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BREAKING THE IYSE

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Magazine

Special Topic

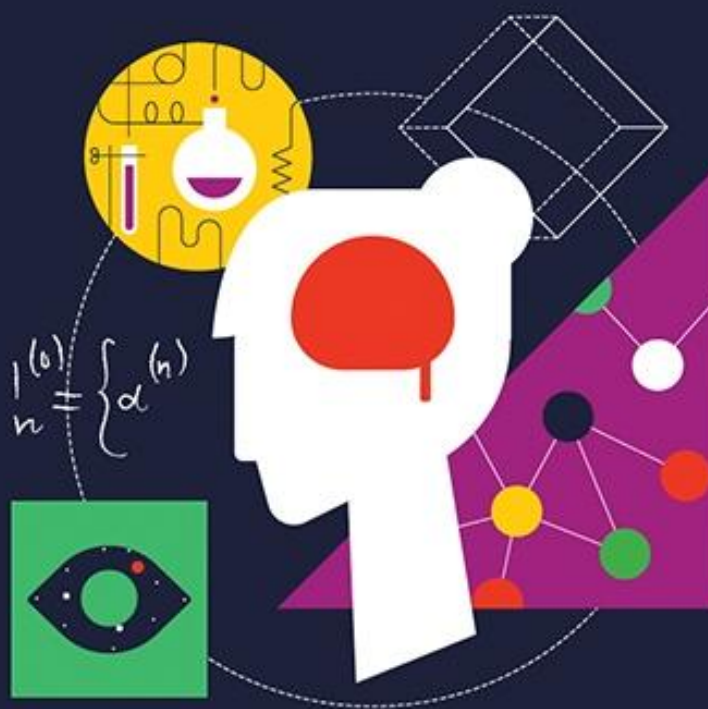
POPULAR STEM MAJORS

Learn more about the most popular STEM majors taken

Featured

SEXISM IN MEDICINE

Explore how sexism is induced in medicine



Crossword!

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Five Popular STEM Majors Taken by Women

Hiba Mastas

“A womanly occupation means, practically, an occupation that a man disdains,” said George Gissing. Women were always seen to be lesser beings, a complementary aspect of life in the eyes of men. So, when it was time for them to leave the limiting life of being solely a housekeeper, they faced multiple obstacles raised by men. Over the years, women were able to infiltrate small departments of work, however, those occupations always involve them being segregated by the higher authority of men. It wasn't until much later that they had the opportunity to claim higher positions, and in our time being that means positions in STEM. STEM is a term used to group academic disciplines of science, technology, engineering, and math. The fields of work that incorporate STEM are in high demand right now, so having a major in any of those disciplines is an attractive choice for incoming freshmen. Even schools understand the importance of these studies and designed the curriculum in order to lay a basic foundation of STEM. This means that both men and women receive the same training in science and math during primary, middle, and high school. Nevertheless, the number of women who pursue a degree in science and engineering is scarce compared to that of men. This statistical difference may seem outrageous, but the reasons behind it make historical sense, making the representation of women slightly higher in a few fields. So, what are the most popular STEM majors taken by women? It was discovered that women lean more towards the life sciences majors. As statistics show, women comprise 50.5% of all medical school students in the US according to the AAMC (Association of American Medical College).

Furthermore, in biomedical sciences, biology, health studies, physical sciences, and social sciences women outnumber men making these 5 bachelor's degrees the most popular STEM majors taken by women. However, women are underrepresented when it comes to majors like mathematics, computer science, technology, and engineering. Why this choice? Many reasons play into this phenomenon. Discrimination, for one, contributes a great deal to this matter. Even though perspectives have evolved, the fight for equity between the genders is still taking place, making little progress each year. Society still represents mathematicians and scientists to be a male occupation. The lack of female representatives leads girls to believe that professions like these are not made for them. From a young age, the stereotypical idea that men are more fit to take on the intensive fields of math, engineering, and

technology is embedded into women's minds, making them more reluctant to pursue these disciplines. Women may be underrepresented in the fields of math and engineering but in some life science disciplines, they outnumber men. Why this specific choice? Eccles, a professor of psychology, women's studies, education and the director of the Gender and Achievement Research Program at the University of Michigan says: "Although these girls might be interested in physics and are confident of their mathematical abilities, they choose to go into the biological sciences or medicine because they want a job that more directly helps people." This means that women are more likely to choose a field of work that allows them to interact with people and help them. Women have an instinct to care for others, so maybe the biological nature of women plays a role in their study orientation. The reasons why women are more inclined to choose a life science major are

multiple and undefined. They are influenced by society and also by the underrepresentation of women in the other field of STEM. Some may argue that the reason why few women pursue a major in STEM is even biological. However, women are becoming more willing to join those disciplines even if they face discrimination based on their gender. It is slow progress for sure, but progress nevertheless.



“A womanly occupation means, practically, an occupation that a man disdains,”

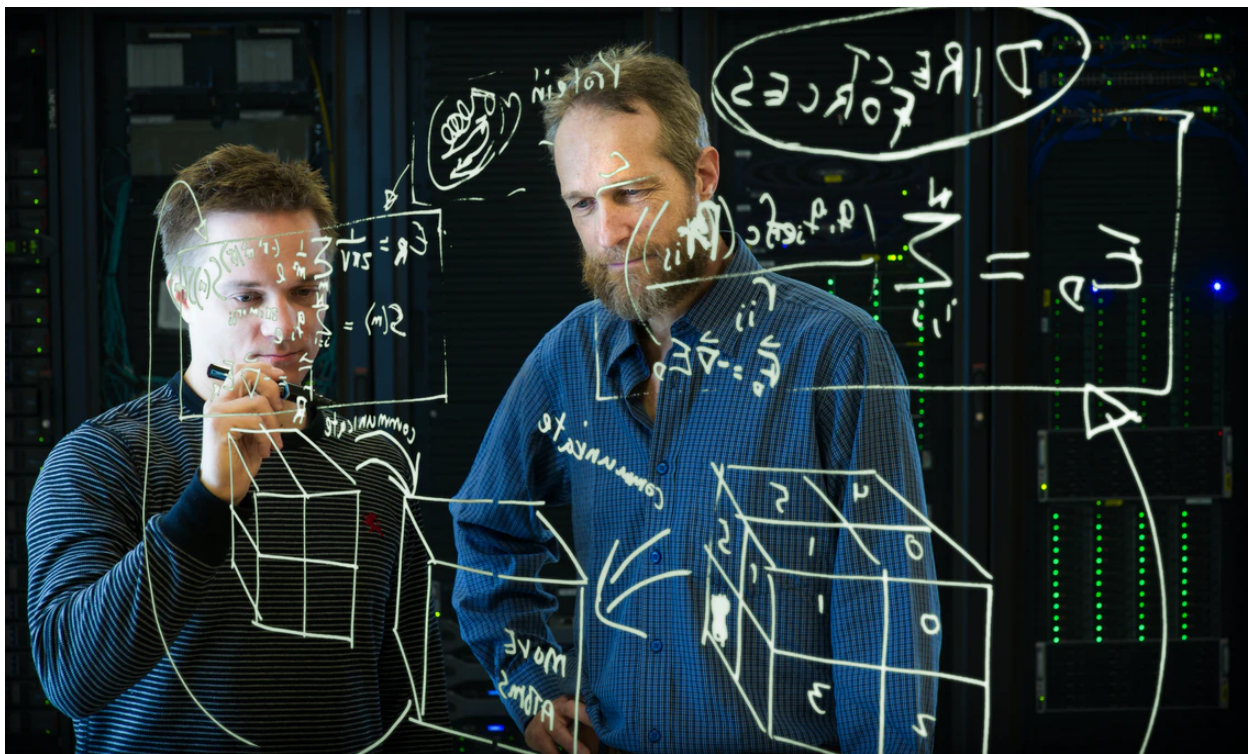
Gender-based Implicit Bias in the Classroom

Hiba Mastas

It isn't a secret that teachers often favor some students over others. This bias phenomenon can be translated into the way the professor interacts with the student, either by giving him or her more attention or treating them differently than the rest of the class. This teacher bias occurrence can manifest itself in many ways, it can be religiously based, racially-based, or gender-based. The gender-based biased treatment is often practiced implicitly by the teacher in the classroom, leaving the student feeling wronged, however, unable to prove this unjust treatment. Both genders are victims of this unethical practice. Now the question lies, how is this gender-based bias implemented in the classroom for both genders? The discrimination against boys in the classroom is related to their behavior and self-discipline. "Boys will be boys" was considered an explanation for the inappropriate behavior of boys, but nowadays it is stuck as a stereotype that all boys are aggressive and violent. This leads to teachers becoming more stringent towards them in the classroom as a way of asserting dominance and displaying power. They relate this staged behavior to the boy's hormone system, claiming that they release more testosterone which makes them more active and thus harder to control. Another stereotype that pushed professors to be gender-biased is the one that states that schoolwork is something girls are naturally best at. This automatically makes the instructor lean in favour towards girls when it comes to answering questions or even grading. The same goes for girls, however, the discrimination towards them is more fierce and obvious. Teachers are more likely to overlook a student that identifies as a girl and praise them for being quiet rather than encourage them to voice their opinions and seek deep answers. Teachers are more inclined to engage with boys in STEM-related conversations rather than girls. This follows the discrimination of the female gender in STEM, where men are seen to be the future leaders in those disciplines but women are slowly climbing that ladder in a way that still lets them be treated as side characters. The stereotype that women are soft beings also plays a role in this matter, teachers are reluctant to put girls in leadership positions under the argument that they

cannot handle the pressure and responsibility that comes with the job. Furthermore, even though girls get the same grade as boys in STEM-related subjects they are not given the credit of being as smart. They are always undermined by words like: “Girls can do just as well as boys if they work hard,” according to Brookings. This gender-based bias has been around for so long. Teachers claim to show no sign of favoritism, but that is definitely not the truth. They are humans after all, and sometimes it is normal to feel more inclined towards someone due to what is considered socially normal. However, this reason should not be due to their race or

“Some teachers favor students over others”



gender because no one gets to choose how they're born, these things are forced upon us and one should embrace them. Hence teachers should start questioning themselves and whether their biased actions are based on the gender of the student or on other factors like their academic achievement or their behavior in class or towards the teacher. Gender-based bias can affect the student's life in a way that makes them not grow into their potential just because they didn't find the right mentor and were discriminated against in the class, which should be a safe space, regardless of their gender.

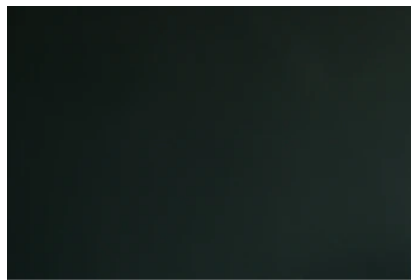
Sexism *IN* Medicine

“MeToo
Move-
ment
has
shown
various
cases
of
sexism”

For decades, medicine has been a growing field, employing nearly 16 million people in 2020. The intent of many professionals here is to nurture other human beings yet, they are far from compassionate to their peers. Sexism in medicine is a persisting battle that has never ceased storage. Being indispensable, nurses are the silent backbone of the healthcare industry- however, it is assumed that it is a more feminine-inclined role. Due to this, men are disinclined to become nurses and, this toxic masculinity has remained stagnant in the healthcare industry for years. Can you imagine, only 9% of the 4 million nurses in the USA are men, according to Elite Learning. There is the media to blame for this. Along with this, an inherent mentality remains amongst patients who do not want male nurses. It seems ludicrous as there are many male physicians, who patients do not mind at all. Despite this active discouragement for men to pursue medicine as a nurse practitioner, men receive a 6000 USD higher salary than women on average in this practice, a testimonial to discrimination in medicine. There are more women entering medicine day by day. Medicine is one of the first STEM fields, with a majority of 50.5% women in medical schools than men, according to the Washington Post. However, in the workplace, there is a severe lack of recognition and leadership positions. Unfortunately, as with any other field, women are overlooked for promotions in hospitals and universities and, the reasoning for this given by management is often vague and discernable, all to avoid a corporate lawsuit for gender discrimination. Furthermore, they are disregarded professionally too! A 2017 study conducted by Professor Tania Lombrozo had found that female physicians were less likely to be introduced by their professional credentials and are also less likely to be addressed by “Dr” and instead are called “miss”. This, along with the 20,000 USD income divide proves that sexism in medicine is still prevalent. Within the distinguished medical industry, biases are often overlooked. However, the minuscule representation of women is evident in every workplace and educational institution, so is it really surprising that more than half of the female medical school entrants drop out. Unlike the environment male practitioners experience, women are stripped away from equal training and experiences confined solely to the bias of gender. Unfortunately, women are automatically regarded as inept in a healthcare profession in certain societies leading to condemned skills and practice, for they must fight to be taken seriously.

This industry revolves around the needs of the patient and, these subtle biases can affect the quality provided to the patient compromising one's health. As society progresses, the healthcare industry has experienced tangible growth. The Civil Rights Act of 1964 (VII) was passed stating prohibition of discrimination against employees based on sex, race color, or religion. This law has been gradually integrated into the workforce, tied into the advancements of a gender-neutral rebranding of nursing to emphasize skills over the prejudice of gender. As the public gains awareness of the underrepresentation of women,

campaigns such as #HeForShe running parallel to #MeToo movements have been created to raise promotion and sponsorship of women. Hopefully, this industry will strive to foster an inclusive and respectful opinion to truly integrate and evolve in equality.



Areas of STEM Predominantly Held by women

*Why are they held mostly
by women?*

Tania Perehinets



With men highly dominating STEM, people are used to attribute science discoveries to this sex. Professors in top universities, successful scientists – we do not even use “male” after these words, as this is by default for our society that only men have such kind of achievements. But, science revolution has not only been brought about by men. All genders have greatly contributed to the victory of progress. Nowadays society puts big efforts to make such a confession visible. It gives women in STEM special scholarships, one-sex university, places in internships, separate science courses and competitions. Due to this, the amount of females in STEM is increasing. According to statistics on Built By Me, “the number of women who are awarded STEM degrees every year has increased by over 50,000 in the past decade.” Has this change resulted in more women in science being celebrated? To talk about main STEM branches, the field of formal science is staying infrangible by men. According to the National Center for Education Statistics (U.S. Department of Education), “women earned 57%, 60% and 52% of all Bachelor’s, Master’s and Doctoral degrees respectively in the U.S. in 2013-14 ... women earned only 43%, 41% and 29% of the Bachelor’s, Master’s and Doctoral degrees respectively in mathematics and statistics in the same year.” Many prestigious universities like UCLA, MIT or Harvard have a colossal gender disparity in formal science with, according to statistics from Women in Engineering and Science in Canada, nearly 23.2% of women in Bachelor’s degree at Mathematics Departments. Revealing another two branches of STEM, the statistics do not oppose females, and so may be called predominantly women led fields. Natural science: Despite physics, which remains popular mainly between one sex, biology shows a progress. According to Statistics Canada, more than 60 percent of biology majored undergraduates are female. Humanities: While many people blame discrimination for women minority in science, the statistic says the opposite. There are both ‘women’ and ‘men’ fields in science. This separation is not because only one exact sex can be good at something, as two sexes have the same brain and physical abilities. The parenting, education and the surrounding of a person greatly inclines him to choose a specific field. There is a widespread stereotype in schools that boys are better in formal science than girls. Teachers pay more attention to tasks to boys than girls.

Thus, many girls lose confidence in the subject and pursue other subjects. On the contrary to the formal science, natural and social sciences are mostly obligatory subjects in the USA. It means that females can take them up despite any prejudice. There are two main factors which incline women to choose the fields, predominantly held by them. To support females, who suffer from the lack of confidence and stereotypes, there are different scholarships that encourage them to get involved in science. The most popular between them are Aysen Tunca Memorial Scholarship – \$2,000, Virginia Heinlein Memorial Scholarship – \$2,500, Women Techmakers Scholars Program – \$10,000, BHW Scholarship – \$3,000, Scholarship America’s Dream Award – \$5,000–\$15,000.

Based on the statistics below, the conclusion is that despite the stereotypes and prejudices about women in STEM, our society successfully strives to support females in science. Special scholarships, liberalism and feminism are the most important factors that facilitate this. The extreme growth of women in maths, physics or programming in the near few years is the expected impact of this.

Hedy *Lamarr*

“All creative people want to do the unexpected”



Dubbed 'The most beautiful woman in film' Hedwig Eva Maria Kiesler, or as she is more commonly known, 'Hedy Lamarr', was an actor and inventor born on November 9, 1914 in Vienna, Austria. She was the only child of Emil Kiesler, a director of the Bank of Vienna and Gertrude Kiesler, a concert pianist. Having been born into a wealthy and loving family she did not lack much emotionally nor material wise. At the age of four, Hedy began her schooling. Hedy had private tutors teaching her several languages, she took ballet and piano lessons, and learned to play sports. Her parents put her education as a priority. She fell in love with theater and caught the eye of Max Reinhardt who had her act in one of his plays where she began her acting journey. Hedy went on to star in movies such as *Algiers* (1938), *I take this Woman* (1940), *Come Live With Me* (1941), and many more. She was a beloved actress, an 'Angelina Jolie' of her times. However, what many people did not know is that Hedy was gifted in chemistry and engineering. Hedy had dropped out of high school and as such did not have any type of formal training in the two disciplines, nevertheless her great passion drove her to learn all she could. Arguably, her most impactful invention is Frequency Hopping technology. While she was in America, Hedy met a composer named George Antheil. The two quickly became friends and bonded over discussions about inventing and about the Second World War. Hedy being the caring young lady she was, was deeply troubled by all that was happening. She did not wish to just sit by and enjoy her life while others were suffering thus she decided to take action. George and Hedy managed to invent and patent 'Frequency Hopping'. Instead of broadcasting over a single channel, messages would jump seemingly at random across many channels, as such only the sender and receiver who know the channels that were being used would be able to receive and decode the message. Unfortunately, people were reluctant to use her invention. When George and Hedy approached the National Inventors council to present their device, they were refused as the council suspected that it would be too cumbersome to implement. They also denied her direct attempts to help with the war, claiming that she would make more of a difference in acting. Unfortunately, Hedy's patent expired before she earned anything from it. While she was a talented actor, people never acknowledged her for her creativity and innovation. It wasn't until later on that she received recognition for her invention. The Electronic Frontier Foundation named Hedy and George recipients of the Pioneer Award in 1997.

Her contribution to frequency hopping technology was also recognized when the National Inventors Hall of Fame admitted Hedy in 2014. Her contribution powers every cellphone, Bluetooth device, and wi-fi network in use today. It's rather unfortunate that she was overlooked simply because she was a woman, if she was given the resources and support she deserved I have no doubt she would have gone on to invent marvelous things.



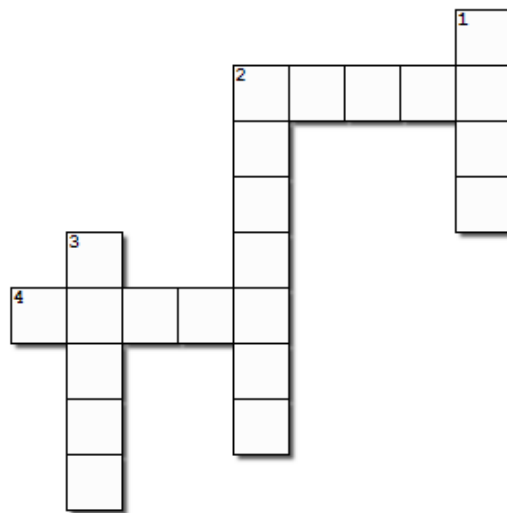
Crossword Puzzle

You've made it! Thank you so much for reading until the end!
Answers are on the next page.

Name: _____

Women In STEM Crossword

Complete the crossword puzzle related to Women in STEM below



Created using the Crossword Maker on TheTeachersCorner.net

Across

- 2. Synonym for intelligent
- 4. Many females

Down

- 1. 4 letters related to title
- 2. The logic behind the world (Starts with an S)
- 3. The scale for the world

Women In STEM Word Search

N	T	I	R	E	M	A	D	D	I	M	Y
O	D	A	A	L	B	E	O	J	J	A	T
A	A	H	A	G	E	T	R	A	A	R	U
A	L	T	U	E	R	A	O	R	N	I	Y
L	I	A	N	M	T	U	T	R	E	E	O
I	C	A	O	Y	H	O	H	E	G	C	U
S	E	M	S	D	A	T	Y	L	O	U	Y
E	B	I	I	A	P	O	H	U	O	R	O
M	A	R	M	M	A	A	O	U	D	I	U
E	L	A	E	J	R	E	D	K	A	E	N
I	L	G	J	W	K	S	G	T	L	R	R
T	A	N	E	N	E	R	K	R	L	C	E
N	O	A	A	I	R	L	I	D	L	O	H
E	G	W	M	R	Y	O	N	O	H	I	H

ALICE BALL
 JANE GOODALL
 LISE MEITNE
 MARIE CURIE
 MAE JEMISON
 TU YOUYOU
 BERTHA PARKER
 WANGARI MAATHAI
 DOROTHY HODGKIN

Crossword

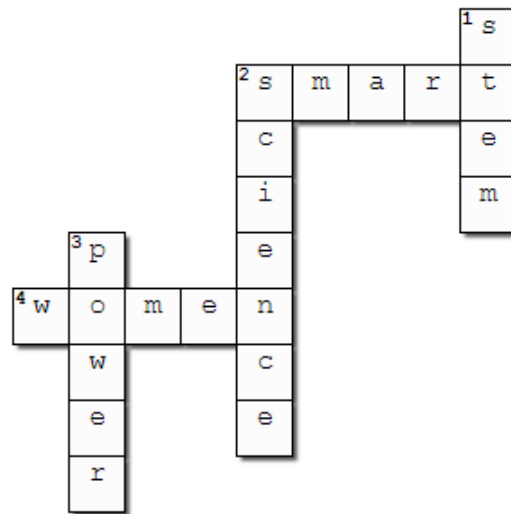
Puzzle Solutions

Thank you so much for reading until here! Stay tuned for our next edition!!

Name: _____

Women In STEM Crossword

Complete the crossword puzzle related to Women in STEM below



Created using the Crossword Maker on TheTeachersCorner.net

Across

- 2. Synonym for intelligent (**smart**)
- 4. Many females (**women**)

Down

- 1. 4 letters related to title (**stem**)
- 2. The logic behind the world (Starts with an S) (**science**)
- 3. The scale for the world (**power**)

Women In STEM Word Search

B	W	S	N	D	L	M	G	S	Z	B	T	M	K
Y	A	P	M	O	I	A	F	C	P	E	U	B	J
X	N	U	X	R	S	E	B	J	M	R	Y	M	M
U	G	O	Z	O	E	J	M	A	E	T	O	F	A
A	A	Q	M	T	M	E	G	N	W	H	U	H	R
L	R	G	Z	H	E	M	R	E	Q	A	Y	M	I
I	I	Q	J	Y	I	I	V	G	X	P	O	B	E
C	M	Z	C	H	T	S	F	O	R	A	U	N	C
E	A	S	G	O	N	O	O	O	M	R	C	Q	U
B	A	N	X	D	E	N	W	D	N	K	H	A	R
A	T	E	F	G	O	R	T	A	N	E	W	R	I
L	H	G	Y	K	A	J	H	L	A	R	Y	F	E
L	A	F	E	I	Q	Z	H	L	A	K	K	G	Z
M	I	Z	N	N	V	N	J	R	S	F	B	L	S

- ALICEBALL
- JANEGOODALL
- LISEMEITNE
- MARIECURIE
- MAEJEMISON
- TUYOUYOU
- BERTHAPARKER
- WANGARIMAATHAI
- DOROTHYHODGKIN