

~ COLORFUL ~

DIVERSITY IN STEM



diversity == important;

diversity - the practice or quality of including or involving people from a range of different social and ethnic backgrounds and of different genders, sexual orientations, etc. (Oxford Languages)

A term we've all heard before. Whether at school, in the workplace, it's a big deal. And many preach and advocate for the importance of diversity because, well, it is important.

Diversity provides perspective, brings new ideas, increases productivity, etc. After all, you're bringing a bunch of different people together to create something bigger and better. It creates a better environment and broadens your own thinking.

What's not to love?





facts

What exactly does the field of STEM right now?

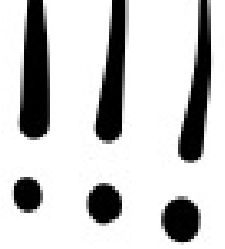
Well, let's take a look:

- Gender representation varies. In the life sciences, women make up about 47% of the workforce. However, in other fields, they make up 14% in engineering, 25% in computer science, and 39% in the physical sciences.
- In U.S. colleges, the male to female ratio for students majoring in physics, engineering, and computer science is 4-to-1.
- About 72% of the researchers in the world are men. But this varies by country - for example, in Myanmar, more than 80% of their researchers are female.

So, while statistical ratios are different for every location, the facts still show a problem - a gap.

A lack of diversity.

consequences;



Having a lack of diversity does have consequences.

For instance, in 2018, Joy Buolamwini tested well-known face recognition classifiers, Microsoft, IBM, and Face++, on a dataset comprised of females and darker-skinned individuals. She found that these classifiers were least accurate in identifying darker-skinned females, and most accurate in identifying lighter-skinned men. This algorithmic bias stems from the lack of diversity.

Another example is of a study done at the University of Texas, which found that sexual harassment was prevalent in the sciences, with nearly 50% of female students in medicine there reporting harassment. This is not okay.



causes++



Hard to say exactly, but I got some guesses.

For one, *female and minority role models are massively underrepresented*. Just think about it: who comes to your head for famous male scientists? Albert Einstein, Thomas Edison, Charles Darwin, Isaac Newton, Stephen Hawking, Alexander Graham Bell. The list goes on.

Okay, how about famous female scientists? Uh, Marie Curie, Rosalind Franklin. The three women from *Hidden Figures*: Katherine Johnson, Dorothy Vaughan, and Mark Jackson. Don't forget the most famous one of all: Ms. Frizzle. Of course, there's way more, but they're not nearly as well-known as the male scientists. And this doesn't even take into account the tons of historical women whose accomplishments were instead recognized by their male counterparts.

Another thing to consider - the retention rate for STEM majors is quite low, especially for underrepresented individuals. About 40% of black and Latino students switch out of STEM majors before earning a degree, compared to 29% of white students. Hence, there's actually not a lack of interest in STEM - rather, it's the environment and other societal pressures inducing people to leave.



inclusion + equity;

There's also actually more to diversity than just... well, diversity. Simply having one underrepresented individual on your team is not the whole solution. An individual cannot be diverse, but a group of individuals can.

There're matters of inclusion and equity to consider too. As the famous saying goes, "Diversity is being invited to the party. Inclusion is being asked to dance." And to me, equity would be like making sure everyone's able to get to the party. So, even if you have individuals from diverse backgrounds, you still have to work to make them feel included and heard.

Therefore, yes, diversity can be "solved" by improving statistical quotas. But you still need to cultivate an environment of inclusion and wellness. What's the point of being "diverse" if no one feels included or heard?



solution...?



"We should not confuse equity with statistical quotas."

- Dr. Nathalie Cabrol, Director of the Carl Sagan Center for
Research at the SETI Institute

Hey, it's not all bad – the industry has definitely come a long way. For instance, since 1990, women's representation in the life and physical sciences has increased greatly - the most being in the physical sciences, from 22% to 39%. But, as cliché as it sounds, there's more to be done.

We're still a long way from a diverse, inclusive, and equitable STEM industry. And while it probably won't ever be perfect, there's still a ton of things we can do to increase outreach. Volunteer at local schools, get involved with organizations, and highlight more underrepresented individuals.

And, if you're a minority in STEM, know that you do belong and your ideas do matter. I'm excited for the STEM industry to look a bit more colorful.

The
End.

