STEM connector

The State of Diversity, Equity, & Inclusion in STEM: 2021

Author:

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"Inclusivity means not 'just we're allowed to be there,' but we are valued. I've always said: smart teams will do amazing things, but truly diverse teams will do impossible things."

Claudia Brind-Woody
VP and Managing Director of IBM[1]

"Diversity is being invited to the party. Inclusion is being asked to dance."

Vernā Myers
Author, Speaker, and Activist[2]

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A Note from the CEO

The United States is currently the world's leading technology powerhouse with our industries changing the way the world communicates and works. STEM powers our everyday lives and supports 67% of American jobs. In 2020, the inequalities that have existed in our society for many years surfaced through a series of shocking events. This set the landscape for a much-needed deeper discussion and plan of action on diversity, equity, and inclusion. As a result, we as a society have become more aware of the inequalities that exist and this new empathy and understanding have driven us to focus on fixing ourselves.
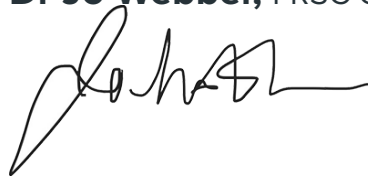
> *"The greatest achievement of humanity is not its works of art, science or technology, but the recognition of its own dysfunction." -Eckhart Tolle*

At the 2020 STEMconnector summit, our members gathered virtually for a panel discussion on DE&I that I felt was groundbreaking in its honesty. It became very clear to me that many organizations are struggling with how best to redress the balance and build for a sustainable culture and corporate environment that promotes equity and inclusion for all. Now, in early 2021, virtually all leading companies and many smaller organizations are scrutinizing their levels of diversity, equity, and inclusion and strategizing how to build for a more diverse and inclusive future.

At STEMconnector we felt it was important first to **measure**.

This is our first research report specifically on DE&I in STEM. We will be following up with smaller releases throughout the year and will release another full report in 2022. This gives us the ability to measure and track across multiple years. I hope you find this latest report from STEMconnector insightful and useful as we work to open STEM pathways for all.

Dr Jo Webber, FRSC CChem

A Note from the Author

We at STEMconnector have a mission – to achieve a more diverse, sustainable, STEM-ready workforce. Diversity, Equity, and Inclusion (DE&I) efforts have always been central to our mission and are embedded in our research and products. However, we felt that a report specifically addressing this topic of DE&I in STEM was necessary. This paper attempts to explain and, where possible, quantify the current state of DE&I in the STEM workforce. But data require interpretation and context. I myself am a white woman in STEM. Some of the themes explored in this paper I have experienced firsthand; most, I have not. There will almost certainly be aspects of this report that deserve further reflection, context, and insight from those who have lived experience. This is also not meant to be a final report, but rather the first of many and the start of a dialogue. We wanted to begin that conversation rooted in the data and research. Moving forward, we will make updates to that data where they are available, include insights from our network through expert interviews, identify solution sets and best practices, and continue to look critically at the evidence. We will seek to expand our understanding through analysis, storytelling, and sharing the experiences of others as we work to be true allies in the fight for equity and justice. We hope you join us on this journey to help make STEM a more inclusive place for everyone.

Introduction

The field of STEM – Science, Technology, Engineering, and Mathematics – continues to be a critical driver of innovation, economic growth, and individual opportunity worldwide. In the United States alone, the STEM economy is estimated to support 69 percent of GDP and contributes $2.3 trillion in annual federal tax revenue.[3]

More than two decades after the initial coining of the term STEM, we continue to experience a talent crisis – there are simply not enough STEM-ready workers to meet the ever-growing needs of employers.[4] Looking into the next decade, that need will continue to expand. The Bureau of Labor Statistics estimates that the U.S. economy alone will see an additional 10.7 million STEM jobs by 2029. This represents an 8.0 percent increase in STEM jobs compared to a 3.7 percent increase for all occupations.[5]

Large-scale efforts have been made by governments, businesses, education institutions, and non-profits to fill this shortage. Yet, hiring enough STEM talent continues to be a major concern, not just for individual employers, but for the global economy as a whole.

Historically, STEM has been dominated by white males from high income backgrounds – and this poses a problem.[6] As explored in STEMconnector's foundational work, State of STEM, there is no single STEM talent gap, but rather five nuanced gaps – the Fundamental Skills Gap, the Belief Gap, the Postsecondary Education Gap, the Geographic Gap, and the Demographic Gap.[4] The Demographic Gap in particular describes how the STEM talent crisis is owed in part to the disproportionate participation in STEM jobs based on race, gender, and income. However, all five gaps share a common thread – that some do not have access to the same education, resources, mentors, or opportunities as others.

By increasing the number of people from underrepresented groups in STEM, the workforce would make huge strides towards bridging the STEM talent gap. But to nurture, attract, promote, and retain STEM-ready talent from underrepresented demographic groups, the status quo cannot be maintained. Broad, concerted efforts are needed so that people from all backgrounds are welcomed, supported, valued, and included in STEM across classrooms, boardrooms, and communities.

This first of an annual series of reports is meant to serve as a reflection on the data and research around DE&I in STEM. The data presented here is focused primarily on gender diversity and racial / ethnic diversity. The reason for that focus is two-fold: (1) systemic racism and sexism have plagued society for far too long, and bias, discrimination, and harassment continues to be an issue in the workplace despite decades of effort in this area, and (2) there is generally more data available on gender and race than on other demographic groups. However, diversity spans far more than just these two categories and includes aspects such as age, geography, nationality, immigration status, language, religion, socioeconomic status, sexual orientation, (dis)ability, and life experience. Creating inclusive environments and equitable outcomes will help not just for individual demographic groups, but for all people. **The end goal is to create opportunities for <u>everyone</u> to be able to pursue, persist, and thrive in STEM.**

The Business Case for Diversity

It's not just about filling job openings. Beyond the moral imperative to eliminating underrepresentation in STEM, diversity is good for business. Organizations with gender parity on teams and in leadership see improved financial performance, innovation, and productivity.[7] According to research conducted by McKinsey, ethnically diverse organizations are 35 percent more likely to outperform their peers.[8] Additional research from Josh Bersin demonstrated that inclusive companies see 2.3 times higher cash flow per employee over a three year period.[9] Furthermore, the Harvard Business Review found that diverse companies are 70 percent more likely to capture new markets.[10]

Conversely, a lack of gender and racial diversity is correlated with poorer financial performance.[8] Many of the underlying reasons are fairly intuitive – differences in education, perspective, and lived experience contribute to more well-rounded products and services. Research in the field of psychology has also shown that diverse teams are more likely to focus on facts rather than opinions and process those facts more carefully. Diversity helps keep biases in check and makes individuals question their underlying assumptions, leading to more accurate conclusions and more innovative solutions.[11]

It's also not just about getting more diverse people in the door. There is a tremendous cost to employers' inability to retain diverse talent once hired. For example, researchers at the Kapor Center for Social Impact estimated that turnover in technology fields costs employers at least $16 billion per year. Employees consistently cited unfair treatment, such as bullying, stereotyping, sexual harassment, and racial bias, as the number one reason for leaving their jobs. On the other hand, comprehensive diversity and inclusion efforts can reduce turnover, with 62 percent of workers indicating that they would have stayed if their company took steps to make company culture more inclusive and respectful.[12]

Current and future employees are demanding increased diversity, equity, and inclusion efforts of employers. Two-thirds of jobseekers surveyed by Glassdoor indicated that a diverse workforce is an important factor when considering places of employment. In addition, more than half (57 percent) of surveyed employees responded that their company should be doing more to increase diversity amongst its workforce.[13] New generations are also placing a heavy emphasis on diversity and inclusion. According to research conducted by Tallo, a digital platform that matches talent with opportunities, 69 percent of Gen Z (born after 1996) respondents indicated that they would be more likely to apply for a job with recruiters and materials that reflected a racially and ethnically diverse workplace.[14]

The research sends a clear message – diversity, equity, and inclusion, when done right, are good for business and make the workplace better for employees, employers, shareholders, and stakeholders alike.
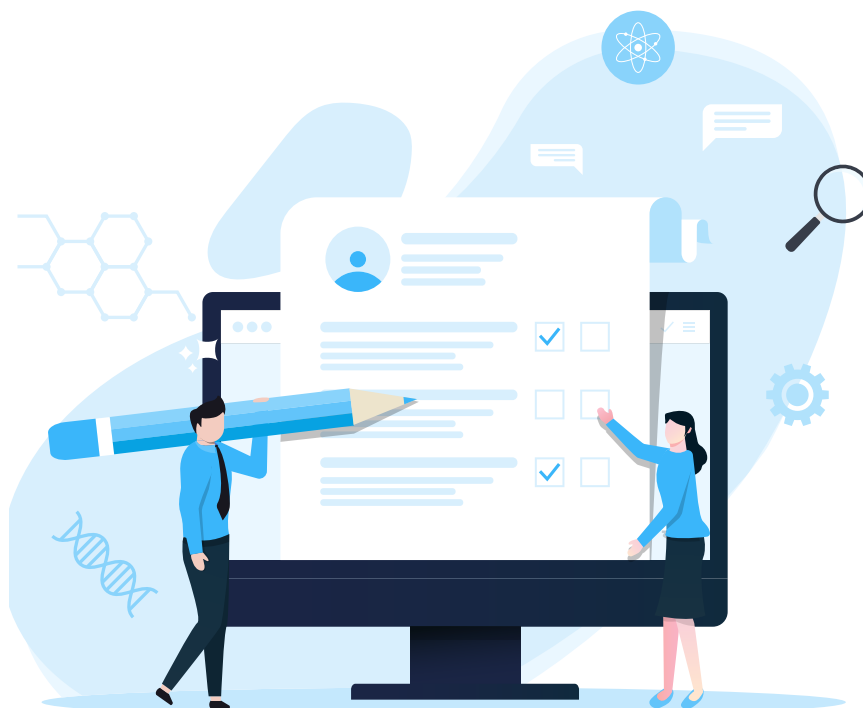
About This Report

The data explored in this report were originally published by the National Science Foundation as part of the Science & Engineering Indicators. Sources of this data include the National Center for Science and Engineering Statistics, National Science Foundation, Scientists and Engineers Statistical Data System (SESTAT), 1995, and the National Survey of College Graduates (NSCG), 2017. The specific data tables referenced throughout this report are: Table 3-16, Table 3-18, Table S2-12, Table S3-12, Table S3-15, and Table S3-17. Unless labeled otherwise, all data are from 2017 – this is in order for all datasets to be comparable with data from the NSCG.
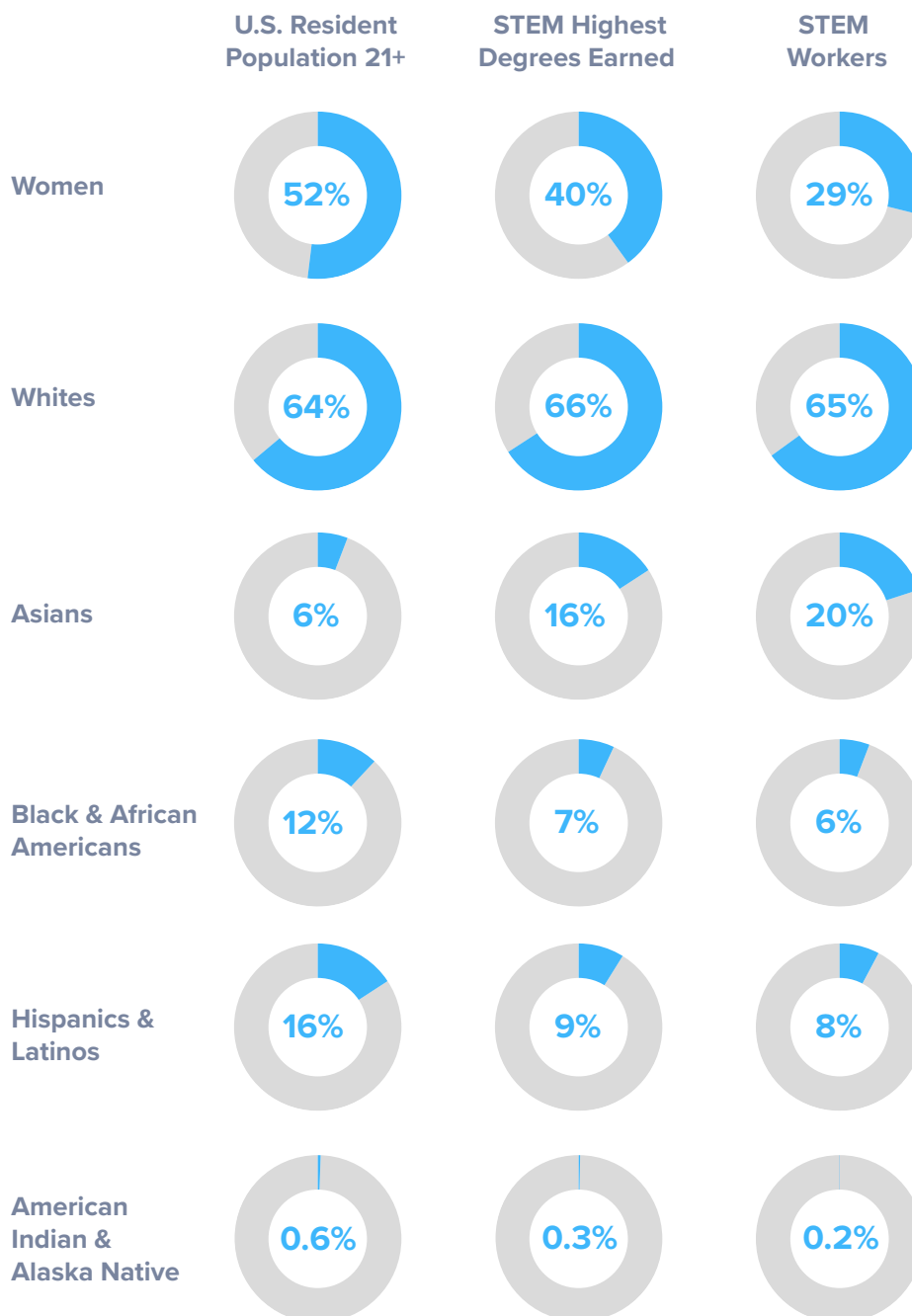
A note on language: to maintain consistency and accuracy, the categories of Women, Black & African Americans, Hispanics & Latinos, American Indians & Alaskan Natives, and Asians match the language and definitions used in the underlying data sources.

Throughout this report, we compare the share of people from certain demographic groups in STEM jobs on a national level to the share that demographic group makes up of the total adult population in the United States. The underlying assumption is that, all things being equal, people from different backgrounds should have equal opportunities in STEM. If this is indeed the case, we should observe roughly equal proportions of demographic groups in these jobs. However, the goal is not parity for parity's sake. Instead, we use these measures to help identify which demographic groups have equitable and fair access to STEM careers and which do not. Equal representation and equitable access are by no means the same thing, but these measures are a convenient barometer of diversity in the STEM workforce. By supplementing these quantitative measures with qualitative data, we can start to recognize where inequities lie and how best to address them.

The State of Diversity in the STEM Workforce

With regards to gender and racial / ethnic diversity, the STEM workforce falls far below parity – represented throughout this report by the U.S. adult population aged 21 and older. Below is a visualization of the gender and racial / ethnic breakdowns of STEM degree holders and STEM workers in the U.S. using the most recent comparable datasets.

|	U.S. Resident Population 21+	STEM Highest Degrees Earned	STEM Workers
Women	52%	40%	29%
Whites	64%	66%	65%
Asians	6%	16%	20%
Black & African Americans	12%	7%	6%
Hispanics & Latinos	16%	9%	8%
American Indian & Alaska Native	0.6%	0.3%	0.2%

Women in STEM

In the 1960's and 70's, a social scientist asked nearly 5,000 elementary school students from the United States and Canada to draw a scientist.[15] Out of those thousands of submissions, only 28 students, all of whom were young women, drew a female scientist.

Since then, the Draw-a-Scientist Test has been repeated with many different investigators and tens of thousands of additional students. From the 1980's onward, an average of 28 percent of submitted drawings have depicted women.[15] The results of the Draw-a-Scientist Test reflects the reality of women working in STEM today – progress has been made, but there is still a long way to go.

As of 2017, women made up more than half of the adult population in the United States but only 29 percent of the STEM workforce.

U.S. Resident Population 21+	STEM Highest Degrees Earned	STEM Workers
Women		
52%	40%	29%
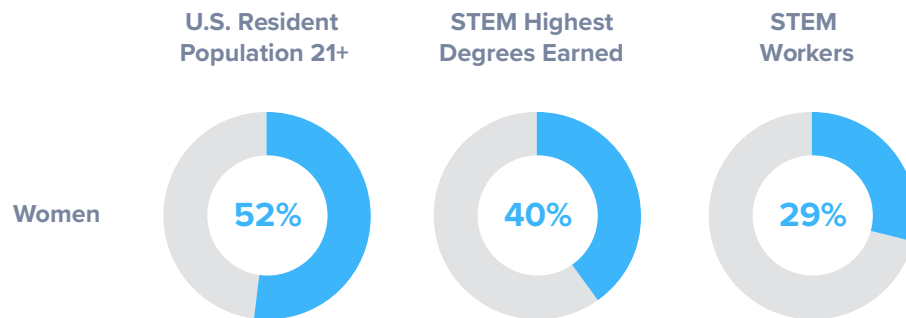
There was a 30 percent increase in the number of women in STEM occupations between 1995 and 2017. However, the representation of women in STEM occupations in 2017 still fell 23 percentage points below parity.

Share of Women in STEM Occupations (1995 vs 2017)

52%

+30%

29%

22%

US Population 21+ (2017)   Women in STEM Occupations (1995)   Women in STEM Occupations (2017)
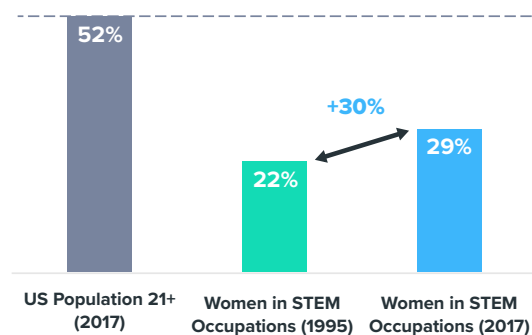
When we break out rates of female STEM workers by sector, we see some gender gaps widen and others narrow. In particular, the representation of women in Biologvical, Agricultural, and Environmental Life Sciences is nearly at parity, and women are even overrepresented in Social Science fields.

Share of Women in STEM Occupations, by Sector (2017)
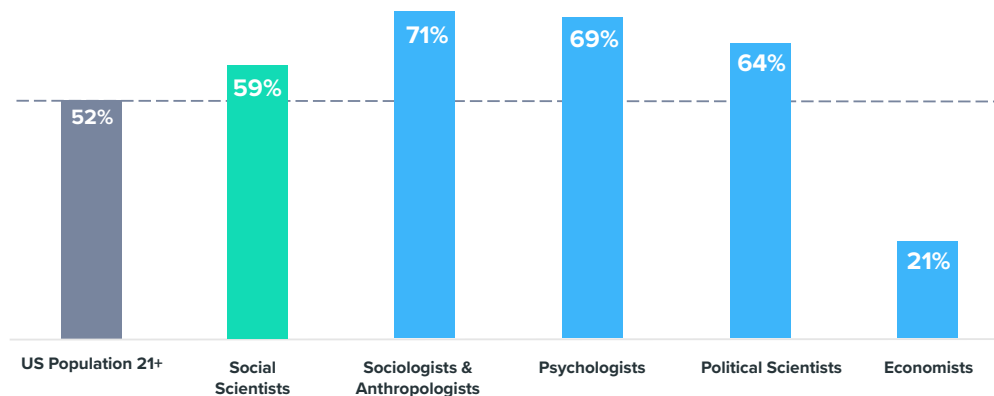

US Population 21+	All Occupations	STEM Occupations	Social Scientists	Biological, Agricultural, & Environmental Life Scientists	Physical Scientists	Computer and Mathematical Scientists	Engineers
52%	48%	29%	59%	48%	29%	27%	16%
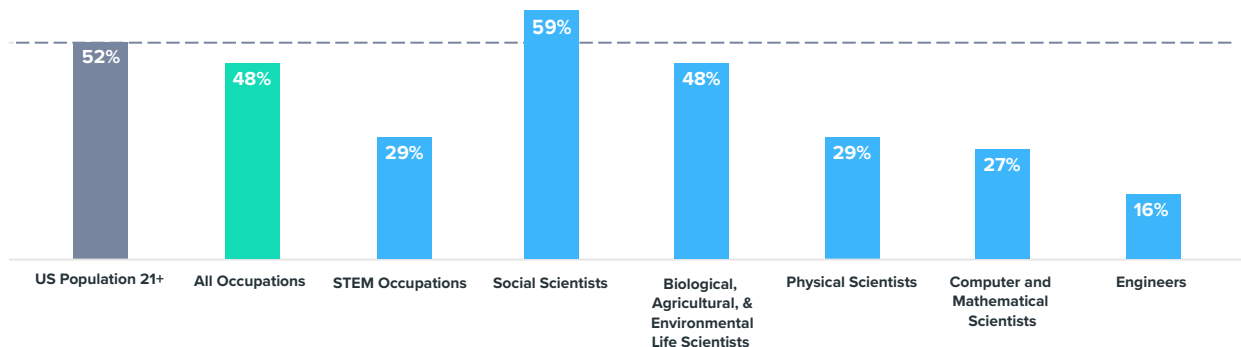
Considering the field of social science as a whole, women are overrepresented. However, when we look at subsectors within social science, we find that women make up only 21 percent of Economists.
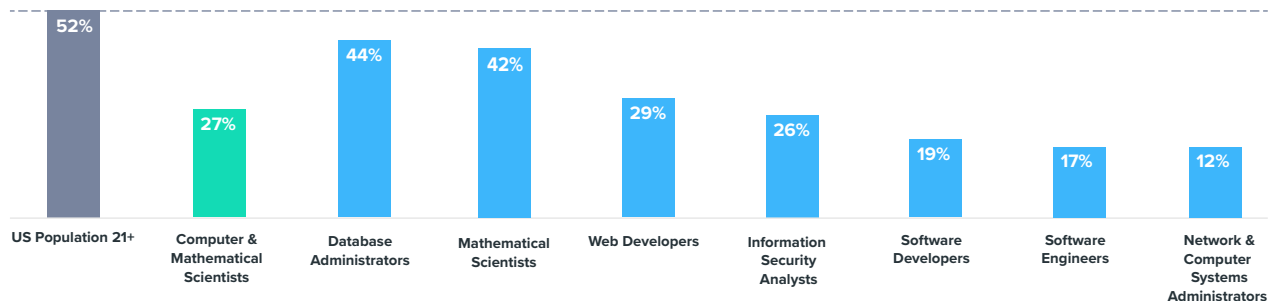
Share of Women in Social Science Occupations, by Subsector (2017)

US Population 21+	Social Scientists	Sociologists & Anthropologists	Psychologists	Political Scientists	Economists
52%	59%	71%	69%	64%	21%

Technology fields, which represent some of the fastest growing sectors in the economy, are among the occupations with the highest wages, greatest reported job satisfaction, lowest job stress, and are insulated from economic shocks such as those seen during the COVID-19 pandemic.[16] Unfortunately, women are woefully underrepresented in the majority of technology fields.
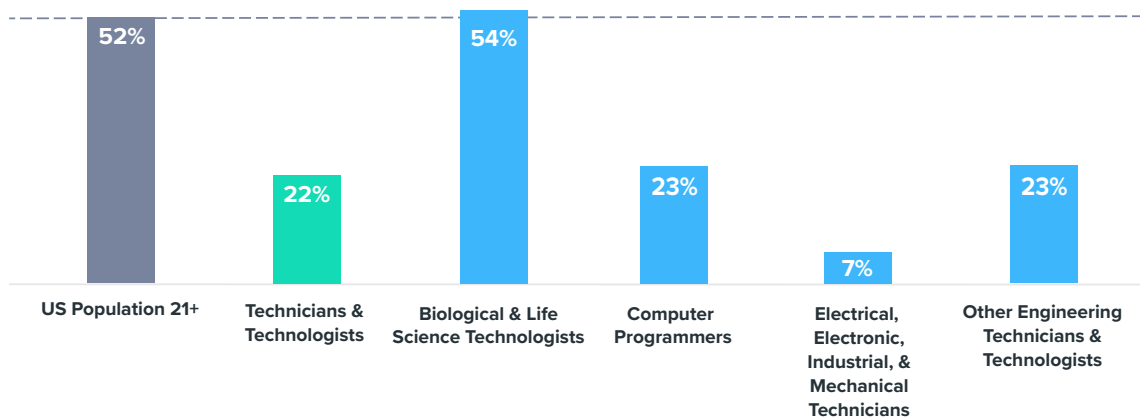
Among Computer and Mathematical Science subsectors, women are between 8 and 42 percentage points below parity.

Share of Women in Computer & Mathematical Occupations, by Subsector (2017)

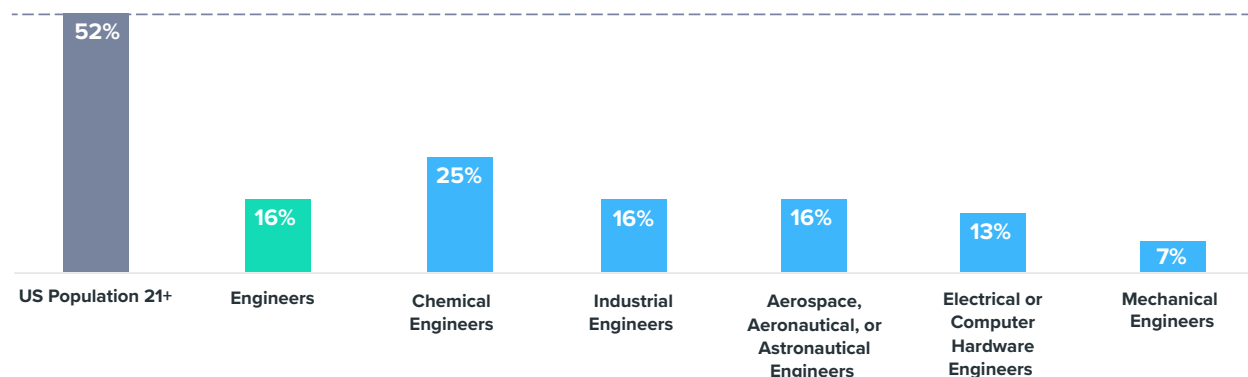|								
52%	27%	44%	42%	29%	26%	19%	17%	12%
US Population 21+	Computer & Mathematical Scientists	Database Administrators	Mathematical Scientists	Web Developers	Information Security Analysts	Software Developers	Software Engineers	Network & Computer Systems Administrators

Technologist occupations are considered Science & Engineering-Related by the NSF and are not included in the overall share of women in STEM depicted above. However, once again, women are also underrepresented in Technologist and Technician occupations including computer, electrical, industrial, mechanical, and engineering technicians.

Share of Women in Technologist Occupations, by Subsector (2017)

|					
52%	22%	54%	23%	7%	23%
US Population 21+	Technicians & Technologists	Biological & Life Science Technologists	Computer Programmers	Electrical, Electronic, Industrial, & Mechanical Technicians	Other Engineering Technicians & Technologists

In some Engineering subsectors, gender gaps widen even further. Depending on the subsector, the share of women in engineering occupations fall between 27 and 45 percentage points below parity.

Share of Women in Engineering Occupations, by Subsector (2017)

52%	16%	25%	16%	16%	13%	7%
US Population 21+	Engineers	Chemical Engineers	Industrial Engineers	Aerospace, Aeronautical, or Astronautical Engineers	Electrical or Computer Hardware Engineers	Mechanical Engineers

The argument has been made that the lack of diversity in certain STEM fields can be attributed to a lack of qualified professionals from underrepresented groups. In reality, that argument has been able to carry less and less weight over time. Regarding women in STEM, the share of women with STEM degrees has risen significantly in the last two decades. There was a 68 percent increase in women with STEM degrees in the workforce between 1995 and 2017. Women also earned half (50 percent) of STEM degrees awarded in 2017, virtually at parity with men.

Share of Women with STEM Degrees in the Workforce (1995 vs 2017)
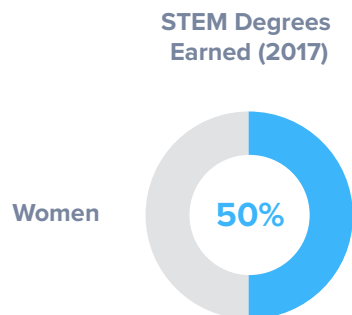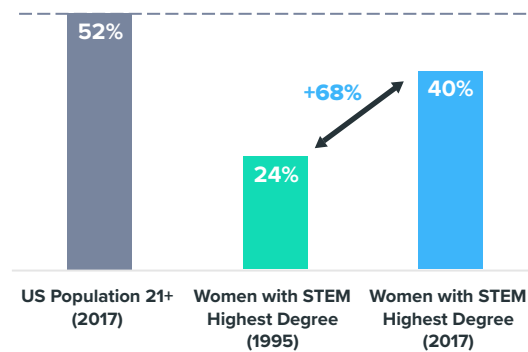
While this represents a great achievement, it is only the beginning. For the entire STEM workforce to reach gender parity within the next 10 to 20 years, women need to continue to be able to earn STEM degrees at this sustained rate. In addition, women need to be retained in STEM occupations at much higher rates than they are now, provided more opportunities for leadership positions, receive equitable pay, and be better recruited into fields where their representation is lowest, such as technology and engineering.

For more detailed information about factors affecting women's representation in STEM, we invite you to explore **STEMconnector's Presentation Builder** resource, including the Women's Story. STEMconnector members have full access to these data stories with the ability to download individual PowerPoint slides for use in their own presentations.

For further reading:

- AAUW's *The STEM Gap: Women and Girls in Science, Technology, Engineering and Math* | **Link**
- The National Science Foundation's *Women, Minorities, and Persons with Disabilities in Science and Engineering* | **Link**
- NCWIT's *Learning From Young Women: A Multi-year NCWIT Research Study* | **Link**

Racial & Ethnic Diversity in STEM

On April 16, 2020, The National Academies' Roundtable on Black Men and Black Women in Science, Engineering, and Medicine convened for a public workshop entitled, *The Impacts of Racism and Bias on Black People Pursuing Careers in Science, Engineering, and Medicine*. During the keynote address of this workshop, Camara Phyllis Jones, M.D., Ph.D. of the Morehouse School of Medicine described racism in two allegories, the first of which she called the "two-sided sign." Her allegory is recounted in the proceedings of the workshop (emphasis added):

> "... she described an experience as a student at Stanford Medical School when she sat in a restaurant with friends and noticed a sign facing inside the restaurant that read "Open." She realized this meant the other side, facing outside, read "Closed." In other words, she continued, while the diners inside could enjoy a meal, those outside could not gain entry; moreover, ***those inside might not even realize the existence of the sign or that it served to keep out prospective customers***. "I know it's hard to see if you only see 'Open,'" she said. "***Part of your privilege is not to have to know***" whether the privilege relates to race, sex, nationality, or other causes. But, she continued, "Once you do know, you can act.... ***Our challenge is that once we have a hint about a two-sided sign, we cannot forget this knowledge going forward***..."

Dr. Jones' allegory is a powerful one, and it points to an uncomfortable truth – the privilege that is granted to one race and withheld from another is unearned and inherently unfair. She goes on to explain:

> "... ***[Race] is not a biological or cultural construct but a social interpretation of how one looks***. In her own case, she noted she would be considered three different races in three different settings: "Black" in the United States, "White" in Brazil, and "Colored" in South Africa. Furthermore, "if I were to stay in any of those settings, ***my health and educational outcomes would become that of the group to which I was assigned, even with the same genes and abilities in all those places***." [17]

Recognizing the existence of the two-sided sign is only the first step. Our call to action, as individuals equipped with whatever power and platforms we each have at our disposal, is to continually be looking for opportunities to switch that sign from "closed" to "open."

Regarding the STEM workforce in the United States, three racial and ethnic groups have been historically underrepresented – Black & African Americans, Hispanics & Latinos, and American Indians & Alaska Natives. Each group faces unique challenges, but commonalities exist between their rates of representation and their experiences in STEM.
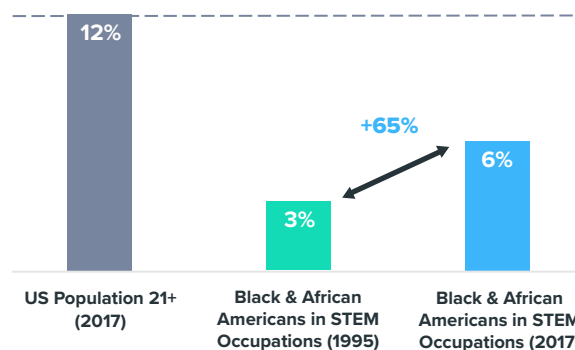
Black & African Americans

In 2017, Black and African Americans made up 12 percent of the adult population in the United States but only 7 percent of STEM highest degree holders and 6 percent of STEM workers.

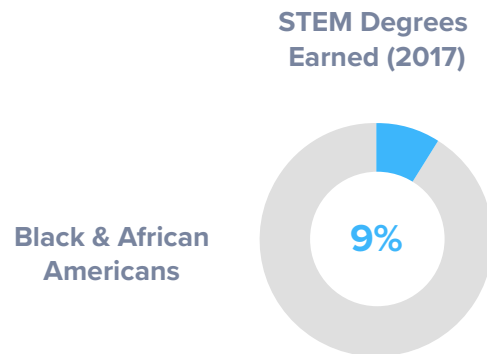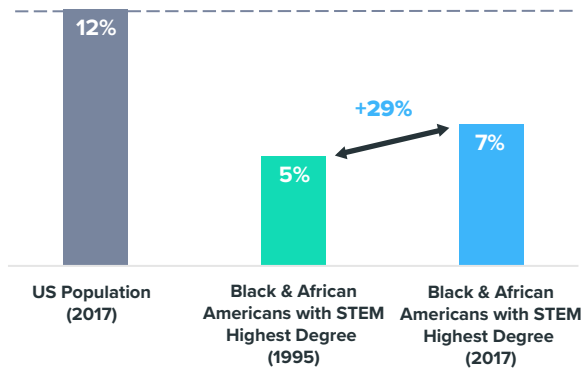|	U.S. Resident Population 21+	STEM Highest Degrees	STEM Workers
Black & African Americans	12%	7%	6%
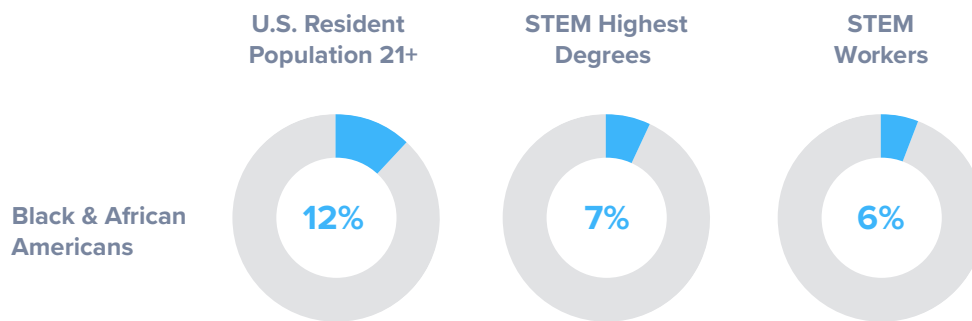
The representation of Black and African Americans in STEM occupations falls far below parity, however, these rates represent a significant improvement from the last several decades. From 1995 to 2017, there was a roughly 65 percent increase in Black and African Americans working in STEM. This is a step in the right direction, but the rate of Black and African Americans entering STEM would need to stay constant or increase in order to reach parity in the next thirty years.

Share of Black & African Americans in STEM Occupations (1995 vs 2017)

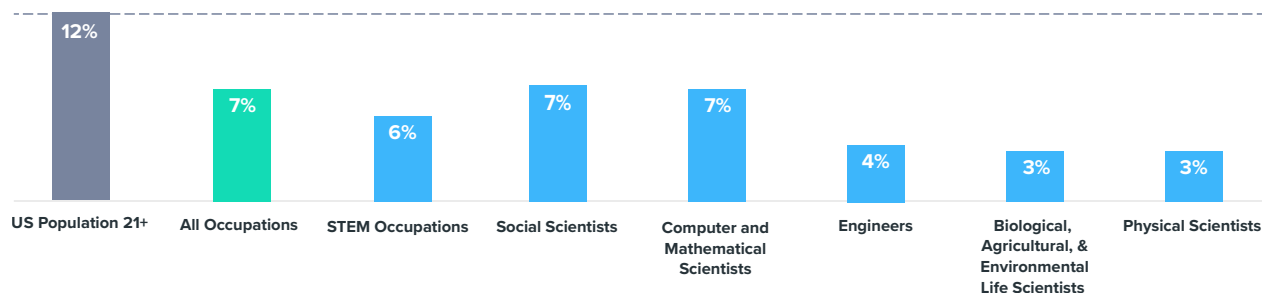| US Population 21+ (2017)	Black & African Americans in STEM Occupations (1995)	Black & African Americans in STEM Occupations (2017)
12%	3%	6%

+65%

The share of Black and African Americans with STEM degrees has also risen in the past twenty years, but at less than half the rate of those entering into STEM jobs. In 2017, only 9 percent of STEM degrees awarded went to Black and African Americans. With a majority of STEM jobs requiring at least a bachelor's degree, this underrepresentation in terms of credentials serves to exacerbate the lack of representation in STEM jobs, especially higher-paying or leadership positions.

Share of Black & African Americans with STEM Degrees in the Workforce (1995 vs 2017)

STEM Degrees Earned (2017)

12%

+29%

5%   7%

US Population (2017)

Black & African Americans with STEM Highest Degree (1995)

Black & African Americans with STEM Highest Degree (2017)

Black & African Americans

9%

When separating the data by STEM sector, there is unfortunately not a single category in which Black and African Americans are at or above parity. Engineering, Biological, Agricultural, & Environmental Life Science, and Physical Sciences have the lowest rates of representation for Black Americans.

Share of Black & African Americans in STEM Occupations, by Sector (2017)

12%

7%   6%   7%   7%   4%   3%   3%

US Population 21+

All Occupations

STEM Occupations

Social Scientists

Computer and Mathematical Scientists

Engineers

Biological, Agricultural, & Environmental Life Scientists

Physical Scientists

Hispanics & Latinos

In 2017, Hispanics and Latinos made up 16 percent of the adult population in the United States but only 9 percent of STEM degree holders and 8 percent of STEM workers.

U.S. Resident Population 21+

STEM Highest Degrees

STEM Workers
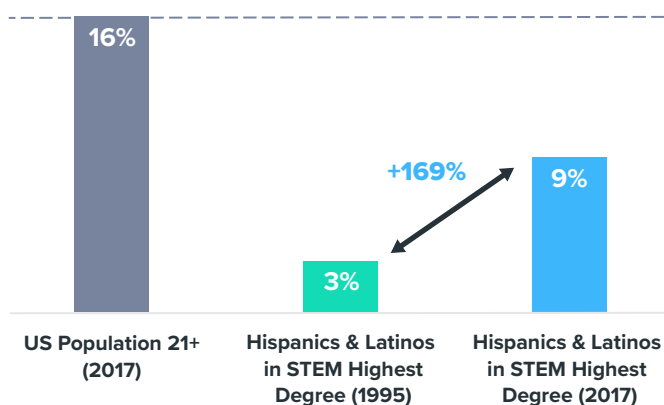
Hispanics & Latinos

16%

9%

8%
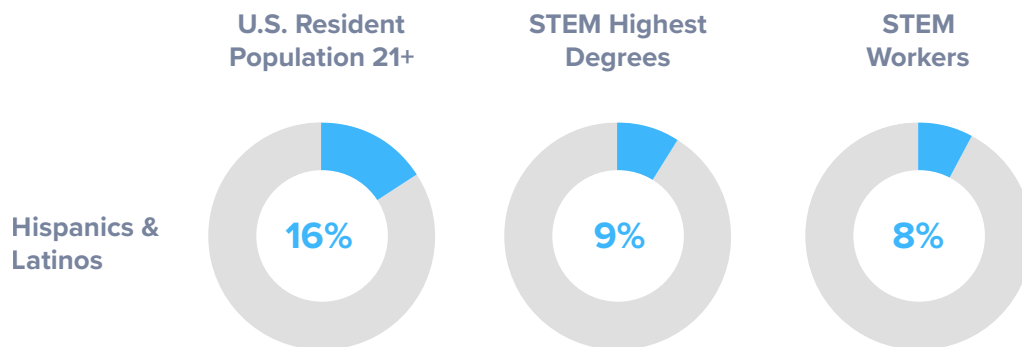
The number of Hispanics and Latinos in the United States has grown substantially in recent years. In just the last decade, Hispanics made up 52 percent of the total population growth in the U.S.[18] It is unsurprising then that the share of Hispanics and Latinos in the STEM workforce has also grown significantly, up from 3 percent in 1995 to 8 percent in 2017.

Share of Hispanics & Latinos in STEM Occupations (1995 vs 2017)

16%

+168%

3%

8%

US Population 21+ (2017)

Hispanics & Latinos in STEM Occupations (1995)

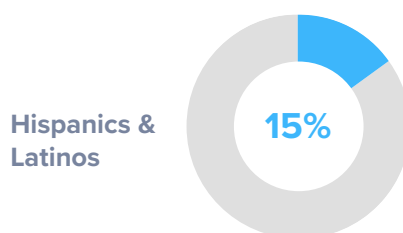Hispanics & Latinos in STEM Occupations (2017)
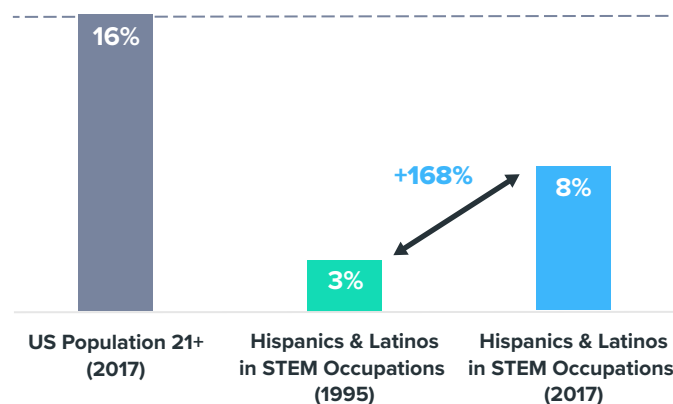
Among STEM degree earners in the workforce, the share of Hispanics and Latinos has also risen significantly since 1995. Encouragingly, Hispanics and Latinos earned 15 percent of STEM degrees awarded in 2017, nearly at parity with the adult population. Once again, these rates would need to be maintained or increased in order to meet parity within the STEM workforce.

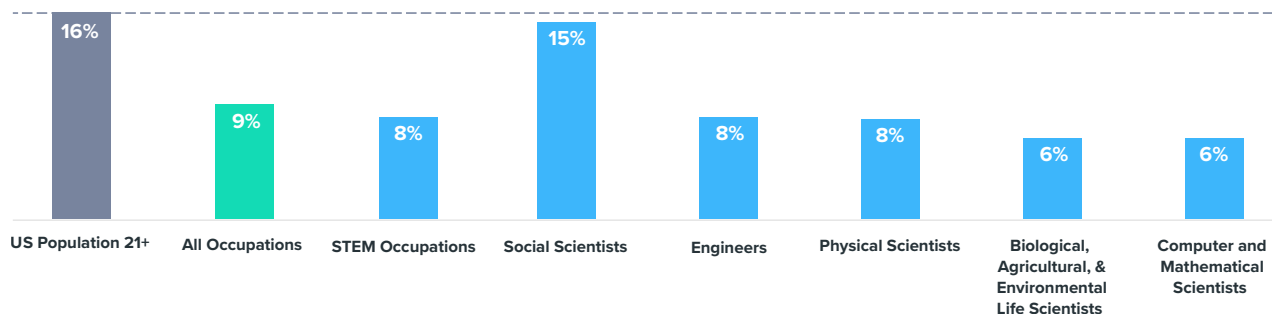**Share of Hispanics & Latinos with STEM Degrees in the Workforce (1995 vs 2017)**

16%
US Population 21+
(2017)

+169%

9%
Hispanics & Latinos
in STEM Highest
Degree (2017)

3%
Hispanics & Latinos
in STEM Highest
Degree (1995)

**STEM Degrees
Earned (2017)**

Hispanics &
Latinos

15%

Despite this growth in both population and degrees earned, Hispanics and Latinos remain underrepresented in every STEM sector. While the share of Hispanics and Latinos in Social Sciences comes close to parity, rates fall far short in Engineering, Physical Sciences, Life Sciences, and Computer & Mathematical Sciences.

Share Hispanics & Latinos in STEM Occupations, by Sector (2017)

16%
US Population 21+

9%
All Occupations

8%
STEM Occupations

15%
Social Scientists

8%
Engineers

8%
Physical Scientists

6%
Biological,
Agricultural, &
Environmental
Life Scientists

6%
Computer and
Mathematical
Scientists

American Indians and Alaska Natives

In social science research, there is a phenomenon often referred to as the "small-N problem," with N referring to sample size.[19] When a certain population is quite small relative to the general population, it often means that the sample size of that population in, say, a national survey of college graduates, is also going to be very small. There are statistical consequences to this – small samples have more variability compared to large sample sizes and that data is more prone to inaccuracy. In relation to demographic groups, it is often the case that characteristics of the sampled group may be falsely attributed, or stereotyped, to the group as a whole.

Unfortunately, American Indians and Alaska Natives as a demographic group are plagued by the small-N problem. The NCAI Policy Research Center refers to the American Indian and Alaska Native population as the "Asterisk Nation" because an asterisk, rather than a datapoint, is often used in reports of racial and ethnic data.[20] Within the datasets on STEM workers used for this report, we see this exact phenomenon – many categories of STEM sectors and sub-sectors have only an "s" reported for American Indians and Alaska Natives because the data has been suppressed for reasons of confidentiality or reliability. The result of having this incomplete, inaccurate, or altogether lack of data is a persistent feeling of invisibility among Native people.[20]

While we are unable to explore comparable data on all levels, the data we have available once again demonstrate the underrepresentation of Native people in STEM. American Indians and Alaskan Natives made up 0.6 percent of the adult U.S. population in 2017, but only 0.3 percent of STEM degree holders and 0.2 percent of STEM workers in the same year.

U.S. Resident Population 21+	STEM Highest Degrees	STEM Workers

American Indian & Alaska Native

| 0.6%	0.3%	0.2%
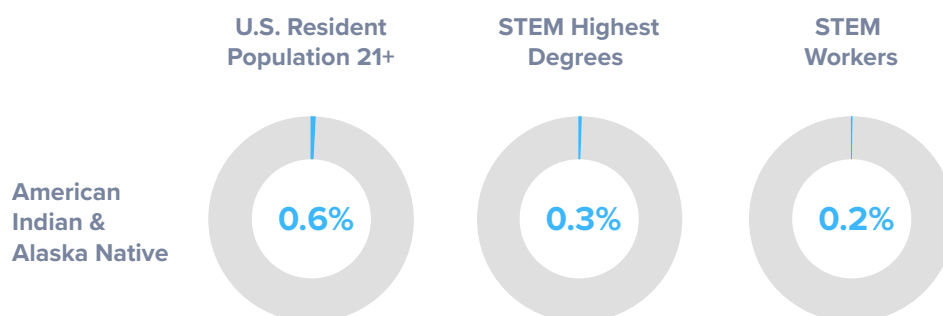
In the NSF datasets used here, estimates of STEM workers and degree holders are rounded to the nearest thousand. This rounding of results is negligible for most demographic groups but, because they make up less than a percentage point of the total, could have significant impact on how we interpret the data for American Indians and Alaska Natives. Bearing in mind these potential inaccuracies, we can see that the estimated share of American Indians and Alaska Natives in STEM occupations decreased between 1995 and 2017.

Share of American Indians & Alaska Natives in STEM Occupations (1995 vs 2017)
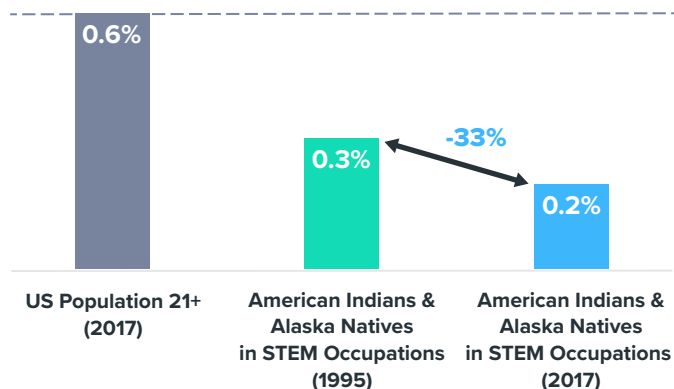
This lack of progress is reflected in the share of STEM highest degree holders as well, with no estimated change occurring between 1995 and 2017.

Share of American Indians & Alaska Natives with STEM Degrees in the Workforce (1995 vs 2017)
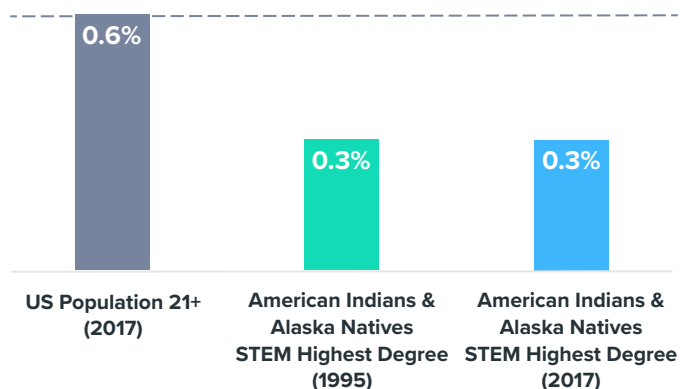

Lack of representation in not just the workplace, not just STEM, but in the data sources themselves is a serious issue that requires concerted efforts on the part of researchers and government agencies to correct. It is critical for STEM employers and policymakers to understand the nature of these issues when making decisions.

Asians

Unlike the other racial and ethnic groups described in this report, Asians are overrepresented among STEM degree holders and STEM workers.*

U.S. Resident Population 21+   **STEM Highest Degrees**   **STEM Workers**

Asian   **6%**   **16%**   **20%**
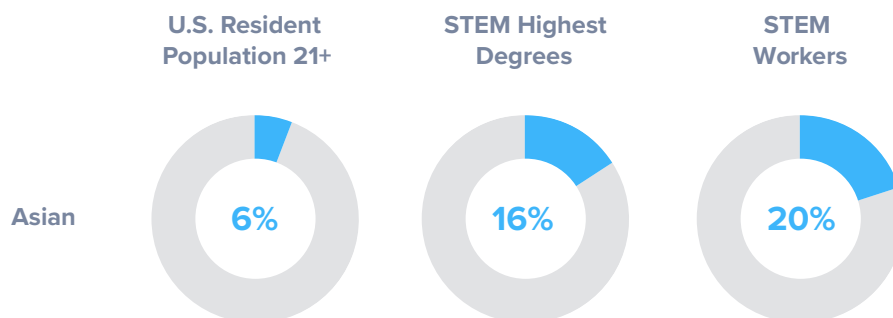
However, it should be noted that this does not mean that Asians in STEM do not face challenges including discrimination, harassment, or unfair treatment. In a timely and alarming example, four in ten Americans surveyed by Pew Research Center in 2020 said that it had become more common to express racist views towards Asians since the COVID-19 pandemic began.[21] In addition, Asian women in STEM have been described as an invisible minority. Very few Asian women hold advanced positions in STEM, with 95 percent of those employed in industry working in non-managerial jobs.[22] Even if Asian people are overrepresented in terms of the total number of STEM workers, efforts that advance equity and inclusion for Asian men and women are still critical to address these issues.

> **For more detailed information about factors affecting racial and ethnic diversity, equity, and inclusion in STEM, we invite you to explore STEMconnector's Presentation Builder resource, including the Overlooked Talent Pools series. One-page summaries are publicly available for each installment. STEMconnector members have full access to these data stories with the ability to download individual PowerPoint slides for use in their own presentations.**
>
> **For further reading:**
>
> - The National Academies of Science, Engineering, and Medicine's *The Far-Reaching Impacts of Racism and Bias* | **Link**
>
> - The Kapor Center for Social Impact's *The Leaky Tech Pipeline: A Comprehensive Framework for Understanding and Addressing the Lack of Diversity Across the Tech Ecosystem* | **Link**
>
> - Pew Research Center's *Women and Men in STEM Often at Odds Over Workplace Equity* | **Link**

*In the underlying data for this report, data on Pacific Islanders are separated out from data on Asians. This is in part due to how data was collected as part of the NSCG in 1995 versus 2017. To avoid any inaccuracies that might come from combining these categories, Pacific Islanders are not included in this report.

Other Underrepresented Groups in STEM

As discussed in the introduction, diversity spans far more than just gender and race. It includes a variety of aspects such as age, geography, nationality, immigration status, language, religion, socioeconomic status, sexual orientation, (dis)ability, and life experience. Throughout 2021 and beyond, we will be providing updates to this report that explore additional underrepresented groups in STEM.

Conclusion

The STEM talent crisis remains a critical priority for employers, governments, and educational institutions. But in order to make real progress in bridging the STEM talent gaps, issues of diversity, equity, and inclusion need to be of equal importance. Progress has been made in the past two decades to increase the representation of women, people of color, and other groups in STEM, but there is still a long way to go. Part of the solution will be to create more equitable opportunities and inclusive environments so that people of all different background can have the ability to pursue, persist, and thrive in STEM. We hope this report will serve not just as reflection on where we are, but on where we can go, as we work to create a more diverse, sustainable, STEM-ready workforce.

References

[1] Hadfield, R. (2019). *Diversity and Inclusion in Business: 45 Quotes from LGBTQ+ Leaders.* ZoomInfo. Retrieved from: https://blog.zoominfo.com/diversity-and-inclusion-quotes/?utm_source=social&utm_medium=twitter

[2] The Verna Myers Company (2017). *Diversity Doesn't Stick Without Inclusion.* Retrieved from: https://www.vernamyers.com/2017/02/04/diversity-doesnt-stick-without-inclusion/

[3] FTI Consulting (2020). *STEM and the American Workforce.* Retrieved from: https://medium.com/@ScienceIsUS/stem-and-the-americanworkforce-f5c36be6874e

[4] STEMconnector (2018). *The State of STEM: Defining the Landscape to Determine High-Impact Pathways for the Future Workforce.* Retrieved from: https://www.stemconnector.com/download-resource/state-of-stem/

[5] Bureau of Labor Statistics (2020). *Employment in STEM Occupations.* Retrieved from: https://www.bls.gov/emp/tables/stem-employment.htm

[6] Riegle-Crumb, C. & King, B. (2010). Questioning a White Male Advantage in STEM: Examining Disparities in College Major by Gender and Race/Ethnicity. *Educational Researcher, Vol. 39(9), 656-664.* Retrieved from: https://www.jstor.org/stable/40983259

[7] National Center for Women & Information Technology (2014). *What is the Impact of Gender Diversity on Technology Business Performance? Research Summary.* Retrieved from: https://www.ncwit.org/sites/default/files/resources/impactgenderdiversitytechbusinessperformance_print.pdf

[8] McKinsey & Company (2015). *Diversity Matters.* Retrieved from: https://www.mckinsey.com/~/media/mckinsey/business%20functions/organization/our%20insights/why%20diversity%20matters/diversity%20matters.pdf

[9] Josh Bersin (2019). *Why Diversity and Inclusion Has Become a Business Priority.* Retrieved from: https://joshbersin.com/2015/12/why-diversity-and-inclusion-will-be-a-top-priority-for-2016/

[10] Hewlett, S. A., Marshall, M., & Sherbin, L. (2013). *How Diversity Can Drive Innovation.* Harvard Business Review. Retrieved from: https://hbr.org/2013/12/how-diversity-can-drive-innovation

[11] Rock, D. & Grant, H. (2016). *Why Diverse Teams Are Smarter.* Harvard Business Review. Retrieved from: https://hbr.org/2016/11/why-diverse-teams-are-smarter

[12] The Kapor Center for Social Impact (2017). *Tech Leavers Study: A first-of-its-kind analysis of why people voluntarily left jobs in tech.* Retrieved from: https://mk0kaporcenter5ld71a.kinstacdn.com/wp-content/uploads/2017/08/TechLeavers2017.pdf

[13] Glassdoor (2014). *What Job Seekers Really Think About Your Diversity and Inclusion Stats.* Retrieved from: https://www.glassdoor.com/employers/blog/diversity/

[14] Tallo (2020). T*he Survey is In: Gen Z Demands Diversity and Inclusion Strategy.* Retrieved from: https://tallo.com/blog/genz-demands-diversity-inclusion-strategy/

References

[15] Yong, E. (2018). *What We Learn From 50 Years of Kids Drawing Scientists*. The Atlantic. Retrieved from: https://www.theatlantic.com/science/archive/2018/03/what-we-learn-from-50-years-of-asking-children-to-draw-scientists/556025/

[16] Stewart, A. (2020). *End of Year Report: The Hottest Jobs and Top Paid Skills of 2020*. Payscale.com. Retrieved from: https://www.payscale.com/data/end-of-year-report-2020

[17] Laurencin, C. T. (2020). *The Impacts of Racism and Bias on Black People Pursuing Careers in Science, Engineering, and Medicine*. The National Academies Press. Retrieved from: https://www.nap.edu/read/25849/chapter/1

[18] Krogstad, J. M. (2020). *Hispanics have accounted for more than half of total U.S. population growth since 2010*. Pew Research Center. Retrieved from: https://www.pewresearch.org/fact-tank/2020/07/10/hispanics-have-accounted-for-more-than-half-of-total-u-s-population-growth-since-2010/

[19] Bohnet, I. & Chilazi, S. (2020). *Overcoming the Small-N Problem*. University of Massachusetts Amherst. Retrieved from: https://www.umass.edu/employmentequity/overcoming-small-n-problem#:~:text=The%20%E2%80%9Csmall%2DN%20problem%E2%80%9D,are%20confronted%20with%20managers%20who

[20] The National Congress of American Indians Policy Research Center (2020). *The Asterisk Nation*. Retrieved from: https://www.ncai.org/policy-research-center/research-data/data

[21] Pew Research Center (2020). *Many Black and Asian Americans Say They Have Experienced Discrimination Aid the COVID-19 Outbreak*. Retrieved from: https://www.pewsocialtrends.org/2020/07/01/many-black-and-asian-americans-say-they-have-experienced-discrimination-amid-the-covid-19-outbreak/

[22] Wu, L. & Jing, W. (2011). Asian Women in STEM Careers: An Invisible Minority in a Double Bind. *Issues in Science and Technology,* Vol. XXVIII (1). The National Academies Press. Retrieved from: https://issues.org/realnumbers-29/