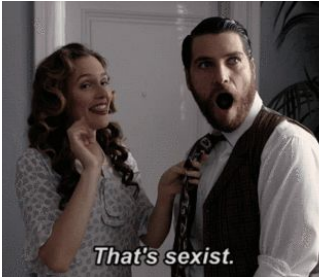


SySTEMic Gender Bias

STEM- Science, Technology, Engineering, and Mathematics



Gif: ("Making History")

"You know, it really doesn't matter what they write as long as you've got a young and beautiful piece of ass."

-Donald Trump



Gif: ("Audrey Ramirez")

Monopoly, car heater, refrigerator, dishwasher, medical syringe, x-ray and computers; what do these things have in common? They were invented or revolutionized by women. Some of the most significant scientific findings and creations are from women; that's where we start to see a real problem. Throughout history we see very little representation of women in the STEM field compared to men and not much has changed in what we call the "modern era".

Science's Fear of Women

When we talk about famous women in science most people think about Marie Curie, a physicist and chemist in the early 1900's. She pioneered in the research of radioactivity, she was also the first woman to win a Nobel Peace Prize and the only person to win a Nobel Peace Prize in two different sciences (*Quercus*). With such an amazing track record it is pretty obvious to see why she is so famous. Marie was an amazing scientist and woman who had to endure more than her male partners. What about the other women who proved their worth and somehow their names don't pop up in our science or history classes? The average public could name many more men scientists than women. The picture on the right is of famous scientists graphically designed into action figures. The artist chose the scientists themselves, their choices were very educated and have very influential scientists, however out of 76 total figures designed only 7 are women. The excuse for the lack of women represented in this photograph is "they're hard to find". Why is it difficult to find women who have expressed their love of science when women are approximately half of the population. Why does science seem afraid of women?

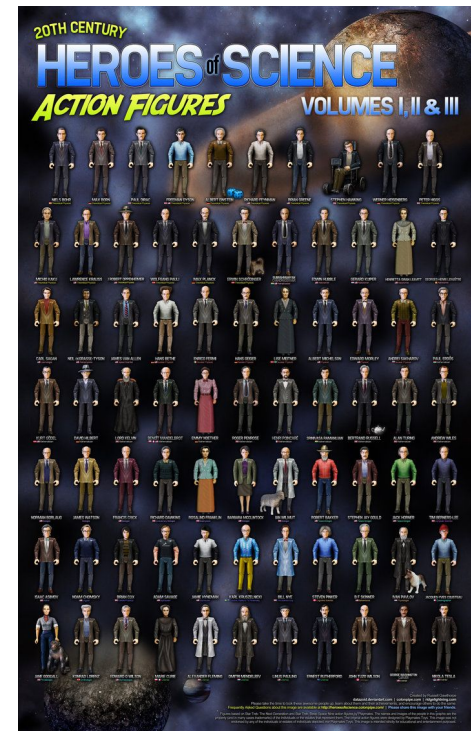


Image: ("Heroes of Science Volumes I, II and III")

For many years society has said that a woman's place in the world was to perform the house duties and raise children, hence, making it taboo or even

dishonorable for women to pursue careers in STEM. For example; Florence Nightingale, born in 1820, revolutionized sanitation in hospitals and had a natural knack for mathematics at a young age. She was discouraged from practicing it so she became a nurse. Although she was very successful in her field, her passion was always mathematics (Quercus). Now that we look back in history we see that women were discouraged from practicing science because it was not ladylike. The women that persevered had to go through many more hardship their male counterparts did. Imagine a world where women were allowed all the same accreditations as men in science, imagine what has been missed due to women being discouraged to pursue sciences.

Tough Reality of Gender Inequality in STEM

We have come a long way, us women. However, there is still much more fight left, especially in the STEM fields. In the 21st century you would think that the science fields have expressed immense progress in gender equality. Sadly, we see a significant gap between men and women in the STEM field. A 2015 census for the United States shows that only 34.4% of people who earned a PhD in a STEM field were women; with the smallest percentage being in the computer science field with only 22.5% of PhD graduates being women. We see hope in these statistics, with 53.3% of biology PhD earners being women (“Women In Science, Technology, Engineering, And Mathematics (STEM)”). The excuse that we see many male scientists use is that women want children and lives, which is hard to achieve when you are a dedicated scientist. However, this point is weak, and an ill excuse considering the fact that there are male scientists who are just as inclined to aspire to have a family. In reality, the little female representation we see in this field is actually the reason why the gender gap is so large in STEM.

Tiffany is a little girl who loves playing on the computer and learning new things about these miraculous and superior technologies. One day at school her teacher passes out a paper about the newest after school club, it was called the ‘Coding Club,’ after her teacher explains what computer coding is Tiffany becomes filled with joy, it was the perfect club for her! When Tiffany walked into the club room she realized she was the only girl, feeling a little more anxious she found a seat. As she sat waiting for the club to start she could feel the curious stares of the boys in the room. When the instructor finally came in he looked at Tiffany and said, “we don’t see many girls coming to these classes.” Feeling embarrassed, Tiffany didn’t continue attending the club.

This scenario or events like it happen all the time to girls and women. Having representation and more acceptance in the STEM field for females would no longer turn girls away from science at a young age. Another sad truth in the STEM field is the ignorance we face. It is hard to succeed at your job when you have influential members of your field telling you

Percentage of Degrees Earned by Women in Postsecondary Institutions (2014–2015) ⁴¹			
	Bachelor's	Master's	PhD
Biological and biomedical sciences	59.0%	57.3%	53.3%
Mathematics and statistics	43.0%	40.6%	27.9%
Physical sciences and science technologies	38.5%	37.5%	34.3%
Engineering and engineering technologies	18.7%	25.2%	23.2%
Computer and information sciences and support services	18.0%	30.4%	22.5%
All STEM fields ⁴²	35.1%	32.7%	34.4%

Image: “Women In Science, Technology, Engineering, And Mathematics (STEM)”

you aren't' good enough. In 2015, Tim Hunt, awarded the Nobel Prize in medicine in 2001, spoke at the World Conference of Science Journalists stating: "Let me tell you about my trouble with girls, three things happen when they are in the lab: You fall in love with them, they fall in love with you, and when you criticize them they cry." (Bilefsky). Tim's suggestion to segregate female scientists was intended to put down females, however, this attempt failed miserably for him, thank goodness. After the conference a new hashtag surfaced in the social media world, #distractinglysexy, which highlighted women scientists working in the field. The backlash caused Tim Hunt to resign from teaching at University College London (Bilefsky). This particular situation definitely turned out for the better, not for Tim, but for women, it opened up more discussion about discrimination in STEM and started a trend of women representing their STEM fields. It is known that this type of slander happens regularly and usually ends with a much less desirable conclusion. Whether it be in the comments of an article, face to face, or on a stage, ridicule and ignorance is just as harmful as under representation for the future of female scientists.

Empowering our STEM Girls

All hope is not lost, in fact it is far from lost, more programs are surfacing as this problem is being more commonly addressed. People are becoming aware of the problems we face. One of the most prominent organizations now is "STEM Like a Girl".

This program is for parents and their daughters from 4th-6th grade to go to classes that teach different STEM activities to "ignite a spark in both girls and parents to continue STEM activities at home and beyond." (STEM Like a Girl). These types of programs give young girls the ability to become interested in STEM careers as well as learn from influential women to inspire them. This isn't the only program, there is also "Girls Who Code" to teach girls about computer science. These programs are only the start of healing the gender gap in the STEM world. We also need people to continue to advocate for girls in STEM, such as Dea Kurti, a sixteen-year-old girl who spends her time shipping informational STEM books all over the world ("The teen coder who wants to change the world"). She does her part in inspiring other girls to strive for careers in STEM and follow their passions. She is bridging the gender gap in the science community around the world. Empowering our girls and women to go after their dreams, give them the

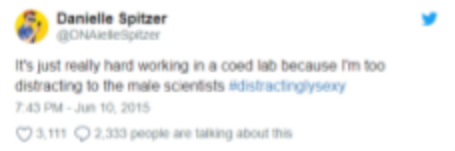


Image: "#Distractinglysexy Twitter campaign mocks Tim Hunt's sexist comments"

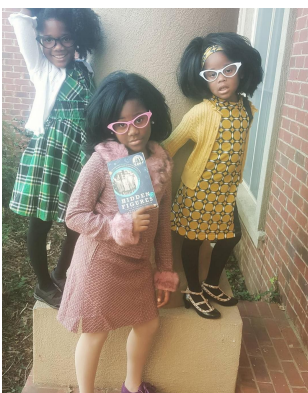



Image: "Explore Book Characters, Black Girls, and more!"

assistance they need. This is the only way to heal the STEM gender gap and catapult our scientific findings.

Making it a Reality

Diversity in the workforce contributes to new and revolutionary ideas. We need to bring the world into a more progressive society; we must involve all walks of life. To be able to accomplish this, we, as a society, must show representation, encourage learning, as well as advocate for our young to succeed and create a better world.



We need all hands on deck. And that means clearing hurdles for women and girls as they navigate careers in science, technology, engineering and math.

MICHELLE OBAMA



Image: "STEM Like a Girl"