All STEM Connections

Mind the Gap: A Critical Look at the Gender Gap in STEM

WHITE PAPER

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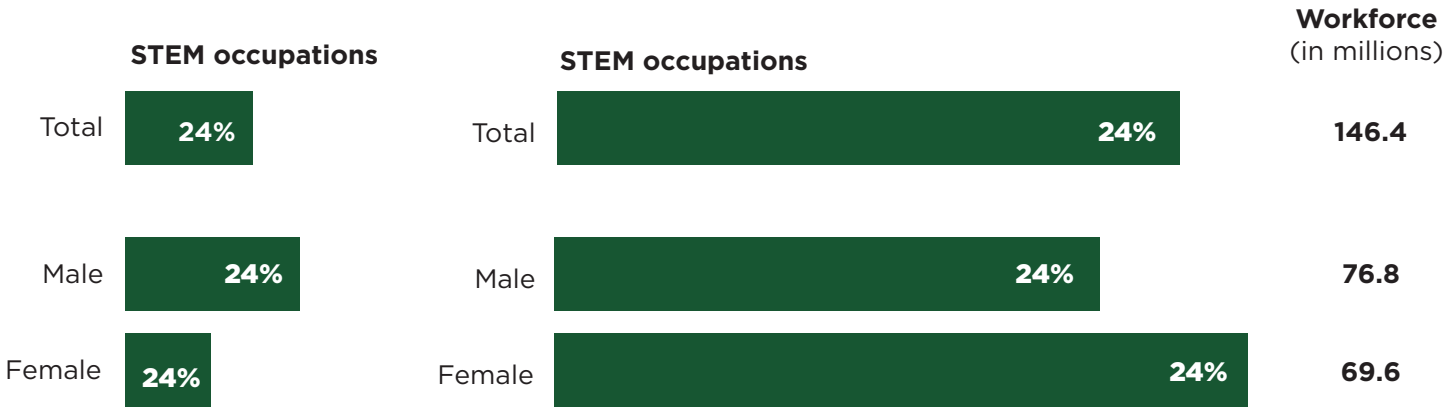
Introduction

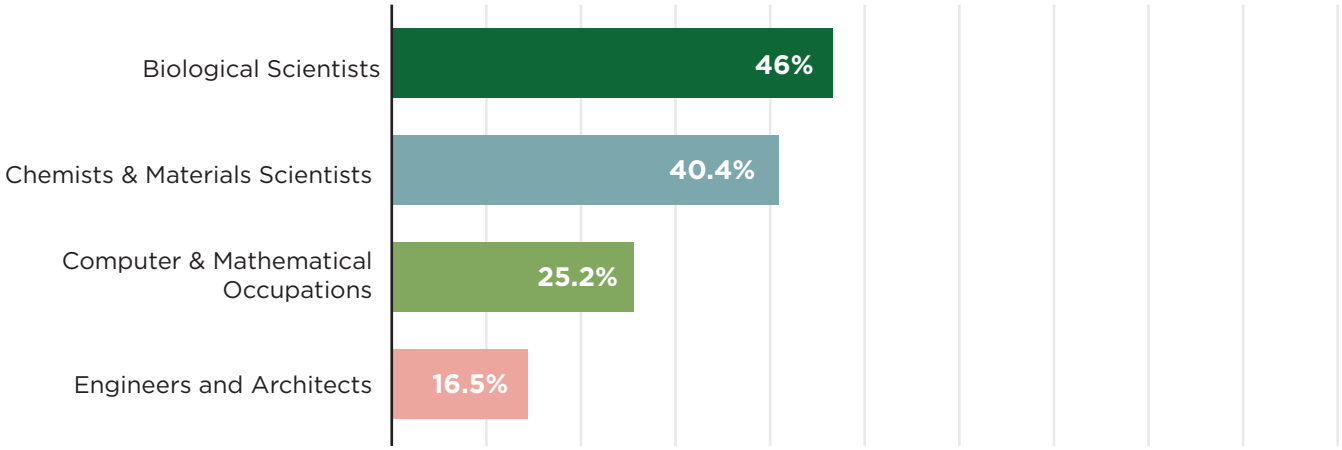
When it comes to gender imbalances in the U.S. workforce, few fields are impacted as much as the science, technology, engineering, and mathematics (STEM) professions. This issue is well-documented — a subject of academics and associations alike who have spent decades seeking to diagnose and address its root causes. These range from deeply rooted stereotypes and a scarcity of female role models to structural challenges in the workplace, which collectively contribute to the underrepresentation of women. This disparity is particularly troublesome for employers, resulting in a lack of diversity and inclusion and, ultimately, restricting the growth potential of STEM.

Occupations of the workforce ages 18–74[1]



STEM professions make up a significant share of U.S. employment. Out of nearly 150 million workers aged 18 to 74, roughly a quarter — 35 million — were employed in STEM fields. Yet, while men and women made up similar shares of the total workforce (52 percent men, 48 percent women), a significantly larger share of men (29 percent) work in STEM compared to women (18 percent).[2] Meanwhile, within the STEM workforce, women make up just over a quarter of all workers.[3] This share varies by industry. For example, in the U.S., women make up nearly half of all biological scientists, according to data from the Bureau of Labor Statistics. On the other hand, they make up just 16.5 percent of all engineers and architects.[4]

Share of women in STEM occupations[5]



In the U.S., STEM occupations are projected to grow by 10.8 percent between 2022 and 2032, significantly outpacing the overall workforce growth rate of 2.3 percent.[6]

The United States isn't alone. The share of women in STEM stands at 17 percent in the European Union, 16 percent in Japan, and 14 percent in India.[7] The gender gap has far-reaching global impacts, particularly in the context of the heightened demand for STEM professionals. In the U.S., the Bureau of Labor Statistics projects that STEM occupations will grow by 10.8 percent between 2022 and 2032, significantly outpacing the overall workforce growth rate of 2.3 percent.[8] Without significant improvements, the underrepresentation of women threatens to limit the talent pool and stifle innovation and economic growth on an alarming scale. By failing to fully integrate and support women in STEM, industries are missing out on the diverse perspectives and ideas that are essential to addressing complex challenges and driving future advancements. Closing the gender gap is not just a matter of equity; it's an economic imperative that will help meet the urgent need for a more robust and inclusive STEM workforce.

These disparities are the subject of Mind the Gap: A Critical Look at the Gender Gap in STEM. From AllSTEM Connections, a full-service staffing company focused on placing qualified professionals in STEM roles, this white paper explores the causes of the gender gap, its impacts, and top solutions for companies to foster a more inclusive and diverse workforce.

Discrimination or Disinterest? Diagnosing the root causes of the gender gap.

Women make up just over a quarter of all workers in STEM.[9]

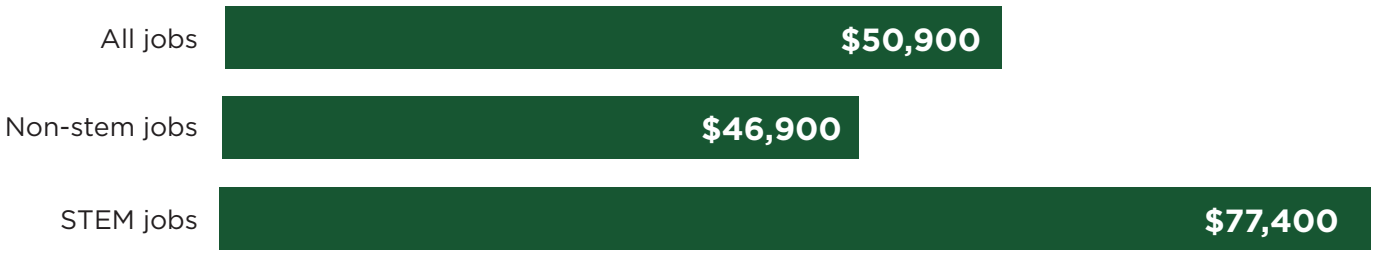
The gender gap in STEM is shaped by a variety of deep-rooted cultural, social, and institutional factors. However, despite increasing awareness and efforts to promote gender equality, women continue to be significantly underrepresented in STEM fields. This disparity is not just a reflection of individual choices but rather the result of systemic barriers that discourage and hinder women from entering and advancing in these careers.

Understanding the underlying causes of this gender gap is crucial for developing effective strategies to bridge it. The following key factors highlight the persistent challenges that contribute to the underrepresentation of women in STEM, shedding light on the complexities of this issue and the areas where targeted interventions are needed[10]:

- Persistent **stereotypes** link STEM fields with masculine qualities, discouraging women from pursuing STEM careers.
- A **shortage of female role models** in STEM leadership makes it difficult for women to find mentors.
- **Unconscious biases** in hiring, promotion, and funding disadvantage women in STEM.
- The **demanding nature of STEM careers,** coupled with family responsibilities, often leads women to opt out or work part-time, an issue laid bare during the COVID-19 pandemic.

State of Pay

State of pay: A lucrative, but unequal, industry

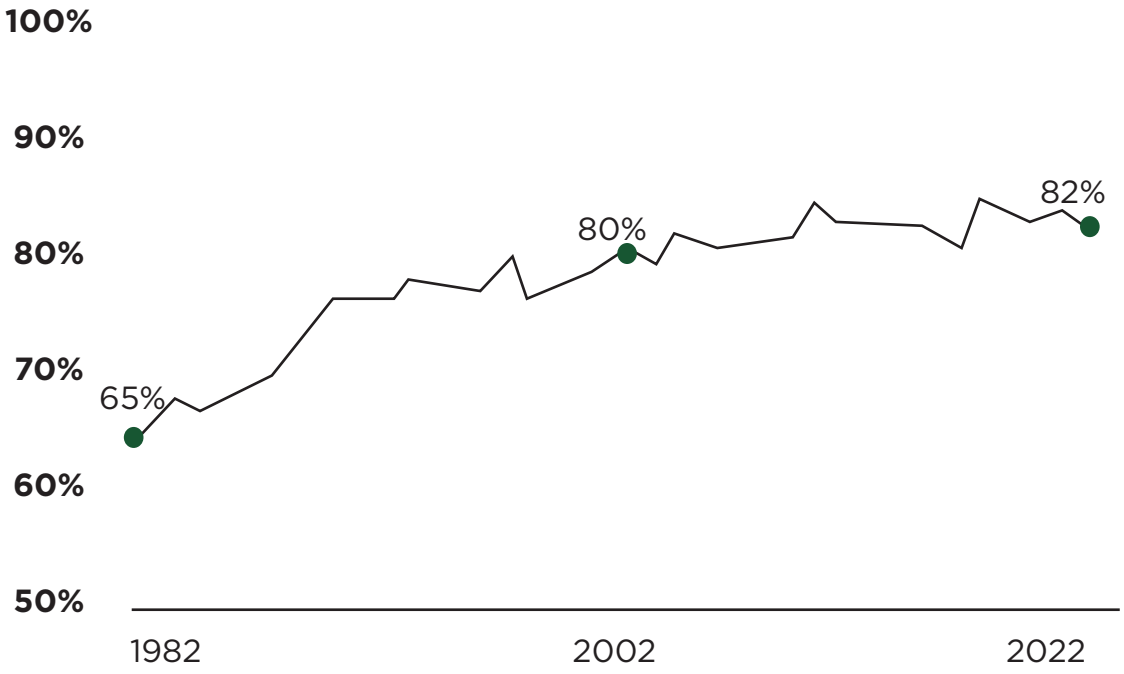


STEM careers are highly sought after not only for their opportunities for rapid professional advancement and growth but also for offering competitive pay that, on average, far exceeds that of other industries. Professionals in STEM earn just over $77,000 per year, more than $25,000 over the average pay for all U.S. workers. Yet, despite some progress, women in STEM occupations continue to earn significantly less than their male counterparts. The median earnings for women in STEM stand at $66,200, compared to approximately $90,000 for men. This means women earn 74 cents for every dollar earned by men in the same fields.[11]

The median earnings for women in STEM stand at $66,200, which is about 74% of the median earnings for men in the same fields, who earn $90,000.[12]

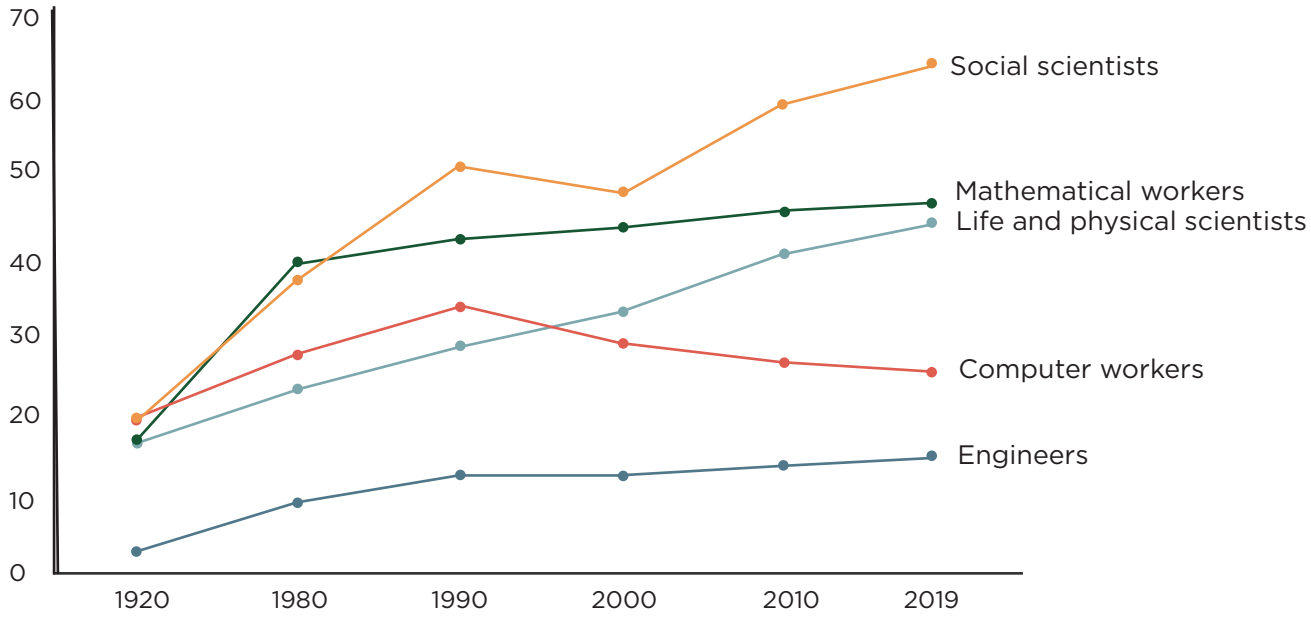
The pay gap in STEM careers mirrors wider compensation trends, but it is significantly more pronounced in STEM professions. By comparison, women in the United States earn, on average, 82 cents for every dollar earned by men across all industries.[13] However, the rate of progress has been marginally faster in STEM, improving from 72 cents on the dollar in 2016.[14] Meanwhile, there has been little progress in compensation across all U.S. industries since 2002, when women earned 80 cents per dollar. This slow pace of improvement contrasts sharply with the substantial gains made in the two decades prior when in 1982, American women earned just 65 cents for every dollar earned by men.[15]

Women's median hourly earnings in the U.S. as a percentage of men's median hourly earnings — all industries[16]



A hopeful future of STEM

Percentage of Women in STEM Jobs: 1970 - 2019
(Civilian employed, 16 years and over)



Source: U.S. Census Bureau, 1970, 1980, 1990, and 2000 Censuses; 2010 and 2019 American Community Surveys, 1-Year Estimates

Although progress in achieving gender balance in STEM has been uneven, women have made significant strides over the years. According to data from the Integrated Postsecondary Education Data System (IPEDS), women accounted for 45% of students majoring in STEM fields in 2020, a notable increase from 40% in 2010 and just 34% in 1994. Additionally, the Research Science Institute (RSI), one of the most prestigious summer STEM programs for high school students, reported that in 2022, for the first time, female students outnumbered male students, making up 55% of accepted U.S. students — a significant rise from just 22% in 1984.[17]

There are many benefits to a future in which there is parity between the number of women and men in the field, including[18]:

- **Advancing diversity and inclusion:** Achieving gender equity enhances diversity and inclusion, which drives the development of more innovative solutions to societal challenges.
- **Boosting economic growth:** Closing the gender gap in STEM can help fill the skills gap in the workforce, spurring economic growth and creating new job opportunities.
- **Enhancing research quality:** Greater gender diversity in STEM contributes to better research outcomes, as diverse perspectives offer unique insights into complex research questions.
- **Improving products and services:** Increasing gender diversity in STEM leads to the creation of products and services that more effectively cater to the diverse needs of all consumers.
- **Fostering social progress:** Reducing the gender gap in STEM contributes to broader social progress by promoting a more just and equitable society.

Solutions

Ensuring gender equity in STEM is a collective responsibility that requires a commitment from individuals, organizations, and communities alike. As a leading staffing company for STEM fields, AllSTEM Connections is uniquely positioned to assist companies in identifying effective solutions to achieve this goal. Through tailored recruitment strategies and a focus on diversity, we help organizations build stronger, more equitable teams, driving innovation and success in STEM industries.

These are five of the top solutions we're recommending to our clients to address the gender gap in STEM:

#1

Support early education initiatives:

Help non-profit organizations integrate STEM-focused programs in early education to spark interest among young girls, providing them with hands-on experiences and positive female role models. Major companies like Google and General Motors have awarded tens of millions of dollars in grants to organizations that provide equipment and learning support to elementary schools across the country.

#2

Provide career mentorship opportunities:

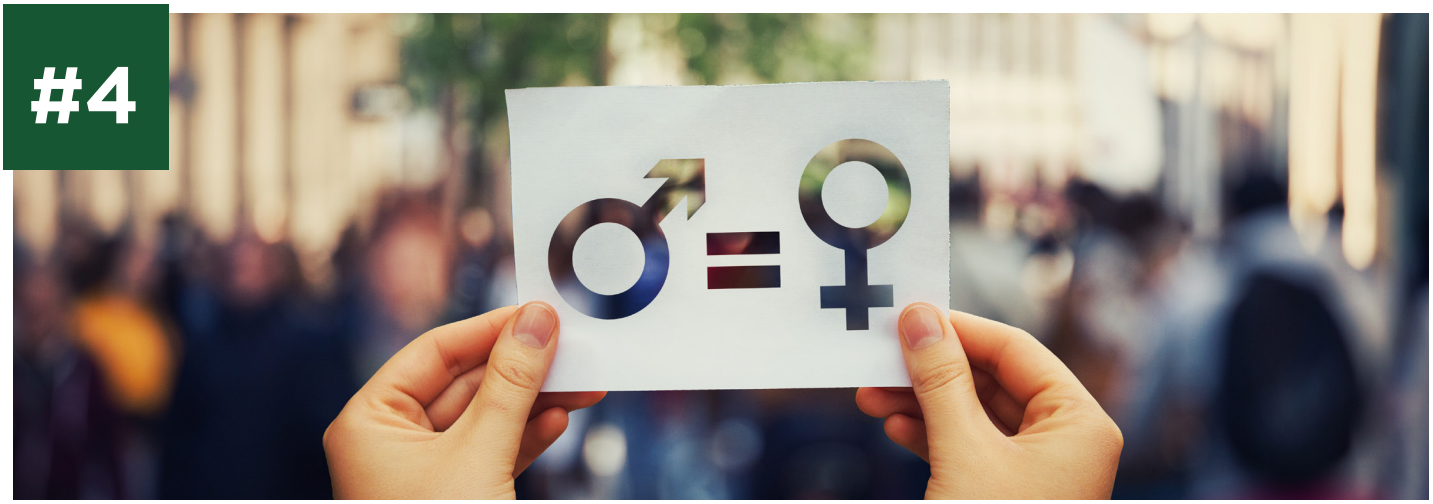
Establish career mentorship and internship opportunities targeting early career women, helping them gain industry insights and build confidence in pursuing STEM careers. Reward your employees for supporting and taking part in efforts to equip the next generation with valuable skills in STEM.

#3

Challenge suppliers to share your goals:

Collaborate with suppliers and partners to ensure they are equally committed to gender diversity in their workforce, setting benchmarks and sharing best practices to achieve these goals. Consider recognizing and even rewarding suppliers that meet your criteria for gender equity.

#4



Compensate women and men equitably:

Implement transparent pay structures that ensure equitable compensation for women and men in STEM, demonstrating the industry's commitment to gender equality and making the field more attractive to women. AllSTEM Connections can provide guidance to help ensure that you are compensating your workforce fairly.

#5

Promote a flexible workplace:

Promote flexible work arrangements and family-friendly policies that support work-life balance, making STEM careers more accessible and sustainable for women throughout different life stages. This includes best practices like offering paid family leave and extending remote work opportunities when possible.

About AllSTEM Connections

AllSTEM Connections takes the time to understand the needs of STEM professionals and companies to make the best connections in STEM-related industries. We are part of the ActOne Group of Companies, whose mission is to become the business 'community's global partner in providing forward-thinking talent and resource-management solutions. By leveraging the expertise of the various companies of the ActOne Group, our clients can access the powerful potential of 'today's diverse global workforce.

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2. Report: The STEM Workforce, National Center for Science and Engineering Statistics, January 30, 2023
3. The Gender Gap in STEM: Still Gaping in 2023, MIT, March 3, 2023
4. The STEM Gap: Women and Girls in Science, Technology, Engineering and Mathematics, AAUW, 2021
5. The STEM Gap: Women and Girls in Science, Technology, Engineering and Mathematics, AAUW, 2021
6. Employment in STEM occupations, U.S. Bureau of Labor Statistics, April 17, 2024
7. The Gender Gap in STEM: Still Gaping in 2023, MIT, March 3, 2023
8. Employment in STEM occupations, U.S. Bureau of Labor Statistics, April 17, 2024
9. The Gender Gap in STEM: Still Gaping in 2023, MIT, March 3, 2023
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11. STEM Jobs See Uneven Progress in Increasing Gender, Racial and Ethnic Diversity, Pew Research Center, April 1, 2021
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