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Women in STEM: Past & Present

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THE LIVES OF COLLEGE WOMEN

Lead, Like a Girl

By Aislynn Martin



"Girlboss": The neologism that acts as a façade for women's empowerment. This term was first introduced in 2014 by Sophia Amoruso, author of *#Girlboss*. This

book tells Amoruso's inspirational story of how she built a business from the ground up and in turn became, as she writes, a "girlboss." While her story is commendable and the initial intention of the girlboss movement was good, the culture around this movement revealed something toxic. Instead of just being called leaders, entrepreneurs, successful people or just plain-old bosses, women were given their own word — say it with me — "girlboss." What seems like a harmless composite hides hard, sexist undertones and keeps women separate. After all, no one ever has to say, "#Boyboss."

As it stands today, "the girlboss went from iconic to ironic," author Abby Snyder writes for *The Michigan Daily*. What was once seen as a compliment has become an insult, and rightfully so. Implications that women needed their own word and space to be a boss is sexist because it segregates women by their sex in a place where sex should not matter. Not to mention, the word and movement place unobtainable standards onto women of how to perform if they want to be successful. Be fierce, but not angry. Be firm, but not

mean. Break barriers, but do it politely. And remember, if you're overwhelmed, you're probably just not "hustling" hard enough.

Women being held to higher standards is nothing new, but it is especially prevalent with women in leadership positions. In fact, a study by the Pew Research Center found that when asked "Why Aren't More Women in Top Business Positions?", one-third of men and one-half of the women agreed that women are held to higher standards than men and therefore must work harder to become leaders. Yet, 71% of participants in this same study agreed that it is time for more changes to be made in regards to equality of men and women leaders. But still, numbers from *catalyst.org* show that only 6.2% of CEO positions in major companies are held by women, meaning men make up the other 93.3% of CEOs. There are more US CEOs named James than there are women CEOs. What could be a reason for this lack of more women in leadership?

Studies have suggested that the gap starts at least as early as you choose your college major, but this is not the whole picture. Often, there are more underlying issues that keep women out of leadership, beyond college major or career path. Social work, for example, is a female-dominated college major and profession. Ph.D. candidate Alyssa Middleton with the University of Louisville found that in the field of social work, which is approximately 85% female, men still serve as leaders in disproportional rates, and women are promoted significantly slower

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Women in STEM: Past & Present

By Kiana Haynes, Iroda Abdullaeva, and Subha Pratihara, Ph.D.
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“That there is a ‘problem’ with women and science is a truth universally acknowledged” Claire G. Jones and Sue Hawkins write for a Notes and Records editorial for the Royal Society, the premier scientific research organization in the UK.¹ The UNESCO Institute for Statistics data shows that only 30% of the researchers in STEM active worldwide are women. In the U.S., the numbers of women working in STEM are equally dismal; even though women make up half the U.S. workforce, only 28% are employed in STEM careers, making

up an even smaller portion of those working in engineering (15%) and computer and mathematical sciences (26%).

This disparity is deep-rooted in our society. Throughout history, women have been erased through deliberate practices that forbid their education, restricted wages, and refused titles due to the singular convergent reason of common prejudice against their gender. For example, Rosalind Franklin, a chemist and X-ray crystallographer, made an unparalleled contribution to the development of the first structural model of DNA through X-ray diffraction and molecular crystallographic studies. The work was ultimately stolen, violating her fundamental rights of ownership, when Francis Crick, James Watson, and Maurice Wilkins received the Nobel Prize for discovery of DNA structure in 1962, but Franklin was never even nominated. In this instance, as in countless others, women scientists were not recognized and were displaced from the scientific community.

Persevering through targeted erasure, women scientists have exercised their brilliance and fought men’s self-proclaimed monopoly on scientific discovery. Women face additional discrimination based on class, race and ethnicity. Their achievements should be remembered and shared. Table 1 summarizes only a few of these spectacular women who have inspired the authors, but their achievements are just the tip of the iceberg. These women have carved their identities into a society that refused to see their value and are strong role models to inspire future generations.

Figure 1. Students in Science at TTU, 2015—2021.

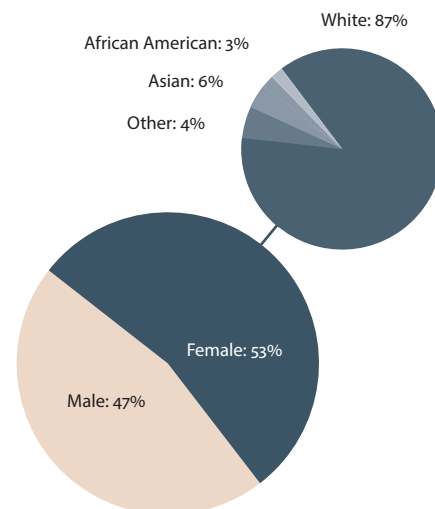
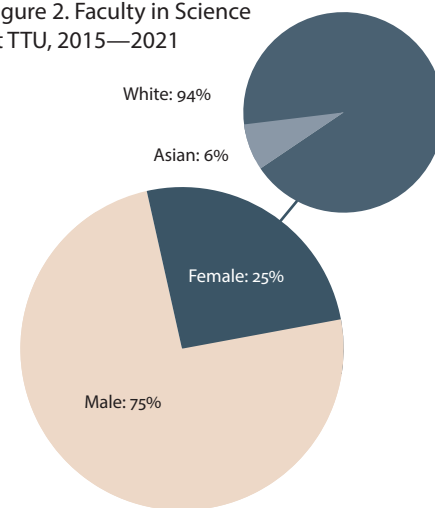


Figure 2. Faculty in Science at TTU, 2015—2021



Letter from the Editors

Rachel Pearson &
Hailey Kincer

College is a huge turning point in anyone’s life. It takes you from being a child to a woman (if you identify that way), as we become adults who are independent, developing careers and finding ourselves more and more. College is also a time to explore and become the person—and for us, the woman—we want to be.

There is a huge need to bring awareness the struggles that women and gender minorities face when it comes to their position in college and in the workforce. The transition from one to the other isn’t easy, especially depending on the career field. Women and gender minorities need to receive the same

Contemporary Issues

In the past few decades, the gender gap has narrowed for science and math education in K12 inside the United States as it has in the world. The U.S. Department of Education statistics from 2007 show that almost equal numbers of male and female students complete high school education in STEM. Nonetheless, a greater issue still remains: society’s powerful gender role stereotypes. Statistics show the rate of STEM courses taken by female students drop off significantly at the higher education levels. Although girls and young women display the same aptitude for science and math skills as boys and young men, they do “differ in their interest, confidence, and sense of belonging” in STEM, leading to lower participation rates in those fields, according to the 2022 report on The State of Girls and Women in STEM by the National Girls Collaborative Project.

Tennessee Tech reflects the gender and racial disparities that characterize STEM internationally. The authors have collected data about science students and faculty in Tennessee Tech University for this article. The figures at left compare students (undergraduate, masters and graduate program) and faculty in the Department of Chemistry. Data was acquired for the last six academic years (2015 to 2021) and includes gender, race and ethnicity.

Figure 1 represents the classification

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Table 1. Remarkable Women Scientists^{2,4,5}

SCIENTIST/RESEARCHER		SPECIALTY/ AFFILIATION	MOST NOTABLE CONTRIBUTIONS
Andrea Ghez b. 1965		Astrophysicist University of California, Los Angeles, CA, USA	Won the Nobel Prize (2020) in Physics with two other scientists for their discovery of a supermassive compact object in the Milky way's galactic center. She is the fourth woman to win the Nobel Prize in Physics.
Donna Strickland b. 1959		Optical Physicist University of Waterloo, Waterloo, Canada	Received the Nobel Prize (2018) in optics -shared by three other male scientists- for her contribution in developing methodologies of generating and amplifying ultra-short laser pulses. She is the first full-time female professor in physics at the University of Waterloo.
Mary Jackson 1921–2005		Aeronautical Engineer National Aeronautics and Space Administration (NASA), USA	First African American woman who worked as a NASA engineer, contributing to Project Mercury during the Space Race. Her research was focused the supersonic pressure tunnel around the airplanes. She served as the manager of women's program at NASA (1979-1985), fighting against the gender and racial disparity in science and engineering.
Asima Chatterjee 1917—2006		Organic Chemist University of Calcutta, India	First woman to receive a Doctor of Science from an Indian University, British India and the first woman President of the Indian Science Congress. She studied natural products from plants in the Indian subcontinent and their medicinal values. She developed anti-epileptic and anti-malarial drugs using medicinal plants in India, and published around 400 scientific papers.

resources, support, respect and enthusiasm that men enjoy in that journey, not just from other women, but everyone. Making people aware of the extra work required just to attain equality when someone is part of a minority group may help eliminate some of those unnecessary challenges.

The topics we chose to write about in this issue emphasize different aspects of our lives in college, whether it be sexual liberation, growing more confident, getting mental health and advocacy support we could need or understanding the issues that women can face while pursuing their education. While everyone’s experience is unique, we do face collective challeng-

es and we’re better off tackling them together.

Here at the Women’s Center, we always want to bring the issues that matter to you to the forefront. So, what do you think matters to the lives of college women? Reach out to us with an article idea or theme for our next issue! ✦

—Rachel Pearson & Hailey Kincer

Not Imposters

By Nicki Parish

Being a graduate student is hard on its own. Constantly fighting the confidence issues, microaggressions from superiors or non-minority colleagues and imposter syndrome that sometimes accompanies being a gender or racial minority in higher education can feel unbearable at times. Imposter syndrome is “doubting your abilities and feeling like a fraud,” and studies have found that this phenomenon disproportionately affects high-achieving individuals. Imposter syndrome can stem from confidence issues, internalized discrimination from gender-, racial- and ethnic-based stereotypes about an individual’s intellect or skills, feeling outnumbered by a dominant group in a department and other environmental factors. A recent study published by the American Psychology Association investigates how gender and imposter feelings coincide in academia and asserts that “feeling like an impostor is common among successful individuals, but particularly among women and early-career professionals.” These feelings can persist despite proven competence and success in one’s work. Oftentimes, women experience discrimination in professional and higher academic fields which can snowball into confidence issues, rooted in discrimination and stereotypes rather than valid limitations.

Microaggressions frequently contribute to feelings of imposter syndrome. Whether its as overt as a sexist comment from a colleague, or subtle, like the lack of a women’s bathroom but multiple men’s rooms in a particular department, microaggressions foster feelings of not belonging and inadequacy. Universities and work places should enact more measures to combat them and communicate that every member of the staff and student body is a valued part of the community. In Tennessee Tech’s

own Henderson Hall, the building that holds the English department in which, according to Argos, women represent close to 65% of students and faculty in the department, there is a men’s bathroom on every floor, but only specifically designated women’s ones on the first and second floors, tucked back into corners behind the stairs. Additionally, in many of the STEM buildings, women’s restrooms are scarce, indicating that Tech has not updated their buildings from previous decades when men dominated these educational fields and leaving women to feel like an afterthought or as if they do not belong in their field. Women, and all minority groups, belong in fields of higher education, and their work environments should not contribute to cultivating or advancing any sense of imposter syndrome.

Creating a growth-based mindset in classrooms and companies yields professionals who are more confident and competent in their abilities.

So how can we combat the frequently condescending, male-dominated workplaces like academia that can birth phony feelings? The first, blatantly obvious solution is to create environments that don’t foster feelings of discomfort, discrimination and underqualification but rather promote diversity in people, leadership styles and encouragement. Professional and academic spaces can achieve this by encouraging teamwork, reviewing discrimination policies and nurturing comradery between all individuals. Additionally, students and professionals should be encouraged to ask questions in order to eliminate the fear that comes with not knowing an answer or being lost. Creating a growth-

based mindset in classrooms and companies yields professionals who are more confident and competent in their abilities. It is important for executives, administrators and authorities of any kind to promote a comfortable work environment that encourages curiosity and asking for help.

While a community-wide solution is the ideal outcome, one may not always be forthcoming; there are also personal solutions to help combat imposter syndrome and improve the lives of those who are experiencing it. One individual way to overcome imposter syndrome that ImposterSyndrome.com suggests is to “fake it until you make it.” No one can tell if confidence is real or fake unless someone tells them! And, chances are, everyone else is faking it too. Visualizing success is another suggested strategy. Visualizing a successful outcome, using specific, evidence-based methods, often times improves the chance of success. When complete success is simply out of reach, developing a positive mindset

about failure and adversity can help dispel imposter feelings. A study published by Psychology Today found that “mental practices are almost as effective as physical practices.” A positive mindset is more likely to yield desired outcomes and eliminate distress if things do go awry. Finally, understand feelings won’t change immediately. It takes time, work and an accommodating workspace to alter deeply rooted, internalized imposter syndrome. Together, we can, with the right measures and strategies, combat the factors that contribute to impostor syndrome and develop positive workplaces that boost confidence and help all academics and professionals thrive. ✦

Women should not be told what should make them feel empowered because every woman is different.

Empowerment on our Campus

By Hailey Kincer

What is empowerment? I Googled “women’s empowerment” and found articles with very general assumptions about what should make women feel empowered. As these general definitions suggest, empowerment can look different to everyone. I interviewed two women on Tennessee Tech’s campus to find out what empowerment means to them and what makes each of them feel empowered. I centered my interviews on three questions: “What does empowerment mean to you, and what does it look like? What makes you feel empowered as a woman? Where or when do you feel most empowered?” I chose a woman in Tech leadership and a student to showcase the ideas of women in different stages of life.

Charria Campbell, Director of Student Engagement & Intercultural Affairs, was my first interview. Her answers focused on helping others and being a role model to everyone. Campbell views empowerment as elevating others, which to her means being able to identify people’s talents and teach them how to use them successfully. For her, this looks like being a support system to everyone because being an example for both female and male students and leading them to everything they might need is one way to be supportive. Campbell said she feels most empowered when students come to her for help and when people in her life show up for her in unexpected ways—whether that is being there for her when she needs it or just thinking about her.

I also wanted to know what made Campbell feel empowered as a woman, instead of just seeing what she thinks empowerment is in general. Campbell responded that being empowered as a woman holds many different meanings for her. She feels most empowered as a woman when she can be a role model for women on campus and in the community. She also said she feels empowered by not being afraid to take chances or chal-

lenge the status quo. Relationships and sisterhoods are important to Campbell when it comes to feeling empowered as a woman, but she recognized that building relationships and sisterhoods looks different for all women.

The other person I interviewed here at Tech was a student who wished to remain anonymous. She focused on empowerment as having recognition, and, specifically to women’s empowerment, she focused on gender itself coming into play. To this student, empowerment occurs when people are recognized for their hard work and efforts towards achieving a goal. She said this looks like having a good team surrounding you in order to work together to achieve something. This student believes that people can be empowered when their unique talents and personality can be brought to the table.

The student shared that she feels most empowered as a woman when she is able to do things without her gender coming into question. Though she loves helping others, and she does that with every chance she gets, it frustrates her when her actions get discounted simply because of her gender. On the other

hand, she feels empowered when she is able to work with other people who recognize her talent and effort. But most importantly, she feels most empowered when she is able to help others because it makes her feel like a good human being, and she takes any chance she gets to help students, friends and anyone she can.

Interviewing women on campus showed me that women should not be told what should make them feel empowered because every woman is different. Empowerment does not have to be generic things like the way we dress or the makeup we wear, though it is not a bad thing to feel empowered by these things. In the end, only you know what makes you feel empowered. Both of these women view empowerment as helping others in some form, which, for me, was very interesting because I thought I would get very different answers from the women I interviewed. This goes to show that some women do view empowerment in similar ways, but when it comes to feeling empowered, the possibilities are endless. In the end, the choice is entirely up to you! ✦

Where Does Wage Inequality Stand in Tennessee?

An Updated Look at the Gender Wage Gap in Tennessee

By Sid C. Bundy, Ph.D.
Assistant Professor of Accounting
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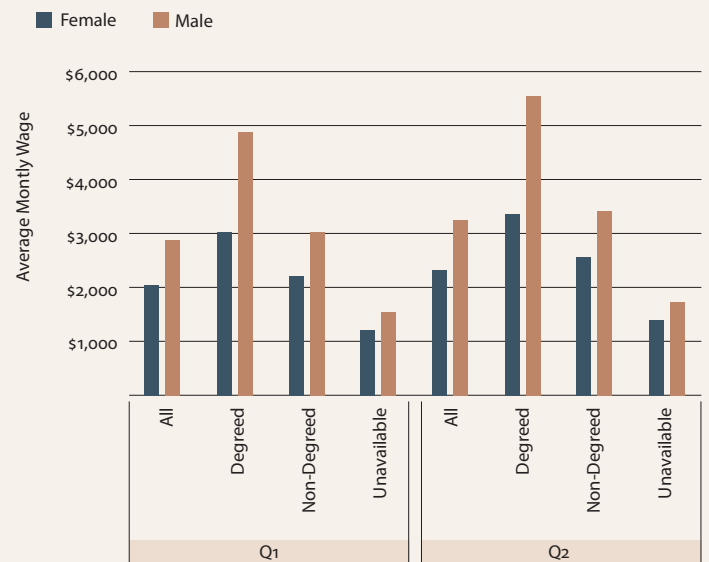


Although the gender-based wage gap has decreased since the Equal Pay Act was first signed in 1963, in 2021 Tennessee women still earned \$.07321 on the dollar (or 26.79% less) compared to men. This means on average women in Tennessee earn \$9,251 less than men. Extensive research focuses on factors that exacerbate this gap and

make it persistent (Cukrovska-Torzewska & Matsiak, 2020). For example, studies find that motherhood accounts for most of the gender wage gap, but what exactly causes this motherhood wage penalty remains unclear (Glass, 2004) and that Black and Latina women are consistently at the bottom of the economic hierarchy (Jamila Michener, 2020). Although this data may seem far removed from our daily lives at Tennessee Tech, updated data on the status of the gender-based wage gap indicates that inequality still affects Tennessee and the women on our campus.

According to the most recent data available in the U.S. Census's Quarterly Workforce Indicators, the overall average monthly wage increased by \$293 (14.55%) for women in Tennessee from the first quarter in 2018 to the first quarter in 2021, while men saw a \$369 (12.87%) increase during the same period. Both outpaced national inflation (7.9%) for the period (Bureau of Labor Statistics, 2022). This information indicates that women's salaries increased at a faster rate than men's. However, women in Tennessee still earned 28.73% less than

Figure 1: Average Monthly Wages in Tennessee Before and After the Great Resignation by Gender and Education-Level



men in the first quarter of 2021. While this does represent a slight improvement over the gap from the first quarter of 2018 (29.78%) for women overall, not all women saw an improvement in wages. In fact, the 2021 information reveals a step backward in wage equity for college-educated women during the pandemic (U.S. Census, 2021).

The statistics are particularly grim for women with college degrees. Women without degrees closed the wage gap slightly from 27.91% to 26.79%; however, degreed women saw the wage gap increase from 38.31% to 39.06%. Before you question your path to a degree, note that women with degrees still averaged \$9,941 more on an annual basis. In addition, wage inequity differs between industries.

The size and direction of gender inequity in workforce participation varies by industry and field (Figure 3). The U.S. Census Bureau provides convenient comparisons of workforce participation and wage inequality for a sample of industries and fields. On a positive

On average women in Tennessee earn \$9,251 less than men.

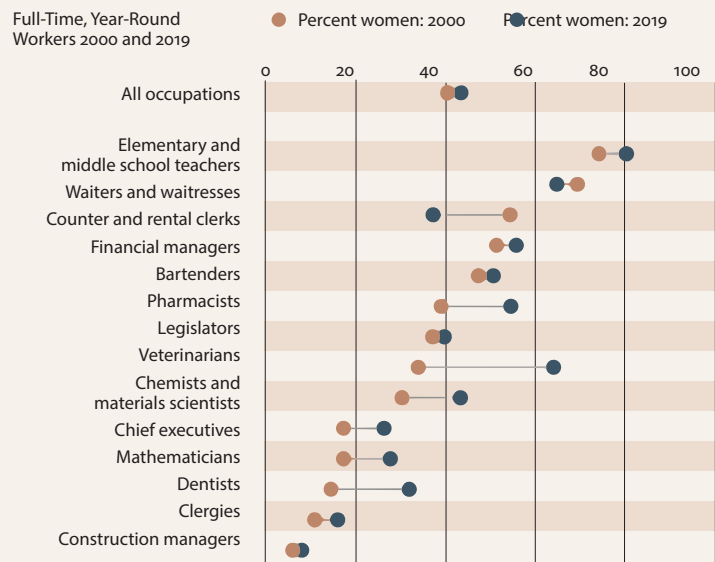
note, women's workforce participation increased in most fields between 2010 and 2019 (Figure 3). However, as Figure 4 shows, occupations where women represent between 25% and 75% of the workforce experience the highest wage inequality. Industries in this table that are dominated by either men or women report lower levels of wage inequality; however, these are also fields that report lower average pay. For example, taxi drivers, farmers and electricians are almost entirely men and also among the lowest wage earners.

You may or may not be surprised to find the gender-based wage gap is relatively small among engineers (3-14%) and accountants (18%). But, even these fields demonstrate substantial inequality, especially when we account for how few women hold leadership positions. Less than 18% of engineers are women. On the other hand, while over 60% of accountants and auditors are women, only 23% of firm partners are women.

Even the limited information presented here demonstrates that wage inequality still affects college women today in a very real way. However, so much more goes into this gap. Race plays a key role in widening inequality among women,

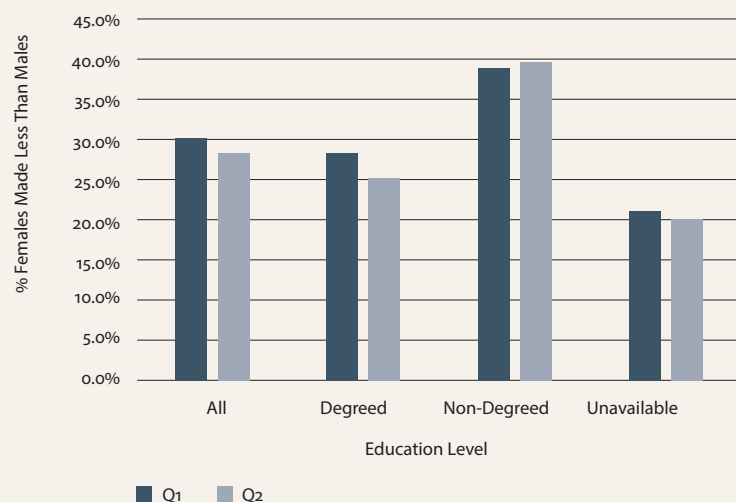
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Figure 3: Change in Women's Participation in Selected Occupations Since 2000



Source: U.S. Department of Commerce, U.S. Census Bureau

Figure 2: Gender Wage Gap in Tennessee Before and After the Great Resignation by Education Level



Purity Culture's Impure Effects

By Amber Lovell

College is often the first time people live away from family, allowing for more independence and self-reliance. This permits decision-making that wasn't usually accessible before. Many decisions college students make for themselves are just like many other adults' decisions—deeply personal. Personal decisions, which do not harm others, should never warrant shaming. How someone expresses their sexuality, for example, is a personal decision. Despite this, some still choose to shame others for their personal choices regarding sex. The U.S. often boasts a “culture that emphasizes strict gender roles and norms, abstinence, and modesty.” This is called “purity culture.” While there is nothing wrong with choosing abstinence for yourself, we shouldn't attempt to force or shame others into doing so, the same way we wouldn't want to force or shame others into being sexually active.

Purity culture involves the use of shame to pressure people, especially women, into abstinence, or “remaining pure.” According to UNews writer and student of Saint Louis University, Anastasia Hanonick, its teachings include

sentiments like “a woman's... sexual ‘purity’ is her only value,” and women are “distractions” who tempt and “lure innocent men in with (their) sex appeal.” Hanonick was raised in purity culture, which she says caused her to develop shame about and hatred for her femininity, believing “women were disgusting.” She adds, “All I was ever taught was that I was the problem, and as long as I kept my legs closed, nothing bad would ever happen to me.” She was never taught about boundaries or relationship red flags, eventually finding herself in an abusive relationship. When she decided to tell her story, she was blamed for the way she was treated and told it was a “punishment for having premarital sex.” She believes most girls raised in purity culture like her will struggle with confidence, intimacy, self-esteem and self-blame. Julie Ingersoll, professor of religious studies at the University of North Florida, echoes this belief, saying the rules of purity culture “create a powerful sense of shame and failure by design,” which results in many people raised in it finding it “difficult to develop healthy adult sexual relations.”

Hanonick's story is not an isolated case. Lorin O'Rear, who studies at the

University of Alabama, writes that she was told: “with the wrong intention, even kissing can be sinful.” She believes that victims of sexual assault who were not taught proper consent due to purity culture are more likely to feel guilt than recognize they are victims. Ingersoll agrees, adding that the trauma of sexual assault is made worse when the victim is taught “to blame themselves.” This is illustrated by the kidnapping of 14-year-old Elizabeth Smart in 2002. The Guardian journalist, Jill Filipovic, explains that Smart was held captive for months while her captor repeatedly raped her. In 2013, Smart spoke about how her religious background made her feel worthless, saying, “After that first rape, I felt crushed. Who could want me now? I felt so dirty and so filthy. I understand so easily all too well why someone wouldn't run because of that alone.” Many books have been written on the harms of purity culture, including Jessica Valenti's *The Purity Myth* which examines “how America's obsession with virginity is hurting young women” (and is available for checkout at the Women's Center).

The effects of purity culture are important to be aware of since many of us are navigating relationships and sex under its influence. Kayla Tricaso, who works with Modern Intimacy, a sex therapy center, says that the messaging of purity culture that people “are inherently flawed, dirty, and impure... can be incredibly damaging to a person's identity and self-esteem.” Purity culture,

Introducing Tech ASPIRES

By Rachel Pearson

Where would you go if you experienced rape or sexual assault? Who would you talk to? Would you want to take legal action against the perpetrator, and if so how would you begin? Sexual assault is traumatic, and survivors do not always know who to turn to in the aftermath of their experience. The ASPIRES program is a brand-new grant-funded program that was created to address the needs of survivors of sexual violence on Tech's campus and give them a place to turn to for help.

The ASPIRES acronym stands for Advocacy and SANE Practice In a Rural Educational Setting, which highlights the major goals: advocacy and medical and forensic services for

even when taught with good intentions, can have negative consequences. Harms that may come from being raised in or around purity culture can feel inescapable and isolating, but healing is possible, especially when you realize you aren't alone. While you cannot help the way you were raised, it is still possible to learn proper boundaries, consent and self-worth. Many local and campus resources are available to support you on your journey. No matter your sexual past, you are valuable and worthy of companionship and love. ✦

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How'bout No Limitations on Sex

By Savannah Hunter

Last fall, the Women's Center Book Club read "The Kiss Quotient" by Helen Hoang. This book follows Stella Lane, who is diagnosed with Asperger's and has had many terrible experiences with sex. After questioning her own sex skills and sexual desires, Lane hires a male escort, Michael, to guide her along her sex journey in finding what she likes. By frequently checking in with Stella and treating her with respect, Michael helps Stella take control of her sexual liberation journey. Stella's journey can be similar to that of how college women can take control of their own sex life and go at their own pace.

High school is a time full of uncertainty often guided by a parent's watchful eye. The moment a person leaves home and goes to college, everything feels completely different. They make friends with new people and begin to find their true selves. This new independence and freedom create opportunities for students to explore attraction and intimacy. By starting to explore intimacy, students can begin to feel comfortable with their sexual experiences. This freedom is liberating for many college women who now feel confident in their own skin and in control of their sexual experiences. The power many people feel when they are free to express themselves sexually is called sexual liberation.

The American Psychology Association describes sexual liberation "as the state of being free from sexual mores or inhibitions that are considered restrictive."¹ Many college women start to realize that they deserve the right to sexually liberate themselves and feel confident in every sexual experience. This is because the transition from high school to college is marked by independence and exposure to new people and experiences. One-way women can indulge in their own

survivors through the establishment and ongoing training of Sexual Assault Nurse Examiners (SANEs) on campus. According to the Rape, Abuse & Incest National Network (RAINN), 13% of all college students experience rape or sexual assault. Unfortunately, no college campus is exempt. According to the ASPIRES team, here at Tennessee Tech, 25% of students who responded to the 2020 campus climate survey reported experiencing a completed or attempted rape. Though men also experience sexual violence, women and gender nonconforming students are especially vulnerable populations to sexual violence. RAINN reports that 26.4% of undergraduate women and 23.1%

of gender nonconforming college students report experiences of rape and sexual assault while only 6.8% of undergraduate men have reported similar experiences.

Through ASPIRES, survivors of sexual violence can now request a rape kit up to seven days after the event through health services on campus. During business hours, survivors can call the ASPIRES office, and after hours they can call the 24/7 Eagle Eye Crisis Hotline (see the resources section) to connect with an on-call SANE nurse or advocate who will assess their needs and help them through the next steps. SANE nurses are specially trained to make the unpleasant experience as

sexual liberation can be by participating in hook-ups. Hook-up culture is having sex that is not intimate, and comes with a no strings attached ideal. An article from the Daily Orange states that 72% of college students have been involved in hook-ups at least once during college. ² Unfortunately, there is often a double standard on how men and women are treated if they partake in hook-ups. Men can be seen as “players” and women can be stigmatized as the “sluts” or “whores,” which is called slut-shaming. An article from the Sage Journals states that 50% of girls are more likely to experience slut-shaming, while only 20% of boys experience this. Sexual liberation fights back against slut-shaming and allows women to take matters into their own hands.

I recently conducted an informal survey asking college women about their sexual experiences and how they express their own sexual liberation and confidence. Eleven women ages 19-23, several of whom are currently enrolled in college, responded to this brief survey. Ten of these women said they are currently sexually active and trust their partner when engaging in sexual intercourse. When asked if safe sex is important to them and how they ensure that their partner feels the same, many women’s responses stated that they make sure their partner is tested before continuing their relationship

while a few women reported using condoms and birth control to prevent STDs and unwanted pregnancies.

When asked what they do to feel sexually liberated, some survey respondents reported taking pictures of their body, listening to music alone and pampering themselves to feel empowered. Two women mentioned the use of sex toys during sex and masturbation to feel in tune with their body and experience sexual liberation to its fullest. Some women also reported feeling sexually liberated by discovering more about their sexuality during college through experimentation. One woman reported that leaving home to attend college allowed her to be free and open in finding her sexual awakening, which she believes would not have happened had she never left her hometown.

The responses from the college women can prove that some women tend to find their sexual freedom in college. They seek out their personal liberation. These college women that I received responses from said that they had to find their own freedom and try things that made them feel empowered or liberated. College women across the country are going through their own sexual liberation, and I think it is important to support them and end the stigma. ✦

You’re Not Alone

By Lilly Davis

Have you had those times you’re sitting in your dorm room stressed to the max, sleep-deprived, with a paper due that night you procrastinated on, an exam the next morning you forgot about, all while having an argument with someone? That can be a lot all at once. You could be experiencing anxiety over your work load or personal life, causing you to

feel nervous or tense. It is not uncommon for college students to feel negative emotions such as feeling overworked, short on time, like they’re not being heard and lifeless. In fact, according to CollegeStats.Org, “80% [of students] feel overwhelmed by their responsibilities as a student,” and, “50% of students rated

comfortable as possible for the survivor. A forensic exam can be conducted even if they do not want to report the incident or pursue legal action; DNA is collected regardless in case the survivor decides to press charges later. The survivor decides whether to press charges or not, but they should keep in mind that Tech Police and other law enforcement may investigate incidents disclosed to them.

ASPIRES also provides advocacy services. After an exam, a Victim Advocate will keep in contact with survivors to make sure they are okay. The Victim Advocate helps direct survivors to resources, shares coping tools and skills and can give crisis

intervention as needed. The Victim Advocate can even stay with the survivor during the exam process as their support system. Advocates hold space for the survivor and actively listen to them. People can use the services of Victim Advocates even if they are not pursuing a forensic exam or if the sexual assault occurred more than seven days prior.

Though we may not know the situations of everyone we interact with while at school, statistics reveal that we have all likely interacted with a survivor of sexual violence on campus. Tech’s new ASPIRES program meets important needs of survivors by providing them with services and support during

their mental health below average or poor.” Mental health can be a struggle for college students, especially ones just starting their college career.

Being in a new place without familiar comforts can be very stressful. It's easy to let stress build up until you burst. CollegeStats.Org stated, “80% of students report that they feel stress on a daily basis.” Taylor Covington, a data researcher for The Zebra, explains the main stress triggers for college students are “stress over grades, financial anxiety, overworked, biological and genetic causes, and traumatic events including sexual assault and racism.” It is not uncommon to feel overwhelmed with life in college and everything intertwined. Some students might feel that stress is just something they can handle on their own. It's also easy to just say, “I'm fine” and move on from the conversation when someone asks how you are doing. But, it's okay to not be okay, and it's not wise to bottle up all of the emotions, stress and anxiety until you cannot handle it anymore. We need to take care of ourselves and focus on having a healthy mind.

Many students are given diagnoses that affect their mental health other than anxiety. These can include depression, panic attacks, sleep disorders, Post-traumatic Stress Disorder, eating disorders, Obsessive-Compulsive Disorder, Attention Deficit Hyperactivity Disorder among others. Covington reports that though “more than 25 percent of college students have been diagnosed or treated

Even though school is a top priority, it is important to take care of our mental health by learning how to cope with things in a healthy manner.

for a mental illness,” unfortunately, “almost 6 in 10 people with mental illness get no treatment or medication.” The fact that one in four students experience mental health hurdles demonstrates how common poor mental health is among people trying to make it through college, and how many of us go untreated. Mental health is a crucial issue to not take lightly in college life, not only by students, but by campus administration as well.

Even though school is a top priority, it is important to take care of our mental health by learning how to cope with things in a healthy manner. We all need to implement some sort of healthy self-care strategies that can help manage stress in our daily lives. According to ActiveMinds.Org, some of these can include physical activity, breathing exercises, adequate sleep, setting boundaries, connecting with others, celebrating small

successes, checking off simple tasks and creating your own self-care list. It can be difficult to find time to take care of ourselves in college, but it's a vital necessity. It is so important to have routines, gauge our stimulation levels, assess what we can handle and take breaks when needed. Even though these strategies are simple, that doesn't mean it is easy to integrate them into our lives on our own—and that's why we might need to seek out help. According to The Jed Foundation, “30% of students are turning to counseling, 48% are turning to a support system of friends, and 39% are turning to a support system of family.” Know you can reach out to someone because you are not alone. Tech has resources to help you (see the back page of this issue), and it's okay to get help. You deserve care so you can feel better. ✦

a critical point in their lives. If you or someone you know has survived sexual violence, consider reaching out to ASPIRES. If you are interested in helping ASPIRES and their cause, help advertise ASPIRES on social media and across campus or help collect donations of items for survivors following a rape kit and exam. For a donation item wishlist or more information about how you can help ASPIRES, reach out to @tntechaspires. ✦

Contact: The ASPIRES office (931) 372-6566, 8-4:30 M-F
The Eagle Eye Crisis Line (855) 206-8997, any other time 24/7

The Disturbing Sexism and Racism Found in Cartoons

By Shannon Leigh

The madness of sexism and racism in cartoons dates to at least 1930 when America's favorite black and white flapper appeared on live television as an anthropomorphic dog. This young lady was quite the hit on early television and cartoons and still brings joy to people's hearts today. Which young lady made every man's heart throb? Betty Boop.

This animated icon has made her way into every outlet store and greeting card. However, most fans may not know that Betty Boop was only 16-years old, though she is frequently oversexualized. For example, an old man chases Betty as she is forced to undress so she can avoid his possessive grasp in the episode "The Old Man of the Mountain." As Betty struggles to avoid unwanted sexual attention, the music bounces up and down, as if trying to make a joke about the fear women go through daily.

Sexism is not the only baggage Betty

Boop has to offer. The cartoon's creator, Max Fleischer, designed Betty based on an African American jazz singer named Esther Jones. Betty appeared as an African American woman only once before she was rewritten as a teenage white girl. Furthermore, Esther Jones received no recognition for inspiring the character. Why is this?

The term "whitewashing" explains when media portrays a person of color as a white character to increase their public appeal. Like Betty Boop, early cartoons used whitewashing to eliminate Black culture in main characters. Whitewashing perpetuates the idea that white culture is superior to other cultural traditions, and it reinforces the harmful impacts of racial stereotypes that extend beyond cartoons and entertainment culture. The characters of color that remained were often portrayed with racist stereotypes or animalistic traits, such as in the films *The Birth of a Nation* and *Breakfast at Tiffany's*. These two strat-


egies worked together to reduce positive representations of people of color. Whitewashing and stereotyping in entertainment can increase the segregation of our society. This lack of representation in entertainment must be addressed for society to move toward more equity and justice for everyone.

Many people might write off Betty Boop's racism and sexism because "it was just a sign of the times." However, age is not an excuse for racism. Although this show was created in 1930, twenty years before the Civil Rights Movement, that is not a valid excuse for the content. Furthermore, there were certainly people in the 1930s who protested sexism and racism and would have objected to the content at the time. Betty Boop should not necessarily be cancelled for its content. Instead, it should be used as an example of how America can move away from racism and sexism in entertainment.

And though we might like to say that this kind of discrimination is a thing of the past, we still struggle to address sexism in cartoon media today. As of January 2022, M&Ms announced they are changing the stilettos on the Brown M&M to shoes with a much lower heel and the Green M&M will be wearing sneakers instead of revealing Go-go boots, to help eliminate the oversexualization of women in mass media. Although Fox News's anchor Tucker Carlson has some issues with the new "unappealing" and "androgynous" Brown M&M, M&Ms are taking a major step for our society. By making the female M&Ms seem more realistically dressed as modern American women, Mars Inc. is making one of the many changes that need to occur, and we hope that other companies will follow their example. ✦

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There are so many ways to experience life as a woman, and it is exactly those differences that make life rich for all of us.

The New Attune

By Helen Hunt, Ph.D., Director of the Women's Center

If you're a faithful reader of *Attune*, you might notice the journal looks a little different this time. That is because the hard work of Professor Drew Sisk and the students in the fall 2021 Design Practicum: Aidan Britt, Emmaleigh Bradshaw, Lukas Pinson, Nathaniel Wheeler, and Cate Biles. I had the pleasure of working with these students as they developed our journal's new look.

I am amazed by their work. They each created and pitched a new concept (layout, colors, fonts, images, design statement, the works). After consulting with me, they collaborated to make the beautiful template that you, dear reader, see in front of you. They built a whole alphabet of drop caps (the large letters intertwined with the leaves that kick off many of the articles). They customized the breezy plants with small hearts based on the type of leaf structure I liked. They drew each letter for the *attune* nameplate on the front page based on a font that Emmaleigh Bradshaw created. They built an InDesign template and even made a set of photo filters for us to use in the future. Drew Sisk then took the articles our contributors drafted for this issue and constructed the layout, patiently and painstakingly working through each draft with me despite my penchant to crash the program. I am deeply grateful for their work and inspired by their creativity.

But what I loved most was seeing all of their different visions of what *At-*

tune—and a Women's Center—could mean. Each concept interrogated the idea of womanhood. How can we go beyond stereotypes and norms? How can we seize the present moment but also hold on to the best of the past?

The artists considered what modern femininity could look like beyond stereotypical pink and florals. They turned to inspiration from the women's movements of the past, especially the drive, the energy and bravado of the 70s. They considered how to lead readers through the text, using lines to create structure. To stop us here, to let us pause and think there. They verged into concentric, looping circles to evoke the natural world, pushing to visually embrace people who need and want the support of the Women's Center but don't identify with a feminine presentation. The variation among all their concepts reminds us there are so many ways to experience life as a woman, and it is exactly those differences that make the world rich for all of us.

And yet, all these concepts evoked alignment, or, another way to think of

what it means to attune. How can we find resonance in our lives with the things that are important to us? How can we line up resources and opportunities with all kinds of people? How can we pay more attention in our lives to what's happening around us, to the feelings happening within us? How can we stay present in each moment without ignoring struggles that go beyond us? When *Attune* started in fall of 1994 the tagline was "Attuned to Today's Woman." While we are moving away from taglines, we are keeping the spirit of attunement evoked by these designs. ✦

ATTUNE'S DESIGNERS

Aidan Britt

Emmaleigh Bradshaw

Lukas Pinson

Nathaniel Wheeler

Cate Biles

Drew Sisk, MFA | Assistant Professor
of Design/Digital Media

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than men in this field. Additionally, an article by Anya Jabour with the University of Montana shares that men dominate leadership in fields of social work because of a collaborative effort beginning in the 1930s into the 1950s to “defeminize” the social work profession. This disproportion remains to this day. Social work serves as an example that even in fields that employ many women, men can still dominate leadership roles.

All things considered, there is nothing inherently wrong with men holding leadership positions, but there is a problem when nearly 50% of our world's population is underrepresented in leadership. What makes a good leader is not solely based on gender but is about the quality of character of the person and the intentions they have while leading others. The Pew Research Center found that most people valued honesty, intelligence, decisiveness, organizational skills and compassion in their leaders. What's more, 80% of participants agreed that men and women make equally good leaders. Although women face discriminatory words, high standards and sometimes even lesser opportunity, most people agree that we are still just as capable of leading. We are not “woman leaders.” We are just leaders. ✦

WOMEN IN STEM continued from page 3

of the student body based on gender with further analysis of the female student body according to race/ethnicity. The same analysis has been performed on the faculty, illustrated in Figure 2.

Despite the fact that women make up more than half of the Chemistry students at Tech, their gender is not reflected in the faculty who teach them since only 25% of the Chemistry faculty are women. These statistics also demonstrate a significant lack of racial diversity in both groups, though the dominance of the white population is more pronounced among faculty. Research shows that female students in science and engineering are more successful when they have a better female teacher/female student ratio. To promote the success of more than half of the students in Chemistry and the women students in STEM, it is crucial to create a more diverse faculty body by both hiring and retaining women and people of different racial and ethnic backgrounds to support the widest range of talented students.

Breaking the barrier

While educators have worked for decades to tackle equity in STEM, more work needs to be done. The first step is to recognize there is still a problem and determine where women need more representation. Young women need more role models to follow. Research shows that female students gain more self-confidence and better test performance when a female teacher is introduced in the class. Moreover, more minority STEM teachers should be introduced into Tech's classrooms to create a sense of belonging for a diverse student body. It is crucial for women to hold leadership roles in schools and here at Tech to help improve the climate for young women pursuing STEM.

These are some of the steps that will help break the barriers between classroom and career path for women pursuing science and engineering. Ultimately, everyone can play a role creating gender equality in STEM and encouraging future generations of girls to get involved in STEM at an early age and pursue

higher education and research and development (R&D) career paths.

Conclusion

There is hope and great potential for Women's educational progress in STEM, and women's achievements should be celebrated. Science and engineering would not be where they are today without the brilliance and dedication of hard-working women. But more effort is needed to ensure that girls and women have full access to educational and employment opportunities. It is today's society that should work consistently to bring gender equality and sustainability for a bright future for women in STEM.

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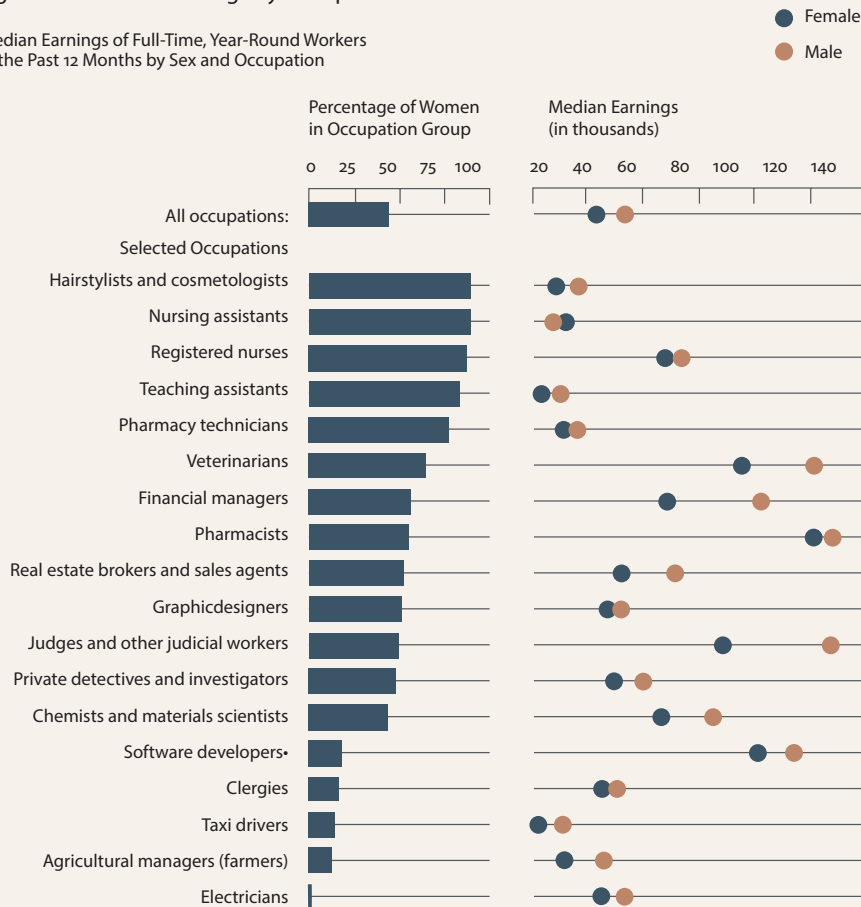
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WAGE INEQUALITY continued from page 7

Figure 4: Women's Earnings by Occupation

Median Earnings of Full-Time, Year-Round Workers
in the Past 12 Months by Sex and Occupation



Source: U.S. Department of Commerce, U.S. Census Bureau

Wage inequality
increases with age
as well as
motherhood.

and delving into the data a little further uncovers trends that highlight that wage inequality increases with age as well as motherhood. In fact, I encourage students to publish an update to gender-based wage inequality in Attune after the dust settles from the Great Resignation. ✦

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tntech.edu/women

Get Help

Health Resources

Counseling Center

931-372-3331

tntech.edu/counsel

Eagle Eye Crisis Hotline

855-206-8997*

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tntech.edu/healthservices

Food Pantry

tntech.edu/volunteer/pantry.php

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genesishouseinc.com

Upper Cumberland Family Justice Center

931-528-1512 or 866-704-1080

ucfamilyjusticecenter.org

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las.org

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thehotline.org

VictimConnect Resource Center

855-484-2846

We can help you navigate resources!

Call the Women's Center:

931-372-3850

Message us on social media:

@tntechwomenscenter

*resources available 24/7