WHY SO FEW WOMEN IN STEM?

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Abstract

I will be researching why are there so few women in STEM career fields. I will first look into the statistics of women within STEM fields compared to men in STEM fields. How does the pay differ for women and men working in STEM fields? How does the hiring rate of women into STEM fields differ from men? I will also look into the history of women in STEM as a whole. I will also research how to get girls interested in STEM careers, specifically looking into how we can improve our education system, specifically looking at how we can help girls become passionate about STEM. I will research the current initiative to promote STEM in school systems and the gaps that exist for low-income school districts.

Keywords: Women, STEM, Discrimination, Pay gap, Education

For so long men have dominated Science, Technology, Engineering, and Mathematics (STEM) career fields. However, women are up and coming within these fields. But why has this taken so long? Why is the gap between men and women in STEM fields still so large? Looking into the overall question of why are there so few women in STEM? This gap between men and women interested in STEM can be found as early as middle school. Many studies have been done to look into why this is true. They have found many factors such as: education, family, race, support from loved ones, wage gap, and opportunities. All these factors play a role in shaping whether or not a woman pursues a degree in STEM and if they move on into a STEM career.

We see a decline in girls interested in STEM from a young age. Education plays a large role in why there are so few women in STEM careers. Researchers see a decline in interest as early as middle school. However, the high school years are the most crucial time in "shaping gendered orientation toward science and engineering" (Legewie & DiPrete, 2011, p.1). According to Legewie and DiPretes' research, going to a high school that is supportive of women and pushes them positively towards math and science can reduce the gender gap in STEM bachelor's degrees by 25% or more. Legewie & DiPrete say the gap really starts to widen between men and women in the high school years (Legewie & DiPrete 2011). Many factors within education go into women following a STEM career field. One of them is the exposure to STEM academic courses and information gained about STEM occupations. In Legewie and DiPrete's research they found that "Girls take at least as many math classes in high school as do boys, and the classes are at a similar level of rigor (Lee et al. 2007)" (Legewie, & DiPrete, 2011, p.3). So, if boys and girls take at least the same number of classes at the same level, what causes the divide? The answer is simple: the influence from peers, parents, and teachers.

According to Bystydzienski in "Why so few women? Explaining Gendered Occupational Outcomes in Science, Technology, Engineering and Mathematics Fields", a six-year study was done by Xin Ma and Willis Johnson that examined which "math courses in the US secondary school curriculum predicted choices of college majors and occupational aspirations" (Bystydzienski, 2009). This research study of US youth between grades 7-12 found that "Algebra II played a critical role in the career choice of males and calculus was a critical filter determining whether females declare science and engineering majors rather than majors in the liberal arts" (Bystydzienski, 2009). The research also found that if girls in grade 12 take calculus, it is positively correlated with college enrollment in science and engineering. However, the researchers could not conclude if taking calculus helped sway the girls into picking STEM majors or if they had already planned on it (Bystydzienski, 2009).

From 1988 to 2000, a study was done by Xie and Shaumen on attitudes of 8th graders. The study started off with a survey done in 8th grade where the sample of students gave their answers of whether they wanted to pursue a degree in STEM. The same students were then asked the same question in 12th grade and after receiving their Bachelors' degree. In 8th grade 90.5 % of Males selected no STEM orientation compared to 95.9% of females. Here we see that women already outweigh men in the non-STEM area. In comparision, 8th grade boys were oriented towards a STEM focus at a rate of 9.5%. Where as girls were oriented towrads a STEM focus at a mere 4.1%. Even in 8th grade, there is already a gap between females and males (Legewie & DiPrete 2011).

When the students were surveyed again in 12th grade only 6.8% of female's chose "college, STEM" compared to the 16.6% of males. This gap between male and females continues to get bigger. Comparing these numbers to the numbers of "college, no STEM" where

women dominated at 68.8% over the 52.6% of men (Legewie & DiPrete 2011). A third category was added to this survey of “no college”. The rate of males, 30.8% far outweighed the rate of females at 24.4%.

On the final survey after acquiring a Bachelors degree, it was found that only 9.8% of males obtained a “STEM BA” compared to 5.9% of females obtained a “STEM BA”. While 94.1% of females obtained a “Non-STEM BA” and 90.2% of males receive a “Non-STEM BA”.

Comparing all these numbers that Xie and Shaumen found they concluded that “the gender gap would be reduced by 10.5% if women had the same eighth grade science orientation as men” (Legewie & DiPrete 2011). They also took a look into the transition rates which were the rates of each group moving to the next stage. For example, 8th grade “STEM orientation” had a transition rate of 27.9% for girls and 41.8% for boys into the “college, STEM” of 12th grade. One of the major findings of the transition rates was between the grades they found that “if males and females had the same transitions rates within high school, the gender gap in STEM BA’s would be reduced by a substantial 55.3%” (Legewie & DiPrete 2011). In the transition years girls are much more likely to abandon a science career even when they showed interest in 8th grade.

Although a girl’s course completion of calculus plays a role in their choice of STEM there is that their interest starts at a younger age. Children begin role playing and assigning gender roles at very young ages and, as a result, girls are already being steered towards "female career" roles. “Martin et al. (1990) found that by the age of 10, children have attached gender stereotypes to predominantly male occupations such as plumber or construction worker and to predominantly female occupations such as nurse or hairdresser” (Legewie & DiPrete 2011). A way we can prevent this is by using after school programs to help girls build an interest in

STEM. These programs allow girls the time and space to explore what they are interested in and have the support from the people around them. In Koch and Irby's book, they write that there are three primary characteristics that need to be present in order for girls to participate in STEM and that is engagement, capacity, and continuity (Koch, Polnick, & Irby 2014). In order for girls to be engaged, they must find what interests and motivates them. They also must have an understanding of STEM and what skills are needed to be successful in different disciplines. Finally, they need to have the resources and opportunities available for them to explore and learn within their desired discipline. Out of school programs allow girls to explore their interests "without the constraints of in-school mandates" (Koch, Polnick, & Irby 2014). By using out of school programs we can get girls to work together and help build a support system for them. These girls can help each other build an interest and natural curiosity for STEM. Starting these after school programs at a young age can help raise the number of women with STEM majors as well as raise the number of women in STEM careers.

There are many ways to help girls become interested in STEM disciplines outside of school such as after school programs and support from home. However, one of the biggest hurdles for women in STEM careers lies within the walls of our school systems. Teachers and support staff play a key role in developing programs in STEM that interest young girls. They also are key players in helping our youg female learners in understanding the STEM content and material. Linda Darling Hammond made a list of things that teachers can do to help our students to better understand the material: understand the subject matter, connect learning to student's prior knowledge and experience, instructional strategies so students draw their own conclusions, apply and practice new skills, and how to better engage students. As teachers, we are always learning just like our students. We learn new ways to engage our students and help them learn

content material (Kosh, Polnick, & Irby 2014). In 2003, Sue Rosser published a book on female-friendly activities that teachers could do in their classrooms. She then highlighted how certain activities or teaching methods were geared towards men. As classrooms of girls began to be revealed, it was reported that certain fields of study had a higher rate of discrimination than others. A teacher that is knowledgable and passionate about STEM will capture and inspire our young female learners.

Along with the lack of interest, women face many other difficulties during their education. Discrimination has been happening for years. In 1980, Ruth Hubbard published a book on the discrimination within the field of biology. She discussed how previous medical and psychological studies were only done on males. The findings from those studies were then used to make medical and psychological diagnoses of women, even though women were omitted from the studies. After her book was published, many other women published their own books on discrimination in their fields of STEM and the discrimination in their classes (Kosh, Polnick, & Irby 2014).

There are many problems within the STEM community, but some of them can be solved. The lack of interest can be solved in many ways. Many schools have started after school programs for girls who are interested in STEM. This gives them opportunities to have a supportive and open environment to explore topics of their choosing while also giving them access to these topics. Letting the students explore topics they are interested in helps build a natural curiosity for things they do not understand.

Another way communities are helping girls is by setting up summer programs. In Koch, Polnick, and Irby's book, they look into the different types of programs that can help get girls interested in STEM. One way is by incorporating STEM into service learning. When we connect

STEM fields with helping people around their community, it increases the interest among women and increases the interest among the underrepresented population as well (Koch, Polnick, and Irby 2014). Not only have they combined STEM with service learning, but they have also created summer programs with specific interests in mind. One of them is a robotics program. These programs have been used for years now. They have been implemented into some school systems and they are used as after school and summer programs. One of the big programs that was implemented in schools was the LEGO MINDSTORMS. This program could be implemented in elementary grades as a way to spark interest as well as be used for high school age children. Programs like these help students build on their skills in robotics and build an interest in engineering from a young age. Programs like LEGO MINDSTORMS helps to get our young women interested in STEM careers and reinforces skills necessary to be successful in STEM fields.

Not only do these programs help girls become interested in STEM, but they also help students in general with their academics. A study was done on a group of fifth graders who were representative of Latino students in 2010. These students participated in a robotics program where they were tested on the knowledge ten weeks later. The study found that, after using the program, students had a higher understanding of ratios and proportions when tested ten weeks later. Not only did they have a higher understanding, but they also retained the information longer. Programs like these not only get students engaged, but they can also connect to their academics in school. These studies into the LEGO program only studied short term effects; no longer term affects were studied.

On top of extra programs, there are steps that us as educators can take to help our students. One of the big classes that get girls interest in STEM is mathematics. There are many

ways to teach students mathematics. A few of those ways is by modeling math, collaborative learning, activity-based, manipulatives, and small and whole group discussions. These ways of teaching help students build their own curiosity and learn math in a non-worksheet way (Kosh & Irby 2014). These ways help all students with understanding what will be expected of them in the real world. They will have to work together with other people on real world problems. Providing our young women and girls with real mathematical life experiences helps to provide a concrete base for them to continue in STEM fields.

As a way to fight underrepresentation, places are using Title IX as a way to ensure equal opportunity. In order to get government funding, schools and programs need to adhere to three rules. One of those rules is "The number of available opportunities for each gender must be proportionate to the number of each gender's interest" (Kosh, Polnick, & Irby, pg 76, 2014). This forces schools and programs to give equal opportunities to both males and females. By allowing equal opportunities for all, it allows girls to increase their representation. With more representation, the more women can can fight for equal pay and change the discrimination that surrounds women in STEM.

Regardless of race, women all over have been discriminated against. Koch, Polnick, & Irby researched the evolution of these discriminations. In the 1920's and 1930's, three female scientists who received their graduate degrees were threatened with losing their jobs if they married or started a family. Other female scientists were not hired in laboratories because "they would be a distraction to the men in the laboratory" (Koch, Polnick, & Irby 2014). In 1970, female scientists were struggling with their careers and their families. This imbalance came from the lack of family-friendly policies that were in place. They felt that this issue was not a concern amongst their male counterparts and therefore wasn't being addressed. This made it hard for the

women in these fields and many had to choose between a STEM career and their families (Koch, Polnick, & Irby 2014). “In particular, mothers are often cast in the role of primary caregivers of children, and they are tasked with the job of passing on culture to their children in ways that can help their children succeed” (Koch, Polnick, & Irby 2014). Not only do females struggle with the balance between work and family, their attitudes towards these fields influences their daughters’ perspectives, “As the same-sex role model for girls in the family, mothers may influence their daughters in behavior as well as instruction and may provide both supports and barriers to their daughters along pathways to considering a computer science major.” (Koch, Polnick, & Irby, 2014). Women are influenced by many factors and this “contributes to women’s low participation in science and technology occupations” (Bystydzienski, 2009).

The problem of discrimination is not only in the United States. Authors Ahu That, Mustafa Ozbilgin, and Kusku Fatma conducted a survey in Turkey that interviewed engineering students, professional workers, and banking employees on gender perceptions and stereotypes. The study found that despite Turkey’s “relatively high proportion of female engineering students (34.8%, which is significantly higher than in most of Europe and in the United States), male engineering students reported beliefs that women have lower levels of interest in engineering than men and that women are less suited to engineering fields” (Bystydzienski, 2009). Gender discrimination is built into many different countries around the world. As a society, we need to get rid of the ideas that women are less suited for STEM as well as the many other discriminatory statements that prevent women from joining STEM.

Not only is there a gap between men and women, but there is also a gap between white women and women of color and minorities. A study done by Koch, Polnick, and Irby that followed 3 African American women and their pursuit of STEM degrees found many possible

influences. to purse a degree within STEM. The three women: Danielle, 28, Shomara, 30, and Regina, 34, explained their positive and negative influences which included professors, peers, and family during their schooling experience. The first factor that was researched was the influence of professors. It was reported that all three women had positive interactions with professors. Two of the three women reported remembering a distinct moment or interaction with a professor or school administrator that impacted them neagatively. For Danielle, this neagative interaction occured with her middle school principal. He conveyed to Danielle that he thought that Danielle had "her nose in the air and held her head too high" (Koch, Polnick, Irby, pg 9, 2014). For Shomara. it was her college advisor who told her to change majors after receiving a C in chemistry. Shomara said that she was shocked at the comment and thought about, if she was a male student, would her advisor have said the same thing. Regina said she couldn't remember an exact professor, but she says she, "felt like the sore thumb sticking out" (Koch, Polnick, Irby, pg 9, 2014). None of the three girls reported receiving negative impact from their peers. When it came to parents and other family members' support, both Regina and Danielle felt they had support from their parents. Shomara felt like she did not and explained that her parents couldn't afford to pay for her school. During the interviews, all three women explained that both race and gender played a part in their schooling. Danielle said, "I was stereotyped and labeled… labeled as ghetto… labeled as having an attitude" (Koch, Polnick, & Irby, pg 13, 2014). Shomara stated that "being Black was more significant than being female" (Koch, Polnick, & Irby, pg 14, 2014). Regina found that both race and gender played a role in her education, "she found that her questions during her undergraduate education were sometimes ignored and devalued, whereas questions posed by males were always given priority and answered" (Koch, Polnick, & Irby, pg 14, 2014). These women had both negative and positive experiences and concluded that Regina

had the least negative experience, but "was the least confident" (Koch, Polnick, & Irby, pg 15, 2014). Not only did these women fight gender stereotypes and each pursued a Bachelor of Science, but they also faced the stereotypes of race. The problem that Koch, Polnick, & Irby found was not that the STEM curriculum turned girls away, the problem was the way it was presented and the support and interactions they had with their teachers, peers, and family. From more outside research during this study, they found that "only 1.6%, 0.4%, 1.1%, and 2.3% of African American females initially choose physical science, mathematics/statistics, computer sciences, or engineering, respectively, as a major" (Koch, Polnick, & Irby, 2014). Along with these low numbers, many women claimed that large class sizes discouraged them from joining,

> "Johnson (2007) interviewed 16 Black, Latina, and Native American women enrolled in a large, traditionally White institution (TWI) and reported disturbing results. She found that women were discouraged by the large size of the lecture classes and by asking and answering questions in class. Additionally, they felt negatively impacted by the portrayal 'of science as a gender-, ethnicity- and race-neutral meritocracy' (Johnson, 2007, p. 805)." (Koch, Polnick, & Irby, 2014).

They also found some shocking statistics, "In 2006, of all African American freshmen, 27.6% of males and 16.4% of females intended to major in a STEM field, with the majority (11%) of females choosing biological or agricultural sciences as their major" (Koch, Polnick, & Irby 2014). Along with the difference between men and women they looked into the different levels of degrees among women and found, "in 2007, only 599 African American women in the United States earned bachelor's degrees in the physical sciences (although this represents 57% of all physical science degrees awarded to African Americans). In the same year, African American women earned only 2.2% of doctoral degrees in biology and less than 2% of doctorates in

engineering, computer sciences, physical sciences, and mathematics/statistics combined" (Koch, J., Polnick, B., & Irby, B. J. 2014).

Koch looked into not only African American minorities but looked into how science language impacted 8 Latina students between 7th and 8th grade. These 8 students, who chose names as to keep their real identity a secret, were named Ivette, Maricela, Belinda, Claudine, Teresa, Erica, Coni, and Sophie. Ivette, Maricela, and Belinda were in 7th grade while the rest were in 8th grade. During an observation, the author noted that during class Coni and Sophie would work together in a group on worksheets and work on it in Spanish. The two students said that they were not comfortable speaking publicly during class because they had a fear of being made fun of. Coni stated that, "Sometimes there are some people, because I don't know how to speak real English, better English they make fun of me" (Koch, Polnick, & Irby, pg 48, 2014). These students have to fight through language barriers in order to learn in their STEM courses. This is a major disadvantage for minority female students. These students have to work harder in order to understand the material which may push them away from STEM. Our education system should be helping every student to pursue their passion regardless of obstacles.

Women have begun to increase their representation in most majors; however, the one major that women still can't seem to increase their representation in is computer science. In the last two decades, computer science has seen a decline in women receiving their bachelor's degrees. A study was done and found that the ratios of females to males was actually higher for each non-white ethnic group (Kosh, Polnick, & Irby, 2014). Not only does race play a role into this, but culture and class as well. In Kosh, Polnick, and Irby's book, a woman named Louise Ann Lyon interviewed three mothers whose daughters were computer science majors. They were interviewed on how they influenced their daughters' pursuit of computer science. The three

mothers were asked questions about their daughters' upbringing and how they came to choose their computer science degree. The first mother, Guadalupe, was a migrant farmworker and an immigrant from Mexico whose daughter, Monica, is a computer science major. The second mother, Teresa, was a middle-class Filipina American and a single mother to her daughter Kelsey. The third mother is Ann, a middle-class White elementary teacher and her daughter is Erin. All three mothers agreed that they made educationa priority for their daughters. They all felt that having a strong educational base would open doors to better jobs and in turn a better life. During an interview with Guadalupe, she stated that she wanted her daughter, Monica, to be educated and she had to ignore her Mexican culture in order to become educated. Guadalupe also said she wanted her daughter to ignore the American culture of drinking and partying in college. Ann talked about how she wanted her daughter Erin to be educated in something she enjoyed, but also wanted her to know about being financially secure. All three mothers played a role in their daughters choosing college. Both Teresa and Ann were educated middle class and could help their daughters navigate and choose a major that fit them. However, Guadalupe was an immigrant working class women and because of this could not help her daughter when choosing a specific major.

While we have seen the numbers for African American women, it unfortunately is a similar story for Asian women. In 2008, a study was done by Lilian Wu and Wei Jing that looked into the statistics of doctoral scientists and engineers employed in universities and 4-year colleges and have tenure. This study broke the population up by race and gender. Among women, White women were the highest percentage with 40.2% while Asian women were the lowest with 20.6% (Wu and Jing 2011). Along with Asian and White women, African American women had 32.1% and Hispanic women made up about 30% (Wu and Jing 2011). These

numbers may not look terrible but compared to their male counterparts you can clearly see the gap. White men make up 58.2%, Asian men with 42.3%, African American men with 48.7% and Hispanic men with 50% (Wu and Jing 2011). The researchers then looked at doctoral scientists and engineers employed in universities and 4-year colleges who were full professors and saw that White women had the most with 22.1% then Hispanic women at 16.7%, African American women with 14.3%, and lastly Asian women with only 9.3% (Wu and Jing 2011). Even among women, we can see that Asian women are the smallest percentage and are the least represented. Looking at the male percentage of the same group, we see White men with 43.6%, Hispanic men with 38%, Asian men with 29.1%, and African American men with 25.6% (Wu and Jing 2011). These statistics show that not only do women have lower representation in general, but women of color have to fight even harder to gain representation. This gap between women and men also remains true when looking at the percentage of scientists and engineers employed by the government as well as the percentage of scientists and engineers that hold doctorate degrees and are employed by the government with Asian women making up the lowest percentage.

"Currently, there is relatively equal gender representation in the U.S. workforce, with men representing 52% of the workforce and women 48% (Beede et al., 2011). Approximately 46% of the US workers have college degrees. However, even women with the same degree as men are discriminated against and their work is seen as "less prestigious and is associated with lower compensation" (Lim, 2016). This discrimination and perceived notions about the worth of women's work leads to the wage gap. And yet women's representation in the STEM workforce has remained stagnant over the last decade at 25% (Beede et al., 2011; NSF, 2011). This representation is even less in fields such as physics and engineering" (Koch, Polnick, & Irby 2014). Not only do women have less support during their younger school years, even if they

make it to a career, they are set back with countless boundaries, the first being a pay gap. The pay gap already exists between men and women within the United States. However, in STEM careers, that gap is smaller which means that women earn close to what their male counter parts earn. In Koch, Polnick, and Irby's book which was published in 2014 they look into the pay gap between men and women within STEM careers. They found that in 2011, "Women in the STEM workforce earn 33% more than women in non-STEM careers (Beede et al., 2011)" (Koch, Polnick, & Irby 2014). With women in STEM earning 33% more than women in non-STEM careers, why aren't more women working in STEM? Even earning more money in these careers, the wage gap for women in STEM is 14%. Breaking down these numbers, "in computer and math, the wage gap is 12%, in engineering it is 7%, in physical and life sciences it is 8%, and in general STEM managerial positions it is 9% (Beede et al., 2011)" (Koch & Irby 2014). Even with these better wage's women are still underrepresented in STEM.

The statistics from Koch, Polnick and Irby's book are ten years old and the pay gap does not seem to be improving. In 2015, Silicon Valley paid male workers with a bachelor's degree approximately 90,000 dollars while women with the same education level got paid approximately 56,000 dollars (Lim, 2016). In order to study the pay gap between women and men, Kyung Lim used a human capital style of research and many factors were studied. These factors were college major, gender composition of college major, occupational sector and job-related variables, and personal values and characteristics. The first factor of college major found that "biological and life science majors have the lowest earnings and the greatest female participation (55%)" (Lim, 2016). In 2016, Kyung Lim researched the pay gap among recent STEM graduates. They research found that, among college graduates, women are out paid by 17,000 dollars among engineering careers and 12,000 dollars among biological science majors.

They also found that “popular majors women tend to study within STEM (e.g., biological sciences) are associated with the lowest earnings prospect among the STEM major” (Lim, 2016). Along with college graduates, “women are more likely to experience pay disadvantage associated with family formation (i.e., getting married and having children) and are less likely to be promoted at work than men” (Lim, 2016). All of this leads to the pay gap between men and women within STEM careers. Even when women try to negotiate their salaries, they are penalized for it and are seen as greedy while a man who negotiates is not penalized and seen as assertive. “Successful women are more likely to be disliked or personally criticized than an equally successful man” (Lim, 2016, p. 19). Women are often negatively impacted by things that men are positively impacted by. For example, many women are negatively impacted by having children while “men with children enjoy pay advantages over men without children” (Lim, 2016, p. 28). Lim found that men earn approximately 3.3% higher per each additional child. Pay gaps like this discourage women to pursue careers in STEM. It also makes women chose between having a family and having a career in STEM. This is a decision women may have to make that their male counterparts do not. This is yet another reason why that women are underrepresented in STEM.

In 2011, a study was done comparing salaries of various majors. It found that within engineering men made on average 79,000 dollars and women made on average 62,000 dollars while women only occupied 16% of the engineering workforce (Lim, 2016, p. 22). Such a small number of women are represented in the engineering majors and yet the average pay gap is 17,000 dollars. In computer and mathematics majors it found that men on average made 73,000 dollars while women made on average 60,000 dollars and women only occupied 31% of the workforce (Lim, 2016, p. 22). While women occupy more of the computer and mathematics

majors there is still on average a 13,000 dollar pay gap. In physical sciences men made on average 65,000 dollars and women made on average 48,000 while women occupied 42% of this workforce (Lim, 2016, p. 22). In physical sciences, women occupy even more of this major but on average there is a 17,000 dollar pay gap. This pay gap is larger than the computer and mathematics majors where women only make up 31%. Lastly, in biology and life science, men made on average 57,000 dollars while women made on average 45,000 dollars and occupied 55% of this workforce (Lim, 2016, p. 22). Biology has the highest percentage of women who occupy the majors that were studied and yet there is still a 12,000-dollar difference between the average amount a man makes versus a woman. These numbers show the gap between men and women very clearly. Even when women occupy more than half of that major, they are still underpaid compared to their male colleagues.

Not only did K. Lim look into the actual pay gap, but they also looked into factors that could affect this pay gap. Another remarkable finding was that sometimes if women start to enter a specific field then the fields overall pay decreases. However, this topic was not talked about much as it was not the main focus of the research. Along with this, they also found that women were less likely to be promoted at work. With women not being promoted the wage gap gets bigger, “gender pay gap starts at the beginning of their career and typically widens over time” (Lim, 2016, p. 11). They found that not only were women less likely to get promoted, but the gap was wider among advanced degree holders. For women, having any post-graduate certification or degree was found to have a positive and significant impact on their salary. In men, however, only a master’s level degree showed significant increase in salary, approximately 11.5%. The gap also increases as age increases, “the gap increases for older cohorts of workers, as men’s median salary is almost 60% larger than that of women ages 45-49” (Lim, 2016, p. 33). Along

with this, it was found that women were more likely to have part-time positions than men (Lim, 2016). This pay gap between full time positions and part time positions also factors into the overall pay gap. Another factor that Lim found that affected women was the connection between their parents' income and their income. If their parents earned more and the women came from a higher socioeconomic class, then the women were more likely to make more money.

Throughout all of my research the experts all agree that society needs more women within STEM careers. Overall, our education system needs to be revamped to encourage women to pursue STEM degrees in college, but even more importantly, to reach our youngest girls in their early years of education. Along with schools, society needs to change and understand that women should not be the backbone of the household. Women have a hard time balancing home and work life because society believes women should stay home. Society has started to change, and more men are staying home with the children. There is also a more cooperative outlook in households. Families are becoming a place where both parents are productive in their careers and share equal demands on the home front. As time goes on hopefully society will become more accepting and get rid of gender norms. "Women and girls need to see female role models in the workplace that look like them" (Davis). By having women in STEM careers, it will inspire other women to pursue that field and the representation of women in STEM will grow.

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