49,639	Sales Consultant	19%	Business	\$62,548
Barber / Hair Stylist / Cosmetologist	32%	Not in target sector	\$49,454	Sales Consultant	19%	Business	\$62,548
Field Service Technician	44%	Not in target sector	\$51,340	Territory / Regional Sales Representative	15%	Business	\$62,630
Parking Enforcement Officer	26%	Not in target sector	\$39,135	Account Representative	18%	Business	\$48,371

*Pathways into Target Occupations with the Greatest Demand*

Occupation (Origin)	Black-Latinx-AIAN %	Occupation (Origin) Sector	Occupation (Origin) Salary	Occupation (Next-Step)	Black-Latinx-AIAN %	Occupation (Next-Step) Sector	Occupation (Next-Step) Salary
Gaming Worker	17%	Not in target sector	\$39,434	Technical Support Engineer / Analyst	16%	IT	\$76,738
Safety Specialist	35%	Not in target sector	\$59,218	Technical Support Engineer / Analyst	16%	IT	\$76,738
Railroad Service Worker	49%	Not in target sector	\$57,898	Technical Support Engineer / Analyst	16%	IT	\$76,738
Immigration / Customs Inspector	27%	Not in target sector	\$65,096	Technical Support Engineer / Analyst	16%	IT	\$76,738
Construction Safety Specialist	40%	Not in target sector	\$67,414	Technical Support Engineer / Analyst	16%	IT	\$76,738

## IDENTIFYING STABLE, ENTRY-LEVEL OCCUPATIONS THAT PAY A LIVING WAGE IN TARGET SECTORS

Target occupations meet the living wage threshold (>\$47,590 estimated market salary), are projected to grow, have significant demand (at least 100 job postings annually, which is large enough to support career service programming), and show demand for certificates that Tipping Point grantees can help individuals earn. Tipping Point grantees tend to focus on one or more of five main job groups: Business, Finance, Healthcare, IT, and Manufacturing. The research identifies 165 occupations across these five areas.

The report considers two measurements of accessibility to workers without a college degree. The first is in the column titled % of Demand at Entry Level, which measures the percent of job postings requesting less than a college degree and no more than two years of work experience. However, in some sectors (e.g., Healthcare), degrees or experience are assumed and therefore omitted from job postings. For this reason, results from an occupation survey that asked entry-level workers their level of education are also included. The results of this survey can be found in the column titled Most Common Educational Attainment of Entry-Level Worker. See Appendix I for the list of entry-level jobs.

There are two sectors that warrant close inspection: the healthcare sector, where licensure is common, and the IT sector, where employers tend to hire college grads despite the absence of formal education requirements. These sectors are discussed below.

Healthcare is the sector with the fewest target occupations that require no education beyond a high school diploma. There are commonly licensing or credentialing requirements for healthcare jobs. In some cases, the credentials can be earned without a full associate's degree (AA), though other times they do require a minimum of two years of school. Even in the case of many occupations with non-degree pathways, most entry-level workers do earn an AA degree. However, there are target healthcare jobs that really do not require an AA: Medical Coders are often hired with a certificate that takes 6-9 months to complete, Health Information Technicians can be hired right out of high school or after completing the same medical coding program, Neurodiagnostic Technicians commonly only need a certification that covers EEGs, and Patient Advocates typically require no more than a high school diploma.



The table below summarizes in more detail the education requirements for target occupations in Healthcare.

*Educational Requirements for Target Occupations in the Healthcare Sector*

Target Occupation	% of Demand at Entry Level (sub-college, <2 years of experience)	Most Common Educational Attainment of Entry-Level Worker	Detailed Educational Requirements
Radiologic Technician / Technologist	81%	Associate degree	Certificate (e.g., ARRT cert in Radiography) or AA degree
Physical Therapy Assistant	94%	Associate degree	PTA program from the APTA and passing a licensure exam
Ultrasound Technologist / Sonographer	80%	Associate degree	AA in allied health program, additional certificates available
Cardiovascular Technician / Technologist	87%	Associate degree	Certificate program that commonly lasts 1 year
MRI / CT Technician / Technologist	75%	Associate degree	Certification from ARRT or ARMRT
Chemical Technician	31%	Associate degree	AA in allied health program
Occupational Therapy Assistant	94%	Associate degree	AA in OTA program
Respiratory Therapist	69%	Associate degree	AA in Respiratory Care and passing licensure exam
Medical Coder	46%	Postsecondary certificate	Certificate program
Health Educator	41%	Bachelor's degree	High school education and on-the-job training
Fitness / Wellness Manager	72%	Bachelor's degree	Some prior experience as a trainer or wellness specialist
Dental Hygienist	77%	Associate degree	AA
Health Information Technician / Cancer Registrar	53%	Postsecondary certificate	Postsecondary certifications
Research Technician	35%	Bachelor's degree	AA, with additional certs available
Athletic Trainer	42%	Bachelor's degree	On the job training, with certs available for degree holders
Neurodiagnostic Technician / Technologist	73%	Postsecondary certificate	On the job training, or non-degree certificate, or AA or BA
Histotechnologist / Histotechnician	71%	Bachelor's degree	Accredited histology program, including online options
Clinical Auditor / Utilization Reviewer	29%	Bachelor's degree	AAPC cert, which recommends but doesn't require AA
Patient Advocate / Navigator	40%	High school diploma or equivalent	On the job training

In contrast to the Healthcare sector, the target occupations in the IT sector often have low formal education requirements but employers tend to hire workers with a bachelor's degree (BA). For example, there are no formal education requirements to becoming a Salesforce Developer or UI/UX Designer, despite workers in these jobs most commonly holding a BA or AA. In IT jobs where much of the existing workforce has a college degree, it can be difficult for those without a degree to stand out. Fortunately, demand for IT jobs is growing quickly, especially in the Bay Area. The three fastest-growing occupations in the list of target occupations are all IT jobs. To meet demand, employers can consider other signals of readiness, like certificates, badges, portfolios, and recommendations from career service providers. Accelerating employment in the IT sector for candidates without a college degree will require some amount of employer change in hiring, and the supply gap for IT professionals may motivate that change. Career service providers can support employers making this change, by demonstrating how to expand the talent pool for a vacancy by identifying skill similarities between the vacant role and other occupations in the local labor force.

## Demographic Information for the Region, Sectors, and Target Occupations

Race/Ethnicity Characteristics of the Bay Area, Target Sectors, and Target Entry-Level Occupations, with Shading Based on Over- (Green) and Under- (Red) Representation Relative to the Overall Bay Area

Category	Emp.	% of Emp	Employment					% Race/Ethnicity				
			AIAN	API	Black	Latinx	White	AIAN	API	Black	Latinx	White
Overall Bay Area	3,900,342		8,197	1,114,437	209,346	912,624	1,655,738	0%	29%	5%	23%	42%
<b>Tippling Point Sectors</b>												
Bus. / Admin.	1,204,751	31%	2,825	305,601	71,046	249,732	575,548	0%	25%	6%	21%	48%
Healthcare	364,561	9%	674	135,644	22,381	52,345	153,517	0%	37%	6%	14%	42%
IT	321,589	8%	292	173,088	7,553	20,340	120,317	0%	54%	2%	6%	37%
Manuf.	226,242	6%	593	101,086	6,334	47,829	70,400	0%	45%	3%	21%	31%
Finance	216,825	6%	432	77,653	8,903	26,241	103,596	0%	36%	4%	12%	48%
<b>Target Entry-Level Occupations</b>												
Bus. / Admin.	158,669	4%	275	38,134	7,070	22,691	90,498	0%	24%	4%	14%	57%
Finance	42,810	1%	146	11,438	1,866	5,885	23,475	0%	27%	4%	14%	55%
Healthcare	18,292	0%	79	5,419	1,905	2,873	8,015	0%	30%	10%	16%	44%
IT	60,127	2%	127	26,407	2,074	5,397	26,122	0%	44%	3%	9%	43%
Manuf.	46,605	1%	151	18,897	1,504	11,335	14,717	0%	41%	3%	24%	32%
Overall	326,503	8%	778	100,296	14,420	48,181	162,828	0%	31%	4%	15%	50%
<b>Not in target sector</b>												
Not in target sector	1,566,373	40%	3,381	321,366	93,130	516,137	632,358	0%	21%	6%	33%	40%

The Bay Area is majority minority, where white workers make up 42% of employment, Asian and Pacific Islanders (API) workers 29%, Latinx workers 24%, Black workers 5%, and American Indian and Alaskan Native (AIAN) workers make up <1%.

Relative to their proportion in the overall workforce, API workers are over-represented in all target sectors except for Business and Administration, where they are slightly below par. Among target entry-level occupations, though, API workers are less well represented. As seen in the earlier section, API workers are also over-represented among the unemployed. This trend suggests that there may be a steppingstone of early-career employment that some API workers struggle to move through.

In the IT sector, API employment is particularly high, comprising a majority (54%) of the workforce. Black and Latinx workers are very under-represented in the IT sector: Black workers make up 2% of IT jobs compared to 5% of the workforce overall, and Latinx workers make up 6% of IT jobs compared to 23% of the workforce overall. Employment of Black and Latinx workers is only marginally higher in entry-level IT occupations, at 3% and 9%, respectively.

In Business and Administration jobs, the API and Latinx populations are slightly under-represented while the Black and AIAN populations are at parity with their proportion of the overall workforce. Among target entry-level occupations in Business and Administration, all non-white groups are under-represented,

indicating the lack of a foothold for people of color to get a start in Business and Administration.

In Finance, API workers are well represented in the sector overall, but all non-white groups are poorly represented across entry-level positions.

Black workers are highly represented in Healthcare occupations (6% of the Healthcare workforce), and even more so in target entry-level healthcare occupations (10% in entry-level Healthcare jobs). Latinx workers are under-represented in Healthcare jobs overall and among target entry-level positions.

In manufacturing jobs, API workers are well represented in the sector overall, and API and Latinx workers are well represented in entry-level positions.

The research also generated job-title level estimates for employment by race/ethnicity and gender cohort. These granular estimates help in the subsequent stage of scoping equity-building career pathways. The table below shows five target entry-level occupations in each sector with the largest share of workers who are AIAN, Black, or Latinx.

*Target Entry-Level Occupations with the Largest Share of Black, Latinx, or American Indian or Alaskan Native Workers, by Sector*

TP Sector	Specialized Occupation	Bay Area Employment	AIAN	API	Black	Latinx	White	Black-Latx-AIAN
Bus. / Admin.	Compensation / Benefits Specialist	1059	0%	22%	24%	21%	34%	45%
	Logistics Specialist	1269	1%	20%	11%	31%	38%	42%
	Facilities Specialist / Coordinator	848	0%	7%	1%	29%	64%	29%
	Purchasing Assistant	1131	0%	36%	12%	15%	37%	27%
	Municipal / License / Court Clerk	4278	0%	31%	8%	18%	43%	26%
Finance	Fraud Examiner / Analyst	289	0%	23%	16%	16%	45%	31%
	Payroll Specialist (General)	2063	0%	27%	10%	22%	41%	31%
	Claims Adjuster / Specialist	3828	1%	27%	12%	18%	43%	31%
	Loan Officer (General)	2476	0%	26%	7%	19%	48%	27%
	Credit / Loan Counselor	507	0%	27%	5%	21%	47%	26%
Healthcare	Health Educator	2414	1%	12%	32%	20%	35%	53%
	Medical Coder	668	1%	30%	6%	31%	33%	37%
	MRI / CT Technician / Technologist	872	0%	24%	11%	23%	42%	33%
	Cardiovascular Technician / Technologist	604	0%	27%	20%	13%	41%	33%
	Athletic Trainer	1048	4%	18%	15%	13%	51%	31%
IT	Database Administrator	1512	1%	38%	1%	20%	40%	22%
	Multimedia Designer / Animator	1750	0%	21%	8%	12%	60%	19%
	Technical Support Engineer / Analyst	7981	0%	43%	8%	11%	38%	19%
	Computer Support Specialist	7270	0%	39%	4%	13%	44%	17%
	Network Administrator	634	0%	42%	4%	11%	43%	15%
Manufacturing	Plant Operator	3098	0%	6%	2%	74%	18%	76%
	Stationary Engineer / Boiler Operator	3122	2%	29%	7%	24%	38%	33%
	CNC Programmer	2100	0%	46%	3%	29%	21%	32%
	Machinist	5246	1%	32%	1%	30%	37%	32%
	Controls / Valve Technician	323	0%	24%	0%	28%	49%	28%

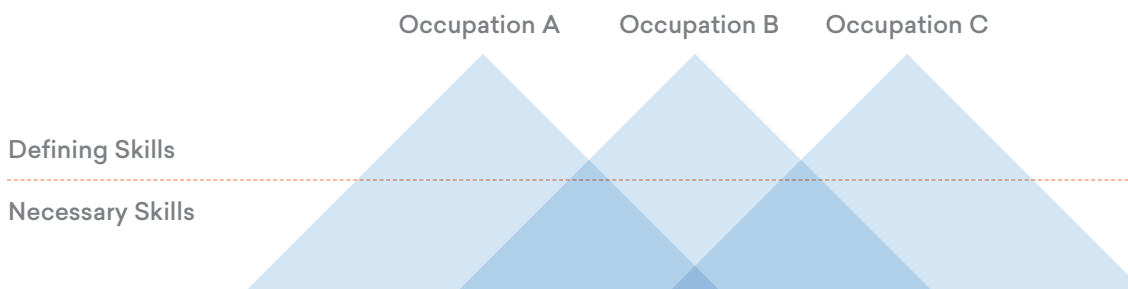
## Skill Profiles

Skill profiles are helpful in reviewing the core competencies for a role against the training program curricula that exist for that role. Skills include tools, knowledge, concepts, abilities, and competencies, but do not include tasks. For example, Scheduling is a skill whereas Manage an Executive's Schedule is a task.

Key skills for an occupation can be either necessary skills or defining skills. Necessary skills are required for a job but themselves insufficient to deliver on the core responsibilities of the role. Defining skills are concentrated within one occupation or a small group of related occupations. Defining skills are what makes an occupation unique and distinct from other occupations.

Necessary skills are often cross-cutting, in that the skill is applicable across a wider range of occupations. Defining skills are more narrowly relevant to a smaller group of occupations, but they signal true readiness for the occupation.

### *Necessary and Defining Skills*



In a skills-based hiring approach, employers must decide which skills to buy and which to build. Workers in skills-similar roles will have some, but not all, of the skills required for a role. It is often easier for employers to find necessary skills in the pool of available workers, and it is more difficult to find workers with defining skills who are not already employed in the target occupation.



Target Occupation Name	Skill Name	% of Job Postings for Occupation Requesting Skill (min. 5%)	Defining or Necessary Skill
Account Executive & Publisher	Advertising Sales	93%	Defining
	Sales	87%	
	Sales Goals	50%	
	Digital Advertising	29%	
	Salesforce	39%	Necessary
	Sales Calls	34%	
	Advertising	26%	
	Account Management	17%	
	Business Development	14%	
	Sales Prospecting	12%	
	Prospective Clients	12%	
	Ad Campaigns	10%	

## SCOPING EQUITY-BUILDING, SKILLS-BASED PATHWAYS INTO STABLE, ENTRY-LEVEL JOBS THAT PAY A LIVING WAGE

Career pathways, or job transitions, are developed between occupations according to the following criteria: possibility, feasibility, and desirability. The transition has to be possible from a skills perspective, it has to be feasible from a pre-requisites perspective, and it has to be desirable from a worker perspective by offering a higher salary. Demographic data is also included, so that it is possible to identify equity-building pathways, or job transitions into occupations where people of color are presently under-represented.

### Criteria for Job Transitions in Career Pathways

#### POSSIBILITY

- ✔ Knowledge, skill, ability overlap between occupations.
- ✔ Augment Emsi Burning Glass skill data with O\*NET KSA data

#### FEASIBILITY

- ✔ Similar education, credential, and experience requirements.
- ✔ Stable or growing demand for next-step occupation.

#### DESIREABILITY

- ✔ Next-step occupation offers a higher wage.

The career pathway data includes the elements listed below, which provide a high level of versatility to the dataset. For example, we can look specifically at transitions that bring workers into a target occupation by filtering on the *Transition Type* column to “Feeder to Target.” We can further narrow in on equity-building transitions by filtering the column titled *Is this an equity-building transition?* to “Yes.” These meta columns also enable users to focus on a particular sector and on whether the transitions involve moving up within sectors or lateral advancement across sectors.

Column Name	Description
Target Occupation	The name of the target occupation within one of the five sectors.
White %	Demographic data. People of color are divided into the API population and the Black-Latinx-AIAN population group.
API %	
Black-Latinx-AIAN %	
Equity Built in Transition for Black-Latinx-AIAN Workers	Equity-building transitions are from occupations with a greater proportion of Black-Latinx-AIAN workers to occupations with a lower proportion. These transitions build equity in aggregate because they create greater diversity in higher-paying occupations. This column shows the percentage point difference in representation of Black-Latinx-AIAN workers between the source and next-step jobs.
Target Occupation Sector	Which of the five sectors the job comes from
Transition Type	There are two transition types: Feeder to Target and Target to Next Step. Feeder to Target transitions get workers into target occupations. Target to Next Step transitions chart a career forward from the target occupation.
Advancement Type	There are two transition types: Lateral Advancement into a New Sector and Upward Advancement within Sector. These represent whether the transition is within or across sectors. All transitions are upward transitions.
Bay Area Average Annual Job Posting Demand	The average number of job postings for this job in the Bay Area
Bay Area Employment	The current employment estimate for this job in the Bay Area
Most Common Educational Attainment of Entry-Level Worker in Occupation	This is modeled from survey data, and it represents the most common level of educational attainment held by workers entering this occupation.
Sub BA throughout	This is a flag for whether both jobs in the transition are Sub-BA.
Similarity Score	This is a measure of the skill similarity or skill adjacency between the two roles
Overlap of Necessary and Defining Skills	This is a list of the actual skills (including concepts, knowledge, abilities, competencies, etc.) that overlap between the two roles. The skills listed here are "necessary" or "defining" skills, so they don't represent all of the skills attained or used in a job. There can be skill similarity / skill adjacency even when there are no overlapping necessary or defining skills.
Necessary or Defining Skills in Occupation (Origin) Only	These skills are only present in the origin occupation
Skills that can be bridged to be more competitive	These skills are only present in the next-step occupation

## Sample Career Pathway

For example, here is an equity-building transition:

Example of a Skills-Based Transitions into an Occupation

Occupation (Next-Step)						
Occupation (Next-Step)	White %	API %	Black-Latinx-AIAN %	Tipping Point Sector	Most Common Educational Attainment of Entry-Level Worker in Occupation	Salary
Real Estate Agent	67%	3%	30%	Business	High school diploma or equivalent	\$60,734
Occupation (Origin)						
Occupation (Origin)	White %	API %	Black-Latinx-AIAN %	Tipping Point Sector	Most Common Educational Attainment of Entry-Level Worker in Occupation	Salary
Claims Adjuster / Specialist	43%	12%	46%	Finance	High school diploma or equivalent	\$53,937
Insurance Sales Agent (General)	55%	2%	42%	Finance	High school diploma or equivalent	\$48,612
Bookkeeper	62%	4%	34%	Finance	Some college, no degree	\$47,908
Construction Helper / Worker	23%	2%	75%	Not in target sector	No formal educational credential	\$41,927
Social / Human Service Assistant	35%	11%	54%	Not in target sector	High school diploma or equivalent	\$43,787
Paralegal / Legal Assistant	53%	6%	41%	Not in target sector	Associate degree	\$57,115
Forest / Conservation Technician	47%	3%	50%	Not in target sector	Associate degree	\$51,179

Skill Gaps and Overlaps for Above Transitions

Occupation (Origin)	Similarity Score	Overlap of Necessary and Defining Skills	Skills That Can Be Bridged to Be More Competitive
Claims Adjuster / Specialist	0.46	Customer Service, Customer Contact	Budgeting, Social Media, Prospective Clients, Real Estate Experience, Real Estate Sales, Contract Preparation, Sales
Insurance Sales Agent (General)	0.45	Sales, Customer Service, Prospective Clients, Customer Contact	Budgeting, Social Media, Real Estate Experience, Real Estate Sales, Contract Preparation
Bookkeeper	0.41	Customer Service, Customer Contact, Budgeting	Social Media, Prospective Clients, Real Estate Experience, Real Estate Sales, Contract Preparation, Sales
Social / Human Service Assistant	0.40	Customer Contact, Customer Service	Budgeting, Social Media, Prospective Clients, Real Estate Experience, Real Estate Sales, Contract Preparation, Sales
Paralegal / Legal Assistant	0.39	Customer Contact, Customer Service	Budgeting, Social Media, Prospective Clients, Real Estate Experience, Real Estate Sales, Contract Preparation, Sales
Forest / Conservation Technician	0.32	Budgeting	Social Media, Prospective Clients, Real Estate Experience, Real Estate Sales, Customer Service, Customer Contact, Contract Preparation, Sales



# Technical Assistance and Strategy Sessions







**T**HE ENGAGEMENT BETWEEN Tipping Point and Emsi Burning Glass concluded with a series of three technical assistance sessions. The goal of these sessions was to operationalize the use of granular, skill-level data in the typical workflows of workforce development organizations.

The three technical assistance sessions focused on curriculum auditing, career coaching, and DEI and engaging employers. The technical assistance is summarized below.

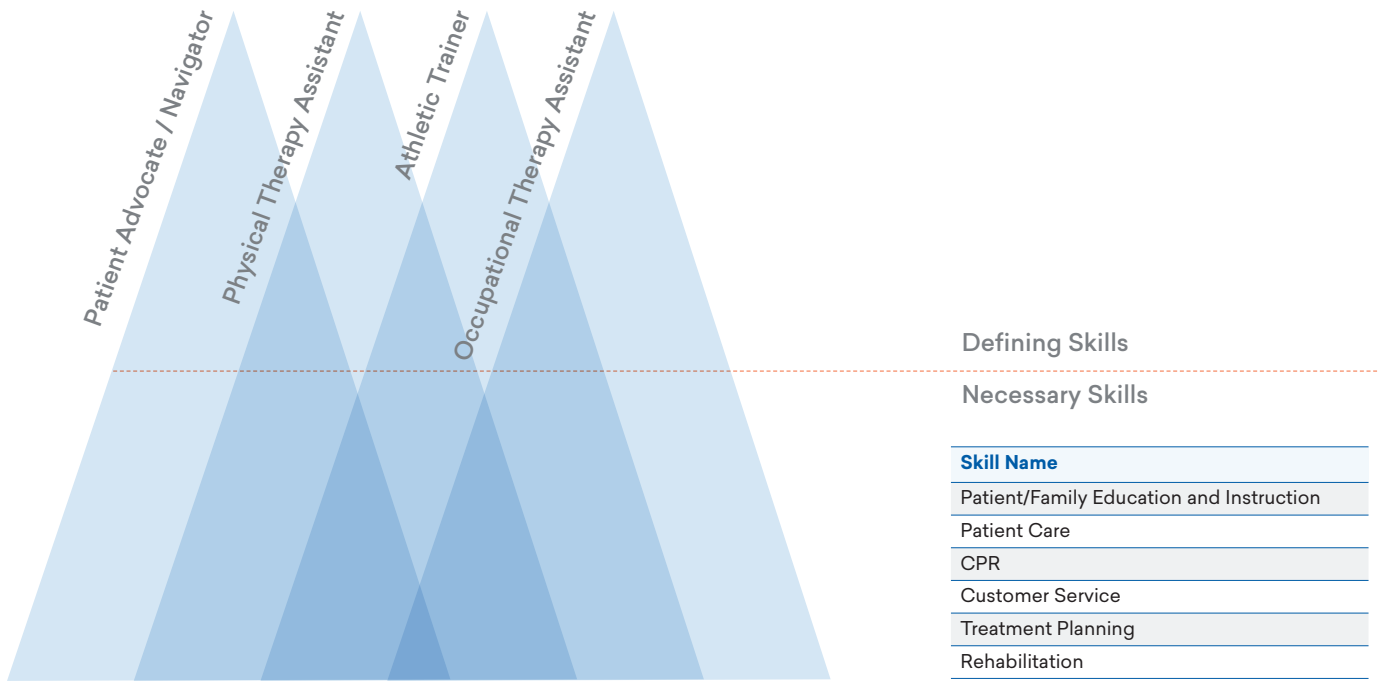
## CURRICULUM AUDITING

The skills-level data featured in the engagement between Emsi Burning Glass and Tipping Point grantees can be used to review the curricula for job training programs. Job training programs that target a specific occupation should instruct most of the necessary and defining skills listed in job postings. Job training programs that target a sector or group of occupations should instruct the skills that commonly cut across the jobs in that sector. The use cases below discuss ways to operationalize the skill-level data in curriculum auditing exercises.

### Curriculum Auditing Use Case 1

**Challenge:** A training provider previously offered four separate courses for four distinct occupational targets, since the targeted occupations have different credentialing requirements. Is there a way to audit the skills taught in the courses and reorganize the programming flow?

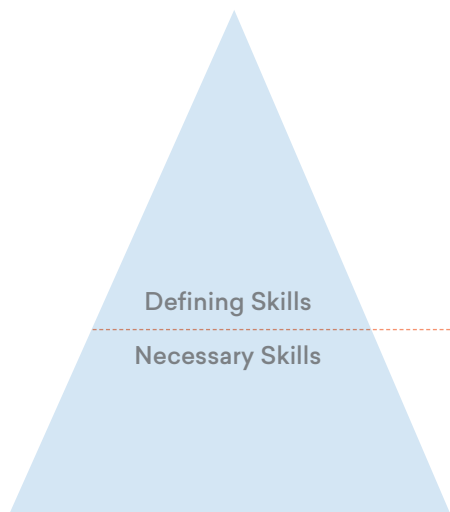
**Solution:** After reviewing the skills that overlap between these four occupations, the training provider developed a “Patient Centered Care Fundamentals” course that served as a foundational course for students who could then choose to specialize in one of four shorter courses that instructs the defining skills needed to earn a credential in the relevant occupation.



## Curriculum Auditing Use Case 2

**Challenge:** A training provider is reviewing a program that prepares individuals for work as a Bookkeeper. The course focuses on the basic mathematics needed for double-entry bookkeeping and summarizing daily cash flow. How can the training provider review their curriculum for the course?

**Solution:** Upon reviewing the defining skills for the occupation, the training provider decides to purchase licenses for Quickbooks and train their staff on teaching students how to use this specific program, in addition to the basic mathematics behind bookkeeping. The training provider further notes that bookkeeping positions are tasked with generating routine financial statements, some of which can be done in programs like Quickbooks and some of which are specific to individual employers. The training organization develops a module on financial reporting for inclusion in the bookkeeping program, and the organization invites an experienced bookkeeper to discuss the ins and outs of financial statement best practices in entry-level bookkeeping roles.



Skill Name	% of Job Postings for Occupation Requesting Skill
Bookkeeping	99%
Accounting	79%
Quickbooks	61%
General Ledger	34%
Account Reconciliation	25%
Financial Statements	23%
Financial Reporting	22%

## CAREER COACHING

Career coaching is a type of advice-giving and support provided by career counselors to their clients, to help the clients manage their journey through life, learning and work changes. The relationship between the client and the career coach is collaborative. The client brings their goals, aspiration, interests, and an understanding of their work experience, education history, and skills.

### Collaborative Information Sharing Between Career Coaches and Clients

Information Supplied by Client, Likely Unknown to Career Coach	Information Arrived At Collaboratively Through Career Coaching Discussions	Information Supplied by Career Coach, Likely Unknown to Client
<ul style="list-style-type: none"> <li>⊙ Client career history</li> <li>⊙ Degrees and certifications held by client</li> <li>⊙ Professional interests</li> <li>⊙ Job characteristics sought by client</li> <li>⊙ Long term goals and aspirations</li> </ul>	<ul style="list-style-type: none"> <li>⊙ Client’s knowledge, skills, and abilities—career coach should expand on the list provided by the client by referring to labor market intelligence on commonly co-occurring skills and the skill profiles of jobs in the client’s career history</li> <li>⊙ What skills and abilities to advertise, and how best to position them on a resume or in an interview</li> <li>⊙ Strong career path options</li> <li>⊙ Salary expectations</li> <li>⊙ Negotiating strategies</li> </ul>	<ul style="list-style-type: none"> <li>⊙ Training needed by client to achieve goals</li> <li>⊙ Information on workforce trends</li> <li>⊙ Where to look for jobs</li> </ul>

## Career Coaching Use Case 1

**Challenge:** A digitally literate young person is looking to break into the tech field but does not have a BA degree. How can the career coach help the client find stable, entry-level jobs with living-wage pay to break into the tech sector?

**Solution:** The career coach can look at the occupations that most commonly request Technical Assistance, a skillset in which the individual feels proficient. There are five such occupations, three of which have very high average annual demand and represent strong entry-level occupations in the tech sector.

### Target Occupations Commonly Requesting the Technical Assistance Skill

Target Occupation Name	% of Job Postings Requesting “Technical Assistance”	Defining or Necessary Skill
Computer Support Specialist	68%	defining
Technical Support Engineer / Analyst	59%	defining
Systems Support Specialist	40%	defining
Application Support Engineer / Analyst	28%	defining
IT Administrator	27%	defining
Support Engineer	26%	defining
IT Specialist / Engineer	25%	defining
Systems Administrator	18%	defining
Salesforce Administrator	15%	necessary
Network Administrator	14%	necessary
Network Analyst / Specialist	12%	necessary
Windows Administrator	12%	necessary
Programmer / Analyst	11%	necessary
Server Administrator	10%	necessary

### Identifying Occupations that Require the Technical Assistance Skill and Do Not Require a Bachelor's Degree

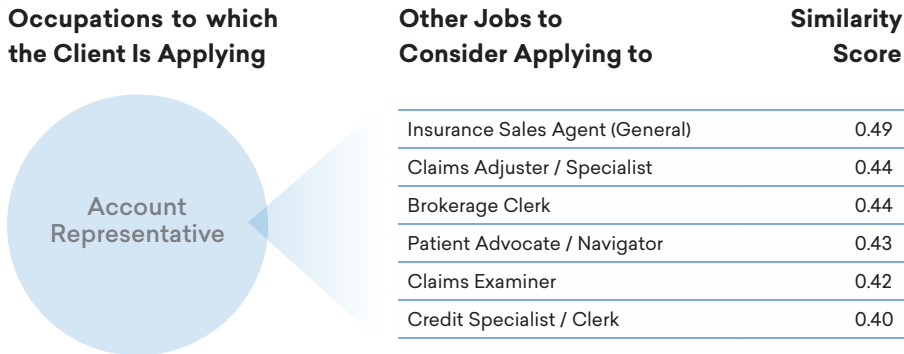
Occupation Name	Projected Growth (10 year)	Average Predicted Salary	Average Annual Demand	Most Common Educational Attainment of Entry-Level Worker
Computer Support Specialist	14%	\$54,737	3,073	Some college, no degree
Technical Support Engineer / Analyst	14%	\$76,417	3,642	Some college, no degree
Systems Support Specialist	13%	\$67,949	957	Some college, no degree
Application Support Engineer / Analyst	11%	\$86,384	1,784	Some college, no degree
IT Administrator	4%	\$79,482	267	Bachelor's degree
Support Engineer	29%	\$95,888	947	Bachelor's degree
IT Specialist / Engineer	13%	\$80,959	383	Some college, no degree
Systems Administrator	6%	\$87,826	2,481	Bachelor's degree
Salesforce Administrator	19%	\$92,144	352	Bachelor's degree
Network Administrator	4%	\$84,453	487	Bachelor's degree
Network Analyst / Specialist	9%	\$92,246	500	Bachelor's degree
Windows Administrator	1%	\$86,274	300	Bachelor's degree
Programmer / Analyst	3%	\$95,782	665	Bachelor's degree
Server Administrator	0%	\$88,006	122	Bachelor's degree
Systems Analyst	9%	\$98,403	2,426	Bachelor's degree
VMware Engineer / Administrator	7%	\$104,015	149	Bachelor's degree
Telecommunications Specialist / Engineer	0%	\$84,198	218	Bachelor's degree
Database Administrator	13%	\$91,130	2,330	Bachelor's degree
Configuration Analyst / Specialist	6%	\$85,512	172	Bachelor's degree
Cyber Security Specialist / Technician	23%	\$87,794	228	Bachelor's degree

## Career Coaching Use Case 2

**Challenge:** A client is applying to every account representative position they can find but aren't having luck with landing interviews. How can the career coach help the client expand their job search?

**Solution:** The career coach uses the similarity score to find skills-similar occupations that might also interest the client and for which the client is likely to have qualifying skills.

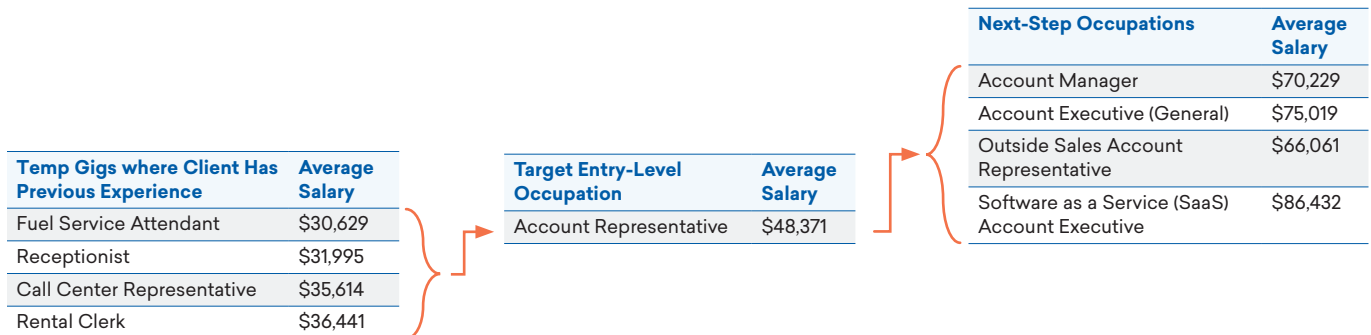
*Using Skill Similarity to Expand the Job Search*



**Challenge:** A client is discouraged after their experience bouncing between a few temporary employment gigs, such as a Fuel Service Attendant, a Receptionist, and at a call center. How can the career coach help the client envision a career trajectory that has enough options to be exciting (keeping doors open) while focusing on feasible transitions between jobs?

**Solution:** The career coach helps the individual map out a few career occupations using skill similarity to take the broadest possible scope of available occupations and therefore provide the most interesting career options for the client.

*Building Career Pathways Using Skills-Similar Job Transitions and Salary Information*



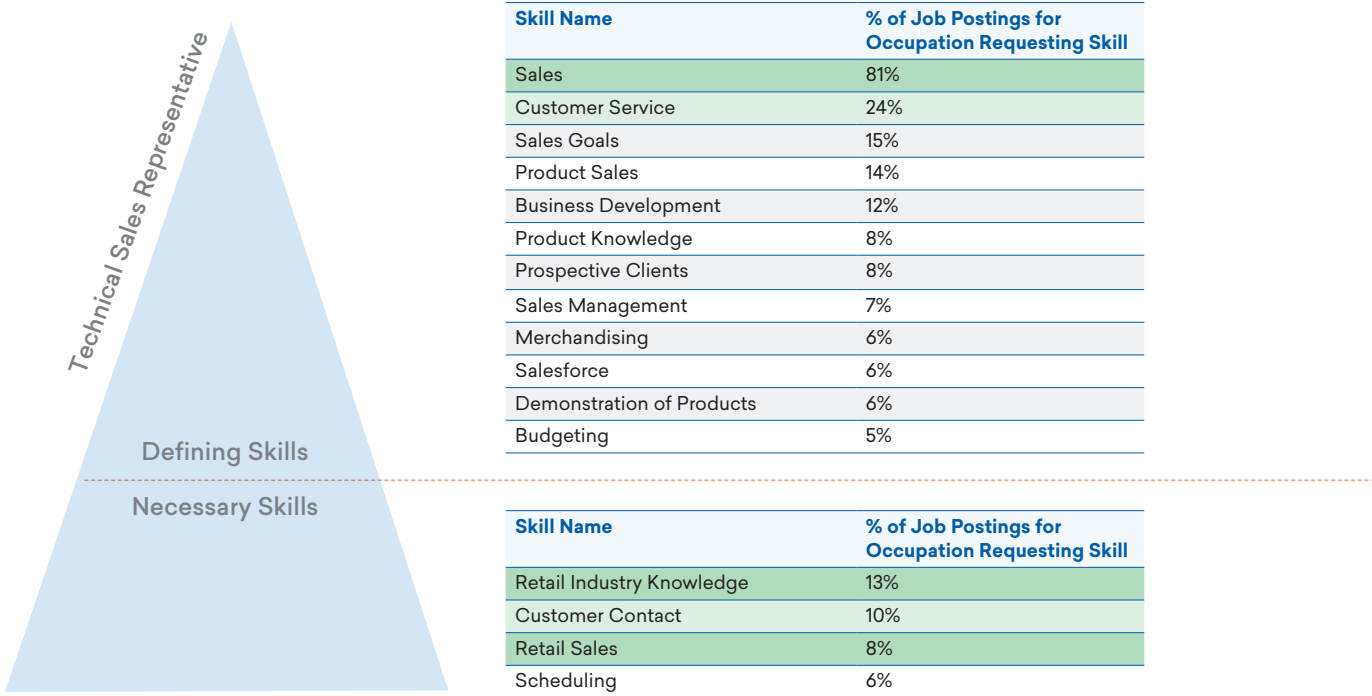


### Career Coaching Use Case 3

**Challenge:** A client expresses that they have a hard time landing a job as a technical sales representative because they don't have the subject matter expertise in the product market in which they are looking for employment. How can the career coach help the client to focus more on skill overlaps than skill gaps?

**Solution:** The career coaches find that the top two most important skill sets are related to basic sales and basic customer service abilities. Specific product knowledge is only requested around 8% of the time, and the ability to run product demonstrations from day one is only expected in 6% of job postings. The career coach further works with the client to review their work history for relevant experience. The coach sees that the individual previously worked a retail job, which positions the individual well to advertise customer contact and retail sales skills.

*Building Confidence and Positioning Skills During the Job Search Process*



## Career Coaching Use Case 4

**Challenge:** A client formerly employed in customer service lost their job when the company outsourced the function to a contractor overseas. The client is keen to find a stable job in which they are unlikely to face displacement pressures. How can the career coach take the displacement sensitivity seriously, by optimizing for stable, long-term job prospects?

**Solution:** The career coach combines the skill similarity data with the occupation profile data on projected growth and automation risk. Occupations above .85 are at high risk of automation, so those are not good fits for the client even if the short-term growth projections are high. The remaining two occupations are projected to grow by more than 10% over 10 years, so these occupations are not likely to face displacement pressure. The career coach can help the client work up a resume for Computer Support Specialist and Sales Support Specialist positions using the overlapping skills from the skill-similarity job transition matrix.

### Identifying Stable and Skills-Similar Jobs

Target Occupation	Similarity Score from Call Center Representative	Overlap of Necessary and Defining Skills	Projected Growth	Automation Score
Insurance Sales Agent (General)	0.45	Sales, Customer Contact, Customer Service, Appointment Setting	4%	0.92
Computer Support Specialist	0.41	Customer Contact, Customer Service	14%	0.61
Outside Sales Representative	0.46	Sales, Customer Contact, Customer Service, Appointment Setting	10%	0.81
Life / Health Insurance Sales Agent	0.41	Sales, Customer Service, Appointment Setting, Scheduling	14%	0.92
Territory / Regional Sales Representative	0.41	Sales, Customer Contact, Customer Service, Scheduling	3%	0.80
Claims Adjuster / Specialist	0.44	Customer Contact, Customer Service, Data Entry, Scheduling	1%	0.98
Account Representative	0.43	Sales, Customer Contact, Customer Service, Data Entry, Scheduling	4%	0.85
Sales Support Specialist	0.41	Sales, Customer Contact, Customer Service, Scheduling	10%	0.71

# DIVERSITY, EQUITY, AND INCLUSION AND ENGAGING EMPLOYERS

Marrying data on employment outcomes (representation, retention, mobility) with skills-level data can unlock internal pathways and lead to expanded talent pools for hiring that advances racial and gender equity. Career services organizations, such as Tipping Point grantees and other workforce development practitioners, can use detailed demographic data and detailed skill data to engage employers to develop those internal pathways and expand their talent pools.

Career services providers can also use the demographic data detailed above to benchmark representation in job training programs and to set goals and establish accountability for making their client population more representative of the community.

## DEI Use Case 1

**Challenge:** A career services provider is interested in developing a job training program that provides bridge skills and certificates to individuals in entry-level roles in target sectors, in order to help them advance within the sector. The organization wants this training to complement their commitment to racial justice.

**Solution:** In order to focus on racial justice, the organization commits to focusing on entry-level jobs that employ a large number or high concentration of people of color, so that their job training program naturally oversamples people of color. They refer to the tables below and opt to develop two programs, one that focuses on next-step skills for Office / Administrative Assistants and another that focuses on advancement opportunities for Security Officers. By targeting their upskilling efforts to Office / Administrative Assistances and Security Officers, the organization will be targeting occupations where people of color are crowded, and the training program will provide a bridge out of that occupation into a role with a higher salary, greater upward mobility, or less precarity.

*Occupations that Employ the Greatest Number of Black Women in Target Sectors in the Bay Area*

Specialized Occupation (Job Title)	Tipping Point Sector	Total Employment Estimate	Employment of Black Women	% Employment of Black Women	% Employment of White Workers
Caregiver / Personal Care Aide	Healthcare	59,660	6,081	10%	20%
Cashier	Business	67,440	3,256	5%	23%
Nursing Assistant	Healthcare	19,046	2,926	15%	12%
Registered Nurse	Healthcare	52,859	2,439	5%	42%
Office / Administrative Assistant	Business	39,805	1,933	5%	44%
Customer Service Representative (General)	Business	30,064	1,714	6%	40%
Project / Program Administrative Assistant	Business	25,431	1,679	7%	48%

*Occupations that Employ the Highest Concentration of Black Women in the Bay Area*

Specialized Occupation (Job Title)	Tipping Point Sector	Total Employment Estimate	Employment of Black Women	% Employment of Black Women	% Employment of White Workers
Nursing Assistant	Healthcare	19,046	2,926	15%	12%
Home Health Aide	Healthcare	5,938	859	14%	18%
Licensed Practical / Vocational Nurse	Healthcare	13,070	1,375	11%	22%
Caregiver / Personal Care Aide	Healthcare	59,660	6,081	10%	20%
Front Office Assistant	Business	13,410	1,009	8%	37%
Technical Customer Service Representative	Business	17,912	1,311	7%	37%
Security Officer	Business	22,112	1,522	7%	24%

## DEI Use Case 2

**Challenge:** A career services provider wants to make sure that Black, Latinx, and American Indian or Alaskan Native individuals are better represented in their client base than in the jobs that they train for.

**Solution:** The organization sets enrollment goals to double the representation of Black, Latinx, and American Indian or Alaskan Native clients in their programs in order to exceed the levels of representation in entry-level roles for the target sector.

*Demographic Information for Tipping Point Target Sectors*

Category	Emp.	% of Emp	Count					Percent				
			AIAN	API	Black	Latinx	White	AIAN	API	Black	Latinx	White
Overall Bay Area	3,900,342		8,197	1,114,437	209,346	912,624	1,655,738	0.2%	29%	5%	23%	42%
Business Sector	1,204,751	31%	2,825	305,601	71,046	249,732	575,548	0.2%	25%	6%	21%	48%
Healthcare Sector	364,561	9%	674	135,644	22,381	52,345	153,517	0.2%	37%	6%	14%	42%
IT Sector	321,589	8%	292	173,088	7,553	20,340	120,317	0.2%	54%	2%	6%	37%
Manufacturing Sector	226,242	6%	593	101,086	6,334	47,829	70,400	0.3%	45%	3%	21%	31%
Finance Sector	216,825	6%	432	77,653	8,903	26,241	103,596	0.2%	36%	4%	12%	48%

## Engaging Employers Use Case 1

**Challenge:** A tech employer has expressed interest in setting diversity targets for representation at the “top of the funnel” in their hiring process, specifically looking to engage more Black and Latinx women in tech.

**Solution:** The career services provider pulls job-level representation statistics for common tech occupations and confirms that representation is very low for Black and Latinx women. The career services provider shows that some occupations have 2% Black women and others have up to 4% Latinx women. In an effort to not only meet but exceed diversity standards in the industry, the career services provider recommends that the employer aim to have 10% of candidates interviewed be Black or Latinx women, which would have the chance of more than doubling the representation of these women in the sector if other employers acted similarly.

*Using Job-Level Race/Ethnicity Data to Review the Candidate Funnel*

Specialized Occupation	Black Women	Latinx Women
Computer Programmer	<1%	2%
Systems Analyst	1%	3%
Computer Support Specialist	2%	2%
Technical Support Engineer / Analyst	1%	1%
Systems Support Specialist	2%	2%
Software QA Engineer / Tester	<1%	2%
IT Specialist / Engineer	<1%	1%
Systems Administrator	1%	2%
Multimedia Designer / Animator	1%	4%
Application Support Engineer / Analyst	1%	1%

# Conclusion





## Conclusion

Tipping Point, its grantee organizations, and Emsi Burning Glass entered into a partnership to analyze local labor market data at a time when the COVID-19 pandemic has transformed career pathway trends, employer hiring practices, how people work, and ultimately, employment opportunities. The importance of maintaining relevant and meaningful skills training and career services programs took on greater importance as service providers sought to meet the needs of their clients during these challenging times. The detailed labor market information on jobs, skills, credentials, and career pathways along with the technical assistance sessions related to curriculum auditing, career coaching, and DEI and engaging employers provided by Emsi Burning Glass gave Tipping Point and its grantee organizations an introduction to skills-based career pathways and more information on how to refine their offerings to continue to meet their clients' needs. During the technical assistance sessions, Tipping Point grantees worked through use cases where detailed labor market information could be used to enhance career services. While the sessions provided detailed scenarios on how to use a skills-based approach and the Emsi Burning Glass Labor Insight platform, Tipping Point grantees also identified multiple ways to incorporate granular labor market information into their program strategies. The following actions summarize the most important takeaways from the engagement:

- ② **Use detailed data on jobs, skills, and credentials along with a skills-based approach to give career coaches a wider range of options to guide clients who are looking for career pathways that match their skill level and interests.** For example, over the course of the engagement, Emsi Burning Glass provided Tipping Point grantees with tools that map out job transitions with increasing wages, and the career coaches saw the potential to work with clients to uncover branching career pathways that can open many doors for advancement. Furthermore, having a framework based on *defining and necessary* skills provides career coaches with a collaborative way to engage with clients, help them visualize related skills between occupations, and give guidance on how to move from originating to target occupations.
- ② **Use updated labor market data to refresh existing programs and develop new skills trainings based on promising career pathways.** Tipping Point grantees stressed the importance of having a reliable source of current labor market information in order to maintain skills training programs and prepare workers to meet employer needs. The labor market data was used to validate existing programs, identify ways to cluster similar skills or supplement industry-specific skills with soft (“baseline”) skills, and forge new programming into other pathways. During the engagement, Tipping Point grantees were able to provide examples where existing programs could be enhanced to meet current labor market trends. Previously overlooked foundational skills like scheduling were identified to be added to the coursework for Administrative Assistant programs, and courses were aligned with professional certificates,

such as in IT. More novel strategies that Tipping Point grantees wanted to implement included identifying skills clusters and sequencing job training accordingly: start with professional skills that cut across disciplines (e.g., digital literacy, business skills, or job search skills), then industry-level skill clusters, occupation-level skill clusters, and finally employer-specific skill clusters. Lastly, Tipping Point grantees found new opportunities to develop skills training programs for promising industries. Data on job postings could be analyzed to determine where employer demand drove employment by industry (grantees launching new programs in IT or manufacturing) and geographic expansion (scaling existing programs into new regions in the Bay Area).

- ② **Help clients appreciate the full range of their employment options and understand how to work towards long-term mobility.** Tipping Point grantees found that occupation-level skill profiles can highlight cross-cutting skills to help clients identify next-step jobs and encourage them to complete training. Knowledge of cross-cutting skills encourages clients to expand the range of jobs to which they are applying. A full appreciation of the skills that a client has and the jobs that request them reinforces strengths-based language. One can imagine helping a client understand, *Here is a detailed list of my abilities, and here is an extensive list of occupations that are looking for the abilities that I offer.*
- ② **Emphasize upward mobility from the start.** Additionally, the concept of long-term mobility--upward mobility--is not something that has to come at the end of a client's participation in a skills training program. By having labor market data that reveals job transitions that lead to career pathways with advancement potential, Tipping Point grantees recognized that they can do more to build an advancement mindset at the beginning of a program--and design multi-tiered programs that are tailored towards supporting clients in their journey towards their long-term career goals. For example, Tipping Point grantees discussed the need to re-engage alumni with advanced programming that will help them complete additional training and certifications when they need them to prepare for multiple job transitions.
- ② **Use employer-level data to inform job placement targets and employer partnerships.** Labor market data based on employer demand can help job placement teams direct their attention to the employers with the largest number of job vacancies for a given position, develop long-term partnerships with employers, and improve job placement rates overall. The information can also help identify programs that can serve as on-ramps to further post-secondary education, since many job postings still request a postsecondary degree. However, Tipping Point grantees did express the need for employers to see the value in skills-based career development, which would mean lowering degree requirements and accepting other signals of career readiness. Labor market data can be a powerful tool to show how skill similarity

enables a worker to move into jobs with increasing complexity. How might the workforce development field as a whole use this data to incentivize employers to hire more qualified workers through a skills-based approach? These types of questions also need to be answered in order to ensure the success of skills-based career pathways.

- ② **Incorporate demographic information into career services that support recruitment, hiring, and retention in order to address occupational crowding and occupational segregation.** The engagement with Emsi Burning Glass provided insightful information on occupational segregation and opportunities to build equity through career pathways where workers of color have not been represented. Building worker equity is a conversation that continues to gain momentum across the workforce development field, and Tipping Point grantees are paying close attention and beginning to set targets on the number of people of color (and women) that must be served. More information is needed to help understand the experiences of underrepresented workers so that skills training and career services programs can be effectively designed to support them. The data provided in this engagement and in this report is contributing to helping elevate opportunities where service providers can focus their efforts.

This engagement has been a step towards reimagining how to support the Bay Area community as it emerges from the pandemic, and our hope is that it will help inform the efforts of other funders and service providers who are invested in this work.



# Appendix I: Stable, Living-Wage Occupations in the Bay Area





Target occupations meet the living wage threshold (>\$47,590 estimated market salary), are projected to grow, have significant demand (at least 100 job postings annually), and many show demand for certificates that Tipping Point grantees can help individuals earn. Tipping Point grantees tend to focus on one or more of five main job groups: Business, Finance, Healthcare, IT, and Manufacturing. The research identifies 165 occupations across these five areas.

Stable, Living-Wage Occupations in the Bay Area

Tippling Point Sector	Occupation Name	Projected Growth (10 year)	Average Predicted Salary	Automation Vulnerability	Average Annual Demand	% of Demand at Entry Level (sub-college, <2 years of experience)	Most Common Educational Attainment of Entry-Level Worker
Business	Account Executive & Publisher	3%	\$76,868	0.81	166	27%	High school diploma or equivalent
Business	Account Representative	4%	\$49,067	0.85	803	53%	High school diploma or equivalent
Business	Brand Marketing Specialist	20%	\$58,241	0.61	181	28%	Bachelor's degree
Business	Business to Business (B2B) Account Executive	11%	\$75,571	0.81	795	46%	High school diploma or equivalent
Business	Business to Business (B2B) Sales Representative	10%	\$78,611	0.69	1586	53%	High school diploma or equivalent
Business	Buyer (General)	2%	\$59,074	0.73	118	39%	Bachelor's degree
Business	Chief of Staff	16%	\$128,798	0.16	175	22%	Bachelor's degree
Business	Commodities / Manufacturing Buyer	1%	\$60,864	0.75	540	20%	Bachelor's degree
Business	Compensation / Benefits Specialist	14%	\$61,121	0.47	1262	52%	Bachelor's degree
Business	Content Marketing Specialist	25%	\$62,503	0.61	126	28%	Bachelor's degree
Business	Contracts Administrator	2%	\$66,573	0.77	891	34%	Bachelor's degree
Business	Digital Marketing Specialist	27%	\$68,473	0.57	544	31%	Bachelor's degree
Business	E-Commerce Specialist	17%	\$81,344	0.23	363	34%	Bachelor's degree
Business	Email Marketing Specialist	22%	\$54,520	0.61	424	50%	Bachelor's degree
Business	Enterprise Account Executive	16%	\$107,202	0.84	859	21%	High school diploma or equivalent
Business	Event Marketing Specialist	18%	\$53,267	0.61	317	38%	Bachelor's degree
Business	Facilities Specialist / Coordinator	14%	\$49,788	0.73	657	56%	Bachelor's degree
Business	Field Sales Representative	9%	\$61,038	0.75	341	59%	High school diploma or equivalent
Business	Healthcare Account Executive	0%	\$80,581	0.82	195	20%	High school diploma or equivalent
Business	Healthcare Recruiter	10%	\$60,137	0.31	177	54%	Bachelor's degree
Business	Healthcare Sales Representative	8%	\$77,645	0.25	169	44%	Bachelor's degree
Business	HRIS Analyst / Specialist	11%	\$75,059	0.31	274	34%	Bachelor's degree
Business	Human Resources Specialist	12%	\$59,725	0.31	3918	38%	Bachelor's degree
Business	Inside Sales Account Executive	6%	\$71,877	0.77	378	34%	High school diploma or equivalent
Business	Junior Business Analyst	13%	\$77,105	0.13	891	27%	Bachelor's degree
Business	Logistics Specialist	14%	\$54,798	0.01	148	54%	Bachelor's degree
Business	Marketing Account Executive	1%	\$75,871	0.82	271	29%	High school diploma or equivalent
Business	Marketing Associate	23%	\$56,035	0.61	424	41%	Bachelor's degree
Business	Marketing Specialist	24%	\$60,953	0.61	1796	38%	Bachelor's degree



Business	Marketing Strategist	23%	\$75,877	0.61	143	18%	Bachelor's degree
Business	Media Planner / Buyer	14%	\$68,119	0.18	1121	28%	Bachelor's degree
Business	Medical Device Sales Representative	7%	\$94,789	0.25	164	42%	Bachelor's degree
Business	Medical Sales Representative	12%	\$94,372	0.25	198	55%	Bachelor's degree
Business	Mid-Market Account Executive	11%	\$85,219	0.83	211	22%	High school diploma or equivalent
Business	Municipal / License / Court Clerk	0%	\$52,945	0.52	159	58%	High school diploma or equivalent
Business	Outside Sales Account Executive	7%	\$70,320	0.79	398	35%	High school diploma or equivalent
Business	Outside Sales Representative	10%	\$53,377	0.81	2427	65%	High school diploma or equivalent
Business	Pre-Sales Engineer	5%	\$118,341	0.00	197	25%	Bachelor's degree
Business	Procurement / Sourcing Specialist	4%	\$66,359	0.61	422	26%	Bachelor's degree
Business	Product Marketing Specialist	20%	\$74,294	0.61	430	23%	Bachelor's degree
Business	Public Relations / Communications Specialist	10%	\$59,762	0.18	2425	33%	Bachelor's degree
Business	Purchasing Agent	1%	\$54,132	0.75	200	56%	Bachelor's degree
Business	Purchasing Assistant	1%	\$48,348	0.98	359	58%	High school diploma or equivalent
Business	Real Estate Agent	12%	\$61,412	0.86	2177	68%	High school diploma or equivalent
Business	Recruiter (General)	14%	\$59,344	0.31	4094	39%	Bachelor's degree
Business	Recruiting Assistant	7%	\$48,793	0.31	350	50%	Bachelor's degree
Business	Sales and Marketing Specialist	12%	\$64,611	0.60	258	43%	Bachelor's degree
Business	Sales Consultant	9%	\$62,041	0.81	986	65%	High school diploma or equivalent
Business	Sales Engineer	8%	\$101,292	0.00	630	29%	Bachelor's degree
Business	Sales Lead	7%	\$60,130	0.82	318	50%	High school diploma or equivalent
Business	Sales Recruiter	0%	\$62,247	0.31	237	35%	Bachelor's degree
Business	Sales Representative	9%	\$53,414	0.77	11488	64%	High school diploma or equivalent
Business	Sales Support Specialist	10%	\$49,258	0.71	673	57%	High school diploma or equivalent
Business	Sales Trainer	15%	\$67,860	0.01	144	40%	Bachelor's degree
Business	Scheduler / Operations Coordinator	15%	\$48,260	0.88	2672	57%	High school diploma or equivalent
Business	Search Engine Optimization Specialist	15%	\$79,060	0.22	524	35%	Bachelor's degree
Business	Social Media Strategist / Specialist	23%	\$58,435	0.61	1261	38%	Bachelor's degree
Business	Software Account Executive	7%	\$93,338	0.84	237	21%	High school diploma or equivalent
Business	Software as a Service (SaaS) Account Executive	17%	\$86,085	0.83	583	26%	High school diploma or equivalent
Business	Software as a Service (SaaS) Sales Engineer	10%	\$114,496	0.00	170	18%	Bachelor's degree
Business	Solar Sales Representative	4%	\$52,959	0.25	373	81%	Bachelor's degree
Business	Technical Sales Representative	7%	\$91,056	0.25	1011	31%	Bachelor's degree
Business	Technology Account Executive	0%	\$83,842	0.84	414	21%	High school diploma or equivalent
Business	Territory / Regional Account Executive	9%	\$78,971	0.84	208	20%	High school diploma or equivalent

Business	Territory / Regional Sales Representative	3%	\$62,397	0.80	883	42%	High school diploma or equivalent
Business	Title Clerk (General)	9%	\$55,047	0.99	114	62%	High school diploma or equivalent
Finance	Auto Damage Appraiser	5%	\$53,914	0.98	189	60%	Postsecondary certificate
Finance	Bookkeeper	6%	\$47,974	0.98	1577	47%	Some college, no degree
Finance	Budget Analyst	6%	\$73,383	0.94	225	38%	Bachelor's degree
Finance	Claims Adjuster / Specialist	1%	\$53,718	0.98	676	34%	High school diploma or equivalent
Finance	Credit / Loan Counselor	7%	\$53,533	0.04	189	54%	Bachelor's degree
Finance	Financial Examiner	6%	\$73,353	0.17	108	35%	Bachelor's degree
Finance	Financial Planner / Investment Consultant	1%	\$72,418	0.58	308	37%	Bachelor's degree
Finance	Financial Services Representative	2%	\$56,374	0.02	618	55%	Bachelor's degree
Finance	Fraud Examiner / Analyst	10%	\$58,603	0.33	159	32%	Bachelor's degree
Finance	Insurance Sales Agent (General)	4%	\$49,020	0.92	1660	70%	High school diploma or equivalent
Finance	Life / Health Insurance Sales Agent	14%	\$67,487	0.92	858	87%	High school diploma or equivalent
Finance	Loan Officer (General)	12%	\$66,211	0.98	614	51%	Bachelor's degree
Finance	Mortgage Loan Officer	4%	\$59,789	0.98	1278	50%	Bachelor's degree
Finance	Payroll Administrator	3%	\$52,516	0.97	425	48%	High school diploma or equivalent
Finance	Payroll Specialist (General)	6%	\$51,989	0.97	1288	45%	High school diploma or equivalent
Finance	Personal Financial Advisor (General)	11%	\$61,569	0.58	1663	37%	Bachelor's degree
Finance	Property Appraiser / Assessor	8%	\$52,834	0.90	213	49%	Bachelor's degree
Finance	Securities / Commodities Trader	4%	\$77,064	0.02	115	32%	Bachelor's degree
Healthcare	Athletic Trainer	18%	\$47,776	0.01	132	42%	Bachelor's degree
Healthcare	Cardiovascular Technician / Technologist	13%	\$61,495	0.23	702	87%	Associate degree
Healthcare	Chemical Technician	7%	\$50,258	0.57	618	31%	Associate degree
Healthcare	Clinical Auditor / Utilization Reviewer	15%	\$74,018	0.01	118	29%	Bachelor's degree
Healthcare	Dental Hygienist	18%	\$75,051	0.68	214	77%	Associate degree
Healthcare	Fitness / Wellness Manager	11%	\$53,081	0.01	312	72%	Bachelor's degree
Healthcare	Health Educator	14%	\$57,274	0.46	482	41%	Bachelor's degree
Healthcare	Health Information Technician / Cancer Registrar	3%	\$49,335	0.91	191	53%	Postsecondary certificate
Healthcare	Histotechnologist / Histotechnician	12%	\$56,908	0.90	126	71%	Bachelor's degree
Healthcare	Licensed Practical / Vocational Nurse	9%	\$50,265	0.06	3541	90%	Postsecondary certificate
Healthcare	Medical Coder	17%	\$51,613	0.91	496	46%	Postsecondary certificate
Healthcare	MRI / CT Technician / Technologist	23%	\$66,885	0.23	632	75%	Associate degree
Healthcare	Neurodiagnostic Technician / Technologist	16%	\$50,717	0.00	128	73%	Postsecondary certificate
Healthcare	Occupational Therapy Assistant	17%	\$52,036	0.03	605	94%	Associate degree
Healthcare	Patient Advocate / Navigator	8%	\$56,692	0.46	109	40%	High school diploma or equivalent

Healthcare	Physical Therapy Assistant	18%	\$54,181	0.02	959	94%	Associate degree
Healthcare	Radiologic Technician / Technologist	14%	\$61,434	0.00	1292	81%	Associate degree
Healthcare	Research Technician	19%	\$59,594	0.04	153	35%	Bachelor's degree
Healthcare	Respiratory Therapist	19%	\$66,828	0.07	563	69%	Associate degree
Healthcare	Ultrasound Technologist / Sonographer	20%	\$70,790	0.35	897	80%	Associate degree
IT	Application Support Engineer / Analyst	11%	\$86,384	0.40	1784	33%	Some college, no degree
IT	Computer Programmer	-1%	\$97,233	0.47	2065	39%	Bachelor's degree
IT	Computer Support Specialist	14%	\$54,737	0.61	3074	58%	Some college, no degree
IT	Configuration Analyst / Specialist	6%	\$85,512	0.08	172	32%	Bachelor's degree
IT	Cyber Security Specialist / Technician	23%	\$87,794	0.22	228	38%	Bachelor's degree
IT	Data Center Technician / Engineer	14%	\$79,655	0.09	692	39%	Bachelor's degree
IT	Data Quality Analyst	11%	\$77,072	0.22	184	33%	Bachelor's degree
IT	Database Administrator	13%	\$91,130	0.03	2330	43%	Bachelor's degree
IT	Incident Analyst / Responder	15%	\$96,205	0.24	377	29%	Bachelor's degree
IT	IT Administrator	4%	\$79,482	0.09	267	36%	Bachelor's degree
IT	IT Auditor	14%	\$98,116	0.19	382	20%	Bachelor's degree
IT	IT Project Analyst	12%	\$98,698	0.08	507	30%	Bachelor's degree
IT	IT Specialist / Engineer	13%	\$80,959	0.37	384	42%	Some college, no degree
IT	Multimedia Designer / Animator	10%	\$87,532	0.02	961	30%	Bachelor's degree
IT	MySQL Database Administrator	8%	\$106,744	0.03	166	42%	Bachelor's degree
IT	Network Administrator	4%	\$84,453	0.07	488	32%	Bachelor's degree
IT	Network Analyst / Specialist	9%	\$92,246	0.32	501	29%	Bachelor's degree
IT	Programmer / Analyst	3%	\$95,782	0.41	665	28%	Bachelor's degree
IT	Salesforce / CRM Developer	33%	\$95,800	0.05	2275	29%	Bachelor's degree
IT	Salesforce Administrator	19%	\$92,144	0.03	353	33%	Bachelor's degree
IT	Salesforce Developer	32%	\$117,547	0.05	279	30%	Bachelor's degree
IT	SAP Analyst / Admin	18%	\$133,036	0.21	1359	38%	Bachelor's degree
IT	SAP Manager	8%	\$127,406	0.22	393	31%	Bachelor's degree
IT	SAS Programmer	0%	\$109,773	0.12	296	34%	Bachelor's degree
IT	Server Administrator	0%	\$88,006	0.14	122	43%	Bachelor's degree
IT	Software QA Analyst	10%	\$77,908	0.22	962	34%	Bachelor's degree
IT	Software QA Engineer / Tester	12%	\$98,164	0.19	10041	30%	Bachelor's degree
IT	Support Engineer	29%	\$95,888	0.05	948	29%	Bachelor's degree
IT	Systems Administrator	6%	\$87,826	0.04	2481	31%	Bachelor's degree
IT	Systems Analyst	9%	\$98,403	0.04	2426	33%	Bachelor's degree
IT	Systems Support Specialist	13%	\$67,949	0.50	957	49%	Some college, no degree
IT	Technical Support Engineer / Analyst	14%	\$76,417	0.48	3643	36%	Some college, no degree
IT	Telecommunications Specialist / Engineer	0%	\$84,198	0.24	219	46%	Bachelor's degree
IT	User Experience (UX) Designer	21%	\$111,844	0.21	2505	25%	Associate degree
IT	User Interface (UI) Designer	17%	\$98,402	0.21	284	29%	Associate degree

IT	User Interface / User Experience (UI / UX) Designer	21%	\$103,976	0.21	1486	31%	Associate degree
IT	Video Game Designer	10%	\$90,129	0.22	367	30%	Bachelor's degree
IT	VMware Engineer / Administrator	7%	\$104,015	0.17	150	47%	Bachelor's degree
IT	Web Content Producer	15%	\$78,199	0.21	312	35%	Associate degree
IT	Web Designer	4%	\$79,259	0.21	362	50%	Associate degree
IT	Webmaster / Administrator	3%	\$79,741	0.22	299	30%	Bachelor's degree
IT	Windows Administrator	1%	\$86,274	0.04	300	46%	Bachelor's degree
Manufacturing	Calibration Technician	11%	\$54,374	0.80	109	51%	Associate degree
Manufacturing	CNC Programmer	16%	\$65,539	0.36	138	41%	Postsecondary certificate
Manufacturing	Controls / Valve Technician	9%	\$50,707	0.63	126	62%	High school diploma or equivalent
Manufacturing	Electrical Engineering Technician	13%	\$51,715	0.84	352	58%	Associate degree
Manufacturing	Electronics Repair Technician	1%	\$50,140	0.76	137	62%	Associate degree
Manufacturing	Electronics Technician	4%	\$53,889	0.81	137	64%	Associate degree
Manufacturing	Engineering Technician (General)	5%	\$54,677	0.78	279	61%	Associate degree
Manufacturing	General Engineering Technician / Technologist	9%	\$73,209	0.24	2188	40%	Associate degree
Manufacturing	Industrial / Mechanical Engineering Technician	8%	\$51,048	0.32	587	57%	Associate degree
Manufacturing	Machinist	8%	\$50,963	0.65	489	57%	High school diploma or equivalent
Manufacturing	Plant Operator	2%	\$52,707	0.74	113	70%	High school diploma or equivalent
Manufacturing	Quality Control Analyst	10%	\$62,154	0.61	1858	35%	Associate degree
Manufacturing	Quality Inspector	1%	\$48,665	0.98	1700	67%	High school diploma or equivalent
Manufacturing	Robotics Technician	10%	\$56,321	0.81	101	63%	Associate degree
Manufacturing	Stationary Engineer / Boiler Operator	3%	\$61,614	0.85	222	47%	High school diploma or equivalent