



# Gender's Impact on Majors in Higher Education: The Causes and the Consequences

*This paper looks at gender segregation in higher education. I am examining why certain majors are perceived as feminine and masculine, and what students experience when they study fields that do not socially align with their gender. I also summarize the impact gender socialization has on men and women choosing their fields of study and the consequences higher education gender segregation has beyond college. Feminine and masculine should not be labels affiliated with majors and they should not be a precursor for determining the value of majors.*

I am tired of the phrase “It is what it is.” I do not accept that gender segregation in higher education “is what it is” when the effects it has on students are extensive. I am tired of highly important fields of study being demoted because they are “feminine” majors. I am a woman who is a part of two of these majors that are deemed feminine, social work and women and gender studies, and I have experienced the consistent devaluation of majors that are perceived as less worthy of students’ time. Yes, I am indeed tired of this devaluation and this gender segregation. As Madeline Albright (2010) said, “It took me quite a long time to develop a voice, and now that I have it, I am not going to be silent” (para. 30). I *must* speak up about inequalities that are persistent in our culture and have an extensive impact.

This paper looks at the gender segregation in higher education. Within this, I am interested in examining why certain majors are perceived as feminine and masculine, and what students experience when they study fields that do not socially align with their gender. I also summarize the impact gender socialization has on men and women choosing their fields of study, and the consequences higher education gender segregation has beyond college. Feminine and masculine should not be labels affiliated with majors, and they should not be a precursor for determining the value of majors. Gender segregation in college majors has an impact on students' experiences and on students' futures. Simply put, there should be no divide based on gender or based on perceptions of what gender stands for as coded onto what we study and learn. Gender is not a synonym for "less" or "more" in what we study in higher education.

### **Gender Socialization Preceding College**

Gender segregation, in fields of study in college, starts before students ever get to college. It starts with gender socialization. In order to understand gender socialization, it is important to have a working definition of what gender itself is.

Gender is the social status and personal identification of being feminine and/or masculine (Lorber, 2001). It is intertwined with privilege and oppression, with boys and men collectively experiencing more privilege and girls and women collectively experiencing more oppression (Launius & Hassel, 2015). Although there is a large spectrum of gender, I am focusing solely on girl/woman and boy/man genders because of the lack of acknowledgement or knowledge of other genders in fields of study in higher education. I am looking at gender using a binary lens to understand how this shapes college majors and the consequences of this segregation beyond college.

Gender is taught and internalized through interacting with others and learning from direct and indirect feedback from others (Fausto-Sterling, 2000). Gender is something that is both taught and learned, which is referred to as gender socialization (Fausto-Sterling, 2000). Gender socialization is the lifelong process that begins in infancy when people learn what it means to "do gender" in socially expected ways (Launius & Hassel, 2015). As Simone de Beauvoir (1949) argued, one is not born a woman, but rather, becomes one. Gender is assigned to children and they are then taught how to perform the

gender or do gender (Butler, 1999). Teaching how to do gender comes from gender performativity, which Butler (1999) states is the ways in which society expects men and women to behave in terms of masculinity and femininity. This gender performativity leads to gender socialization, which leads to doing gender. Boys learn that to be masculine they should be assertive, strong, unexpressive, protective, self-oriented, and in control (Launius & Hassel, 2015). Girls learn to nurture, be expressive, and to function in a world that puts boys and men in positions of authority and control. This learning becomes “doing” gender early on.

Everyone is taught how to do gender at an early age, which causes gender to seem natural starting at this very early age (Lorber, 2001; West & Zimmerman, 1987). Throughout my childhood, I played with dolls and stuffed animals. In fact, I had a collection of dolls I played with daily. I dressed them, had them interact with one another, had them work (as either teachers, hairdressers, or store clerks), and I pretended the dolls were parents. What does a doll teach a girl about gender? What does a truck teach a boy about gender? Toys are an aspect of gender socialization and have an impact, even slight, on life trajectories (Fausto-Sterling, 2000). I cannot help but wonder if the toys that I played with

were cars, would I have internalized femininity less?

Parents and other important people in children’s lives also have a gender-biased perception of what their children can do, the types of activities at which they might excel, and the sorts of things with which they might struggle (Oschsenfeld, 2016). For example, boys are often socialized not to show emotion or cry, behaviors that are characteristically associated with femininity. This pressure is not the same for girls. When I was younger, I was often encouraged to express my feelings. At times, I was so expressive, I was given what my parents called “Kelsi’s alone time” in order to calm down. This gave me an unlimited amount of time to work through my feelings. I also was taken to counseling with my mom starting at a young age to unpack some of my feelings. This gave me an environment to have full freedom to express my emotions. Why was I given so many opportunities to be emotional and do so in healthy ways? There was no pressure for me to withhold my emotions and tears. Maybe my gender played a role in this, whether or not this was a conscious thought process of my parents. All of this, and more, is a part of gender socialization. Gender socialization does not stop after children are no longer young, but continues throughout adolescence, including in education preceding college. Because of

societal reinforcements, many boys feel more confident in their math skills, a learning trait stereotypically linked with boys and masculinity (Oschenfield, 2016).

Conversely, and again because of societal reinforcements about learning traits, many girls in middle and high school seek out fields that use language and the arts and have less confidence and interest in mathematics (Morgan, Gelbgiser, & Weeden, 2013). Because of this, boys are involved in math courses more than girls, who are more likely to study other courses, particularly ones that are “people-oriented,” such as history, art, music, and English (Oschenfield, 2016). This divide in what courses boys and girls want to study leads to some boys cultivating more skills in mathematics (Dickson, 2010). Figure 1 depicts the number of boys and girls who took advanced placement tests in mathematics and science in 2009 (Hill, Corbett, & St. Rose, 2010). A significantly higher number of boys took tests in calculus, chemistry, physics, and computer science (Hill, Corbett, & St. Rose, 2010).

This impacts the desired fields of study boys and girls have when entering college (Dickson, 2010). This is referred to as the “science pipeline,” as science and math fields of study are in part determined by the science and math classes boys and girls take in middle and

high school (Morgan et al., 2013). Boys are more likely to enter this science pipeline, but when girls do enter the science pipeline, it tends to become a “leaking” pipeline because there is an increased likelihood of “dropping out along the way” (Morgan et al., 2013).

The science pipeline makes me think of a relative of mine. He is a nineteen-year-old man who was very successful in high school in all of his courses, but particularly his science and math courses. For example, he received a five out of five on his Advanced Placement Calculus and Biology tests, a 100 percent on his Chemistry Regents, and a 94 percent on his Physics Regents exam. He is now going to college to study data science. His success in mathematics and science courses in secondary school, in part, led to him choosing this collegiate field of study. This exemplifies the science pipeline.

Gender socialization in education goes beyond who wants to take math and science courses. It also portrays itself within the future goals and familial values boys and girls have. Adolescent girls respond at higher rates about having a family being important to them in the future than adolescent boys (Morgan et al., 2013). Adolescent boys are continuously socialized to not be nurturing or at least not display these qualities. This leads adolescent boys to be less interested, or at least less likely to

## Students Taking Advanced Placement Tests in Mathematics and Science, by Gender, 2009.

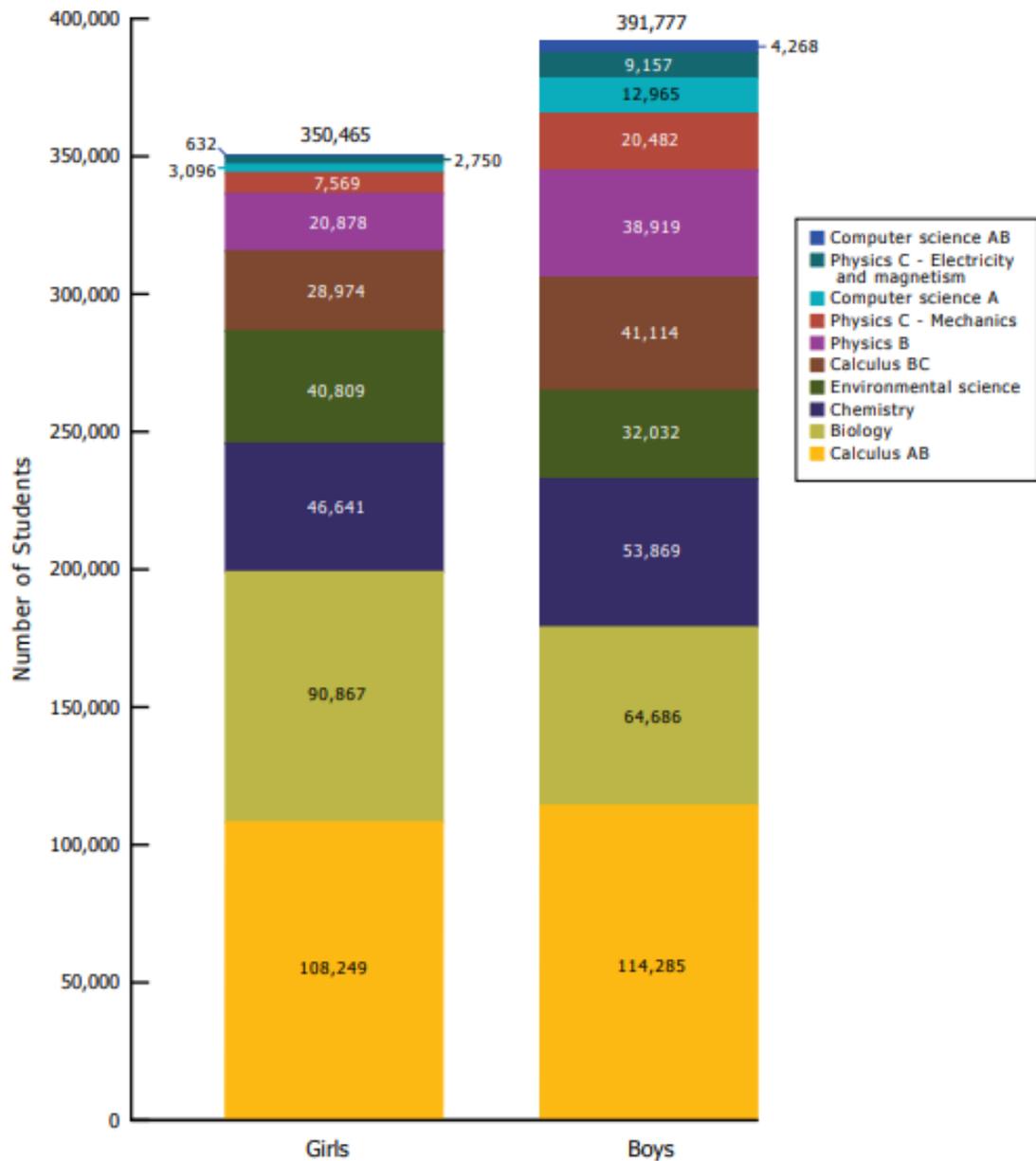


Figure 1. From *Why So Few? Women in Science, Technology, Engineering, and Mathematics*, by C. Hill, C. Corbett, and A. St. Rose, 2010, p. 6. Copyright (c) 2010 by the AAUW ([www.aauw.org](http://www.aauw.org)).

express interest, in caregiving and helping behaviors (Reigle-Crumb, King, & Moore, 2016). This impacts who goes into fields of study in college that are centered on care work. This also directly contributes to the gender socialization and subsequent gender segregation in fields of study that men and women pursue.

Constant gender socialization that starts and continues throughout childhood and adolescence leads to gendered interests and self-perceptions (Oschenfeld, 2016). This gender socialization subjects boys and girls to “ongoing, subtle, and yet powerful pressures to conform” (Morgan et al., 2013, p. 991). This pressure can be seen within fields of study within higher education.

### **Majors are Perceived as Gendered**

Majors are not feminine or masculine just because of what major men and women students study. Majors are perceived as feminine and masculine because they go along with societal norms of femininity and masculinity to a certain degree (Beutel, Burge, & Borden, 2017). The masculine and feminine binary within our society leads to fields of study being constrained by this binary (Butler, 1999). “Cultural norms, stereotypes, and beliefs about gender shape perceptions of fields of study” (Beutel et al., 2017, p. 3). For

example, one gender stereotype of women is that they are caring and nurturing. Majors deemed feminine often emphasize this and other gender stereotypes and beliefs about femininity. Therefore, these majors are not feminine or masculine in and of themselves, but rather, they encompass elements that our society labels as feminine or masculine.

Beutel et al. (2017) say there is a divide within college majors, where on one side, majors align with the feminine quality of caregiving, and on the other side, majors align with the masculine quality of technicality. Majors within the arts and humanities discipline are often associated with emotions, culturally linked with women (Beutel et al., 2017). For example, the social work major is an accredited field of study for a profession that is about assisting those in need, which is often deemed emotional and nurturing work. This closely aligns with behaviors associated with femininity. Conversely, physical science majors are associated with objectivity and instrumentality, which are cultural stereotypes of men and masculinity (Beutel et al., 2017).

Majors do not only become perceived as either feminine or masculine, but are also ranked based on the gender they are associated with. Ranking by gender is common within institutions and higher education institutions are no different

(Butler, 1999). The fields of study that are associated with masculine cultural stereotypes are ranked higher than majors that are associated with feminine cultural stereotypes. The field of study of computer science, for instance, is higher within the “gender hierarchy” than the field of study of women and gender studies within our society (Butler, 1999). Society attaches more value, prestige, and capital to computer science than to women and gender studies.

How do majors continue to be perceived as feminine or masculine? There is often a rationality within our society that the gender binary is normal or natural (Butler, 1999). Have you ever heard that boys will be boys and girls will be girls? This is really saying that ‘It is what it is.’ These rationales are a part of what allows majors to continue to be perceived as feminine or masculine. By allowing cultural norms and stereotypes regarding gender to persist, gender segregation within fields of study persist (Beutel et al., 2017). This is furthered by women and men continuously choosing fields of study that have been deemed feminine and masculine respectively. These students are doing gender by picking majors that are perceived to align with their own gender (Beutel et al., 2017). Choices of college majors are structured choices, shaped by our socialization processes, the roles we imagine ourselves occupying later in life,

pressures from peer groups, social institutions, and much more.

### **Students’ Experiences within Gendered Majors**

Despite women attending colleges and universities at increasingly higher rates than any prior points in history, and at higher rates than men, there is still extreme segregation within majors being studied within college. The majority of women study social sciences, health, and education in the United States (Zafar, 2013). Men, on the other hand, dominate computer science and engineering (Zafar, 2013). When I looked at the gender makeup of majors at my own college, The College at Brockport, I found similar statistics.

I gathered data about gender within majors from the Office of Institutional Research and Analysis at The College at Brockport, State University of New York. The data is from the fall of 2014, as this was the last year that the College published information regarding gender and majors. Figure 2 shows that the majors most dominated by women at Brockport in 2014 were nursing, dance, social work, psychology, and women and gender studies, while the majors most dominated by men at Brockport were computer science, physics, finance, philosophy, and sports management (The College at Brockport, 2015).

Very few women choose to major in

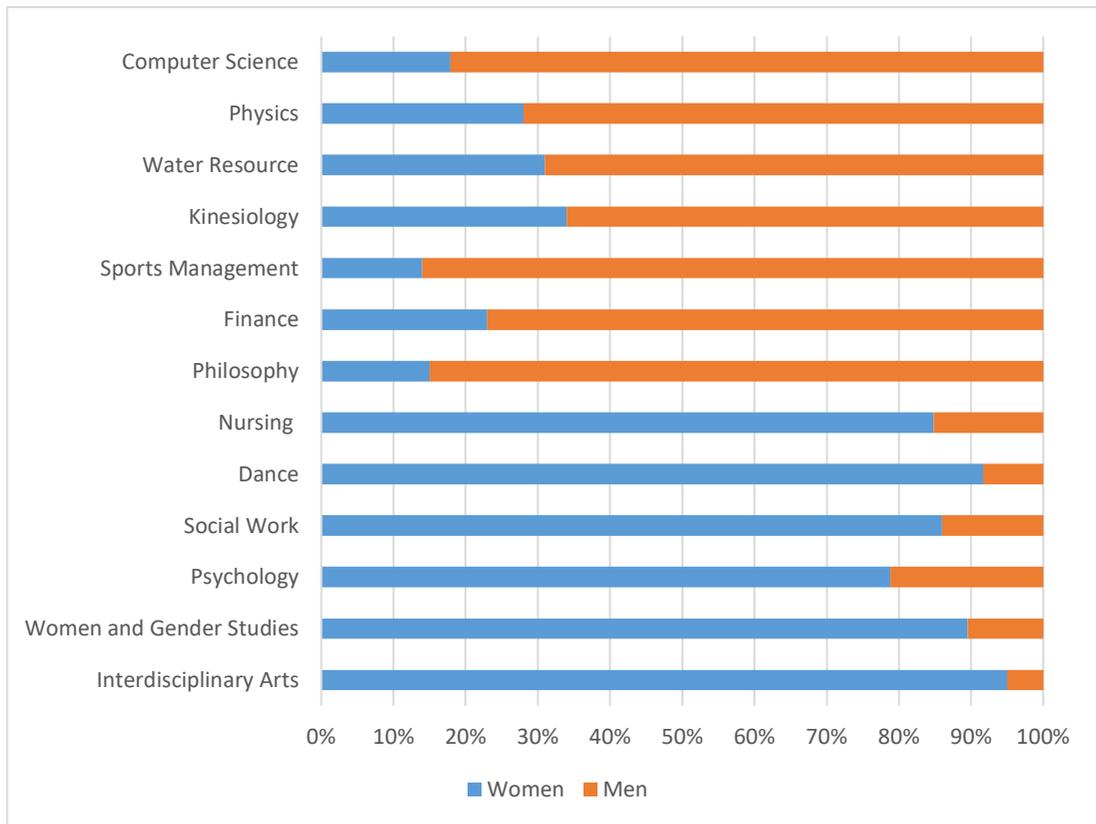


Figure 2. Gender Composition of Majors at The College at Brockport, State University of New York, in Fall 2014.

fields where men are dominant, and the same is true of men in majors where women are dominant. For instance, Olson (2014) found in computer science classes, a heavily man-dominated field, the ratio of men to women is eight to two. Men are also two times as likely to select a major that is science, technology, engineering, or math-based; women are more than three times as likely to choose health and care majors (Morgan et al., 2013). As I previously discussed, my male relative falls within this statistic, as he selected data science. On the other hand, I am part of the latter statistic, a

woman in two majors perceived as caring (social work and women and gender studies).

Women in majors dominated by men often face what scholars refer to as the “chilly climate.” Scholars describe chilly climate as an environment where interactions within the environment are uncomfortable and discouraging to women (Reigle-Crumb et al., 2016). This can be displayed in many ways, such as when departments establish different expectations based on gender. A chilly climate exists when faculty or other students make negative comments about

the intelligence of women, or when class discussions and activities lack inclusion of women (Reigle-Crumb et al., 2016). My friend, a female student majoring in chemistry, has continuously experienced this. She will often not be called on within her classes, though the men in her classes are. Her professors have also made comments in a direct manner about how women are less capable in the field of chemistry. These comments are often made in front of entire classes, but are also made during one-on-one interactions. Imagine the feelings attached to being made to feel incompetent within your classes *simply* because of your gender. Imagine the toll this takes mentally and physically after hearing it class after class, semester after semester.

The existence of a chilly climate within majors dominated by men leads women to switch majors of study at higher rates than women do in other majors (Reigle-Crumb et al., 2016). In fact, Dickson (2010) found in terms of engineering and computer science majors, “white women are almost 19 percentage points more likely than white men to switch majors” (p. 119). This exemplifies gender inequality, situating women as at a disadvantage (Lorber, 2001).

Women in fields dominated by men are not only deterred by a chilly climate, they also are strongly deterred by “stereotype threat.” Even if there is no

chilly climate, stereotypes about men’s and women’s natural abilities impacts not only academic confidence of men and women in “gender transgressive” fields of study, but their performance, as well (Reigle-Crumb et al., 2016). Ideas of what a woman and man should be or can do are so ingrained into all of our minds, that we can even be the ones enacting gender socialization onto ourselves, which is Butler’s (1999) gender performativity thinking in action. For example, a woman in a major dominated by men might experience stereotype threat when internalizing notions that they are supposed to be working towards a career that is nurturing. Akin to Butler (1999), we keep doing gender even in our thoughts pertaining to fields of study. This stereotype threat can exhibit the severity of gender socialization within our society. Women’s ability to advance in majors dominated by men is blocked by, among other things, the chilly climate and stereotype threats (Lorber, 2001).

Challenges within majors that do not align with students’ own gender is not only limited to women in majors dominated by men. Men in majors where women are dominant also report negative experiences. Granted, the negative interactions these men experience may be to a lesser degree than the woman students talked about above. However, many men face gender

devaluation when pursuing majors and fields of work stereotypically feminine. Gender devaluation in this case is when men are seen as less manly because of interactions and choices they make (Reigle-Crumb et al., 2016). In terms of college majors, many men within majors dominated by women face the stigma of choosing majors that are seen as less valuable or that will generate less wealth (Reigle-Crumb et al., 2016). Men also face social repercussions for appearing to reject the higher status awarded to men and male-dominated fields of study (Reigle-Crumb et al., 2016). Gender devaluation for men in majors dominated by women is caused by others thinking men are not being masculine enough. Simply put, men's worth is decreased when their fields of study is perceived as feminine. Do you see the problem here? Majors perceived as feminine are seen as less valuable, which society says is not a characteristic for men, but rather, for women.

The difference in men and women's experiences in gender transgressive majors, however, is also different in an important way. Men's negative experiences in feminine majors occur largely *outside* of the classroom and major. They have to do with cultural stereotypes that shape "feminine" majors as emasculating options for men. Conversely, women's negative experiences in masculine majors occur

*inside* the classroom and major as well. So, while the experiences of both men and women in gender transgressive majors are negative, they are not equivalent.

### **The After Effects**

What men and women study in college goes beyond gender segregation within higher education. Gender segregation plays a critical role in helping to reproduce occupational sex segregation (Lorber, 2001). This gendered division of labor is equated with how our society is structured, with men at the top of the societal hierarchy (Hartmann, 1976); it reflects how gender is reinforced within our society (Launius & Hassel, 2015). Women are disproportionately concentrated in fields that have lower earnings than men (Fausto-Sterling, 2000; Ma, 2009). For example, one of my majors is social work, and I will be a social worker in the near future. I will work in a field where women are dominant in a career that has significantly less value in our society than other careers. I will make significantly less money as a social worker compared to a natural scientist, too. Why? Less capital is invested in occupations our society deems less valuable, and social work is one of these.

The gender wage gap is due, in part, to gender segregation throughout college education. Who studies what affects who has what job, which impacts pay,

among other things. Ochsensfeld (2016) notes,

Since the choice of a college major strongly determines a person's occupational trajectory, and the distribution of women and men across disciplines is both remarkably unequal and inert, sex segregation across fields of study contributes significantly to the separation of women from men in the labor market (p. 117).

Gender segregation by field of study is an important factor contributing to occupational segregation after students leave school.

A person's human capital investment, such as their educational attainment, impacts occupations and wages (Shauman, 2005). Women are less likely to choose fields that are associated with higher-paying occupations (Shauman, 2005). I am one of these women as my chosen profession is social work. According to the Bureau of Labor Statistics (2017) the average annual amount of money a person in the Community and Social Service Occupations field earns, which social worker falls under, is \$48,050 (Bureau of Labor Statistics, 2017). That is quite a bit less than the wages of careers dominated by men. In fact, the average annual salary of a career in Computer and Mathematical Occupations, dominated by men, has the annual income of \$89,810 (U.S. Department of Labor,

Bureau of Labor Statistics, 2017). When I chose social work as my major three years ago, the wages associated with this career were not a deterrent for me. The pay was not important in comparison to me doing something impactful, something I truly wanted to do. I may have chosen fields that are associated with lower paying occupations, but I know I chose a field that will reward me in other ways that I find more important. These compensating differentials, which are the rewards that are increased to make up for unpleasant aspects of work, such as earnings of social workers, are the empowerment and self-satisfaction of assisting others grow. However, my decision making process for choosing my college major and future career was impacted by gender socialization. Money was less important to me than helping others. This attitude aligns with the stereotypes associated with gender: women are expected -- and taught -- to care for others.

Women dominate careers as nurses, teachers, and other caring professionals, careers associated with nurturing and emotional characteristics (Hegewisch, Liepmann, Hayes, & Hartmann, 2010). The careers that align with the majors most dominated by men, like computer science and engineering, continue to be dominated by men. Figure 3 shows the compositions of gender within occupations in the United States and

utilizes data from the U.S. Department of Labor, Bureau of Labor Statistics (2018). The gender wage gap is highest among those who have earned a bachelor's degree (U.S. Department of Labor, Women's Bureau, 2017). Men who have at least a bachelor's degree earn more than women with the same educational attainment (Women's Bureau, 2017). Women who have a college education earn only 74.3 cents for every dollar men earn (Shauman, 2005). This is in comparison to all women workers, who earn 77.8 cents to every dollar all men workers earn (Shauman, 2005). The gender wage gap widens among women of color where, for example, African American women earn 64 cents and Hispanic women, 54

cents, compared to the white male dollar (AAUW, 2018). As a whole, women of all races will earn less no matter their educational attainment, but the disparity increases as their educational attainment increases. For example, a woman with a high school degree will earn 78 percent of what a man with a high school degree earns, while a woman with a bachelor's degree or higher will earn 74 percent of what a man with the same educational attainment will (AAUW, 2018).

Earnings are the highest within computer science, engineering, business, and management fields (Zafar, 2013), which are disproportionately the fields men study in college. The lowest earnings are within the fields of social sciences, life sciences, humanities, and

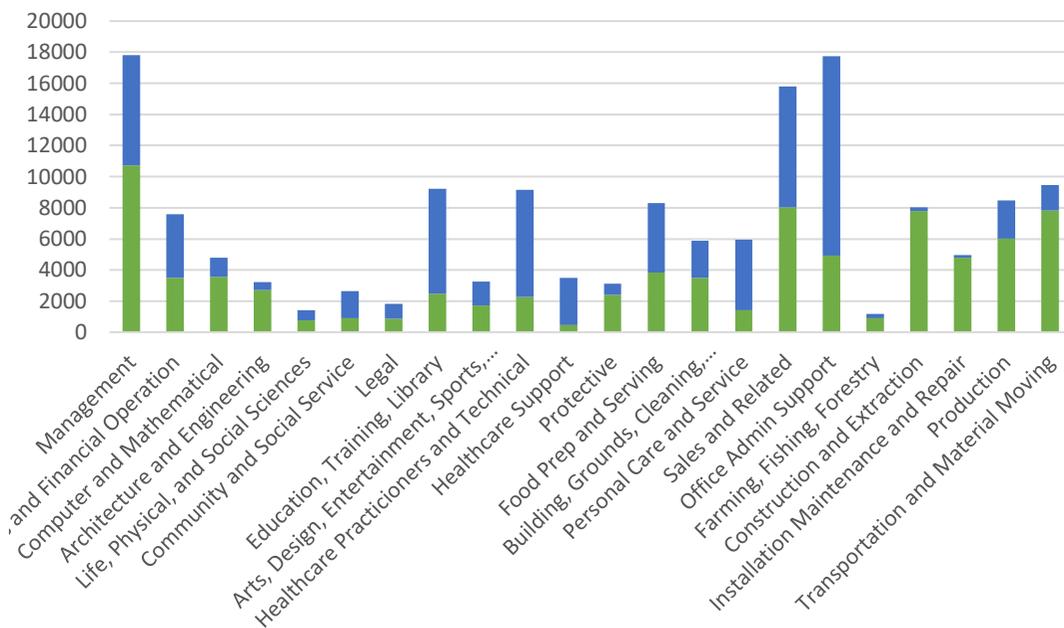


Figure 3. Annual Averages of Employed Men and Women by Occupation in 2017 (U.S. Department of Labor, Bureau of Labor Statistics, 2018).

education (Lorber, 2001; Zafar, 2013), which are conversely disproportionately the fields women study in college. This is sometimes referred to as the “ghettoization” of women workers, as women continue to work in low-paying occupations, which often have poorer working conditions (Lorber 2001; Shauman 2006). This is despite having higher rates of college attendance and graduation. Some social workers have extremely high caseloads of twenty or more clients. Would you consider this an example of a low-wage, poor working condition?

### **Conclusion**

Gender follows us throughout our lives and impacts our experiences, decision-making processes, and our life trajectories. We are socialized to be and to *do* a certain gender. After years and years of this, socially constructed ideas of femininity and masculinity are internalized. One way this becomes visible within our society is the majors’ men and women choose in higher education. Women typically choose fields of study that are perceived as feminine and men typically choose fields of study that are perceived as masculine. This gender segregation leads to different experiences as students. It leads to different careers and different wages. It leads to gender segregation to

continue throughout people’s lives and gender to be continuously done and redone so that we reinforce gender and the gender binary as the gender performativity that Butler (1999) theorizes.

It is time that we stop accepting things as they are, as things that cannot be changed. It is time we starting asking the difficult questions we, as a society, do not want to answer, or do not even want to ask in the first place. Gender is impactful. It impacts who we are, what we study, and what our careers look like. And it is our society that prescribes all of this. It is time we tackle gender roles, norms, and stereotypes head on.

If you are in a major that is predominantly comprised of men or women, ask why this is and think of how others could be more included and welcomed. If you are being paid more or less than someone who is the opposite gender, ask why, and then start a dialogue with others around you. If you feel confined by your gender within your everyday life, or more specifically, within your education or work, ask yourself why you feel this way and what you and your support system can do about it. “Your silence will not protect you’... But your silence could protect them” (Ahmed, 2017, p. 260). Do not stay silent and do not simply accept things as they are. Demand the demolition of gender

norming, which creates gender segregation in higher education and career choice.

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