Board 179: Campus Climate, STEM Students: Examining Structural Obstacles for BW Student Success

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I am Samieh Askarian Khanamani, a second year of Ph.D. student in Engineering Education from the University of Cincinnati. I have 10 years of experience as a vice principal and STEM teacher in STEM-based elementary schools and host of several workshops for kids and parents about engineering and hands-on activities in STEM. My research area is in PreK-12 and diversity. Have an engineering background in my Master's and Undergraduate.

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Faculty Perception on STEM Culture at a Women's University

Abstract

In higher education, women's universities have notoriously provided a utopia for women college students to thrive [1]. Specifically, women students feel at liberty to exercise their intelligence alongside their female counterparts [2]. Even more so, women undergraduate students have often regarded their academic programs to be stronger than women at coeducational colleges and universities [2]. This correlates with the increased representation of women faculty and the overall supportive mentality and collaborative environment fostered within a women's college. However, what has yet to be explored is the overall impact of women undergraduate students in science, technology, engineering, and mathematics (STEM) specifically those who are members of an underrepresented minority group (URM), their identities, and the contributions to the campus climate towards racial diversity. Within the United States, most women's colleges qualify as predominantly white institutions (PWI). Thus, women of color (WOC) who attend these institutions are situated in a space where they are not the majority, and their culture is not central. Consequently, they must conform [3] to the norms. Furthermore, WOC who attend women's colleges and pursue STEM-related degrees are not only situated in a white campus climate but in a field that lacks cultural and racial diversity [3]. Using a case study analysis, the purpose of this study is to examine the mis/alignment of student needs and faculty perceptions at a women's college and a small university located in an urban city in the northeastern United States. To encapsulate and validate the issues of broadened participation, racial equity, and cultural diversity through a combination of student experiences of the campus climate and faculty perception, student interviews and focus groups formed our data collection methods. Evidence shows the existence of an inherent disconnect between faculty perceptions and students' needs, and the campus and curricular experiences of students. The study demonstrates that STEM fields can leverage the utopia of women's universities to broaden their participation in STEM beyond gender while incorporating racial equity and cultural diversity when shaping an inclusive campus climate. This paper (1) describes the relationship between campus climate and STEM culture perceptions, (2) demonstrates the influence of modern women's universities in supporting women in STEM, and (3) examines the intersectional oppressions that women of color experience in STEM.

Keywords: Women of color, Underrepresentation, Student Needs, STEM, Campus Climate

1.1 Introduction

STEM educators are an integral part of the STEM ecosystem because of their role in preparing STEM professionals [4]. Just as important to industry, are the educators who cultivate and influence the intellectual prowess of future STEM professionals. Diverse instructors in STEM also aid in decreasing barriers to accessing STEM and thus increasing student retention in STEM fields [5]. Furthermore, how educators within STEM espouse their values about the importance of STEM has a culminating effect for students' persistence and overall achievement in STEM academics [6]. Instructors' perception of the STEM field and its culture attached to students' performance in campus environment [7]. Essentially, how students perceive the culture within STEM and their belonging within that culture is not contingent but does correlate with faculty support through interactions during their academic careers [8]. As a result of this correlation, students describe feelings such as hostility and lack of caring when characterizing the instructor-student relationship [9]. Report from previous studies shows that there is still negative form of interaction between faculty and students like discrimination from instructors [10]. This reckoning has allowed scholars to conclude that there is a beneficial connection between faculty relationships and student's self-efficacy and their persistence in STEM fields [11].

As scholars, researchers, and educators in STEM we must necessitate locating and enacting optimal factors necessary to increase representation in STEM and support the retention of students, especially students who identify as persons of color, women, and neurodivergent. For this reason, our study investigates faculty-student relationships in STEM programs at a women's university. Despite women's universities serving as one of the only options for women in the United States and other countries, the progression of co-educational institutions in the 1960s has caused a decline in Women's University in the United States [2], [12]. As a result, research about women's universities and activities on campuses has declined too. The contribution of our study to this scholarship is two-fold. First, it explores women's experiences with faculty in STEM at a women's university. Second, it addresses the gap in scholarship and makes a call for a re-examination of women's colleges as potential collaborators for broadening the participation in STEM.

1.2 Authors' Positionality

The researchers of this study are comprised of individuals all of whom are attending or have attended predominantly white institutions in the United States. The authorship team are comprised of Black, Kenyan, and Iranian descents. Our unique experiences cultivate our approach to research as well as our approach to interpreting the experiences of non-white women within the context of the United States. Consequently, we embark on our journey as scholars to transform scholarly and cultural practices in STEM. In doing so, our research aim is to approach STEM topics that decenter whiteness beginning with our own assumptions and biases through reflection and dialogue. Mejia et al state " a lack of reflection prevents the cognitive and motivational tools needed to liberate themselves from condition and historical factors that that hinder their development" [13, p. 2]. Our approach towards liberation is understanding the limitations of scholarship and praxis when whiteness is not decentered from the conversation and perspectives. Much scholarship about gendered experiences is often framed in a Eurocentric

approach [12]. To combat this, we center our study on guided theories from scholars of color. In addition, we aim to be intentional in our choice of language by ensuring that our population is referred to respectfully and not within a deficit lens. Thus, we decenter whiteness by referring to our participants as women, not women of color, throughout the findings and discussion sections of our paper.

2.0 Review of Literature

2.1 STEM Culture

There is a withstanding culture within STEM to push out intellectually inferior students because they are perceived to be unlikely to succeed [15], [16]. Gatekeeper courses like introductory courses are often referred to as "weed out" courses due to the pace and lack of support. These same courses are equated to be the introductory courses to many STEM degree programs and are often responsible for discouraging students from persisting with their degree program [16]. These notorious practices for promoting intellectual inferiority contribute to students understanding about STEM and their ability to succeed as a STEM student.

Intellectual superior beliefs, or belfies about who is inferior, are bred within academia and stifle academic achievement of racial, sexual orientation and gender identity minorities including trans people [17]. Hatfield et al. conducted a quantitative study utilizing a multi-institutional database of 140,000 student records to observe the probability of obtaining a STEM degree for STEM-intending students [18]. They controlled for race and gender, yielding findings that suggest that women and non-white students who received the letter-grade C in an introductory STEM course are less likely to complete a STEM degree than white male counterparts. Despite Black and Hispanic students declaring STEM majors at the same rate as their white peers, they are pushed out of STEM at disproportionate rates regardless of academic preparation, intellectual ability, or their affinity for STEM [8], [17],[18]. Additionally, they are often depicted as being without or more so, at a deficit to be academically successful in STEM.

Meritocratic ideologies or the belief that individuals are successful because of their own merit as opposed to historical, social and institutional barriers in place underscore STEM culture for some time. In fact, meritocracy is often considered to be one of the major influences to prevent social justice [8] culturally inclusive curriculum [20], and socio-technical emphasis on curriculum from being embedded within STEM [8], [21]. For these reasons these beliefs gatekeep individuals from STEM degrees and contribute to their inability to perceive and achieve a sense of belonging to STEM fields as means to support their cultural beliefs in community uplift [22] and giving back.

2.2 Capital

In academia, the assessment of student capital and the lack thereof has often been considered to manifest as the lack of financial resources, mentorship, career guidance, and capital often listed as a necessity for the continuation of education and career trajectory in STEM [23]. Yosso's community cultural wealth model names six types of capital that expand beyond the limited white supremacy understanding of what constitutes capital [24]. These six types consist of

aspirational, linguistic, familial, social, navigational, and resistance [24], [25]. In a study that applies Yosso's framework [24] to explore how Black male initiatives assist in the cultivation of capital, it was found that by making academia and campus more accessible to students and providing them with more resources, students gain aspirational capital [25]. In addition, social support such as family who value and encourage education can assist in the motivational aspects thus contributing to students' persistence towards degree completion [25]. Parental influences and community contribute to the capital that students bring into higher education and play a key role in career aspirations and degree choice [26]. By acknowledging multiple forms of capital [24] educators and researchers alike can restructure their perspective of women and students of color as one that is not deficit, but instead laden with institutional barriers as the aforementioned. In response, they can work collectively and individually to transform educational spaces in STEM courses to be both welcoming and supportive.

2.3 Climate

In addition to the absence of traditionally viewed capital, campuses are often riddled with racial hostility, neurotypical designed curriculum, and gender inferiority [23]. Experiences such as this often contribute to the chilly STEM culture [3], [27]. The campus climate for women often tends to be hostile even though women often outnumber men in higher education [3] [17].

An antithesis to these environments is to explore the climate of women's university. Research has demonstrated that women can invest and cultivate more capital, consequently contributing to the recruitment and retention of women in STEM. This occurs because women can find social support, take up space, and enact freedom of thought without the fear of making mistakes [17]. However, this does not mean that students at women's colleges do not hold to themselves the same rigor as their male counterparts if not more. Specifically, women in a study conducted on campus climate describe how the absence of male students assisted in their abilities to be less concerned with how they contributed to class [17]. Furthermore, Renn found that women found their single-gender institutions to have a climate that was encouraging and non-threatening [17]. Furthermore, the increased representation of women faculty at women's universities acts as a positive reinforcement for an increasing representation of women in fields such as STEM [17].

Faculty assist in the cultivation of a sense of belonging on campus, in the classroom and in one's academic major [23]. For women, same-race same-gender mentors are better suited for proving support, but for Black and Brown students, this becomes increasingly rare due to the inability to find members with both gender and racial identities. The lack of congruency between mentor and mentee shared racial and gender identities often results in the missed opportunity to acknowledge structural racism that persist in STEM educational and professional context [23].

2.4 Faculty Support

Another aspect of the support systems for a STEM-enabling campus environment is faculty support. As the curriculum implementation personnel, they play a significant role in arousing interest in the courses they offer [28], [29]. Faculty have a direct interaction with students that occurs both inside the classroom through structured teaching and outside of the classroom in the

mentor-mentee axis in which they advise, guide, and direct the students in their academic work [30], [31]. This bi-directional relationship can function as a launching pad for creating interest in STEM courses for WOC [32]. When optimally utilized, it can help towards advancing the goal of developing self-confidence and identity in a particular STEM field [33].

Pertinent in this conversation is the way faculty use the classroom environment to influence or support the interactions that occur between themselves and the students, and among students themselves. So important is the student-student dimension since collegiality among the students shows that they rely on peers who provide the source of support for navigating through the STEM programs [34], [35]. Moreover, good knowledge on the level of student preparedness—academic or social —before they come into the program may offer additional insights on students who need more support to get up to the right level required for them to truly excel [36].

Students' perceptions that faculty hold them in high regard and care for their emotional wellbeing promote persistence in STEM among WOC [34], [37].The inherent power relations between faculty advisors and student advisees and the lack of institutional support are among the myriad of challenges faced by underrepresented student community, of which WOC form part [38], [39], [40]. To mitigate this, several faculties have devised different mechanisms for engaging students at the early stage of their entry into the STEM departments. This includes pairing new students with their senior college mates at the laboratories to create more directed mentorship and co-research opportunities [41], thus enabling the programs to adapt to the ever-changing WOC STEM student interests [42], [43].

3.0 Theory

In 2012 Strayhorn conducted a study to explore the experiences of Black males engaged in Black male initiatives. The study yielded a sense of belonging framework. To understand the relationship between campus climate and STEM culture, we utilize Strayhorn's Sense of Belonging framework (2012). The framework explores how the context of spaces can foster a sense of belonging. Sense of belonging, in this case, has seven tenets: (1) a basic human need; (2) a fundamental motive, sufficient to drive human behavior; (3) taking on heightened importance (a) in certain contexts, (b) at certain times, or (c) among certain populations; (4) related to mattering; (5) impacted by students' intersecting social identities; (6) engendering other positive outcomes; and (7) a need that must be satisfied continually, especially. In addition, a sense of belonging has been stated to impact performance, persistence, and retention for college students in marginalized groups [44].

4.0 Methodology

This study utilizes two different methods of data collection, Group Level Assessment (GLA) [45] with faculty and semi-structured interviews with current STEM undergraduate students. The students selected for this study consisted of indigenous, Black, and Latinx which collectively are referred to as women of color in throughout much scholarship. Faculty members were identified by our campus partner to participate in the GLA experiences. The GLA occurs in a series of seven steps with an array of faculty participating and our research team conducting the assessment [45]. Question prompts for the GLA derived from the foci of our study: campus

climate and STEM culture. The seven steps of this innovative methodology follow “climate setting, generating, appreciating, reflecting, understanding, selection, and action” [46, p. 336]. In this process, the question prompts were listed throughout the room on large stick notes. Then, participants were asked to review all the questions around the room and write their responses to the prompts. Participants were instructed to place a check or star next to statements to which they agreed. In the next phase, participants walked around the room and looked at all responses and stars written on their own reflections. Through the next step, participants discussed and looked for themes across the set of charts, analyzed the data from their perspectives. Selecting the most significant ideas and considering possible next steps based on priorities, informing relevant future programs was the final step in the GLA process. This process of collecting and thematically grouping faculty GLA responses is illustrated in detail in our findings section, with the corresponding stars indicating the degree of agreement with fellow faculty.

Complimenting the GLA data process were semi-structured interviews with students. This approach promotes flexibility in the questioning while ensuring the main topics of interest are covered [47]. The purpose of conducting interviews with students is to have a deep understanding of their perception of their campus climate and STEM culture at the site location herein referred to as the University of Women. The interviews were recorded and transcribed by two teams each composed of two researchers to increase validity using a shared coding software. Feedback from the interviews was coded using inductive analysis [48], [49], [50] and later grouped into themes.

5.0 Findings

5.1 Campus Climate

Amongst the faculty in the STEM department, many stated that they believed the University of Women fosters a supportive environment. Some faculty continued to say that it was supportive because they witnessed students' relationships and the kindness that was shared in the classroom and other spaces.

supportive and that of being nice to each other*******	**7**
Supportive*******	**7**

Like the response of faculty, many students affirmed that they felt that they were supported on campus by leaning into the relationships that they developed with faculty. One nursing student describes how the support from a faculty member was a catalyst for learning and persistence in their degree.

> The professors are all so great. They've made such a difference and have made me want to learn. They've made me want to reach out. They've made me want to go out of my way to learn and confirmed that I want to go into nursing, which has been great.

This student describes that not only did the relationship support their learning, but it also supported their aim to build a connection with faculty. In culmination with feeling inspired, an additional student spoke highly about the overall impact of attending a women’s university.

> I think being at a women-centered institution helps women feel better about being at STEM cause being in STEM because we have the opportunity to build up our skills and not have people in our ear telling us what we can and can't do.

The participant describes the relationship between defining their STEM identity. Additionally, they recognize how this type of utopia society of isolation amongst women and supportive male faculty filters the negative socialization about women in STEM.

When asked to describe their experiences at the University of Women, students shared a similar sentiment to faculty stating that it was also supportive. Specifically, they reflected on the institution and their relationship with faculty but limited their responses to the social aspect of the campus.

In addition to being kind and supportive, faculty specifically described their institution as being collaborative and open to collaboration. The faculty, as shown below, second these sentiments through post-it notes. In total, there were three statements about collaboration listed on the board and 14 supporting members in the group.

Collaborative********	**8**
Collaborative and open***	**3**
One of collaborative problem solving, attempting to balance academic rigor with compassion for students' lived experiences***	**3**

One participant supported the sentiment that that the environment itself was not collaborative at the University for Women.

> I've noted that the female students tend to be much more uplifting and collaborative. And so it's not ever a competition, where I know some of the male STEM students I've worked with before or have known are definitely a little more competitive and a little less focused on everyone getting – yeah, it's a little different..

It is important to note that many participants described hearing about what co-educational institutions were like from friends of siblings, thus assisting in the depiction of the University of Women as being more supportive and less competitive.

Another critical aspect of campus climate is the inclusivity within the institution, in which faculty continued to demonstrate in their reflection of the inclusiveness of campus throughout the GLA.

Inclusive, but often times "busy" so that faculty are distracted with urgent work with less time to focus on important community building work****	**4**
inclusive and student centered**********	**11**
Diverse in numerous ways	
diverse, representing a wide range of ethnic, racial, socio-economic and academic backgrounds******	**6**
diverse socioeconomically, ethnically and regarding identity*******	**7**
lack of a diverse faculty**	**2**

The faculty members felt they were trying diligently to be inclusive but also recognized that there were many gaps in the efforts aimed at supporting students and their identities. Concepts such as mental health and representation were often a part of the conversation. One challenge described that contributed to the lack of inclusivity was inadequate resources, specifically time and capacity.

Another student speaks about her experiences and shared realities with friends about the lack of diversity.

> I know from some of my friends' experiences, University for Women is still a very primarily white institution. I know it's very – it claims to be a very diverse school, but I know from my friends' experiences that it's not necessarily that – they do have programs to try to be more inclusive, but I feel like overall it's not quite as inclusive as it could be.

The student recognizes that efforts are being made, but that they are not enough to foster the needed inclusion. Also, they speak on the institution's structural diversity and how there is a considerable diversity within programs, but not throughout the department.

> University of Women is relatively good at making everyone in the classroom feel included. Like, my program's pretty diverse as it goes by races and I think I don't feel any change because of my race.

The relationship between inclusivity and lack of equitable opportunities at the University of Women is evident in the response above. Because of students' observation of Diversity, Equity, and Inclusion (DEI) importance to the institution and their program, they were critical if not hesitant towards industry careers. One student stated, “there is still differences in some of the way women vs. men or white people vs. people of color are treated or are looked at or even compensated.”

5.2 Learning STEM

From the faculty’s perspective, women students feel more comfortable at an institution where their peers are only women. Whilst the STEM field is primarily male-dominated, they recognize that the female-centered spaces propel their students to success.

Empowering ******	**6**
Challenging academically but rewarding in terms of the kinds of problems to be solved and financially rewarding careers that are possible. **	**2**
Better than many other institutions due to the women-focused culture, but still challenging *	**1**
Giving them an environment where their gender doesn’t set them apart, where they can be messy and imperfect while they learn ****	**4**

The faculty feel the environment fosters persistence but also recognize that STEM culture can be challenging in the professional world. In addition, they recognize that academic requirements are also challenging but are mitigated by supportive environments.

From one of the student participants, the women's center provides an opportunity to work on themselves and their learning foundations. This attitude also gives a hint that students can feel empowered in women's institutions compared to other institutions.

> Don't know what people at other schools have experienced, but I feel like the Women's Centered School gives me, really has given me the time to focus, because that's not even why I wanted to come to University for Women is because it was women centered. But the more I'm here, the more I'm grateful that it isn't technically. So I've really appreciated that time to focus on my learning and building myself up and building the skills necessary. And I think it's been really positive.

To have some people who are just like students, especially from underrepresented groups in institutions in high job and leadership positions, can give students a sense of belonging and safety. Women students, especially Black ones, needs to see women just like them in STEM and that would be an engagement factor for them in this field.

> I felt like I'd probably be more comfortable here as opposed to a co-ed school…Also, University for Women has a black female president, so that's another major thing,

These students described that they know the STEM field is challenging and sometimes tough, but being in class or lab environments with other women students can make this challenge easier because they can work together and collaborate in their tasks.

> I don't know if I really have an example, but I guess labs have really shown me that just being in a room full of women, it's just satisfying. At the end of something that's tough, it is a satisfying feeling to accomplish that and know that everyone that helped you around you was a woman. We're all nurses. We're all going on the same path, which is really cool. I guess just lab really isn't much, but just knowing that it's hands on and you're all collaborating and you're all putting your ideas together to get something done. It's not really much of an experience but I guess that's the most that I can put out there

> I think I was most proud probably – we had a lab practical last year where I was able to apply more skills than I learned towards becoming a physical therapist and I was able to actually be in charge of what I was doing. It wasn't like I was following – I was following steps. It was an exam but it wasn't like waiting for the professor to tell you what to do. You had to remember all the steps as though you were the professional and your partner was the patient. You got to feel more in control as if it was a real-world scenario rather than just a lab.

Amongst faculty, another aspect of the campus climate was the rigor involved. Many faculty felt the curriculum was rigorous just like, if not more so, other institutions. In equal measure, some felt strongly about how rigor plays an important role in STEM to be a competitive institution.

Rigor	
Aspirational rigor.*****	**5**
challenging, hard, multidisciplinary, *****	**5**
Better than many other institutions due to the women-focused culture, but still challenging *	**1**
still seen largely as male-dominated and challenging *	**1**

In addition to the support and collaboration that occurs on the campus, both students and faculty found the curriculum to be challenging but felt supported throughout its challenges. One participant's sentiments speak of the challenge of coursework and the rewards of success.

> I think STEM in, like, just as a concept is a really difficult and challenging program majors to be in. They take a lot of hard work, they are very rewarding, like, once you, kinda, get through – every really hard STEM class I finished and succeeded it's very like, "Oh, I did that. That's very exciting, I feel really good about that." especially in a field that isn't the most attainable to everyone, being able to succeed in it is just a very proud moment.

Another classmate acknowledges that the coursework is challenging. However, the challenge is not only because of rigor, but due to her identity as a person of color. The student states “I feel like women and people of color in STEM have to work a lot harder to prove themselves and prove that they are capable of doing what they're doing”. This account is a reminder that challenge does not come from the course content alone but can also be a result of her race and the pressures of representation.

The University of Women provide an environment where gender doesn't set students apart, allowing them to be messy and imperfect as they learn. This culture that belongs to institutions like this can give women students a sense of empowerment and encourage individuals in their academic journey.

5.3 Capital Induced Challenges

The faculty felt that the students’ academic performance and success is hampered by lack of financial endowment which in turn forces them to work long hours of part-time jobs. Consequently, they have less time at their disposal reserved for schoolwork.

Financial Barriers	
Holes in advising, placement, academic support, financial support********	**8**
Not enough financial support -- so students work too many hours; getting students to feel they belong**********	**10**

Moreover, the disconnect from campus poses a barrier to the faculty who would otherwise provide individual academic assistance given the rigorous STEM culture. This situation makes some students believe that they do not belong to the school community since they spend a lot of time off-campus.

Students recognized these gaps and discussed the dangers of being perceived as a monolith. Identities such as geographic origin, financial status, and race were primary topics. One student describes her experiences and difficulties of inclusion, thus:

> I feel like they expect everyone to come from the same place. Like, when they're not, like, there's a lot of like, programs that I try to do for internships, and they want you to already have certain stuff that's like, I don't have access to that, or like, I don't – never heard of that before or something. I'll be like, really expensive, and it's like, they don't have, like, a scholarship or like, some type of like, aid in it, and it's just not good.

The student describes her background and how it differs from others. Specifically, feeling included or the lack thereof pertains to misunderstanding and the miseducation of their background. Experiences of not having the financial capital to embark on unpaid internships and having a different financial background were key stress points.

Another aspect that was more pronounced among the faculty views of the WOC STEM students is student preparedness for the STEM program. The observation is that the student population is varied, with some lacking pre-college STEM exposure. Other aspects of financial challenges are correlated with mental health and time to commit to studies.

Preparation	
Our student population is mixed in terms of preparation, commitment, and mental health**********	**11**
we have some students who, for a variety of reasons (poor preparation, too many hours working outside school, emotional issues, plain old fashioned immaturity) don't complete assigned work and tests**********	**14**
Pre-college preparation of our students and financial support**	**2**
financial concerns, lack of preparation for hard STEM classes, a lack of accountability for completing work on time, lack of understanding of what it takes to be strong in the STEM world******	**6**

Interview findings, however, indicate that students did not feel unprepared for their degree program. Instead, they highlight other obstacles of feeling silenced and overlooked. One student describes what it feels like when the Women's University is not only women and how it impacts their participation. She states, "I noticed how when in classrooms where there are men present, typically the men tend to be the ones that speak up the most. It's like without that, it helps you really realize your potential, I think." In addition to her sentiments, a peer describes being

overlooked in the classroom, a connection that may prevent a student from demonstrating the very preparedness that a professor would expect them to demonstrate. She shared, "I would have my hand raised for the whole class and the second my partner raised their hand, all of a sudden the professor was right there. So but like I know it wasn't only happening to me".

In this section, we can see how there is an incongruent perception of what students perceive to be barriers for participation and what faculty deem as unpreparedness. On one hand, the faculty find that student preparedness, financial barriers, and time commitment to studies are barriers. However, what students describe is feeling overlooked and encountering imposter-syndrome due to racialized and gendered experiences in their academic programs.

6.0 Discussion

This study explored if faculty and students' perceptions of campus climate influenced perception of STEM culture. Guiding our study were three research questions: (1) describe the relationship between campus climate and STEM culture perceptions, (2) demonstrate the influence of modern women's universities in supporting women in STEM, and (3) examine the intersectional oppressions that women of color experience in STEM.

Within our findings we found that students expressed a feeling of support at their institutions. Feeling supported, according to student participants, was based on the interactions with faculty in the classroom. Students expressed feeling challenged, but also that the challenge was not because they were not men, but that they were women. In addition, the campus for women is perceived to foster a supportive and collaborative environment. The supportive environment is seen to be integral to their success in their academics, besides contributing to their development of a strong STEM identity [3] which will later propel them to pursue STEM careers. This is furthered by the concept of collaboration and experiential opportunities through internships and research lab experiences.

Despite the academic support, diversity was recognized on the campus. However, student participants described that there was more representation or concentration of racially diverse students in some programs as opposed to others, a description which matches many studies in STEM [51]. In addition to students' perceptions of diversity, inclusion was also seen as a challenge mainly because students struggled not to be grouped as one and have their individual backgrounds and history recognized. Belief in monolithic of individual identities and their experiences serve as one of many limitations in fostering a sense of belonging [15]. Instead, it is imperative to shift perspectives about racial and cultural groups from deficit to antideficit thinking. Lastly, some students discussed how scholarships were given to them to attend the University of Women which helped them feel supported and welcomed at the institution. However, financial barriers persisted due to their inability to accept and attend an unpaid internship. Financial barriers acted as a double-edged sword in that it was not only impacting the student's internship options, but that it was also a cost in the amount of time that the students could be available on campus while maintaining resources. Faculty expressed an understanding about the financial barriers for students, often advocating for or stating the need for fiscal resources to create more scholarships.

Overall, attending a Women's University was essential to overcoming the stereotypes and gender barriers within STEM. The environment fostered a healthy sense of support and challenge [52] that promoted their ability to find value in learning and enhance their self-efficacy in STEM. Furthermore, students found that they were persisting in STEM because of the role models they had within their labs and faculty mentors, but also that they wanted to persist to be role models for others in their community thus exemplifying a sense of community uplift [3].

In conclusion, the study found that faculty and students' perceptions of campus climate aligned. In addition, the experiences of students in a supportive environment were influential but did not absolve the fear of inclusiveness in the STEM field. Instead, attending a university that primarily purposes to educate women in a collaborative and supportive environment yielded graduates with a solidified STEM identity and a strong self-efficacy for the belief to succeed. However, issues of representation, equity, and inclusion on the college campus caused students to be concerned about similar issues in STEM and the potential challenges of pursuing STEM as WOC. Women's universities, when equipped with enough resources, can serve as the facilitator for broadening participation of WOC in STEM.

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