Fact Sheet 2020

THE H-1B TEMPORARY VISA PROGRAM'S IMPACT ON DIVERSITY IN STEM

The current H-1B visa program limits career opportunities for women, African Americans, and Latinos.

Women, African Americans, and Latinos are not equitably represented in science, technology, engineering and math (STEM) occupations.[1] Especially in computer-related occupations, employers' use of the H-1B visa program to hire temporary foreign workers at below-market wages contributes significantly to this under-representation.

Federal law does not require most employers to recruit available, qualified U.S. professionals before hiring temporary foreign workers through the H-1B visa program.[2] The law also allows employers to pay H-1B workers below market wages, which is why the majority of H-1B guest workers are paid 20-40 percent less than the median wage for professionals in the same occupation and geographic area.[3] Because employers control the visa and it is difficult for H-1B workers to change jobs, the workers are susceptible to exploitation and retaliation for exercising their workplace rights.

The H-1B visa program must be reformed so that it works for U.S. professionals and people working on H-1B visas. Until then, women, African Americans and Latinos will continue to be underrepresented in the STEM occupations where H-1B usage is highest.[4]

Employer H-1B Use Hurts Diversity in STEM Occupations

Typically, 70 percent of all new H-1B visas go to employers hiring foreign temporary workers in STEM occupations. In particular, employers use the H-1B visa program to hire computer professionals. Between FY 2012 and FY 2018, U.S. Citizenship and Immigration Services (USCIS) approved 497,467 initial H-1B petitions for computer-related occupations; 78,139 initial H-1B petitions for architecture, engineering and surveying occupations; and 34,902 initial H-1B petitions for math, life science and physical science occupations.[5]

As employers have utilized the H-1B visa program to make hires in computer occupations, women, African Americans and Latinos have made slower progress towards equitable representation. In STEM fields that utilize fewer H-1B visas, women, African Americans, and Latinos are making faster gains.

Change in representation percentage, private-sector STEM occupations, 2013 – 2019[6]			
	Women	**African Americans**	**Latinos**
Computer occupations	0.79%	0.53%	1.27%
Other STEM occupations	2.40%	0.81%	2.23%

Gender Representation in the STEM Workforce

Women are underrepresented in STEM occupations, especially in computer occupations and architecture and engineering occupations, where in 2019 they made up just 25 percent and 15 percent of the workforce, respectively.[7] Women are the majority of Americans employed in private-sector, non-STEM professional occupations.[8]

Women actually made up a larger share of the computer workforce twenty years ago than they do today.[9] The increased use of the H-1B program will effectively make it impossible for women to achieve parity. The program exacerbates the gender imbalance in part because nearly 75 percent of all H-1B petitions for initial and continuing employment are for male beneficiaries.[10] Thus, women will continue to struggle for access to some of the most in-demand, lucrative STEM careers.

Share of new private-sector positions going to men and women, 2013 - 2019[11]		
Occupation	**Men**	**Women**
Computer occupations	73%	27%
Math occupations	51%	49%
Architecture and engineering occupations	74%	26%
Physical and life science occupations	42%	58%
All STEM occupations	70%	30%
Other professional occupations	23%	77%
All occupations	52%	48%

The hiring of women in computer occupations is so low that at its current pace of change it would take more than 190 years for women to achieve equitable representation in computer occupations and over 105 years to achieve the same in architecture and engineering occupations.[12]

Racial and Ethnic Representation in the STEM Workforce

The hiring of Black and Latino professionals in STEM fields, especially computer occupations, trails hiring in other professional fields and across all occupations. While there has been a moderate increase in representation for Black and Latino STEM professionals since 2013, the rate of change has been slowing. From 2013 – 2019, the share of new jobs in occupations with high H-1B usage that went to Black or Latino professionals was smaller than the share that went to Black and Latino professionals over the previous six-year period (9 and 11 percent vs. 13 and 13 percent).[13]

Share of new private-sector positions by race and ethnicity, 2013 - 2019[14]				
Occupation	**White**	**Black**	**Asian / Pacific Islander**	**Latino**
Computer occupations	51%	9%	38%	11%
Math occupations	62%	5%	25%	17%
Architecture and engineering occupations	57%	13%	25%	18%
Physical and life science occupations	40%	6%	58%	31%
All STEM occupations	52%	10%	36%	14%
Other professional occupations	61%	21%	12%	18%
All occupations	51%	23%	16%	37%

Most H-1B beneficiaries come from two countries: India (76 percent) and China (9 percent).[15] This recruiting pipeline contributes to the over-representation of Asians and Pacific Islanders in STEM occupations. As noted above, employer usage of the H-1B visa is rooted in ability to pay H-1B workers below-market wages and employer control of the visa.[16] The ready supply of cheaper labor means employers do not have to invest in training, diversity, or education initiatives.

Perhaps not surprisingly, self-reported data shows some of the largest and most profitable tech companies making little to no progress in hiring and retaining African American and Latino professionals, despite their increased participation rates in STEM professions as a whole.

Racial representation among technical employees at top tech firms, 2014 and 2018[17]				
Company	**African Americans, 2014**	**African Americans, 2018**	**Latinos, 2014**	**Latinos, 2018**
Apple	6%	6%	7%	8%
Facebook	1%	2%	3%	4%
Google	1%	2%	2%	3%
Microsoft	2%	3%	4%	5%

There is no Evidence of a STEM Labor Shortage

Employer use of the H-1B program cannot be explained by a lack of available STEM professionals. Census Bureau data shows that there are many more STEM graduates working outside of STEM fields than within them, with 50 percent of computer science graduates working in non-STEM occupations. These rates are even higher for women, African Americans and Latinos; 62 percent of female computer sciences graduates, 62 percent of Black computer science graduates and 61 percent of Hispanic computer sciences graduates were working outside of STEM in 2017.[18]

A 2016 report from the U.S. Equal Employment Opportunity Commission cites research from the Center for Work-Life Policy that shows how more than half of women working as scientists, engineers and computer professionals quit their jobs at some point during their careers due to a variety of factors, including hostile work environments, social isolation, the need for flexible work hours and the lack of career advancement opportunities.[19] And researchers from the Kapor Center for Social Impact highlight how unfair treatment is the most frequent reason that women, African Americans and Latinos leave their tech jobs.[20]

Conclusion

Employers are using the H-1B visa program to hire foreign temporary workers at below-market wages and with limited job mobility, bypassing U.S. STEM professionals, especially women, African Americans and Latinos.

Computer occupations already make up more than half of the STEM workforce and are projected to continue growing at a rate faster than any other professional occupational group.[21] Absent reforms to the H-1B visa program, women, African Americans and Latinos will continue to have limited STEM career opportunities. The H-1B visa program must be reformed so that it works for U.S. professionals and people working on the H-1B visa, not just employers.

For more information on issues impacting professional and technical employees, please see DPE's website: www.dpeaflcio.org.

The Department for Professional Employees, AFL-CIO (DPE) comprises 24 national unions representing over four million people working in professional and technical occupations. DPE's affiliates represent teachers, physicians, engineers, computer scientists, psychologists, nurses, university professors, actors, technicians, and others in more than 200 professional occupations.

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[1] Bureau of Labor Statistics. "Table 11. Employed persons by detailed occupation, sex, race and Hispanic or Latino ethnicity, 2019." Retrieved from https://www.bls.gov/cps/cpsaat11.htm
[2] Federal law requires "H-1B dependent employers," companies with 15 percent or more of their workforce on H-1B visas, to attest that they recruited U.S. workers and did not displace existing workers. However, these companies can forego these obligations if they pay an H-1B worker a minimum of $60,000 or hire an H-1B worker with a master's or advanced degree. Consequently, H-1B dependent employers commonly pay H-1B workers right at the $60,000 level, which typically is still far less than the market rate for workers in an occupation and area.
[3] Hira, Ron. "Congressional Testimony: The Impact of High-Skilled Immigration on U.S. Workers." *Economic Policy Institute*. March 1, 2016. Retrieved from https://www.epi.org/publication/congressional-testimony-the-impact-of-high-skilled-immigration-on-u-s-workers-4/
[4] For the purposes of this factsheet, STEM occupations include all occupations included in the computer and mathematical occupations group, the architecture and engineering occupations group, as well as select occupations in the life, physical and social sciences group, as determined by the 2018 Standard Occupational Classification system.
[5] U.S. Department of Homeland Security, U.S. Citizenship and Immigration Services. "Characteristics of H-1B Specialty Occupation Workers." Fiscal years 2012 - 2018 Retrieved from https://www.uscis.gov/legal-resources/buy-american-hire-american-putting-american-workers-first
[6] U.S. Census Bureau. Current Population Survey. Basic Monthly Microdata. January 2013 – December 2019. Retrieved from DataFerret.
[7] Ibid.
[8] Ibid.
[9] U.S. Bureau of Labor Statistics. "Employed persons by occupation, sex, and age, 1999." Retrieved from https://www.bls.gov/cps/aa1999/CPSAAT9.PDF
[10] U.S. Department of Homeland Security, U.S. Citizenship and Immigration Services. "H-1B Petitions by Gender and Country of Birth." October 5, 2018. Retrieved from https://www.uscis.gov/sites/default/files/USCIS/Resources/Reports%20and%20Studies/H-1B/h-1b-petitions-by-gender-country-of-birth-fy2018.pdf
This statistic is for all H-1B petitions, including non-STEM occupations. This rate is likely higher among H-1B beneficiaries in STEM occupations.
[11] Ibid.
[12] Ibid.

[13] U.S. Census Bureau. Current Population Survey. Basic Monthly Microdata. January 2007 – December 2019. Retrieved from DataFerret.
[14] U.S. Census Bureau. Current Population Survey. Basic Monthly Microdata. January 2013 – December 2019. Retrieved from DataFerret.
[15] U.S. Department of Homeland Security, U.S. Citizenship and Immigration Services. "Characteristics of H-1B Specialty Occupation Workers." April 4, 2019. Retrieved from https://www.uscis.gov/sites/default/files/reports-studies/Characteristics_of_Specialty_Occupation_Workers_H-1B_Fiscal_Year_2018.pdf
[16] Costa, Daniel. "H-1B visa needs reform to make it fairer to migrant and American workers." Economic Policy Institute. April 5, 2017. Retrieved from https://www.epi.org/publication/h-1b-visa-needs-reform-to-make-it-fairer-to-migrant-and-american-workers/
[17] Harrison, Sara. "Five years of tech diversity reports – and little progress." *Wired*. October 1, 2019. Retrieved from https://www.wired.com/story/five-years-tech-diversity-reports-little-progress/
[18] U.S. Census Bureau. American Community Survey. Public Use Microdata Sample. 2017. Retrieved from DataFerret
[19] U.S. Equal Employment Opportunity Commission. "Diversity in High Tech." May 2016. Retrieved from https://www.eeoc.gov/eeoc/statistics/reports/hightech/upload/diversity-in-high-tech-report.pdf
[20] Scott, Allison, Klein, Freada Kapor and Onavakpuri, Uriridiakoghene. "Tech Leavers Study." Kapor Center for Social Impact. April 27, 2017. Retrieved from https://www.kaporcenter.org/tech-leavers/
[21] Bureau of Labor Statistics. "Table 1.2 Employment by detailed occupation, 2018 and projected 2028." Retrieved from https://www.bls.gov/emp/tables/emp-by-detailed-occupation.htm.