



High Tech, Low Inclusion

Diversity in the High Tech Workforce and Sector
2014-2022



U.S. Equal Employment Opportunity Commission



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Executive Summary

In the six decades since the Civil Rights Act of 1964 was passed to remedy discrimination and provide equal employment opportunity to all workers, the American economy and workforce have changed significantly. One of the most significant changes has been the expansion of the high tech sector. High tech workers have revolutionized the way we communicate, access information, and work. The products high tech workers create are transforming productivity across many industries such as healthcare, transportation, and energy. High tech jobs offer higher pay and more stability than many other occupations, particularly if the high tech job is within the high tech sector. High tech job opportunities are projected to continue to grow and can provide meaningful economic security to workers who are able to access these opportunities. Diversity in the high tech workforce can support innovation while positively impacting employers' bottom line by helping ensure that new technologies meet the needs of America's increasingly diverse population.

As the primary federal agency responsible for enforcing the laws against employment discrimination, the U.S. Equal Employment Opportunity Commission (EEOC) examines workforce trends to understand where barriers to equal opportunity may exist. In this report, we focus on the *high tech workforce*, which we define as consisting of workers in 56 science, technology, engineering, and mathematics (STEM) occupations regardless of industry. We also examine the *high tech sector*, which is comprised of industries where there is a high concentration of high tech workers (at least 20% of the industry workforce), but also includes many workers in non-STEM occupations like administrative, sales workers, laborers, and helpers. In 2016 and 2017, the EEOC and the Government Accountability Office (GAO) analyzed the sex and race/ethnic diversity in the high tech workforce and sector.¹ This report examines the sex and race/ethnic diversity in the years since. It also builds on the prior reports by profiling the high tech workforce by age; analyzing sex, racial, and ethnic diversity by employer size and occupation within the high tech sector; and describing the most common types of charges of discrimination filed with the EEOC and the EEOC's recent litigation in the high tech sector.

Our findings show that the high tech workforce continued to become more racially and ethnically diverse between 2014 and 2022 with workers of color making up 40.1% of the high tech workforce in 2022. Despite some progress, our findings raise concerns about the barriers to equal opportunity that exist in the high tech workforce and sector. We found that, in 2022:

High Tech Workforce

- Black and Hispanic workers remained substantially underrepresented in the high tech workforce compared to their participation in the U.S. workforce. In addition, Black, Hispanic, and Asian workers were underrepresented as high tech managers compared to their participation in the high tech workforce.
 - Black workers were just 7.4% of the high tech workforce and 5.7% of high tech managers, despite making up 11.6% of the total U.S. workforce. This is only a slight increase from the representation of Black workers in 2005 (6%).
 - Hispanic workers were only 9.9% of the high tech workforce and 8.1% of high tech managers, while making up nearly one-fifth (18.7%) of the total U.S. workforce.
 - Asian workers were 18.1% of the high tech workforce, but 15.3% of high tech managers.

- Women were less than a quarter (22.6%) of the high tech workforce —the same share as in the past two decades—far less than their representation in the total U.S. workforce (47.3%). Women were even more underrepresented in higher-paying high tech jobs *within* the high tech sector (19.4%).
- The high tech workforce was more concentrated in the 25 to 39 year old age group than would be expected given the proportion of that age group in the overall U.S. workforce (40.8% of the high tech workforce versus 33.1% in the overall workforce). The proportion of workers over age 40 in the high tech workforce declined from 55.9% in 2014 to 52.1 % in 2022, falling below their representation in the overall U.S. workforce (53.1%).

Black, Hispanic, and female workers remained substantially underrepresented in the high tech workforce.

High Tech Sector

- The high tech sector (37.4% employees of color) was less racially and ethnically diverse than both the total U.S. workforce and the high tech workforce (41.6% and 40.1% workers of color). Black (7.6%) and Hispanic (9.5%) employees were substantially underrepresented in the sector.
- Women had greater representation in the high tech sector (31.9%) than their presence in the high tech workforce (22.6%), but still far short of their representation in the total workforce (47.3%).
- In the high tech sector, Black, Hispanic, and female employees were underrepresented in managerial positions (Executive/Senior Officials and First/Mid-level Officials & Managers occupations) compared to their representation in the high tech sector’s overall workforce.
- Retaliation is the most frequent allegation in charges of discrimination against companies in the high tech sector filed with the EEOC, as well as the most frequently alleged claim in all EEOC charges. Age discrimination, pay discrimination, and genetic information discrimination are more frequently alleged in the high tech sector than in other sectors.

Our findings demonstrate the need for concerted effort to address discriminatory barriers in the high tech workforce and high tech sector and achieve equal opportunity for all workers. Charges of discrimination illustrate the types of discriminatory barriers workers face, but since workers may fear coming forward due to the potential for retaliation, filings with the EEOC are likely just a sliver of the overall discrimination faced by workers. In recent years, some high tech business leaders have made commitments to increasing diversity; our findings show that proactive efforts are needed to ensure that the opportunities in this growing sector of the economy are available to talented workers of all backgrounds. The EEOC will continue working to address discrimination in high tech by investigating and resolving charges of discrimination and, when necessary, pursuing litigation. The EEOC also provides technical assistance and engages in extensive education and outreach efforts that can assist employers in complying with the laws enforced by the EEOC and support their lawful and appropriate diversity, equity, inclusion, and accessibility efforts.

I. Introduction

The U.S. Equal Employment Opportunity Commission (EEOC) enforces the federal civil rights laws prohibiting job discrimination based on race, color, religion, sex (including pregnancy, sexual orientation, and gender identity), national origin, age, disability and genetic information.² The EEOC is committed not only to investigating charges of discrimination, but also to keeping abreast of workforce trends and informing the public about labor market dynamics that may adversely affect equal opportunities for workers. Addressing barriers in hiring and promotion is a top strategic priority for the EEOC.³ To do so effectively, the agency must



pay particular attention to potential barriers in large and growing industries and occupations that offer substantial employment opportunities to workers. For this reason, the EEOC examined diversity in the high tech workforce and high tech sector in 2016 and does so again in this report.

Our findings detailed in this report show the continued underrepresentation of Black, Hispanic, and female workers in both the high tech workforce and the high tech sector in 2022. Women and all workers of color are also underrepresented as high tech managers in the high tech workforce and as executives and management in the high tech sector.

Equal access to high tech employment opportunities is particularly important to workers given higher pay, greater stability, and the projected continued growth in the high tech occupations.

High tech jobs are projected to continue to grow in coming years and tend to be higher paid and relatively more stable than non-technical occupations. High tech companies and industries are those that employ high proportions of workers in science, technology, engineering, and mathematics (STEM) occupations.⁴ The high tech workforce, which comprised about 5% of the total U.S. workforce in 2015, has grown at almost three times the rate (2.3-2.4 % annually depending on the definition used and timeframe) of the total U.S. workforce (0.9 % annually).⁵ The Bureau of Labor Statistics projects that the STEM workforce will continue to grow at three times the rate of the total U.S. workforce through 2032 (11% versus 3%).⁶

High tech jobs tend to be higher paid and relatively more stable than other non-technical occupations. The Bureau of Labor Statistics reported that, in 2023, the median annual wage for technology-related occupations was \$101,650 compared to \$48,060 for the total U.S. workforce.⁷ High tech workers also are less likely to experience unemployment than the general workforce, a trend that typically persists even in economic downturns.⁸ And while high tech industries are not immune to downsizing as evidenced by layoffs that occurred in 2023 and 2024, in the decade following the Great Recession (2007-2009)

Equal access to high tech employment opportunities is particularly important to workers given higher pay, greater stability, and the projected continued growth in the high tech occupations.

unemployment was consistently lowest among high tech workers.⁹ By 2019, the unemployment rate among the high tech workforce dropped to 2.2% compared to 3.7% for the total U.S. workforce.¹⁰ More recently, business closures during the height of the COVID-19 pandemic spurred an unprecedented increase in unemployment and adversely impacted workers in non-technical occupations more than those in high tech jobs. The unemployment rate for the general workforce grew 11 percentage points from 4.7% to 15.7 %, which was almost double the 6% increase in unemployment among high tech workers.¹¹

High tech employers may also benefit from more diverse workforces.¹² Innovation, a hallmark of the high tech sector, is enhanced when diverse teams are a part of research and development.¹³ Additionally, research has shown that diverse companies attract talent, improve employee satisfaction and retention, and increase customers and sales revenue.¹⁴ Finally, employees in more diverse workplaces also are less likely to experience harassment.¹⁵ All of this means that diversity can benefit an employer's financial performance.

Diverse teams also may result in better performance by mitigating bias. As the National Institute of Standards and Technology explained in its *Special Publication: Towards a Standard for Identifying and Managing Bias in Artificial Intelligence*, early research has shown that when developers had similar demographic backgrounds, they tended to make similar misjudgments, while diverse teams resulted in better performance.¹⁶ Other researchers have similarly found that diverse teams have these bias reduction benefits.¹⁷

This report assesses the diversity of the high tech workforce and sector, specifically on race, ethnicity, age, and sex. It builds on the findings of two previous separate reports—a 2016 EEOC report and a 2017 report by the U.S. Government Accountability Office (GAO)—which observed lower racial, ethnic, and sex diversity in the high tech sector and workforce than other sectors.¹⁸ The EEOC also convened a 2016 hearing in which stakeholders identified barriers to accessing opportunities in the high tech sector, as well as possible solutions including strengthening diversity, equity, inclusion and accessibility efforts.¹⁹

This report also expands on the prior reports by analyzing age diversity. The Age Discrimination in Employment Act of 1967 (ADEA) was passed to combat unfounded assumptions that age impacted ability.²⁰ While age discrimination hurts older workers, a lack of age diversity also can hurt organizations, because studies have shown that age-diverse workforces can improve organizational performance and have the potential to improve company performance.²¹ Older workers have been found to have more engagement and to be equally or more innovative when compared to their younger counterparts.²² However, if, for example, employers stereotype older employees as unable to innovate or keep up with new technologies, trends and skills, these employees may experience differential treatment in obtaining and maintaining a job.²³ On the other hand, some high tech employers may value older workers' knowledge and job experience, which in turn, may translate into more secure employment (i.e., lower unemployment).²⁴ As research has shown that age discrimination remains a concern, we examine the high tech workforce by age.²⁵

Diversity can benefit an employer's financial performance.

Diverse teams also may result in better performance by mitigating bias.

We also build on the prior reports in two other ways. First, we assess the presence of workers of color and women in high tech managerial jobs specifically and across occupational categories in the high tech sector. This analysis may reveal barriers to advancement even for those who are able to obtain high tech positions or work in the high tech sector.

Second, we describe the most common types of charges filed with the EEOC alleging workplace discrimination in the high tech sector relative to charges from other industries.²⁶ Studies and surveys of workers have shown that workers report high levels of discrimination and harassment in industries that are part of the high tech sector.²⁷ We note that an analysis of the charge filing data does not necessarily show the overall prevalence of discrimination, because many workers who experience discrimination may not file charges with the EEOC for a variety of reasons, or a subsequent investigation may reveal that a charge lacks merit. Nonetheless, the high frequency of certain types of discrimination charges illustrates the types of barriers to equal opportunity within the sector.

Although this report does not analyze immigration status or the representation of disabled workers, social science research and the EEOC's charge data suggest that discriminatory barriers likely exist in high tech both for workers who are immigrants and those who have a disability. For example, employers use the H-1B visa program to employ foreign workers to fill high tech positions,²⁸ and in fiscal year 2022, 86% of all H-1B visas were issued to workers born in Asia.²⁹ Workers on visas are particularly vulnerable to discrimination. Having entered the U.S. on an employer-sponsored visa, these workers face several known risk factors for harassment including (1) a power imbalance between the worker and employer, (2) perceived or real lack of job mobility, and (3) social and cultural isolation.³⁰ In addition, because these workers often are reliant on their employer's sponsorship to seek citizenship and may risk having to leave the U.S. if separated from their employer, they are less likely to complain if they experience workplace mistreatment, including discrimination or harassment.³¹ Research also suggests workers with disabilities are underrepresented in the high tech workforce.³² The National Science Foundation reported that workers with disabilities represented only 3% of the STEM workforce. Our analysis of the EEOC charge data below also indicates that some barriers likely exist for workers with disabilities in the high tech workforce and sector (see Section VII below).

The report proceeds as follows: Section II describes how we define the high tech workforce and the high tech sector for this report. In section III, we review key findings from the EEOC and GAO reports on racial, ethnic, and sex diversity of the workforce in the high tech sector.³³ Section IV describes the high tech workforce in 2022. Section V examines changes in racial, ethnic, sex, and age diversity of the high tech workforce between 2014 and 2022. Section VI examines the diversity of workers in the high tech sector by occupation and employer size. Finally, Section VII uses the EEOC administrative enforcement data from 2022 to compare the types of charges of discrimination filed against high tech companies with those filed against companies in other sectors. It also provides an overview of the EEOC's recent litigation efforts in the high tech sector.

II. Definitions

In this report, we use a common definition, which was also used in the GAO report, of the high tech *workforce* as comprising workers in science, technology, engineering, and mathematics (STEM) occupations.³⁴ We first identify 56 STEM occupations using the 2018 Standard Occupational Classification (SOC) manual.³⁵ Using the U.S. Census Bureau’s American Community Survey (ACS) data, we then categorize workers as being in the high tech workforce if they are in one of the 56 STEM occupations or if they manage such workers.³⁶

Both the prior EEOC and the GAO reports showed that industries that have high concentrations of high tech workers, called the high tech *sector* in aggregate, carry implications for diversity and wages among *all* workers in the sector, not just those in high tech occupations. Therefore, this report seeks also to understand diversity among all employees in the high tech sector. There is not a standard definition for what makes an employer or industry “high tech,” so defining the high tech sector is more subjective than the high tech workforce. Industries that output technological products and services such as software publishing or computer hardware manufacturing, as described by the North American Industry Classification System (NAICS) industry labels, are obvious choices for inclusion in the high tech sector.³⁷ Some of the most innovative technology companies in recent years, however, have disrupted traditionally non-technical industries such as in retail sales, travel services, and automobile manufacturing, and employ many STEM workers. We thus use a similar method to that used in the prior GAO and EEOC reports to define the high tech sector as industries in which the percentage of high tech workers is above a certain threshold.

Using 2022 ACS data, we use a threshold of an industry comprised of at least 20% high tech workers to define it as high tech and then aggregate all such industries into the high tech sector.³⁸ Table 1 shows the 14 industries that employed at least 20% high tech workers in 2022. For each industry, we show the total workforce in that industry, the number of high tech workers, and the percentage of high tech workers.³⁹

Table 1. Industries Comprised of at Least 20% High Tech Workers and Categorized as the High Tech Sector, 2022

Industry	Total Workforce	Number of High Tech Workers	Percent High Tech Workers
Computer systems design and related services	3,932,833	2,246,919	57.1
Aerospace products and parts manufacturing	71,554	31,032	43.4
Software publishing	211,813	89,846	42.4
Data processing, hosting, and related services	254,349	106,306	41.8
Architectural, engineering, and related services	1,786,815	710,274	39.8
Computer and peripheral equipment manufacturing	107,541	42,331	39.4
Aircraft and parts manufacturing	850,278	328,724	38.7
Internet publishing and broadcasting and web search portals	303,296	116,978	38.6
Electronic components and products, not elsewhere classified	704,610	270,586	38.4
Communications, audio, and video equipment	117,890	39,568	33.6
Navigational, measuring, electromedical, and control instruments	216,463	66,935	30.9
Telecommunications, except wired telecommunications carriers	396,585	104,892	26.4
Wired telecommunications carriers	485,901	106,548	21.9
National security and international affairs	945,795	203,876	21.6

Source: Authors' calculations using 2022 American Community Survey data.⁴⁰ Counts exclude persons in the armed forces and persons not in the labor force.

III. Findings of Prior Reports on Growth and Diversity in High Tech

The prior EEOC report focused on racial, ethnic, and sex diversity among all employees within the high tech *sector* using data from the EEOC’s 2014 EEO-1 employer reports.⁴¹ The GAO report described racial, ethnic, and sex diversity both of the U.S. high tech *workforce* and of all employees within the high tech *sector* using 2015 data from the U.S. Census Bureau’s American Community Survey (ACS).⁴² Despite using different data sources, years, and definitions, the two reports showed similar patterns of underrepresentation in the high tech workforce and the high tech sector.

Specifically, the EEOC and GAO reports showed overall disparities in the employment of women, Black, and Hispanic workers in the high tech workforce and high tech sector when compared to other industries and the overall workforce. We present selected results from each report in Table 2.⁴³ (The GAO report rounded some results to the whole number so for this data table we report all results as whole numbers.) Female workers were only 36% of the high tech sector in 2014 and 22% of the high tech workforce in 2015 despite making up 49% of the total U.S. workforce in 2015. White workers and Asian workers comprised higher proportions of the high tech workforce and employees in the high tech sector than in the overall U.S. workforce. White workers were 69% of the high tech sector in 2014, 67% of the high tech workforce in 2015, and 63% of the overall workforce in 2015. Asian workers were 14% of the high tech sector, 17% of the high tech workforce, and 5% of the overall U.S. workforce. Black workers (7% of the high tech sector; 7% of the high tech workforce), Hispanic workers (8% of the high tech sector; 7% of the high tech workforce), and workers of Other Races (2% of the high tech sector; 2% of the high tech workforce) were underrepresented among the high tech workforce and in the high tech sector. The total U.S. workforce in 2015 was comprised of significantly more Black (12%) and Hispanic (17%) workers.

Table 2. Sex and Race/Ethnic Compositions as Percentages of the High Tech Sector, the High Tech Workforce, and the Total Workforce, 2014 & 2015

		EEOC Report	GAO Report	
		High Tech Sector 2014	High Tech Workforce 2015	Total U.S. Workforce 2015
Sex	Male	64	78	51
	Female	36	22	49
Race / Ethnicity	Asian	14	17	5
	Black	7	7	12
	Hispanic	8	7	17
	Other	2	2	3
	White	69	67	63

Sources: EEOC and GAO Reports.⁴⁴ The percentages have been rounded and may not add to 100.

While the GAO report documented some increase in diversity in the high tech workforce with the proportion of all workers of color rising from 26% of the high tech workforce in 2005 to 33% in 2015, those gains were not shared equally across all groups. The GAO found that while the number of Black workers in the high tech workforce had grown, there had been no statistically significant increase in Black workers' representation as a percentage of the high tech workforce.⁴⁵ Similarly, although the number of Hispanic high tech workers had statistically significant increases, they remained a smaller proportion of the high tech workforce than their representation in the overall workforce.⁴⁶ Further, the proportion of female high tech workers in the high tech workforce did not change in the decade prior to 2015, remaining at 22%, the same as in 2005. Thus, overall, the high tech workforce failed to reflect the sex and race/ethnic diversity present in the total U.S. workforce.⁴⁷

The GAO report also observed that female workers and Black and Hispanic high tech workers were more likely to be employed in jobs with employers *outside* of the high tech sector. This was significant, because median earnings for high tech workers outside the high tech sector were \$78,000 in 2015, while within the high tech sector median earnings were \$89,000.⁴⁸ Table 3 replicates those results. In 2015, female tech workers occupied 25% of high tech jobs outside the high tech sector while filling only 18% of tech jobs within the high tech sector. Black high tech workers (7.5% within high tech sector versus 5.4% outside the sector) and Hispanic high tech workers (7.7% within high tech sector versus 6.5% outside the sector) also were employed more often outside of the high tech sector. In other words, not only were women, Black and Hispanic workers underrepresented in the high tech workforce in general, as observed in both the EEOC and GAO reports, but when such workers obtain high tech jobs, they also tend to be employed in lower-paying high tech jobs outside of the high tech sector.⁴⁹

Table 3. Sex and Race/Ethnicity Distributions of High Tech Workers Within and Outside of the High Tech Sector, 2015

		GAO Report	
		Outside High Tech Sector %	Within High Tech Sector %
Median Income		\$78,000	\$89,000
Sex	Male	75.0	82.0
	Female	25.0	18.0
Race / Ethnicity	Asian	13.4	21.0
	Black	7.5	5.4
	Hispanic	7.7	6.5
	Other	2.5	2.4
	White	68.9	64.6

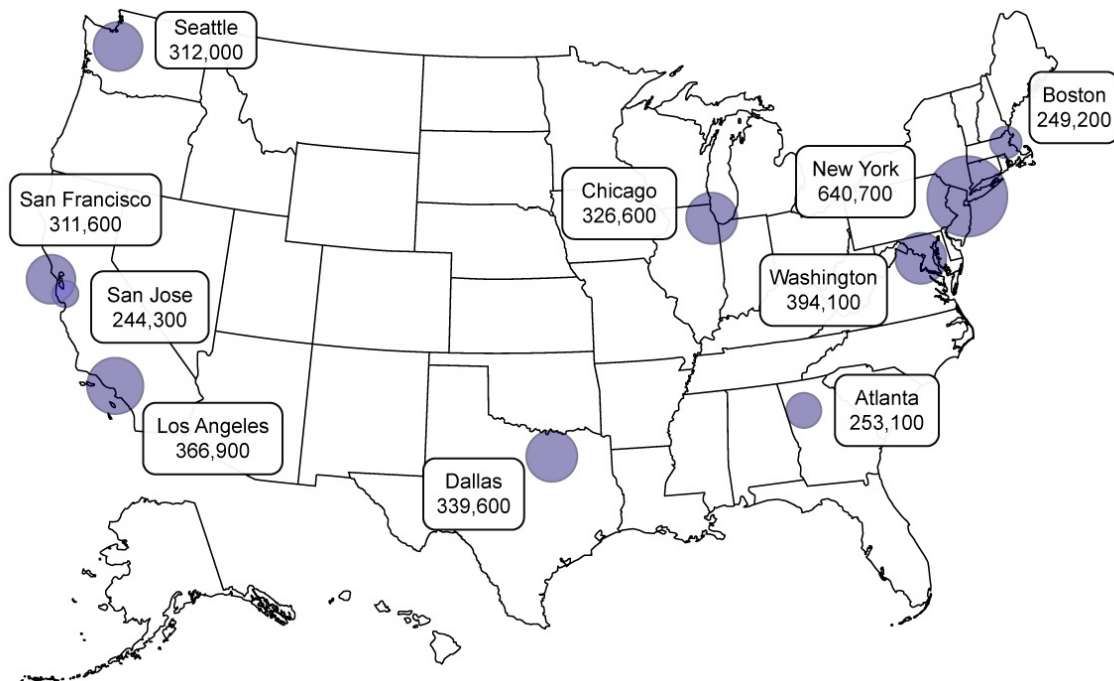
Source: GAO report.⁵⁰ The percentages have been rounded and may not add to 100.

IV. The Characteristics of the High Tech Workforce

To demonstrate the potential economic implications for workers, we first assess the geographic distribution, recent growth rates, unemployment rates, and median income of the high tech workforce. The prior EEOC report briefly described “remarkable geographic dispersion” in the decades since the high tech sector was established largely in Silicon Valley (San Jose-Sunnyvale-Santa Clara metro area) and Boston. By 2014, EEO-1 data showed that Silicon Valley and Boston had only the fourth and fifth largest local high tech workforces, respectively, behind the New York; Los Angeles; and Washington, D.C. metropolitan areas.⁵¹

Figure 1 depicts the metropolitan areas with the ten largest high tech workforces in 2022.⁵² We also provide the number of high tech workers in 2014 and 2022 and percentage growth in Table 4. The list of the top 10 largest local high tech workforces in 2022 largely is unchanged from 2014, although by 2022 Atlanta had surpassed Boston, San Jose, and Houston as the eighth largest high tech workforce.⁵³ New York; Los Angeles; Washington, D.C.; and the San Francisco Bay Area remain at the top of the list.

Figure 1. Top Geographic Areas for High Tech Workforce Employment in the United States, 2022



Source: Authors' calculations using 2022 American Community Survey data.⁵⁴

Table 4. Top Geographic Areas for High Tech Workforce Employment in the United States, 2014 and 2022

Metropolitan Area	2014	2022	Percent Change
New York-Newark-Jersey City, NY-NJ-PA	448,397	640,744	42.9
Washington-Arlington-Alexandria, DC-VA-MD-WV	316,036	394,112	24.7
Los Angeles-Long Beach-Anaheim, CA	272,336	366,914	34.7
Dallas-Fort Worth-Arlington, TX	207,616	339,605	63.6
Chicago-Naperville-Elgin, IL-IN-WI	240,594	326,626	35.8
Seattle-Tacoma-Bellevue	177,213	311,957	76.0
San Francisco-Oakland-Hayward, CA	211,398	311,611	47.4
Atlanta-Sandy Springs-Roswell, GA	165,501	253,078	52.9
Boston-Cambridge-Newton, MA-NH	193,726	249,189	28.6
San Jose-Sunnyvale-Santa Clara, CA	171,919	244,275	42.1
Houston-The Woodlands-Sugar Land, TX	179,277	242,170	35.1

Source: Authors' calculations using 2014 and 2022 American Community Survey data.⁵⁵

Note: In 2014, Houston had the tenth largest high tech workforce, whereas the workforce in Atlanta was not in the top ten. By 2022, the high tech workforce in Atlanta had become the eighth largest.

We observe in Table 5 that between 2014 and 2022 the high tech workforce increased by more than 3 million workers, an acceleration of average annual growth to 5.4% from the 2.4% average annual growth rate found by the GAO report for 2005 to 2015.⁵⁶ This is more than twice the rate in the previous decade and several times the annual growth rate (0.8%) of the total U.S. workforce during the same period. As a result, the high tech workforce comprised 6.1% of the U.S. workforce by 2022.

Within the high tech workforce, the number of non-managerial workers grew by an average of 5.7% annually and resulted in just under 3 million additional non-managerial jobs (Table 5). Compared to the 180,000 managerial jobs created in that same period, most of the growth in the high tech workforce was in non-managerial jobs.

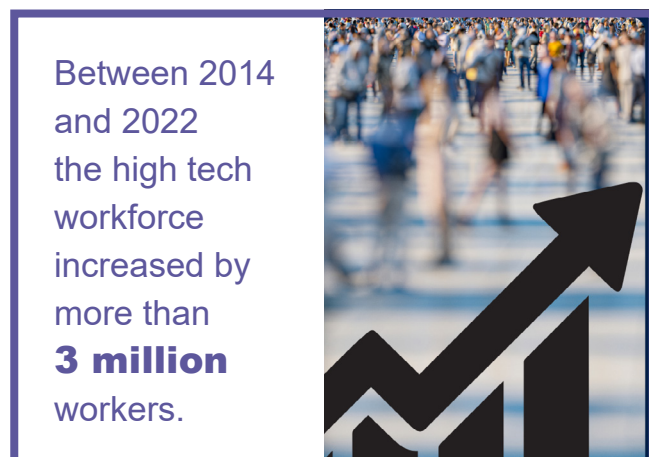


Table 5. Growth of the High Tech Workforce, 2014 – 2022

	2014		2022		Percent Change	Average Annual % Change
	Workers	% ^(c)	Workers	% ^(c)		
Total U.S. Workforce^(a)	159,532,243		169,986,505		6.6	0.8
High Tech Workforce	7,245,226	4.5	10,386,483	6.1	43.4	5.4
High Tech Workers^(b)	6,534,548	90.2	9,495,744	91.4	45.3	5.7
High Tech Managers	710,678	9.8	890,739	8.6	25.3	3.2

Source: Authors' calculations using 2014 and 2022 American Community Survey data.⁵⁷ The percentages have been rounded and may not add to 100.

^a Civilian (non-military) workers who either are employed or are unemployed but looking for work, excluding persons who reside in institutional settings.

^b High Tech Workers excludes High Tech Managers.

^c High Tech Workforce as percentage of the Total U.S. Workforce; High Tech Workers and High Tech Managers as percentage of the High Tech Workforce.

In 2022, unemployment among the high tech workforce was relatively low at 1.8%, and wages remained high with a median income of \$97,500, which was \$46,000 more than the median income for the overall U.S. workforce (Table 6).

We find that in 2022, high tech employment within the sector remained consequential for the income of high tech workers. The median income of high tech workers within the high tech sector (\$104,500) was 17% higher than the median income for high tech workers when employed outside the sector (\$89,500) (shown in Tables 8, 10, and 12 below). Thus, in 2022, high tech occupations continued to offer economic stability and mobility for workers who gain access to such jobs due to the increasing numbers of high tech job opportunities; low unemployment rates; and high wages, particularly for workers within the high tech sector.

Table 6. Unemployment and Median Income in the High Tech Workforce, 2022

	Percent Unemployed ^(c)	Median Income
Total U.S. Workforce^(a)	4.4	51,500
High Tech Workforce	1.8	97,500
High Tech Workers^(b)	1.8	94,500
High Tech Managers	1.4	129,500

Source: Authors' calculations using 2022 American Community Survey data.⁵⁸

^a Civilian (non-military) workers who either are employed or are unemployed but looking for work, excluding persons who reside in institutional settings.

^b High Tech Workers excludes High Tech Managers.

^c An unemployed worker is defined as not working but looking for work. Such workers are considered to be in the labor force.

V. Diversity and Advancement in the High Tech Workforce

In this section, we examine whether diversity in the high tech workforce has changed since the prior EEOC and GAO reports were released. (Findings from the previous reports are reviewed in Section III above.)

A. Racial And Ethnic Composition Of The High Tech Workforce

We first assess whether workers of color achieved greater representation in high tech jobs during the recent period of accelerated growth between 2014 and 2022 (growth rate reported in Table 5 above). Table 7 shows changes in the workforce by race and ethnicity during this period, including demographic distributions for high tech workers and managers. For this, we use five broad categories to allow for comparisons with prior reports and between the workforce and sector.⁵⁹

Overall, the high tech workforce continued to diversify in the years between 2014 and 2022. By 2022, workers of color occupied two-fifths, or 40.1%, of high tech jobs — an increase from 26% in 2005 (as reported by GAO) and 32.4% in 2014.⁶⁰ Thus, workers of color overall made progress toward comprising a similar share

of high tech jobs as workers of color in the total U.S. workforce (41.6%). However, Hispanic and Black high tech workers remained significantly underrepresented in the high tech workforce. Hispanic workers comprised only 9.9% of the high tech workforce in 2022 (compared to 5% in 2005 as reported by GAO and 6.9% in 2014), while making up nearly one-fifth (18.7%) of the total U.S. workforce. Further, Black workers comprised just 7.4% of high tech workers, nearly unchanged from 2005 (6%, as reported in the GAO report) and 2014 (6.9%), despite making up 11.6% of the total U.S. workforce.⁶¹

Among high tech managers, Black, Hispanic, and Asian workers remained underrepresented in comparison to their representation in the high tech workforce overall. Black workers comprised only 5.7% of high tech managers in 2022 despite being 7.4% of the high tech workforce, and Hispanic workers made up 8.1% of high tech managers versus 9.9% of the high tech workforce. Asian workers showed the greatest differential between their proportion in the high tech workforce (18.1%) and as high tech managers (15.3%).



Hispanic workers comprised only **9.9%** of high tech workforce, while making up nearly **18.7%** of total U.S. workforce.

Black workers comprised just **7.4%** of high tech workers, despite making up **11.6%** of the total U.S. workforce.



Table 7. Race/Ethnic Composition and Growth of Total U.S. Workforce and High Tech Workforce, 2014 – 2022

	2014		2022		Percent Change	Avg Annual % Change
	Workers	% ^(b)	Workers	% ^(b)		
Total U.S. Workforce	159,532,243		169,986,505		6.6	
Asian	8,953,096	5.6	10,972,992	6.5	22.6	2.8
Black	18,768,193	11.8	19,785,963	11.6	5.4	0.7
Hispanic	26,175,477	16.4	31,858,946	18.7	21.7	2.7
Other	3,850,696	2.4	8,167,276	4.8	112.1	14.0
White	101,784,781	63.8	99,201,328	58.4	-2.5	-0.3
High Tech Workforce	7,245,226		10,386,483		43.4	5.4
Asian	1,190,912	16.4	1,875,060	18.1	57.4	7.2
Black	487,866	6.7	767,584	7.4	57.3	7.2
Hispanic	502,694	6.9	1,026,529	9.9	104.2	13.0
Other	168,177	2.3	500,345	4.8	197.5	24.7
White	4,895,577	67.6	6,216,965	59.9	27.0	3.4
High Tech Workers^(a)	6,534,548		9,495,744		45.3	5.7
Asian	1,097,654	16.8	1,738,890	18.3	58.4	7.3
Black	452,233	6.9	716,650	7.5	58.5	7.3
Hispanic	461,599	7.1	954,043	10.0	106.7	13.3
Other	153,458	2.3	460,399	4.8	200.0	25.0
White	4,369,604	66.9	5,625,762	59.2	28.7	3.6
High Tech Managers	710,678		890,739		25.3	3.2
Asian	93,258	13.1	136,170	15.3	46.0	5.8
Black	35,633	5.0	50,934	5.7	42.9	5.4
Hispanic	41,095	5.8	72,486	8.1	76.4	9.5
Other	14,719	2.1	39,946	4.5	171.4	21.4
White	525,973	74.0	591,203	66.4	12.4	1.6

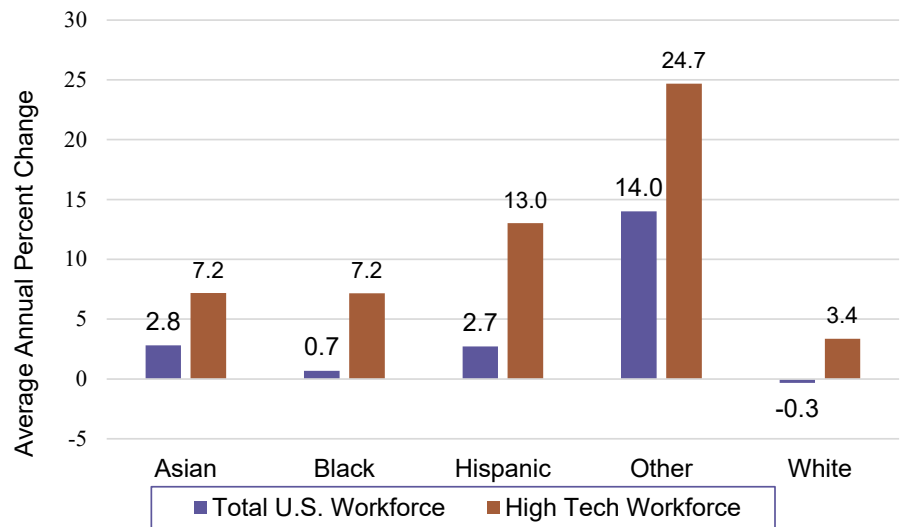
Source: Authors' calculations using 2014 and 2022 American Community Survey data.⁶² The distribution percentages have been rounded and may not add to 100.

^a High Tech Workers excludes High Tech Managers.

^b Race/ethnic group as a percent of each workforce category (i.e., Total U.S. Workforce, High Tech Workforce, etc.)

Figure 2 illustrates the differential growth rates by race and ethnicity in the total U.S. workforce and the high tech workforce. The number of workers of Other Races more than doubled in the total U.S. workforce (112.1% total increase; 14.0% average annual increase) and almost tripled within the high tech workforce (197.5% increase; 24.7% average annual increase). The number of Hispanic high tech workers increased at the next highest rate (104.2% increase; 13.0% average annual increase), more than double the average annual growth rate of the high tech workforce as a whole (5.4% annually). Asian and Black high tech workers both increased their numbers at an annual rate of 7.2% and thus each increased their share of the high tech workforce by less than two percentage points (to 18.1% and 7.4%, respectively). By contrast, the white worker population declined by 2.5% in the total U.S. workforce. The total number of white workers in high tech jobs increased, however, but grew at a slower rate (27.0% total increase; 3.4% average annual increase) than the high tech workforce as a whole (43.4% total; 5.4% annually).

Figure 2. Average Annual Change in Total U.S. Workforce and High Tech Workforce, by Race, 2014 – 2022



Source: Authors' calculations using 2014 and 2022 American Community Survey data.⁶³ The percentages have been rounded and may not add to 100.



Asian workers showed the greatest differential between their proportion in the high tech workforce (18.1%) and as high tech managers (15.3%).

The results for white workers and workers of Other Races are consistent with the Census Bureau's research showing that changes to the race and ethnicity questions implemented in the 2020 Decennial Census and subsequent ACS surveys resulted in more people identifying as Multi-Racial or with Some Other Race after 2020 when they likely identified as white alone prior to 2020.⁶⁴ As a result, the increase reported above in the Other Races category, and the decrease in the white category, may reflect a change in how workers chose to identify themselves, rather than in the actual composition of the two populations. For this report, we consolidate Two or More Races and Some Other Race, which were most affected by the question changes, into the Other Races category due to small samples of workers in each category.

Both Hispanic and Black high tech workers appear to have made incremental progress in gaining access to jobs within the high tech sector, which are higher paying on average. The GAO report observed that, in 2015, 6.5% of high tech workers within the sector were Hispanic and 5.4% were Black (Table 3, above). We find that the percentage of Hispanic high tech workers within the sector increased to 9.4% in 2022, and that the percentage of Black high tech workers in the high tech sector increased to 6.4% (Table 8). Asian high tech workers were the only race or ethnic group with a greater representation of workers within the high tech sector than in high tech jobs outside the high tech sector (21.8% versus 15.4%, respectively).

Our findings show that while Black and Hispanic workers have made some gains in absolute numbers in the high tech workforce, significant concerns remain about the persistent underrepresentation of Black and Hispanic workers in the high tech workforce, particularly in a period when that workforce is undergoing rapid growth. Black workers, in particular, have made only marginal progress in representation in the high tech workforce in the past 20 years. Black and Hispanic high tech workers have also relatively more representation outside the sector than within the more highly paid positions in the sector. Furthermore, even when workers of color gain entry into the high tech workforce, their lack of representation as high tech managers raises concerns about the opportunities for advancement.

B. Age Composition of the High Tech Workforce

We find that the high tech workforce is more concentrated in the 25 to 39 age group than the overall workforce (40.8% versus 33.1%). Figure 3 illustrates age distributions in 2022 of the total U.S. workforce and the high tech workforce. Table 9 provides age distributions for non-managerial and managerial high tech workers



The proportion of workers under age 40 grew from **44.1%** in 2014 to **47.9%** in 2022.

and growth rates of each age group. In 2022, the total U.S. workforce included almost twice the proportion of workers under age 25 (13.9% versus 7.1%) and over age 65 (6.4% versus 3.9%) than in the high tech workforce.

Because the ADEA protects workers who are 40 and older from age discrimination, we look specifically at the growth of the workforce above and below age 40. We find that the proportion of workers under age 40 in the high tech workforce grew from 44.1% in 2014 to 47.9% in 2022. This is only slightly greater than

Table 8. Median Income & Race/Ethnicity Composition of the High Tech Workforce by Sector, 2022

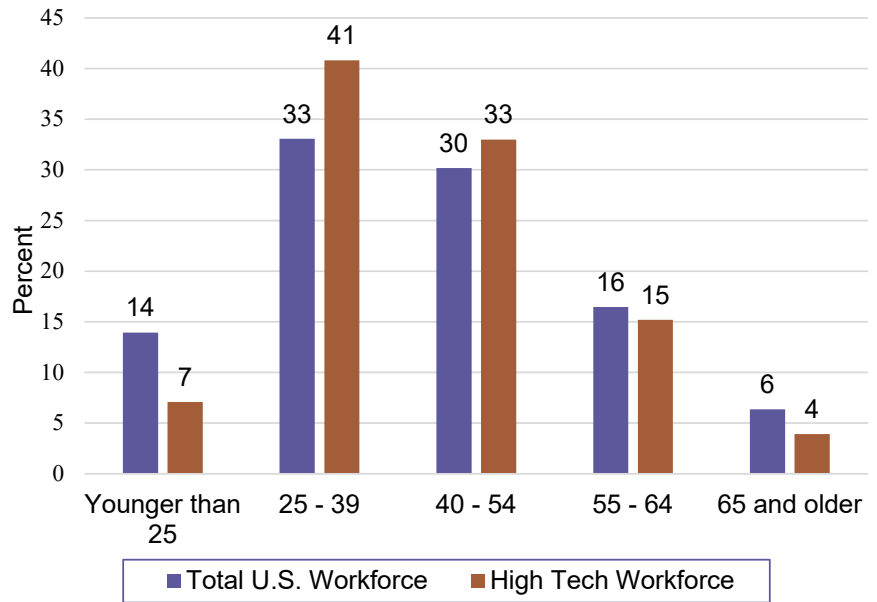
Median Income	Outside High Tech Sector		Within High Tech Sector	
	Workers	%	Workers	%
Race / Ethnicity	Workers	%	Workers	%
Asian	941,670	15.4	933,390	21.8
Black	492,536	8.1	275,048	6.4
Hispanic	625,005	10.2	401,524	9.4
Other	287,887	4.7	212,458	5.0
White	3,767,036	61.6	2,449,929	57.3

Source: Authors' calculations using 2014 and 2022 American Community Survey data.⁶⁵ The percentages have been rounded and may not add to 100.

their representation in the overall workforce in 2022 (47.0%).

The two fastest growing segments of the high tech workforce are those over age 65 and under age 25. The number of high tech workers 65 and older increased by 10.7% annually, on average, almost double the rate of the total high tech workforce (5.4% annually). This age segment is also the fastest growing segment of the total workforce, with average annual growth of 4.5% between 2014 and 2022 (compared to 0.8% average annual growth of the total U.S. workforce). In contrast, the rapid growth among the youngest workers (those under 25) in the high tech workforce is not reflected in the overall workforce. Workers under age 25 in the high tech workforce increased by 9.3% annually between 2014 and 2022 to comprise 7.1% of the high tech workforce by 2022. Workers under age 25 in the total U.S. workforce increased by only 0.4% per year on average while their proportion of the workforce in 2022 (13.9%) declined compared to 2014 (14.3%).

Figure 3. Age Distributions in the Total U.S. and High Tech Workforce, 2022



Source: Authors' calculations using 2022 American Community Survey data.⁶⁶ The percentages have been rounded and may not add to 100.



Table 9. Age Composition of the High Tech and Total U.S. Workforces, 2014 – 2022

	2014		2022		2014 - 2022	
	Workers	% ^(b)	Workers	% ^(b)	Percent Change	Avg Annual % Change
Total U.S. Workforce	159,532,243		169,986,505		6.6	0.8
Younger than 25	22,880,358	14.3	23,693,987	13.9	3.6	0.4
25 - 39	51,499,916	32.3	56,199,761	33.1	9.1	1.1
40 - 54	51,563,121	32.3	51,309,867	30.2	-0.5	-0.1
55 - 64	25,664,709	16.1	27,974,898	16.5	9.0	1.1
65 and older	7,924,139	5.0	10,807,992	6.4	36.4	4.5
High Tech Workforce	7,245,226		10,386,483		43.4	5.4
Younger than 25	421,522	5.8	735,537	7.1	74.5	9.3
25 - 39	2,771,924	38.3	4,239,740	40.8	53.0	6.6
40 - 54	2,720,167	37.5	3,425,625	33.0	25.9	3.2
55 - 64	1,112,226	15.4	1,578,961	15.2	42.0	5.2
65 and older	219,387	3.0	406,620	3.9	85.3	10.7
High Tech Workers^(a)	6,534,548		9,495,744		45.3	5.7
Younger than 25	411,129	6.3	727,768	7.7	77.0	9.6
25 - 39	2,571,292	39.3	3,999,499	42.1	55.5	6.9
40 - 54	2,370,412	36.3	2,997,808	31.6	26.5	3.3
55 - 64	982,785	15.0	1,395,525	14.7	42.0	5.2
65 and older	198,930	3.0	375,144	4.0	88.6	11.1
High Tech Managers	710,678		890,739		25.3	3.2
Younger than 25	10,393	1.5	7,769	0.9	-25.2	-3.2
25 - 39	200,632	28.2	240,241	27.0	19.7	2.5
40 - 54	349,755	49.2	427,817	48.0	22.3	2.8
55 - 64	129,441	18.2	183,436	20.6	41.7	5.2
65 and older	20,457	2.9	31,476	3.5	53.9	6.7

Source: Authors' calculations using 2022 American Community Survey data.⁶⁷ The percentages have been rounded and may not add to 100.

^a High Tech Workers excludes High Tech Managers.

^b Age group as a percent of each workforce category (i.e., Total U.S. Workforce, High Tech Workforce, etc.)

High tech workers within the high tech sector are more concentrated in the 25 to 39 age group (43.6% in the high tech sector versus 38.9% outside the sector), while workers outside the sector are more likely to be older than 40 years of age (49.4% inside, 54.0% outside). The proportions for those over age 65 are similar for both within and outside the sector.

In sum, the high tech workforce remains more highly concentrated between the ages of 25 and 39 than the overall workforce and grew much faster among workers under age 25 (9.3% average annual growth) than the overall workforce (0.4% average annual growth). These findings raise concern about the opportunities for older workers in the high tech workforce and specifically access to jobs within the high tech sector. These concerns are further bolstered by our analysis of the EEOC’s charge filing data in Section VII below.

C. Sex Composition of the High Tech Workforce

We find that the sex composition of the high tech workforce largely has not changed since 2005. The GAO report found that women made up 22% of the high tech workforce in 2005 and still comprised only 22% of the high tech workforce ten years later in 2015 (Table 2).⁶⁹ In 2022, the proportion of female workers remained at less than a quarter (22.6%) of the high tech workforce (Table 11). This is dramatically less than the proportion of women, 47.3%, in the total U.S. workforce in 2022. Despite this, in 2022, women have slightly greater representation in high tech managerial positions (23.6%) than among high tech workers who are not managers (22.6%), although women’s representation among high tech managers actually experienced a statistically significant decrease from its level in 2014 (24.5%).

Table 10. Median Income & Age Composition of the High Tech Workforce by Sector, 2022

	Outside High Tech Sector		Within High Tech Sector	
	Workers	%	Workers	%
Median Income	\$89,500		\$104,500	
Age	Workers	%	Workers	%
Younger than 25	436,354	7.1	299,183	7.0
25 - 39	2,375,588	38.9	1,864,152	43.6
40 - 54	2,060,655	33.7	1,364,970	31.9
55 - 64	997,868	16.3	581,093	13.6
65 and older	243,669	4.0	162,951	3.8

Source: Authors’ calculations using 2014 and 2022 American Community Survey data.⁶⁸ The percentages have been rounded and may not add to 100.

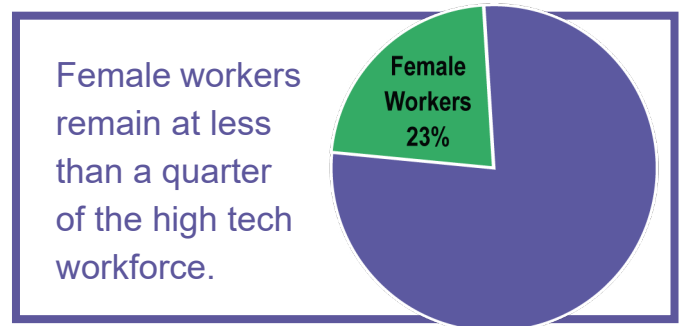


Table 11. Sex Composition and Growth of Total U.S. Workforce and High Tech Workforce, 2014 – 2022

	2014		2022		2014 - 2022	
	Workers	% ^(b)	Workers	% ^(b)	Percent Change	Avg Annual % Change
Total U.S. Workforce	159,532,243		169,986,505		6.6	0.8
Male	83,894,750	52.6	89,604,218	52.7	6.8	0.9
Female	75,637,493	47.4	80,382,287	47.3	6.3	0.8
High Tech Workforce	7,245,226		10,386,483		43.4	5.4
Male	5,619,249	77.6	8,034,169	77.4	43.0	5.4
Female	1,625,977	22.4	2,352,314	22.6	44.7	5.6
High Tech Workers^(a)	6,534,548		9,495,744		45.3	5.7
Male	5,082,573	77.8	7,353,765	77.4	44.7	5.6
Female	1,451,975	22.2	2,141,979	22.6	47.5	5.9
High Tech Managers	710,678		890,739		25.3	3.2
Male	536,676	75.5	680,404	76.4	26.8	3.3
Female	174,002	24.5	210,335	23.6	20.9	2.6

Source: Authors' calculations using 2014 and 2022 American Community Survey data.⁷⁰ The distribution percentages have been rounded and may not add to 100.

^a High Tech Workers excludes High Tech Managers.

^b Sex as a percent of each workforce category (i.e., Total U.S. Workforce, High Tech Workforce, etc.)

We also find that female high tech workers continued to be employed more often outside of the sector (24.9%) than in the high tech sector (19.4%) in 2022 (Table 12). This difference reaffirms concerns that barriers may reduce women's access to high tech jobs in general and to the relatively higher paying jobs within the high tech sector.

D. Sex Composition by Race and Ethnicity and by Age in the High Tech Workforce

We next assess whether the degree of female participation in high tech occupations varies by race and ethnicity or by age. Figure 4 shows the composition by sex of the high tech workforce and of female high tech workers by race and ethnicity. White female high tech workers made up 12.3% of the total high tech workforce, which is 60% of all female high tech workers. Women of color comprise only 10% of the

Table 12. Median Income & Sex Composition of the High Tech Workforce by Sector, 2022

	Outside High Tech Sector		Within High Tech Sector	
	Workers	%	Workers	%
Median Income	\$89,500		\$104,500	
Sex	Workers	%	Workers	%
Male	4,589,229	75.1	3,444,940	80.6
Female	1,524,905	24.9	827,409	19.4

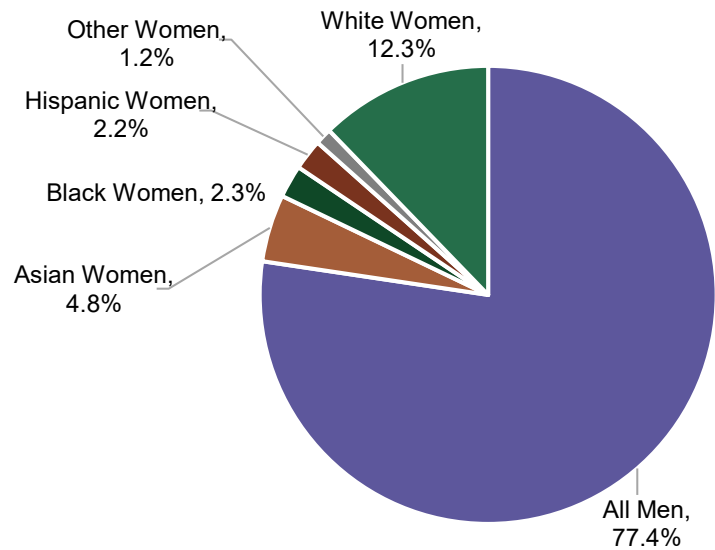
Source: Authors' calculations using 2014 and 2022 American Community Survey data.⁷¹ The percentages have been rounded and may not add to 100.

total high tech workforce (with Asian women making up 4.8%, Black women 2.3%, Hispanic women 2.2% and women of other races 1.2% of the high tech workforce). In addition, women of color were 40% of all female high tech workers. Appendix Table A-1 provides more detailed data.



Table 13 below reiterates the distribution of high tech workers by age shown in Table 9 and, for comparison, provides the distribution of the female high tech workforce by age and percent of women for each age group. We observe that women in the high tech sector are relatively younger than men and participate in the high tech workforce relatively less often when age 40 and older. Whereas 47.9% of the total high tech workforce is under age 40, 50% of female high tech workers are under age 40. We also find that women make up a lower proportion of older workers in the high tech workforce than among those under 25. Female workers are 26.0% of high tech workers younger than 25 – almost 4 percentage points higher than women’s 22.6% representation in the high tech workforce as a whole. In contrast, women are only 21.9% of workers in the high tech workforce who were between the ages of 40 and 54, and 22.7% among those aged 55 to 64. Less than 20% of high tech workers older than age 65 are women. On top of barriers to entry into high tech occupations as illustrated by low participation, these results may suggest that women who obtain high tech jobs experience additional challenges in remaining in such jobs, especially after they turn 40.

Figure 4. Percentage of Female Workers, by Race and Ethnicity, in the High Tech Workforce, 2022.



Source: Authors’ calculations using 2022 American Community Survey data.⁷² The percentages have been rounded and may not add to 100.

Table 13. Sex and Age Composition of the High Tech Workforce, 2022

	Total High Tech Workforce	%	Female High Tech Workforce	%	% Female
High Tech Workforce	10,386,483		2,352,314		22.6
Younger than 25	735,537	7.1	191,075	8.1	26.0
25 - 39	4,239,740	40.8	984,856	41.9	23.2
40 - 54	3,425,625	33.0	748,534	31.8	21.9
55 - 64	1,578,961	15.2	357,782	15.2	22.7
65 and older	406,620	3.9	70,067	3.0	17.2

Source: Authors’ calculations using 2022 American Community Survey data.⁷³ The percentages have been rounded and may not add to 100.

VI. Diversity in the High Tech Sector

We now shift the focus from the high tech workforce to the high tech sector— those industries with relatively high concentrations of high tech workers (Table 1)—to assess the demographic diversity of high tech sector employees, whether or not in a high tech occupation. We also assess sector diversity by occupational category and company size.⁷⁴

First, we observe in Table 14 that, in 2022, employees in the high tech sector were less racially and ethnically diverse than both the total U.S. workforce and the high tech workforce (i.e., 37% employees of color in the total high tech sector versus 41.6% workers of color in the total U.S. workforce and 40.1% workers of color in the high tech workforce). Black (7.6%) and Hispanic (9.5%) employees in the high tech sector are underrepresented to similar degrees as in the high tech workforce (7.4% and 9.9%, respectively), while Asian employees represent a larger share of high tech sector employees (16.9%) than of the total U.S. workforce (6.5%). High tech sector employees also are comprised of relatively fewer women (31.9%) than the total U.S. workforce (47.3% women), but more than in the high tech workforce (22.6%). Given that the sector includes both technical and non-technical occupations, this may be explained by women’s overrepresentation in non-technical jobs within the sector such as administrative and service positions, which we explore further below.

Table 14. Sex and Race/Ethnic Compositions (%) of the Total U.S. Workforce, the High Tech Workforce, and All High Tech Sector Employees, 2022

		Total U.S. Workforce	High Tech Workforce	High Tech Sector
Sex	Male	52.7	77.4	68.1
	Female	47.3	22.6	31.9
Race / Ethnicity	Asian	6.5	18.1	16.9
	Black	11.6	7.4	7.6
	Hispanic	18.7	9.9	9.5
	Other	4.8	4.8	3.4
	White	58.4	59.9	62.6

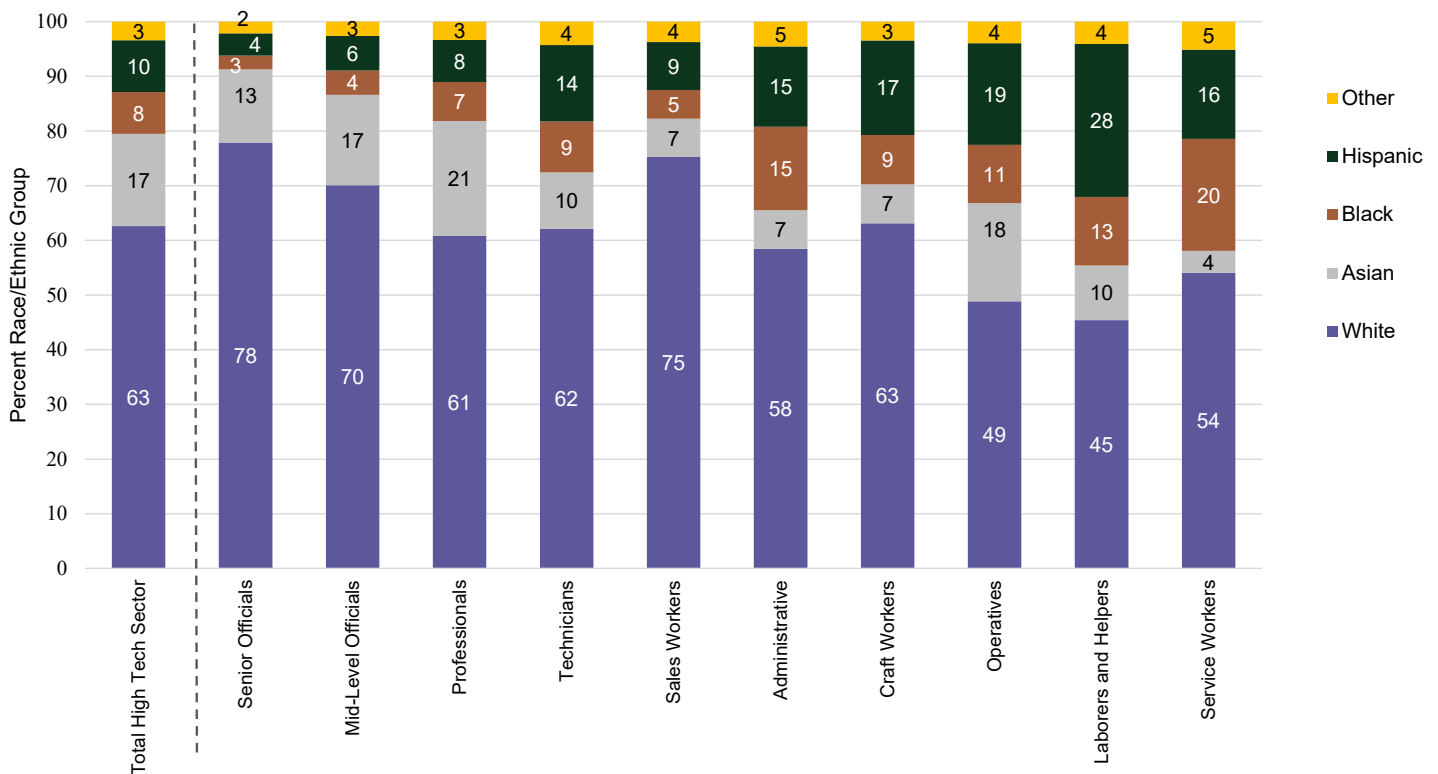
Sources: Authors' calculations using 2022 American Community Survey data and 2022 EEO-1 Employer Information Report data.⁷⁵ The percentages have been rounded and may not add to 100.

A. Sex, Racial, and Ethnic Diversity by Occupation

We next turn to how racial and ethnic diversity varies across occupational categories within the high tech sector. We find striking differences in the racial/ethnic compositions of different occupations, which are shown in Figure 5 (the left-most bar replicates the percentages observed for the high tech sector in Table 14 rounded to the whole number). For example, whereas white workers make up 63% of all employees in the high tech sector as a whole, 78% of Executive/Senior Level Officials and Managers (Senior Officials) and 70% of First/Mid-Level Officials & Managers (Mid-level Officials) in the sector are white. Black and Hispanic employees make up 8% and 10%, respectively, of all high tech sector employees but a much smaller fraction of Senior Officials (3% and 4%, respectively) and Mid-Level Officials (4% and 6%, respectively) employees. In other words, there is much less racial/ethnic diversity in Senior Official and Mid-level positions than the sector as a whole.

Operatives and Laborers and Helpers occupations, in contrast, typically require low or unskilled workers and thus are much lower paying than Senior Official, Mid-level Official, and Professional occupations. In the high tech sector, the Operatives and Laborers and Helpers occupations are comprised of only 49% and 45% white employees, respectively, and the majority are workers of color. (As noted above, the sector is comprised of 37.4% workers of color.) While Black employees are only 8% of all sector employees, they occupy 15% of Administrative, 11% of Operative, 13% of Laborer and Helper, and 20% of Service Worker positions. Hispanic employees comprise 10% of all sector employees but occupy 15% of Administrative, 19% of Operative, 28% of Laborer and Helper, and 16% of Service Worker occupations.

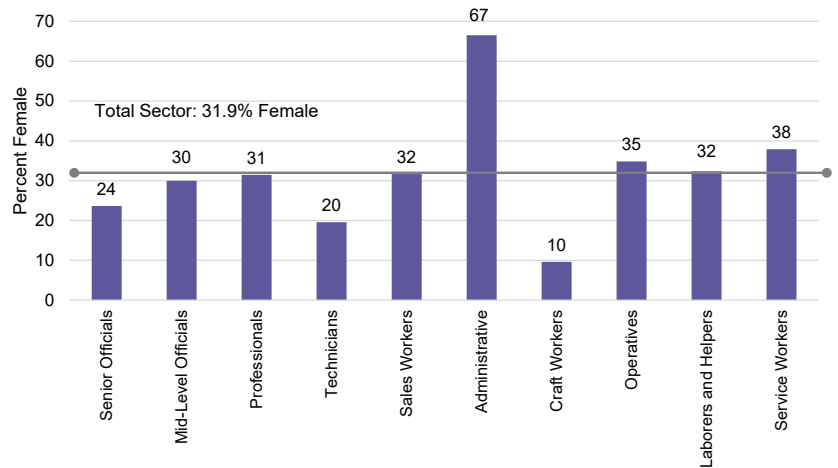
Figure 5. Racial/Ethnic Composition by Occupation in the High Tech Sector, 2022



Source: Authors' calculations using 2022 EEO-1 Employer Information Report data.⁷⁶ The percentages have been rounded and may not add to 100.

Similarly, Figure 6 shows the percentage of women employed in the high tech sector as a whole (31.9%) and the percentage of women employed in each occupational category. The Administrative category is the only female-dominated occupational category in the high tech sector (67% female employees). Like the high tech workforce, all other occupations in the high tech sector are male dominated, particularly Technicians (20% women) and Craft Workers (10% women) occupations. Other occupations at both ends of the occupational ladder are filled by women to similar degrees as their representation in the high tech sector overall. In comprising 31.9% of high tech sector employees, women are relatively underrepresented in making up 24% of Senior Officials and 30% of Mid-Level Officials positions. Women comprise 31% of Professionals, and 32% of Sales Workers. At the lower end of the occupational structure, 35% of Operatives, 32% of Laborers and Helpers and 38% of Services Workers are women.

Figure 6. Percentage of Women within Occupations in the High Tech Sector, 2022



Source: Authors' calculations using 2022 EEO-1 Employer Information Report data.⁷⁷ The percentages have been rounded and may not add to 100.

B. Sex, Racial, and Ethnic Diversity by Employer Size

We next examine sex and racial/ethnic diversity by employer size. Table 15 shows sex and racial/ethnic compositions of the total high tech sector (first shown in Table 14) and by employer size. We find that both the largest high tech employers with more than 10,000 employees, which often are referred to as Big Tech, and the smallest high tech companies employ relatively fewer women than the overall proportion of women in the sector—29.6% and 30.6%, respectively. Medium-size employers between 100 and 10,000 employees employ marginally higher proportions of women (ranging between 33.0% and 33.9%).

Table 15. Sex and Race/Ethnic Compositions (%) of All Employees in the High Tech Sector by Employer Size, 2022

		Employer Size ^(a)					
		Total High Tech Sector	At least 10,000	1,000 to 9,999	500 to 999	100 to 499	Fewer than 100
Sex	Male	68.1	70.4	67.0	66.1	66.9	69.4
	Female	31.9	29.6	33.0	33.9	33.1	30.6
Race/ Ethnicity	Asian	16.9	19.7	17.2	15.3	13.3	11.5
	Black	7.6	8.2	7.2	7.1	7.2	9.7
	Hispanic	9.5	9.2	9.5	9.9	10.0	9.3
	Other	3.4	3.2	3.3	3.7	3.8	3.6
	White	62.6	59.7	62.8	64.0	65.6	65.9
Number of Employers		6,434	41	471	532	3,982	1,408

Sources: Authors' calculations using 2022 EEO-1 Employer Information Report data.⁷⁸ The percentages have been rounded and may not add to 100.

^a Number of employees reported on the Employer Information Report (EEO-1).



Big Tech with **29.6%** women and the smallest high tech companies with **30.6%** women employ relatively fewer women than the overall proportion of women in the sector **31.9%**.

We also find that racial and ethnic diversity in the high tech sector varies by employer size. Big Tech appears to be the most racially and ethnically diverse. Big Tech workforces were made up of 40.3% workers of color, which exceeds the total sector (37.4%). By contrast, smaller high tech companies employ workers of color to a lesser degree. Whereas employers with between 1,000 and 10,000 employees have a similar percentage of 37.2% workers of color as the sector as a whole (37.4%), companies with fewer than 1,000 employees range between 34.1% to 36% workers of color.

Asian employees comprise between 11.5% of all employees at the smallest high tech employers and 19.7% of total employees at Big Tech employers.⁷⁹ On the other hand, differences by employer size for Hispanic (9.2% to 10.0%) and Black (7.1% to 9.7%) employees are smaller.

C. Occupation and Employer Size

In the previous two sections we observed separately that race/ethnic and sex diversity varies by occupation and at employers of different sizes. We delve into this further in this section by exploring which types of occupations women and workers of color hold at Big Tech employers versus all other employers in the high tech sector. In doing so, we aim to shed light on whether employer size carries implications for women's and workers' of color occupational opportunities.

Table 16 shows the distributions of male and female employees across occupations for the total high tech sector and by employer size. Reflecting the sector sex compositions of occupations above, men are more likely to occupy Senior Official and Mid-Level Official positions (3.1% and 14.7% of all male employees in the sector, respectively) than women (2.0% and 13.5% in Senior and Mid-Level Official, respectively). By contrast, women are more likely than men to be employed in Other occupations (27.1% of women versus 19.1% of men).⁸⁰ In other words, women employed in the high tech sector occupy Senior and Mid-level management positions relatively less often than men and are relatively more often employed in other occupations such as Sales, Administrative, and Service occupations. Although men predominately occupy the jobs in the Professionals category in 2022 (69% occupied by men versus 31% occupied by women, Figure 6), as they do the high tech sector generally, among workers of the same sex, men and women were employed in professional positions to a similar extent (53.5% of men in the sector are Professionals and 52.5% of women in the sector are Professionals (Table 16)).

When we break out the sector by Big Tech employers and all other employers, we observe differences that suggest relatively better occupational opportunities for women at Big Tech companies than at smaller organizations. Among Big Tech employees, 14.8% of women and 15.7% of men occupy senior and mid-level management positions, a 0.9 percentage point difference, whereas the gap is larger at smaller tech companies in which 15.8% of women and 18.9% of men are employed in such positions. Also, a higher percentage of women (61.5%) than men (59.3%) occupy Professional positions at Big Tech employers while the opposite is true at smaller employers (50.3% of men, 48.3% of women in Professional positions). At the lower end of the occupational ladder, smaller employers appear to drive women's greater tendency to be employed in All Other occupations. In addition, 20.1% of women at Big Tech employers (compared to 18.0% of men) occupy Administrative, Laborers and Helpers, and Service jobs, whereas 30.2% of women and only 19.7% of men do at smaller employers.

Table 16. Occupational Distributions (%) by Sex and Employer Size, High Tech Sector, 2022

		Total High Tech Sector	Employer Size ^(a)	
			At least 10,000	Fewer than 10,000
Male	Senior Officials	3.1	1.2	4.0
	Mid-Level Officials	14.7	14.5	14.9
	Professionals	53.5	59.3	50.3
	Technicians	9.7	7.0	11.1
	All Other Occupations^(b)	19.1	18.0	19.7
Female	Senior Officials	2.0	1.1	2.4
	Mid-Level Officials	13.5	13.7	13.4
	Professionals	52.5	61.5	48.3
	Technicians	5.0	3.5	5.7
	All Other Occupations^(b)	27.1	20.1	30.2

Source: Authors' calculations using 2022 EEO-1 Employer Information Report data.⁸¹ The percentages have been rounded and may not add to 100.

^a Number of employees reported on the Employer Information Report (EEO-1).

^b All Other Occupations include Sales Workers, Administrative Support Workers, Craft Workers, Operatives, Laborers and Helpers, and Service Workers.

We observed in Table 15 that Big Tech employers have somewhat more diverse workforces than smaller employers in the high tech sector. This raises the question of whether more race/ethnic diversity in Big Tech translates into better occupational opportunities for employees of color. We show occupational distributions for each race/ethnic group by Big Tech and smaller tech employers in Table 17. We first observe that all race/ethnic groups, albeit to different degrees, are more likely to occupy Professional occupations at Big Tech employers and less often occupy either end of the occupational ladder, Senior Official and All Other Occupations, at Big Tech employers than at smaller employers. This is true both for white employees and employees of color in Big Tech, so the structure of occupational opportunities at Big Tech employers generally is different than at smaller high tech companies.

On one hand, it is promising that the pattern of relatively greater occupational opportunities in Mid-Level and Professional positions at Big Tech employers and in Senior Official positions at smaller high tech employers holds for all employees of color. Black employees, for example, while still significantly under-represented in Big Tech, are more likely to occupy Mid-Level Official and Professional positions in Big Tech relative to smaller companies. Specifically, 9.2% of Black Big Tech employees are Mid-Level Officials, and 55.1% of Black Big Tech

Men are more likely than women to be Executives, while women are more likely to be in non-tech, non-Professional occupations.

employees are Professionals. By comparison, among Black employees at smaller companies, 7.9% are in Mid-Level Official positions and 46.9% of such Black employees occupy Professional positions. Black employees also are less likely to occupy All Other Occupations at Big Tech (28% versus 32.4%), and more likely to occupy Senior Official positions in smaller companies relative to Big Tech (1.1% versus 0.6%, respectively). As we observed in Figure 6, however, Black employees' representation in Senior Official positions is extremely small at all high tech sector firms, regardless of size (only 3% of all Senior Officials in the high tech sector are Black, while Black employees comprise 8% of all employees in the Sector).

We see similar patterns for Hispanic employees; 53.1% of Hispanic employees at Big Tech firms are Professionals, versus 37.7% at other smaller high tech employers. In addition, among Hispanic employees at Big Tech firms, 27.2% work in All Other occupations whereas 38.2% of Hispanics at smaller high tech companies work in All Other occupations. Furthermore, as with Black employees, very small proportions of Hispanic employees occupy Senior Officials positions in all high tech sector firms, regardless of size (only 0.6% of Hispanic employees at Big Tech companies and 1.4% of Hispanic employees at smaller tech companies). In 2022, Hispanic employees made up just 4% of Senior Officials although they were 10% of the high tech sector employees (Figure 5).

Further, occupational opportunities for employees of color at certain employers do not make up for disparities across the sector as a whole. While employees of color are more likely to achieve Senior Official positions outside of Big Tech relative to their counterparts within Big Tech, the same holds true for white employees. In other words, employees of color are much less likely to occupy Senior Official, and also less likely to obtain Mid-Level Official, occupations than white employees in the high tech sector regardless of company size.



Table 17. Occupational Distributions (%) by Race/Ethnicity and Employer Size, High Tech Sector, 2022

		Total High Tech Sector	Employer Size ^(a)	
			At least 10,000	Fewer than 10,000
Asian	Senior Officials	2.2	1.0	2.9
	Mid-Level Officials	14.1	14.6	13.7
	Professionals	66.2	72.0	62.3
	Technicians	5.0	3.0	6.3
	All Other Occupations ^(b)	12.6	9.4	14.7
Black	Senior Officials	0.9	0.6	1.1
	Mid-Level Officials	8.3	9.2	7.9
	Professionals	49.9	55.1	46.9
	Technicians	10.0	7.0	11.8
	All Other Occupations ^(b)	30.8	28.0	32.4
Hispanic	Senior Officials	1.2	0.6	1.4
	Mid-Level Officials	9.5	10.0	9.3
	Professionals	42.7	53.1	37.7
	Technicians	12.0	9.2	13.4
	All Other Occupations ^(b)	34.6	27.2	38.2
Other	Senior Officials	1.7	0.6	2.2
	Mid-Level Officials	10.9	11.0	10.8
	Professionals	52.0	58.0	49.2
	Technicians	10.1	8.4	10.9
	All Other Occupations ^(b)	25.3	22.0	26.9
White	Senior Officials	3.4	1.4	4.3
	Mid-Level Officials	16.1	15.7	16.2
	Professionals	51.7	57.9	48.7
	Technicians	8.1	6.1	9.1
	All Other Occupations ^(b)	20.7	18.9	21.7

Source: Authors' calculations using 2022 EEO-1 Employer Information Report data.⁸² The percentages have been rounded and may not add to 100.

^a Number of employees reported on the Employer Information Report (EEO-1).

^b All Other Occupations include Sales Workers, Administrative Support Workers, Craft Workers, Operatives, Laborers and Helpers, and Service Workers.

VII. EEOC Charge Filings & Litigation in the High Tech Sector

We next assess the charges of discrimination filed with the EEOC in 2022 for differences between the high tech sector and other sectors. The distribution of charges of discrimination shows that age discrimination charges are notably more frequent in the high tech sector than in other sectors. In addition, while allegations related to equal pay and genetic information are much less common across all sectors, such charges are two and five times as likely, respectively, in the high tech sector than in others. Table 18 shows our analysis of the distribution of charges of discrimination filed in 2022 that we were able to match to a 2022 EEO-1 employer report and categorize by industry (about one third of all charges filed).⁸³

The four most common types of charges filed—those alleging discrimination based on retaliation, disability, race, and sex—are nearly equally as common in the high tech sector as in other sectors with the percentages of charges within about one percentage point between sectors. The greatest difference in the relative frequency of allegations was in charges alleging age discrimination (Table 18). 19.8% of allegations filed by individuals against high tech employers included age discrimination claims, whereas such allegations comprised only 14.8% of allegations in other industries, a 5 percentage point difference that is statistically significant. There is also a statistically significant difference between the frequency of allegations of equal pay violations and genetic information discrimination in the high tech sector versus in other sectors.⁸⁴

Age, Pay, and Genetic Information discrimination charges are more frequent in the high tech sector.

Table 18. Distribution (%) of Types of Charges^(a) by Industry Sector, 2022

Charge Type	Total Charges	Charges by Sector	
		Charges in High Tech Sector	Charges in Other Sectors
Retaliation	53.4	54.4	53.3
Disability	34.4	35.0	34.3
Race	28.0	27.2	28.1
Sex	24.6	24.3	24.7
Religion	21.4	23.2	21.2
Age	14.9	19.8	14.8
National Origin	7.3	8.7	7.3
Color	5.6	5.6	5.6
Other^(b)	2.2	1.8	2.2
Equal Pay/ Compensation	1.1	2.1	1.0
Genetic Information	0.6	2.5	0.5

Sources: Internal 2022 EEOC Charge Records matched to 2022 EEO-1 Employer Information Reports.⁸⁵

Note: The distributions do not add to 100% since a charge may have two or more types and counted in each.

^a Only charges that were matched to a 2022 EEO-1 employer report are included, about one third of all charges filed in 2022.

^b Includes charges of type "Other", and charges that were unassigned, not labeled, or a type that is obsolete.

Retaliation is the most common charge filed in the high tech sector.

While the EEOC does not make public the information obtained under its investigative authority before lawsuits are filed, the distribution of the charges and examples of resolved lawsuits and public conciliations illustrate the discrimination faced by workers in the high tech sector.⁸⁶ Retaliation charges are the highest share of charge filings at the EEOC in the high tech sector as in other sectors of the economy. Given this, it is likely that discrimination in this sector is underreported due, at least in part, to workers' fear of retaliation. Additionally, surveys have found workers report higher levels of experiencing discrimination than represented in the filing of formal complaints with the EEOC.⁸⁷ Thus, we would caution against drawing conclusions about the prevalence of any given type of discrimination based on this distributional data alone. Nonetheless, the nature of the suits filed by the EEOC provide valuable information about the barriers faced by applicants and workers who enter or attempt to enter the high tech sector.

Disability-based discrimination charges are the highest proportion of charges filed after retaliation in the high tech sector, as it is among all charges EEOC receives. In recent years, the EEOC has filed a number of Americans with Disabilities Act (ADA) lawsuits that offer insight into the forms of discrimination faced by workers with disabilities in the high tech sector. These suits involve employers who fail to consider or hire applicants because of disabilities, make unlawful medical inquiries, and/or refuse to provide reasonable accommodations for workers with disabilities.⁸⁸ For example, in its lawsuit against Viewpoint, a construction software developer, and its recruiter, Campuspoint Corporation, the EEOC alleged that the companies rejected an applicant because he requested an American Sign Language interpreter for an upcoming group interview and without determining what reasonable accommodations might be available if the applicant was ultimately hired.⁸⁹ The case resolved for \$225,000 in monetary relief and injunctive relief that included both companies implementing ADA policies and providing equal employment opportunity training to all managers. In its lawsuit against Cessna Aircraft, the EEOC alleged that Cessna had a company-wide policy that failed to make individualized assessments of the abilities of conditional employees with disabilities to perform jobs, but instead Cessna rescinded its conditional job offers to these workers because of their disabilities in violation of the ADA.⁹⁰ The parties' settlement of the case provided monetary relief for two of the affected conditional employees as well as injunctive relief requiring the company to create a new ADA policy.

In general, women are more likely to experience sex-based discrimination, including harassment, when working in occupations and in a sector that are dominated by men.⁹¹ As observed above, women occupy less than a quarter of high tech jobs (22.6%, Table 8) and make up only one third of all employees in the high tech sector (31.9%, Table 15). Two matters investigated and resolved by the EEOC help illustrate how women in the high tech sector may be subjected to egregious workplace sexual harassment. In 2021, the EEOC and Mediacom Communications Corp. resolved a sexual harassment lawsuit when MediaCom agreed to pay \$175,000 to three female employees after the EEOC alleged that Mediacom failed to stop rampant sexual harassment despite female employees' complaints.⁹² In 2022, the EEOC entered into a consent decree and \$18 million settlement—one of the largest in the EEOC's history—with video game developer Activision Blizzard, Inc. after the EEOC filed a lawsuit alleging pervasive sexual harassment, pregnancy discrimination, and retaliation against female employees at the company.⁹³

Other recent EEOC lawsuits illustrate how women also continue to experience barriers to entry and promotion and unequal pay in high tech occupations. For example, the EEOC entered into a consent decree in 2021 with Dell, Inc., a computer manufacturer, after the EEOC's investigation found that the employer paid a female information technology analyst with 24 years of experience less than her male counterparts for performing similar work.⁹⁴ The EEOC has also filed several pregnancy discrimination suits against employers in the high tech sector. In the settled lawsuit between the EEOC and DLS Engineering Associates, LLC, the employer rescinded a job offer for an engineering logistics analyst position when it found out the candidate was pregnant, explaining that they "cannot hire someone who is pregnant."⁹⁵ In another lawsuit, Fermi Research Alliance, Inc., a company that runs a particle physics and accelerator laboratory, agreed to pay a female engineer \$100,000 after the EEOC's investigation found that it had failed to promote her in retaliation for her filing a sex discrimination claim.⁹⁶ These examples shed light on how women may not only experience sex-based discrimination (including sexual harassment, unequal pay, and pregnancy discrimination) in the high tech sector, but also the nature of retaliation when they make claims of sex discrimination.

The results in Table 18 show that age-related charges also are relatively more common in the high tech sector (19.8% of charges compared to 14.8% in other industries). Workers 40 and older are protected against age discrimination by the Age Discrimination in Employment Act (ADEA). Research cited above suggests that older employees often are perceived as not innovative or able to keep up with new technologies and skills and thereby treated differently than their younger peers due to their age.⁹⁷ Age discrimination in the high tech sector may come in many forms from refusing to hire older workers, fewer opportunities for training and advancement, or laying off older workers.⁹⁸ Several settled lawsuits illustrate how employers unlawfully replace older workers in the high tech sector with younger workers. For instance, the EEOC filed a lawsuit against Camber Corporation, a defense contractor, alleging the company fired a software engineer in his mid-sixties after the employee requested a transfer, and subsequently replaced the employee with someone more than 20 years younger.⁹⁹ The EEOC also filed a lawsuit against an engineering and construction company, Burrow Global Services, LLC, alleging the employer violated the ADEA when a new, younger supervisor terminated an electrical engineer, who was over age 60, because of his age.¹⁰⁰ According to the EEOC's suit, the new supervisor almost immediately began commenting about the employee's retirement and repeatedly asked the older employee when he planned to retire. Finally, in resolving a lawsuit, the Jet Propulsion Laboratory, a federally funded NASA research and development center, agreed to pay \$10 million to a class of workers over the age of 40 who the EEOC alleged it had systemically laid off in favor of retaining younger employees.¹⁰¹

VIII. Conclusion

This report assessed diversity in the high tech workforce and high tech sector. While there has been some progress, our findings reflect significant barriers to employment and advancement for some historically underrepresented groups. Most notably, female, Black, and Hispanic workers remained substantially underrepresented in the high tech workforce and sector, even during a period of rapid growth in high tech occupations. Between 2005 and 2022, there was very little change in the representation of Black workers employed as high tech workers and virtually no change at all in the representation of female workers in the high tech workforce.

While Black and Hispanic workers had average annual growth rates higher than the overall high tech workforce, which grew at 5.4% annually on average, the growth did not result in substantial gains in representation for Black workers. Black high tech workers grew 7.2% annually on average, and yet remained underrepresented at 7.4% of the high tech workforce while comprising 11.6% of the total U.S. workforce. While Hispanic workers increased their representation from 6.9% in 2014 to 9.9% in 2022 with a growth rate nearly double that of the overall high tech workforce, they also remained underrepresented compared to their representation in the overall U.S. workforce (18.7%).

In the high tech sector, employees were less racially and ethnically diverse than in both the overall U.S. workforce and the high tech workforce. Black (7.6% in the high tech sector) and Hispanic (9.5% in the high tech sector) employees were also substantially underrepresented in the high tech sector. Our analysis by employer size showed that Big Tech employers, those with more than 10,000 employees, were more likely than smaller employers to have more racially and ethnically diverse workforces. Still, regardless of employer size, employees of color were less likely to be employed in the highest ranking Senior Official occupations than white employees. Opportunities for employees of color at the senior level were few and far in between at Big Tech companies with only 0.6% each of Black, Hispanic and Other Races employees occupying senior level positions relative to more than 1% of each group at smaller employers.

The representation of women in high tech occupations has not improved in almost 20 years, remaining at less than a quarter of the high tech workforce.¹⁰² Additionally, women remained even more underrepresented in higher-paying high tech jobs within the high tech sector, and the representation of female high tech managers had a statistically significant decline from 24.5% in 2014 to 23.6% in 2022. Such stasis for women in the high tech workforce over such a long period of time is striking in light of high female labor force participation in the total U.S. workforce (47.3% in 2022). Further, our analysis of charge discrimination filings found that equal pay allegations were more frequent in the high tech sector than other sectors. EEOC's recent litigation also illustrates how female workers faced harassment and discrimination in some workplaces. Taken together, these results reaffirm concerns that barriers may reduce women's access to high tech jobs, particularly in the higher paying positions in the sector, and that women may face additional barriers even if they do obtain a high tech position.

The findings with respect to age diversity are also concerning. In general, we found that the high tech workforce is more concentrated between ages 25 and 39 relative to the total U.S. workforce (40.8% versus 33.1%). High tech workers over 40 were more frequently found in jobs outside the high tech sector than the higher paying jobs within the high tech sector. In addition, our analysis of the EEOC charge filing data found that allegations of age discrimination were significantly more frequent in the high tech sector than other sectors.

While there has been incremental progress for some workers, especially Hispanic workers, the underrepresentation of Black, Hispanic, and women in the high tech workforce remains a persistent problem, as it was in 2016 when the EEOC released its prior report. At the time of that report, the EEOC convened a hearing in which stakeholders identified barriers to access and opportunity, as well as possible solutions including strengthening diversity, equity, inclusion, accessibility efforts.¹⁰³ In 2020, many high tech companies made significant commitments to advance racial justice and promote diversity, equity, and inclusion in the wake of protests against racial violence against Black Americans.¹⁰⁴ While the 2022 timeframe analyzed here may have been too soon for those efforts to be reflected in the results, there have also been reports that some efforts have been already reduced or abandoned.¹⁰⁵

The present report indicates that significant barriers remain to equal employment opportunity in the high tech workforce and sector. The magnitude of the underrepresentation, particularly for female and Black workers, along with research and the EEOC's experience enforcing anti-discrimination laws suggest that discrimination contributes to the relatively low employment of women, Black workers, Hispanic workers, and older workers. The underrepresentation of certain workers among those who design, develop, and implement new technologies has particularly significant social and economic implications given the high tech sector's rapid growth, the expanding importance of technology in our society, and the need to create technology to serve increasingly diverse communities in the United States and abroad.

In coming years, it will be critically important for employers and the EEOC to better identify and take active steps to address the barriers that limit employment for women, older workers, and Black and Hispanic workers in the high tech workforce and sector. As the primary agency charged with enforcing federal equal employment opportunity laws, the EEOC will continue working to address discrimination in high tech through outreach and education and, when necessary, enforcement.

Appendix

Data Sources

We rely on three data sources for this report. We use 2014 and 2022 data from the American Community Survey (ACS) to assess trends in age, sex and race/ethnic compositions and primary geographic locales of the high tech workforce and sector.¹⁰⁶ We also use the 2014 and 2022 EEOC Employer Information Reports (EEO-1 data) to understand whether workforce diversity varies across high tech companies of different sizes. Our third source of data comes from the EEOC administrative records of discrimination charge filings in 2022. We further describe each data source below.

2014 and 2022 American Community Survey 1-Year Public Use Microdata Sample

Annual ACS data enable analyses of U.S. workforce and industry compositions by demographic, economic, and geographic characteristics in a given year and over time. We draw from individual-level Public Use Microdata Samples (IPUMS) data from the 2014 and 2022 ACS to identify high tech occupations and industries and define the high tech sector, as described above, and examine changes in the total U.S. workforce and the high tech workforce with respect to race, ethnicity, sex, and age.¹⁰⁷ To estimate the size and composition of the total U.S. workforce and the high tech workforce, we use a common definition of the labor force: civilian (non-military) workers who either are employed or are unemployed and looking for work, excluding persons who reside in institutional settings.¹⁰⁸

ACS data include variables for self-reported demographic characteristics including race, ethnicity, sex, and age. For consistency with previous reports, we use the values of the two variables for race and ethnicity to create one variable with five categories: Hispanic of any race (“Hispanic” throughout this report); non-Hispanic Asian alone (“Asian”), non-Hispanic Black or African American alone (“Black”), non-Hispanic white alone (“white”), and non-Hispanic Other Race (“Other Races”).¹⁰⁹

In comparing ACS data from 2014 and 2022, it is important to note that the Census Bureau implemented several changes to the two questions that ask about a person’s ethnicity and race beginning with the 2020 Decennial Census and carried forward in subsequent American Community Surveys.¹¹⁰ The questionnaire changes carry the greatest implications for counts of the Two or More Races, Some Other Race, and white alone populations. By comparison, the questions appear to have fewer implications for counts of the Asian alone, Black alone, and Hispanic populations.¹¹¹

The census question changes are consequential for workforce analyses by race and ethnicity over time as they were implemented between the 2014 and 2022 surveys that we use for the present report. Estimating and distinguishing changes in the high tech workforce due to population change versus due to changes in the questionnaire is beyond the scope of this report. We note, however, when we observe changes that are consistent with the Census Bureau’s research on the implications of the question changes.

While the ACS provides a large, representative data source that enables detailed analyses of workers by industry, occupation and demographic characteristics, the data do not have information on employers other than the industry in which an individual is employed or looking for work. We therefore rely on EEO-1 data to compare employee demographics in the high tech sector by employer size.

2022 EEO-1 Employer Report Data

Annual EEO-1 employer report data collected by the EEOC provide a unique source of establishment-level (i.e., physical location) information on employers' workforce characteristics by sex, race, ethnicity, and occupation.¹¹² All private-sector employers with 100 or more employees are legally required to file EEO-1 reports for each establishment annually. Employers with between 50 and 100 employees also must file if they are federal contractors and meet certain other eligibility criteria.¹¹³ The EEO-1 data thus include only counts of employees of private-sector employers, but not all private-sector employers.

Given the EEO-1 filing criteria and who is counted in EEO-1 data, there are important differences between EEO-1 and ACS data when using each to assess workforce characteristics. ACS data represent all employed and unemployed workers, including seasonal, temporary, and laid-off workers, not only in the private sector, but also in governmental and educational sectors, and workers at small businesses and other types of employers not required to file EEO-1 reports. EEO-1 report data include counts only of currently employed workers at the time that an employer submitted its report. Employers may include, but are not required to, temporary workers in their reports. EEO-1 data therefore is a subset of, and thereby do not fully represent, all workers in the U.S. labor force when aggregated at the national or subnational levels.

Such differences between the ACS and EEO-1 data may result in differences in observed outcomes. Comparing the previous EEOC and GAO reports, however, shows that while specific group percentages may differ, the distributional patterns were similar (see Table 2 above). Other than changes to the race and ethnicity questions in the ACS described above, we expect that patterns observed in each data source largely will remain correlated.

We use 2022 EEO-1 data to compare employee characteristics by employer size within the high tech sector.¹¹⁴ The ten occupational categories in the EEO-1 data include a broader range of jobs than the more detailed SOC categories available in the ACS such that we cannot isolate STEM occupations and calculate industry percentages of high tech workers using the EEO-1 data alone.¹¹⁵ We therefore use NAICS industry codes common to both the ACS and EEO-1 data to identify high tech employers and thereby the high tech sector in the EEO-1 data. We then assess sex, race, and ethnic characteristics *all* employees by employer size within the high tech sector.

2022 EEOC Administrative Records for Filings of Discrimination Charges

Finally, we extract administrative records data of charges of discrimination filed in calendar year 2022 from the EEOC's charge filing system. These data allow us to go beyond the two previous reports to compare the types of charges that are most common in the high tech sector compared to other industries.¹¹⁶

The EEOC's charge filing system did not have complete and accurate NAICS industry codes for 2022 as the employer industry information may not have been supplied by the employer or known by the charging party (employee or job applicant) or the EEOC. (The EEOC has since taken steps to increase the accuracy and inclusion of NAICS code information by requesting that employers supply this information in the online charge filing system.) We therefore rely on the NAICS codes in the EEO-1 data by attempting to match each charge record in the administrative data to a 2022 EEO-1 employer report data record, first using Employer Identification Numbers (EIN) common to both data sources and, if that is missing from a charge

record, then using employer name and address. Our matching algorithm links 27,012 of the 75,218 (35.9%) total charge records from 2022, or over one third of all charges filed that year, to a 2022 EEO-1 employer report and corresponding industry code. Our analysis therefore does not include the complete data on 2022 charges filed with the EEOC.¹¹⁷

Table A-1. Sex Composition of Total U.S. Workforce and High Tech Workforce, by Race, 2022

	Workers in Laborforce	Female Workers	% Female
Total U.S. Workforce	169,986,505	80,382,287	47.3
Asian	10,972,992	5,297,173	48.3
Black	19,785,963	10,478,764	53.0
Hispanic	31,858,946	14,193,326	44.6
Other	8,167,276	4,000,649	49.0
White	99,201,328	46,412,375	46.8
High Tech Workforce	10,386,483	2,352,314	22.6
Asian	1,875,060	494,086	26.4
Black	767,584	239,133	31.2
Hispanic	1,026,529	225,402	22.0
Other	500,345	121,194	24.2
White	6,216,965	1,272,499	20.5
High Tech Workers*	9,495,744	2,141,979	22.6
Asian	1,738,890	464,395	26.7
Black	716,650	222,614	31.1
Hispanic	954,043	207,957	21.8
Other	460,399	110,136	23.9
White	5,625,762	1,136,877	20.2
High Tech Managers	890,739	210,335	23.6
Asian	136,170	29,691	21.8
Black	50,934	16,519	32.4
Hispanic	72,486	17,445	24.1
Other	39,946	11,058	27.7
White	591,203	135,622	22.9

Source: Authors' calculations using 2014 and 2022 American Community Survey data (IPUMS 2022; IPUMS 2024).¹¹⁸

* High Tech Workers excludes High Tech Managers.

Endnotes

- 1 “Special Report: Diversity in Tech,” U.S. Equal Employment Opportunity Commission, 2016, <https://www.eeoc.gov/special-report/diversity-high-tech>; “Diversity in the Technology Sector: Federal Agencies Could Improve Oversight of Equal Employment Opportunity Requirements,” U.S. Government Accountability Office, November 30, 2017, <https://www.gao.gov/assets/gao-18-69.pdf>.
- 2 “Laws Enforced,” U.S. Equal Employment Opportunity Commission, <https://www.eeoc.gov/statutes/laws-enforced-eeoc>.
- 3 “Strategic Enforcement Plan Fiscal Years 2024 - 2028.” U.S. Equal Employment Opportunity Commission, 9, <https://www.eeoc.gov/strategic-enforcement-plan-fiscal-years-2024-2028> (noting “particular concern” regarding “[t]he continued underrepresentation of women and workers of color in certain industries and sectors [including] high tech . . .”).
- 4 Throughout the present report, we refer to the science, technology, engineering, and math (STEM) workforce simply as the “high tech workforce (or workers)” and to industries with relatively high concentrations of such workers, in aggregate, as the “high tech sector.” We provide more detailed definitions in Section II. Of note, we do not distinguish STEM workers with or without a college degree in the present report. While particular STEM jobs may require specific education, credentials, or other qualifications, the National Science Foundation found that, albeit using a broader range of occupations than this report, more than half of workers in STEM occupations do not have a bachelor’s degree and thus began to include workers of all educational levels in their 2021 annual report on the STEM labor force. See Abigail Okrent and Amy Burke, “The STEM Labor Force of Today: Scientists, Engineers, and Skilled Technical Workers,” *National Science Board Science and Engineering Indicators*, Aug. 31, 2021, <https://nces.nsf.gov/pubs/nsb20212>. Assessing the implications of educational attainment or qualifications for workforce and sector diversity is beyond the scope of this report.
- 5 U.S. Government Accountability Office, *Diversity in the Technology Sector: Federal Agencies Could Improve Oversight of Equal Employment Opportunity Requirements*, November 30, 2017, <https://www.gao.gov/assets/gao-18-69.pdf>; Abigail Okrent, Amy Burke, and Katherine Hale, “The State of U.S. Science and Engineering 2022,” *National Science Board Science and Engineering Indicators*, Jan 18, 2022, <https://nces.nsf.gov/pubs/nsb20221>; Abigail Okrent and Amy Burke, “The STEM Labor Force of Today: Scientists, Engineers, and Skilled Technical Workers,” *National Science Board Science and Engineering Indicators*, Aug. 31, 2021, <https://nces.nsf.gov/pubs/nsb20212>. The National Science Board reported average annual growth of 2.3 percent between 2010 and 2019 using a definition of the STEM workforce that includes a broader range of occupations.
- 6 “Employment Projections: Employment in STEM Occupations,” U.S. Bureau of Labor Statistics, U.S. Department of Labor, last updated April 17, 2024, <https://www.bls.gov/emp/tables/stem-employment.htm>.
- 7 “Employment Projections: Employment in STEM Occupations,” U.S. Bureau of Labor Statistics, U.S. Department of Labor, last updated April 17, 2024, <https://www.bls.gov/emp/tables/stem-employment.htm>.
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- 9 Mary Whitfill Roeloffs, “Layoffs Hit 10-Month High as Financial and Tech Companies Slash 39,000 Jobs,” *Forbes*, Feb. 1, 2024, <https://www.forbes.com/sites/maryroeloffs/2024/02/01/layoffs-hit-10-month-high-as-financial-and-tech-companies-slash-39000-jobs/?sh=767f6a083ea8>; Gerrit De Vynck, Danielle Abril, and Caroline O’Donovan, “The U.S. economy is booming. So why are tech companies laying off workers?” *Washington Post*, Feb. 3, 2024, <https://www.washingtonpost.com/technology/2024/02/03/tech-layoffs-us-economy-google-microsoft/>.
- 10 Abigail Okrent and Amy Burke, “The STEM Labor Force of Today: Scientists, Engineers, and Skilled Technical Workers,” *National Science Board Science and Engineering Indicators*, Aug. 31, 2021, <https://nces.nsf.gov/pubs/nsb20212>.

- 11 Abigail Okrent and Amy Burke, “The STEM Labor Force of Today: Scientists, Engineers, and Skilled Technical Workers,” *National Science Board Science and Engineering Indicators*, Aug. 31, 2021, <https://nces.nsf.gov/pubs/nsb20212>.
- 12 U.S. Equal Employment Opportunity Commission, Compliance Manual, Section 15: *Race and Color Discrimination*, 2006, 15-VI Equal Access to Jobs, <https://www.eeoc.gov/laws/guidance/section-15-race-and-color-discrimination> (“Many employers have concluded that a diverse workforce makes a company stronger, more profitable, and a better place to work, and they implement diversity initiatives for competitive reasons rather than in response to discrimination, although such initiatives may also help to avoid discrimination.”)
- 13 Roger Mayer, Richard Warr, and Jing Zhao, “Do Pro-Diversity Policies Improve Corporate Innovation?” *Financial Management* 47, no. 3 (December 2017): 617-650, <https://doi.org/10.1111.fima.12205>; Cristina Díaz-García, Angela González-Moreno, and Francisco Jose Sáez-Martínez, “Gender Diversity Within R&D Teams: Its Impact on Radicalness of Innovation,” *Innovation* 15, no. 2 (2013): 149-160, [Gender diversity within R&D teams: Its impact on radicalness of innovation: Innovation: Vol 15, No 2\(tandfonline.com\)](https://doi.org/10.1002/innov.1220).
- 14 “Gender Diversity and Corporate Performance,” Press Release, Credit Suisse AG, July 31, 2012, <https://www.credit-suisse.com/about-us-news/en/articles/media-releases/42035-201207.html>; Dame Vivian Hunt et al., “Diversity matters even more: The case for holistic impact,” *McKinsey and Company*, Dec. 5, 2023, <https://www.mckinsey.com/featured-insights/diversity-and-inclusion/diversity-matters-even-more-the-case-for-holistic-impact>; David Rock and Heidi Grant, “Why Diverse Teams Are Smarter,” *Harvard Business Review*, Nov. 4, 2016, <https://hbr.org/2016/11/why-diverse-teams-are-smarter>; Cristina Díaz-García, Angela González-Moreno, and Francisco Jose Sáez-Martínez, “Gender Diversity Within R&D Teams: Its Impact on Radicalness of Innovation,” *Innovation* 15, no. 2 (2013): 149-160, <https://www.tandfonline.com/doi/abs/10.5172/impp.2013.15.2.149>.
- 15 “Select Task Force on the Study of Harassment in the Workplace: Report of the Co-Chairs Chai R. Feldblum and Victoria Lipnic,” U.S. Equal Employment Opportunity Commission, June 2016, <https://www.eeoc.gov/select-task-force-study-harassment-workplace>. This report explains that harassment is more likely to occur in homogenous workforces and sexual harassment of women is more likely to occur in workplaces with primarily male employees.
- 16 Reva Schwartz et al., “Towards a Standard for Identifying and Managing Bias in Artificial Intelligence,” *National Institute of Standards and Technology*, Special Publication 1270 (March 15, 2022), <https://doi.org/10.6028/NIST.SP.1270>.
- 17 See e.g., Adela C. Timmons et al., “A Call to Action on Assessing and Mitigating Bias in Artificial Intelligence Applications for Mental Health.” *Perspectives on Psychological Science* 18, no. 5 (December 9, 2022): 1062–96. <https://doi.org/10.1177/17456916221134490>.
- 18 The EEOC’s 2016 report, “Diversity in High Tech,” assessed demographic diversity of both the total U.S. high technology workforce and the leading high tech employers in Silicon Valley, a hub of the high tech sector. “Special Report: Diversity in Tech,” U.S. Equal Employment Opportunity Commission, 2016, <https://www.eeoc.gov/special-report/diversity-high-tech>. The GAO’s 2017 report, “Diversity in the Technology Sector,” similarly evaluated diversity in the high tech sector and also reviewed efforts by the EEOC and the U.S. Department of Labor’s Office of Federal Contract Compliance Programs (OFCCP) to enforce federal equal employment opportunity laws and regulations. “Diversity in the Technology Sector: Federal Agencies Could Improve Oversight of Equal Employment Opportunity Requirements,” U.S. Government Accountability Office, November 30, 2017, <https://www.gao.gov/assets/gao-18-69.pdf>.
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- 25 Victoria Lipnic, “The State of Age Discrimination and Older Workers in the U.S. 50 Years After the Age Discrimination in Employment Act (ADEA),” *U.S. Equal Employment Opportunity Commission*, June 2018. Available at <https://www.eeoc.gov/reports/state-age-discrimination-and-older-workers-us-50-years-after-age-discrimination-employment>; *Eliminating Barriers to Employment: Opening Doors to Opportunity: Testimony before the Education and Labor Committee*, 116th Cong. 1 (2019) (Testimony of Laurie McCann on behalf of AARP), https://edworkforce.house.gov/uploadedfiles/5.21.19_-_mccann_written_testimony.pdf; “The ADEA @ 50 - More Relevant Than Ever: Written Testimony of Jacquelyn B. James, Ph.D. Boston College,” U.S. Equal Employment Opportunity Commission, June 14, 2017, <https://www.eeoc.gov/meetings/meeting-june-14-2017-adea-50-more-relevant-ever/james>.
- 26 “Discrimination by Type,” U.S. Equal Employment Opportunity Commission, <https://www.eeoc.gov/discrimination-type>.
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- 29 Homeland Security, U.S. Citizenship and Immigration Services, *Characteristics of H-1B Specialty Occupation Workers: Fiscal Year 2022 Annual Report to Congress*, March 13, 2023. https://www.uscis.gov/sites/default/files/document/data/OLA_Signed_H-1B_Characteristics_Congressional_Report_FY2022.pdf.
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- 32 Elizabeth Grieco and Steven Deitz, “Diversity and STEM: Women, Minorities, and Persons with Disabilities,” *National Center for Science and Engineering Statistics*, 2023, <https://nces.nsf.gov/wmpd>.
- 33 “Special Report: Diversity in Tech,” U.S. Equal Employment Opportunity Commission, 2016, <https://www.eeoc.gov/special-report/diversity-high-tech>; “Diversity in the Technology Sector: Federal Agencies Could Improve Oversight of Equal Employment Opportunity Requirements,” U.S. Government Accountability Office, November 30, 2017, <https://www.gao.gov/assets/gao-18-69.pdf>.
- 34 Diversity in the Technology Sector: Federal Agencies Could Improve Oversight of Equal Employment Opportunity Requirements,” U.S. Government Accountability Office, November 30, 2017, <https://www.gao.gov/assets/gao-18-69.pdf>; Liana Christin Landivar, “Diversity in STEM Employment by Sex, Race, and Hispanic Origin,” *U.S. Census Bureau*, September 2013, <https://www.census.gov/library/publications/2013/acs/acs-24.html>; Amy Burke, “Science and Engineering Labor Force,” *National Science Board Science and Engineering Indicators*, September 26, 2019, <https://nces.nsf.gov/pubs/nsb20198/>; “Special Report: Diversity in Tech,” U.S. Equal Employment Opportunity Commission, 2016, <https://www.eeoc.gov/special-report/diversity-high-tech>; Michael Wolf and Dalton Terrell, “The high-tech industry, what is it and why it matters to our economic future,” U.S. Bureau of Labor Statistics, *Beyond the Numbers: Employment and Unemployment* 5, no. 8 (May 2016), <https://www.bls.gov/opub/btn/volume-5/pdf/the-high-tech-industry-what-is-it-and-why-it-matters-to-our-economic-future.pdf>.
- 35 The GAO report used the 2010 SOC manual whereas we use the most recently available 2018 SOC manual. Several occupations that were categorized in the 2010 manual as “Computer Occupations, All Other” were given unique occupation codes in 2018, but only one, “Project Management Specialists,” is no longer categorized as a computer or technology related occupation in the 2018 SOC manual, so we exclude it as a high tech occupation for this report. U.S. Bureau of Labor Statistics, *Standard Occupational Classification Manual*, 2018, https://www.bls.gov/soc/2018/soc_2018_manual.pdf.
- 36 See the Appendix for descriptions of the data sources used for this report.
- 37 Federal agencies, including the U.S. Census Bureau and the EEOC, use the North American Industry Classification System (NAICS) to classify business establishments by industry, which is updated every five years by the Office of Management and Budget. For more information, see <https://www.census.gov/naics/> and <https://usa.ipums.org/usa/voliii/indnaics18.shtml>.
- 38 See the Appendix for descriptions of the data sources used for this report.; The top 15 industries with the highest percentages of high tech occupations in 2015 identified by the GAO were comprised of at least 19% high tech workers. For its 2016 report, the EEOC used a threshold of at least 25% high tech workers in an industry in 2014 to categorize it as high tech.
- 39 Our list of industries for 2022 differs from the top 15 industries that the GAO categorized as high tech using 2014 data. Two industries categorized as high tech by GAO in 2014 did not employ at least 20 percent high tech workers in 2022, “Other information services, except libraries and archives, and internet publishing and broadcasting and web search portals” and “Scientific research and development services.” We include “National security and international affairs,” which met our 20% threshold in 2022 but was not included in GAO’s list for 2015.”
- 40 IPUMS USA, University of Minnesota, 2024, www.ipums.org.
- 41 “Special Report: Diversity in Tech,” U.S. Equal Employment Opportunity Commission, 2016, <https://www.eeoc.gov/special-report/diversity-high-tech>. The EEOC EEO-1 employer report data is comprised of annual counts of private-sector employers’ workforces by race, ethnicity, and sex for employers with more than 50-100 employees (depending on the type of employer). EEOC used similar methodology as the GAO to define the high tech sector but included only industries that were comprised of more than 25% “technology-oriented workers” (rather than more than 19%). As noted above, the EEOC used EEO-1 employer reports from 2014.

42 To describe the high tech workforce, the GAO used American Community Survey (ACS) data from multiple years between 2005 and 2015 and defined the high tech workforce as individuals who either were employed in a STEM occupation or were unemployed and looking for work in STEM occupations. The U.S. Census Bureau ACS is an annual, nationally representative household survey data includes the demographic compositions of the U.S. population and workforce. After identifying the high tech workforce, the GAO defined the high tech sector as the top 15 industries with the highest concentrations of high tech workers. The percentage of high tech workers in the top 15 industries ranged between 19% and 62%. The GAO then used EEO-1 data to summarize employer reports 2007, 2011, and 2015 to describe all employees the high tech sector. “Diversity in the Technology Sector: Federal Agencies Could Improve Oversight of Equal Employment Opportunity Requirements,” U.S. Government Accountability Office, November 30, 2017, <https://www.gao.gov/assets/gao-18-69.pdf>.

43 For the purposes of this report, sex is reported as male/female consistent with the ACS data and the EEO-1 data at the time of those data collections. The EEO-1 allows employers to voluntarily report employees as non-binary. In addition, when making an inquiry or filing a charge of discrimination, individuals can identify as non-binary on the relevant EEOC forms and systems.

44 “Special Report: Diversity in Tech,” U.S. Equal Employment Opportunity Commission, 2016, <https://www.eeoc.gov/special-report/diversity-high-tech>; “Diversity in the Technology Sector: Federal Agencies Could Improve Oversight of Equal Employment Opportunity Requirements,” U.S. Government Accountability Office, November 30, 2017, <https://www.gao.gov/assets/gao-18-69.pdf>.

45 “Although the estimated percentage of minority technology workers as a whole had grown since 2005, . . . this trend did not apply to Black technology workers. Specifically, from 2005 through 2015, although the number of Black workers increased as the technology workforce grew, there was *no statistically significant change* in their representation as a percentage of the entire technology workforce.” “Diversity in the Technology Sector: Federal Agencies Could Improve Oversight of Equal Employment Opportunity Requirements,” U.S. Government Accountability Office, November 30, 2017: 13-14 (emphasis added), <https://www.gao.gov/assets/gao-18-69.pdf>.

46 *Id.* at 14.

47 “Diversity in the Technology Sector: Federal Agencies Could Improve Oversight of Equal Employment Opportunity Requirements,” U.S. Government Accountability Office, November 30, 2017, <https://www.gao.gov/assets/gao-18-69.pdf>.

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49 “Special Report: Diversity in Tech,” U.S. Equal Employment Opportunity Commission, 2016, <https://www.eeoc.gov/special-report/diversity-high-tech>; “Diversity in the Technology Sector: Federal Agencies Could Improve Oversight of Equal Employment Opportunity Requirements,” U.S. Government Accountability Office, November 30, 2017, <https://www.gao.gov/assets/gao-18-69.pdf>.

50 “Diversity in the Technology Sector: Federal Agencies Could Improve Oversight of Equal Employment Opportunity Requirements,” U.S. Government Accountability Office, November 30, 2017, <https://www.gao.gov/assets/gao-18-69.pdf>.

51 “Special Report: Diversity in Tech, Appendix Table 1,” U.S. Equal Employment Opportunity Commission, 2016, <https://www.eeoc.gov/special-report/diversity-high-tech>.

52 We use 2014 and 2022 ACS data to depict the size of the high tech workforce, rather than the total number of high tech sector employees, in each metropolitan area. See the Appendix for more information about the data used.

53 The geographic locations of high tech sector employees in EEO-1 data are based on the address of the employer establishments. As such, the 2014 EEOC report did not show the San Francisco-Oakland-Hayward metropolitan area, which was distinguished from Silicon Valley in the San Jose-Sunnyvale-Santa Clara area, as among places with the largest high tech sectors. Workers' locations in ACS data, however, are based on their residential address, and we find that San Francisco-Oakland-Hayward has the fourth largest high tech workforce (Table 4). Our analyses throughout the remainder of this report are conducted at the national level so differences in employers' establishments and workers' residential locations are inconsequential for our results.

54 IPUMS USA, University of Minnesota, 2024, www.ipums.org.

55 IPUMS USA, University of Minnesota, 2024, www.ipums.org.

56 "Diversity in the Technology Sector: Federal Agencies Could Improve Oversight of Equal Employment Opportunity Requirements," U.S. Government Accountability Office, November 30, 2017, <https://www.gao.gov/assets/gao-18-69.pdf>.

57 IPUMS USA, University of Minnesota, 2024, www.ipums.org.

58 IPUMS USA, University of Minnesota, 2024, www.ipums.org.

59 The prior EEOC and GAO reports used five racial/ethnic categories to discuss disparities. Additional research or disaggregation of data could reveal disparities that affect members of particular subgroups. For more information on data sources, see the Appendix.

60 "Diversity in the Technology Sector: Federal Agencies Could Improve Oversight of Equal Employment Opportunity Requirements," U.S. Government Accountability Office, November 30, 2017, <https://www.gao.gov/assets/gao-18-69.pdf>.

61 "Diversity in the Technology Sector: Federal Agencies Could Improve Oversight of Equal Employment Opportunity Requirements," U.S. Government Accountability Office, November 30, 2017, at 14, <https://www.gao.gov/assets/gao-18-69.pdf>.

62 IPUMS USA, University of Minnesota, 2024, www.ipums.org.

63 IPUMS USA, University of Minnesota, 2024, www.ipums.org.

64 Nicholas Jones et al., "2020 Census Illuminates Racial and Ethnic Composition of the Country," United States Census Bureau, August 21, 2021, <https://www.census.gov/library/stories/2021/08/improved-race-ethnicity-measures-reveal-united-states-population-much-more-multiracial.html>; See the Appendix for more information and citations.

65 IPUMS USA, University of Minnesota, 2024, www.ipums.org.

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69 U.S. Government Accountability Office, *Diversity in the Technology Sector: Federal Agencies Could Improve Oversight of Equal Employment Opportunity Requirements*, November 30, 2017, <https://www.gao.gov/assets/gao-18-69.pdf>.

70 IPUMS USA, University of Minnesota, 2024, www.ipums.org.

71 IPUMS USA, University of Minnesota, 2024, www.ipums.org.

72 IPUMS USA, University of Minnesota, 2024, www.ipums.org.

73 IPUMS USA, University of Minnesota, 2024, www.ipums.org.

74 EEO-1 data enable us to analyze employee demographics by ten occupational categories. See the Appendix for more information about each data source and differences in the workers included in our high tech workforce and high tech sector analyses.

75 IPUMS USA, University of Minnesota, 2024, www.ipums.org; U.S. Equal Employment Opportunity Commission, *2022 EEO-1 Employer Information Reports*. More information at <https://www.eeoc.gov/data/eo-data-collections>.

76 U.S. Equal Employment Opportunity Commission, *2022 EEO-1 Employer Information Reports*. More information at <https://www.eeoc.gov/data/eo-data-collections>.

77 U.S. Equal Employment Opportunity Commission, *2022 EEO-1 Employer Information Reports*. More information at <https://www.eeoc.gov/data/eo-data-collections>.

78 U.S. Equal Employment Opportunity Commission, *2022 EEO-1 Employer Information Reports*. More information at <https://www.eeoc.gov/data/eo-data-collections>.

79 The relatively large variation in employment of Asian workers may be due, at least in part, to larger high tech employers sponsoring work visas for more international workers from South and East Asia. Sponsorship requires investments in time and staff to work through government regulations and complexities of overseas recruitment and hiring. Larger companies benefit from economies of scale of such investments when sponsoring large numbers of international workers, whereas these investments may be too costly for smaller companies. American Immigration Council, *Foreign-born STEM Workers in the United States*, Jun 14, 2022, <https://www.americanimmigrationcouncil.org/research/foreign-born-stem-workers-united-states>; Gordon H. Hanson and Matthew J. Slaughter. “High-Skilled Immigration and the Rise of STEM Occupations in U.S. Employment.” *National Bureau of Economic Research Working Paper Series*, Working Paper 22623, 2001, https://www.nber.org/system/files/working_papers/w22623/w22623.pdf; National Research Council, “Building a Workforce for the Information Economy”, *The National Academies Press*, (2001), <https://doi.org/10.17226/9830>.

80 All Other Occupations include Sales Workers, Administrative Support Workers, Craft Workers, Operatives, Laborers and Helpers, and Service Workers.

81 U.S. Equal Employment Opportunity Commission, *2022 EEO-1 Employer Information Reports*. More information at <https://www.eeoc.gov/data/eo-data-collections>.

82 U.S. Equal Employment Opportunity Commission, *2022 EEO-1 Employer Information Reports*. More information at <https://www.eeoc.gov/data/eo-data-collections>.

83 U.S. Equal Employment Opportunity Commission, *Discrimination by Type*, <https://www.eeoc.gov/discrimination-type>.

84 Research conducted by the National Academy of Sciences using EEOC’s pay data collection found that pay gaps existed in the Silicon Valley technology sector, specifically that “all sex and race/ethnicity groups earned less than White men in the same occupation and women in each race/ethnicity group earned less than their race/ethnicity male peers.” “Evaluation of Compensation Data Collected Through the EEO-1 Form,” *National Academics Press*, 2023, 287, <https://doi.org/10.17226/26581>.

85 U.S. Equal Employment Opportunity Commission, *2022 EEO-1 Employer Information Reports*. More information at <https://www.eeoc.gov/data/eo-data-collections>.

86 Title VII §§ 706(b) and 709(e) and ADA § 107 prohibit EEOC from "making public" information obtained under its investigative authority before a Title VII/ADA/GINA lawsuit is filed. The regulations for the Age Discrimination Employment Act and the Equal Pay Act also contain confidentiality provisions. See 29 CFR 1626.4; 29 CFR 1620.30(c).

87 See e.g. Neil G. Ruiz, Carlyne Im, and Ziyao Tian, "Discrimination Experiences Shape Most Asian Americans' Lives," Pew Research Center, November 2023 (finding that about one-in-five Asian adults (22%) say they have experienced workplace discrimination because of their race or ethnicity.); Juliana Menasce Horowitz and Kim Parker, "How Americans View Their Jobs," Pew Research Center, March 2023 (finding that 41% of Black workers, 20% of Hispanic workers, 25% of Asian workers reported having experienced workplace discrimination or unfair treatment in hiring, pay or promotion based on race or ethnicity).

88 See e.g., *EEOC v. Sinclair Broadcast Group, Inc.*, No. 1:22-cv-02406 (D. Md. Sept. 28, 2022) (company suspended and terminated help desk technician after learning of the employee's mental impairment); *EEOC v. Interconnect Cable Technologies Corp.*, No. 8:20-cv-00644-SCB (M.D. Fla. Mar. 19, 2020)(electronics manufacturer demoted and fired employee after she was hospitalized for mental illness); *EEOC v. Guidewire*, No. 5:19-cv-06878 (N.D. Cal. Oct. 22, 2019)(software publisher failed to interview a qualified applicant after the applicant requested an in-person interview to accommodate her hearing impairment, which limited the ability to hear over the telephone and computer); *EEOC v. Conduent Business Services, LLC*, No. 2:19-cv-18541 (D. N.J. Sept. 30, 2019)(technology based business services company eliminated qualified deaf applicant from consideration after recruiting firm indicated he would need an American Sign Language interpreter for an interview); *EEOC v. Caci International Inc.*, No. 1:19-cv-9293-JKB (D. Md. Sept. 13, 2019)(information systems company service provider denied system administrator request for reassignment as a reasonable accommodation and instead fired her); *EEOC v. SoftPro, LLC*, No. 5:18-cv-00463 (E.D. N.C. Sept. 27, 2018) (software company terminated IT employee based on perceived disability or record of disability); *EEOC v. Lockheed Martin*, No. 8:18-cv-02976-GJH (D. Md. Sept 26, 2018) (company failed to engage in the required interactive process with the disabled employee to identify and provide reasonable accommodations, and instead placed her on long-term disability leave and eventually fired her); *EEOC v. Optimal Solutions & Technologies, Inc.*, No. 8:17-cv-02861-PX (D. Md. Sept. 27, 2017) (provider of cyber, engineering, logistics and managed services terminated senior Sharepoint administrator despite good job performance after he disclosed he had a benign brain tumor); *EEOC v. L-3 COMMUNICATIONS/MISSION*, No. 3:17-cv-00538-N (N.D. Tex. Feb. 23, 2017) (company forced engineer to resign because of his disability).

89 *EEOC v. Viewpoint, Inc. and CampusPoint Corporation*, No. 3:21-cv-01429-SB (D. Or. Sep. 28, 2021). Other EEOC lawsuits alleging a failure to accommodate include those against *Guidewire Software*, No. 5:19-cv-06878 (N.D. Cal. Oct. 22, 2019); *EEOC v. Caci International Inc.*, No. 1:19-cv-9293-JKB (D. Md. Sept. 13, 2019); and *EEOC v. Lockheed Martin*, No. 8:18-cv-02976-GJH (D. Md. Sept 26, 2018).

90 *EEOC v. Cessna Aircraft Company*, No. 2:15-cv-01116 (E.D. Wis. Sept. 9, 2015).

91 See e.g. "Select Task Force on the Study of Harassment in the Workplace: Report of Co-Chairs Chai R. Feldblum and Victoria A. Lipnic," U.S. Equal Employment Opportunity Commission, June 2016 (explaining that harassment is more likely to occur in homogenous workforces and sexual harassment of women is more likely to occur in workplaces with primarily male employees), <https://www.eeoc.gov/select-task-force-study-harassment-workplace>.

92 U.S. Equal Employment Opportunity Commission. "Mediacom Communications to Pay \$175,000 to Settle EEOC Sexual Harassment Lawsuit." EEOC press release, July 21, 2021, <https://www.eeoc.gov/newsroom/mediacom-communications-pay-175000-settle-eeoc-sexual-harassment-lawsuit>.

93 *EEOC v. Activision Blizzard, Inc., et al.*, Case No. 2:21-cv-07682 (C.D. Cal. Sept. 27, 2021).

94 *EEOC v. Dell, Inc.*, No. 3:20-cv-0313 (N.D. Tx. Oct. 15, 2020).

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96 *EEOC v. Fermi Research Alliance, LLC*, No. 18-cv-5486 (N.D. Ill. Aug. 13, 2018).

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- 104 See e.g., Jessica Bursztynsky, “Here’s What Tech Companies Have Said They’ll Do to Fight Racism in Wake of George Floyd Protests.” *CNBC*, June 12, 2020, <https://www.cnbc.com/2020/06/12/george-floyd-protests-tech-company-responses.html>.
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- 106 The American Community Survey is an annual national survey conducted by the U.S. Census Bureau that collects demographic and economic information from a random sample of U.S. households and institutions, such as prisons, long-term care facilities, and military bases.
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- 108 U.S. Government Accountability Office, *Diversity in the Technology Sector: Federal Agencies Could Improve Oversight of Equal Employment Opportunity Requirements*, November 30, 2017, <https://www.gao.gov/assets/gao-18-69.pdf>; Liana Christin Landivar, “Diversity in STEM Employment by Sex, Race, and Hispanic Origin,” *U.S. Census Bureau*, Sep. 2013, <https://www.census.gov/library/publications/2013/acs/acs-24.html>; Abigail Okrent and Amy Burke, “The STEM Labor Force of Today: Scientists, Engineers, and Skilled Technical Workers,” *National Science Board Science and Engineering Indicators*, Aug. 31, 2021, <https://nces.nsf.gov/pubs/nsb20212>.
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- 110 Rachel Marks and Merarys Rios-Vargas, “Improvements to the 2020 Census Race and Hispanic Origin Question Designs, Data Processing, and Coding Procedures,” *U.S. Census Bureau Random Sampling Blog Series*, Aug. 3, 2021, <https://www.census.gov/newsroom/blogs/random-samplings/2021/08/improvements-to-2020-census-race-hispanic-origin-question-designs.html>.

111 In the 2020 Decennial Census, due to changes in the race question, relatively more people identified with multiple races or with Some Other Race alone, and relatively fewer people identified as white alone (Census Bureau 2021b). As a result, the population in the Two or More Races category increased by 276 percent from 2010 to 2020 and grew from 2.9% to 10.2% of the total U.S. population (Census Bureau 2021b).

112 For more information, see https://www.eeocdata.org/pdfs/EEO-1_Fact_Sheet.pdf.

113 For more details regarding the eligibility criteria for employers that must file an EEO-1 Component 1 report, see <https://www.eeoc.gov/data/eo-1-data-collection>.

114 2022 data were the latest available when we conducted our analyses.

115 An employer must count each worker in one of ten occupational categories on the report: (1) “Executive/Senior Level Officials and Managers”; (2) “First/Mid-Level Officials and Managers”; (3) “Professionals”; (4) “Technicians”; (5) “Sales Workers”; (6) “Administrative Support Workers”; (7) “Craft Workers”; (8) “Operatives”; (9) “Laborers and Helpers”; and (10) “Service Workers.” Employers also are required to provide the industry in which they operate.

116 For more information on types of charges, see <https://www.eeoc.gov/discrimination-type>.

117 We do not expect that all charge records will match to an EEO-1 report given that not all employers are required to file an EEO-1 report as described above. In addition, there may be matching errors such that an employer EIN, name, or address are different in the two data sources to a degree that prevents a match. To assess for systematic bias in the matched records, we compare the matched charge records to charge records that do not match by several characteristics, including charge type, category, and resolution. We find that the distributions of each variable are similar in the matched and unmatched records. Although more research is needed, the results suggest that the subset of matched administrative records are generally representative of all charge records.

118 IPUMS USA, University of Minnesota, 2024, www.ipums.org.



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