

By Julia Fein-Ashley

It's crazy to think that only 200 years ago, women were discouraged from joining the workforce. They were expected to stay at home and take care of their family. Around 130 years ago, this began to change. A rising number of women were graduating with college degrees and seeking employment. Female pioneers worked in tedious, low-ranking jobs where they were treated like dirt and handed tasks that men did not want to do. In doing so, they paved the way for the future, inspired many of us today to create and hope for more change in the future.



Figure 1: Image sourced from Tech Diversity Magazine

This change throughout history also brings up an important thought to keep in mind: a lot has changed in 150 years. The women's rights movement began in the mid-1800s in an effort to promote the right for women to vote, as well as general equality for women. Although progress has certainly been made since then, there still needs to be more to achieve equality between both genders. Take into consideration the pay gap, where women earn 82 cents for each dollar a man makes. This illustrates that society, as well as specific institutions, still do not value women to the same extent to which men are valued, which is disappointing.

Many industries still have issues in promoting diversity and encouraging representation for people from different backgrounds and genders. STEM is one of those industries and finance is considered to be a part of STEM. According to Duquesnay, a female analyst in the financial sector, Wall Street "has been a boy's club forever". This has been changing, as many organizations are beginning to see the value that female perspectives have.

There are so many benefits linked to females working in STEM-related jobs, especially in finance. Diouf, a researcher at a university in France, noted that female central bank chairs are often considered more stable and have outperformed their male counterparts. This is comparable in many other positions, where many women are gaining senior positions or running their own companies because of their passion and desire to continue learning. So, as Forbes puts it, introducing women to sectors like Finance is just as much a challenge as it is an opportunity. Not only is it an opportunity for the organization to benefit, but also for society as a whole to grow. Institutions, whether they are startup tech companies or multi-billion-dollar financial service organizations can take advantage of the unique perspectives that women throughout the globe provide. To overcome this challenge of underrepresentation, we must answer the question: Why aren't more females involved in STEM?

So many different factors that play this question. Social, geographic and even biological factors must be taken into consideration. Obviously, there are other factors beyond just the ones discussed in this article, so be sure to do your own research on the subject. As college students, we need to understand how to promote diversity as we will be entering the workforce in the next couple of years. Being able to reflect on what we can change is crucial, which is why we need to think through factors logically.

## 1. Social Factors

Our surroundings, including TV shows we watch, what we hear other people say, or even stereotypes, all factor into our thoughts on a specific job or industry. What society perceives as normal has a tremendous amount of pull in where we end up. Shows like the Big Bang Theory often promote stereotypes that are not seen in a positive light, as a result, girls grow up not wanting to pursue a career in areas like science. Other stereotypes or experiences also shape where we end up.

Wall Street has often been considered a place where toxic masculinity runs rampant and has no tolerance for those that do not fit into their mold. Ken Fisher, former head of BofA and CitiGroup made a lewd comment publicly stating "that winning asset management business is akin to getting in a girl's pants". This brings up the

question of if this is said publicly, what is being spoken about privately? No one wants to work in a place where they are harassed because of their gender, so as a result, many women avoid the sector.

Our own perceptions, shaped by our surroundings also determine whether or not we want to enter into a specific field. Take for example, the computer science industry. including computer science. Computer science is considered to be a field for anti-social men who work all day on computers.

Stereotypes are often a result of social factors, whether it be things we hear from our friends or family members. They are often wrong, but still have a tremendous impact on our opinions. To illustrate the effect that stereotypes have on women, Hippel, McFarlane, and Sekaquaptewa conducted a study surrounding their feelings, to further understand the impact that stereotypes have on women. They found that women who experience stereotypes have more negative emotions and do not want to associate themselves with the industry. As a result of speaking about their experience with others, people have often swayed away from the field that the two spoke about.

## 2. Geographic Factors

Often, as students in college, we forget how privileged we are to have an infinite number of opportunities. In other areas of the world, such as the Middle East and Africa, women are not provided with the same amount of freedom as someone in the United States would have. For example, many women in the middle east have families and governments where having high-ranking jobs, or any job at all, is discouraged. Up until recently even, women in the UAE were not allowed to drive without permission until 2018.

Africa has a similar issue as the Middle East, where females are not afforded educational opportunities at the same rate as men. This is due to their political systems, as well as their educational system. According to Marie Francoise Marie-Nelly, the percentage of female graduates in tertiary education for industries like engineering, is below 30% ([blogs.worldbank.org/african/lets-accelerate-women-stem-agenda-today-tomorrow-will-be-too-late](https://blogs.worldbank.org/african/lets-accelerate-women-stem-agenda-today-tomorrow-will-be-too-late)). Compared to the United States, where females are afforded similar educational opportunities as men, this number is truly frustrating.

Another interesting idea to think about is that physical geography also determines whether or not women will be exposed to jobs, especially those in STEM. Rural locations where families do not have the economic resources to move closer to job opportunities are stuck. They are not able to realize the potentially life changing effect that a proper education and opportunity to pursue a career in STEM have.

## 3. Biological Factors

Often, we do not consider factors that are completely out of our control and have impacted us since day one. Interestingly enough, men have many differences when compared to women. Their brain function and development are different, their hormones are different. As a result of these two, many abilities are different in the two genders. Self-discipline, communication, and organization are impacted, but in turn, life choices, opportunities productivity, and standardized test scores are all impacted.

According to Ceci, Williams, and Barnett, members at Cornell University, women often score highly in all segments, including reading and writing, and math. Men, on the other hand, score higher in one specific section, specifically math. As a result, men feel cornered to go into something that they are good at, where women see that they have many opportunities to explore careers in numerous fields, whether it be in English or math. Another biological factor that impacts the underrepresentation of women in STEM and any career is their loyalty to family.

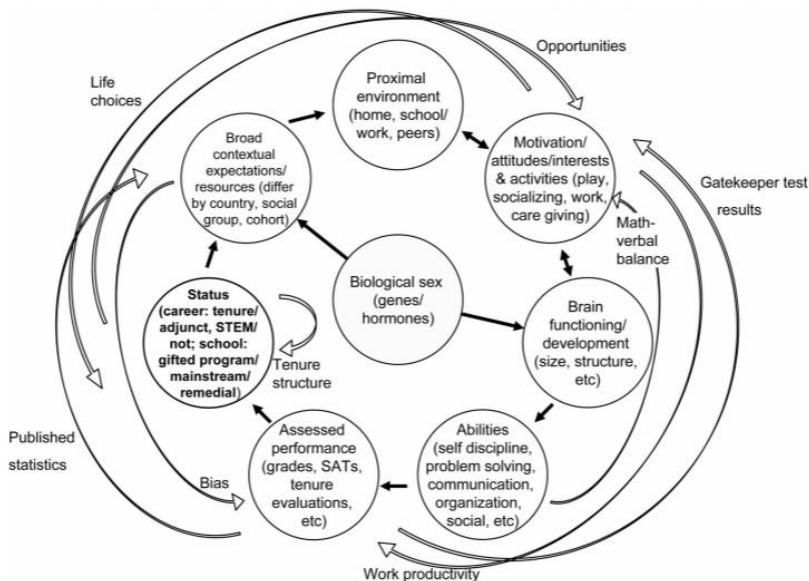


Figure 2: Image sourced from "Women's Underrepresentation in Science: Sociocultural and Biological Considerations"

There is an intense bond between a mother and child, and often as a result the mother feels obligated to stay at home with that child instead of sticking to her career. Obviously, this is not the case all the time, as social expectations also play a huge role in whether or not a mother decides to stay with her child.

The ways in which biology factors into our careers are infinite, so it is impossible to explore them all. The authors, however, drew an illustration that can help us better comprehend just what large role biology plays in career outcomes.

### **Main Takeaways**

There are so many factors that are out of our control. Whether it is social, geographic, or biological, we need to understand that we cannot control every factor that plays into the underrepresentation of women. However, understanding that various elements, including the ones discussed in this article as well as others, play a role in where we end up is a great place to start. As college students, we need to understand that we can positively impact the workforce in the next couple of years. As we enter it, we need to embrace change, create an environment diversity is promoted, and become more open to hearing each other's backgrounds and experiences.

Being able to promote a safe environment for women to work is the main priority. With having a toxic culture, change and increasing female representation will not be possible. As a result, we need to do better and change what is considered to be acceptable in the workplace.

Hopefully this article illustrated that although we cannot change everything, we do have a hand in creating a better, more equal future for future women within STEM. Change starts with the future leaders and workers of the world, which is why it is so important to understand the gravity of the situation that we are in today and will face in the future. Female representation in STEM is only possible only if we push for change, just as past individuals have done.

### **Solutions to promoting a safe and inclusive environment**

Follow the links below to read more about how you can ensure that in the future, your workplace promotes equality and listens to the views of people from various backgrounds. You can have a part in changing the world, one step at a time.

<https://www.thepeoplespace.com/ideas/articles/four-tips-creating-safe-and-inclusive-workplace>

<https://giveandtakeinc.com/blog/culture/create-a-safe-inclusive-work-environment-to-increase-belonging/>

<https://www.shrm.org/hr-today/news/hr-magazine/0418/pages/6-steps-for-building-an-inclusive-workplace.aspx>

### **Want to learn more about female underrepresentation in STEM? Check out our sources used in the article.**

Ceci, Stephen J., et al. "Women's Underrepresentation in Science: Sociocultural and Biological Considerations." *Psychological Bulletin*, vol. 135, no. 2, 1 Mar. 2009, pp. 218–261., doi:10.1037/a0014412.

Councils, Forbes. "Forbes Marketplace: 5 Things You Need to Know about Women in Finance." *Forbes*, Forbes Magazine, 5 June 2018, [www.forbes.com/sites/forbesmarketplace/2018/06/05/5-things-you-need-to-know-about-women-in-finance/](http://www.forbes.com/sites/forbesmarketplace/2018/06/05/5-things-you-need-to-know-about-women-in-finance/).

Diouf, Ibrahima, and Dominique Pépin. "Gender and Central Banking." *Economic Modelling*, vol. 61, Feb. 2017, pp. 193–206., doi:10.1016/j.econmod.2016.12.006.

Fox, Michelle. "Tackling the Gender Gap: 'Wall Street's Been a Boy's Club Forever'." *CNBC*, CNBC, 16 Jan. 2019, [www.cnbc.com/2019/01/16/women-on-wall-street-unequal-pay-and-fewer-female-advisors.html](http://www.cnbc.com/2019/01/16/women-on-wall-street-unequal-pay-and-fewer-female-advisors.html).

Hall, Kirsten. "Women in Business: Entirely Unremarkable." *TED*, Nov. 2015, [www.ted.com/talks/Kirsten\\_hall\\_women\\_In\\_business\\_entirely\\_unremarkable](http://www.ted.com/talks/Kirsten_hall_women_In_business_entirely_unremarkable).

Marie-Nelly, Marie Françoise. "Let's Accelerate The Women in STEM Agenda Today; Tomorrow Will Be Too Late!" *World Bank Blogs*, 22 Apr. 2021, [blogs.worldbank.org/african/lets-accelerate-women-stem-agenda-today-tomorrow-will-be-too-late](https://blogs.worldbank.org/african/lets-accelerate-women-stem-agenda-today-tomorrow-will-be-too-late).

Von Hippel, Courtney, et al. "Stereotype Threat among Women in Finance." *Psychology of Women Quarterly*, vol. 39, no. 3, Feb. 2015, pp. 405–414., doi:10.1177/0361684315574501.