"Hey Dude":

How First Year Women Engineering Students Experience Gendered Faculty Interactions

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Despite women's increased presence in engineering classrooms, women students continue to report sexism as a remaining issue in developing meaningful relationships with faculty (Kuchynka, et al., 2018). "Dude culture" often overtakes the engineering classroom, and positions the backseat as women's place, which includes less participation, lack of relationship building with faculty, and being pushed into stereotypical feminine roles in group work (e.g. group secretary) (Miller, et al., 2020; Seron, et al., 2016). This culture can impact women's relationships with faculty, which can decrease their engagement and increase attrition (Simmons & Lord, 2019; Seymour & Hewitt, 1997). Women's experiences in engineering can be described by a series of microaggressions, taking place both in their interactions with their men peers and faculty. These microaggressions from faculty and the sensemaking/mindsets they use, can make women students feel like outsiders, others, or tokens in the engineering space (Simmons & Lord, 2019; Camacho & Lord, 2011). When faculty's interactions with women are gendered, or at the intersection of gender and race/ethnicity, these messages are internalized, and negatively impact women's sense of belonging, self-efficacy, academic outcomes, and future career choices (DeAngelo, et al., 2021; McCoy, et al., 2015).

Purpose

Building on and extending this literature, we examined how inequities in the classroom are reproduced by faculty through gendered interactions with students, and how women experience, understand, and uptake these gendered interactions during the first year of college. Few studies (i.e., Salazar, et al., 2020; Moss-Racusin, et al., 2012) have examined the role of faculty in producing inequity through gendered behavior in their interactions with women undergraduate students in engineering. We examined women's perceptions and experiences related to *how* the gendered behavior occurs and how this reproduces systemic inequity.

The following research questions were addressed:

RQ1: How do women experience and perceive interactions with faculty as gendered?

RQ2: How do these gendered experiences with faculty influence how women see themselves as engineers?

Participants articulated that men faculty often gender them in classroom interactions and women therefore, feel that they experience barriers in attempting to build close relationships with men faculty that their men peers do not. However, many of the participants assert a sort of gender-evasive and cling to notions of meritocracy as an explanation for their gendered experiences with professors, claiming that everyone is treated equally. While these ideals may serve as an unconscious mechanism for managing feelings about their underrepresentation in engineering, and the resulting discrimination they experience, this endorsement of gender-evasive and meritocracy creates a contradiction in the perceptions that women articulate about their lived experiences with men faculty. This contradiction between women's perceptions and lived experiences then in turn contributes to the perpetuation of the systemic issues that result in the underrepresentation of this population. If women refuse to acknowledge that gendered interactions affect their personal experience, despite articulating experiences in which they are clearly treated differently than men peers, affecting cultural change could prove to be difficult. These findings challenge much of what we know about women's experiences in engineering, indicating that there is a need for additional education around how individual experiences translate to and impact the treatment of underrepresented populations.

Literature Review

While there is an emerging body of literature on the impact of professors on students' experiences, as well as student perceptions of gendered interactions with faculty, there is less so

on how women in engineering specifically make meaning of these assumptions and narratives (for exceptions, see Hall, 2016; Morris & Daniel, 2008; Powell et al., 2009; Riley, 2019). This review examines the particular ways in which professors can either negatively or positively influence students' experiences, academic performance, and mindset (Mayhew et al., 2016; Micari & Pazos, 2012; Sax et al., 2005; Vogt, 2008; Weidman & DeAngelo, 2020), as well as how undergraduate women in STEM grapple with interactions they have with faculty that may be gendered. This scholarship provided a frame of reference for understanding our participants' lived experiences, especially within the context of previous research.

Faculty Impact on Student Experience

Interaction with faculty is crucial to a quality undergraduate education (DeAngelo et al., 2015). Outside of peers, faculty are a main source of socialization for students (Weidman & DeAngelo, 2020). Faculty and student interaction are paramount to good practice in undergraduate education (Chickering & Gamson, 1987), and are important for student involvement and motivation. Large-scale quantitative studies have demonstrated significant relationships between the amount of time students spend interacting with faculty and a variety of positive academic and social outcomes (Mayhew et al., 2016; Sax et al., 2005; Weidman & DeAngelo, 2020). Research has also found a positive correlation between students who receive encouragement from professors and their academic performance and self-efficacy (Micari & Pazos, 2012). In fact, Aronson et al. (2002) found that even if students do not have personal relationships with a particular faculty member, the delivery of supportive messages from professors to students can be significant. Students who received clear communications from professors regarding the possibility of incremental improvement (growth mindset) in academic

abilities demonstrated higher rates of academic satisfaction and engagement and greater performance versus students who did not receive similar messages.

Conversely, students in STEM disciplines who report negative experiences with faculty earn lower cumulative grade point averages and are more likely to change their major (Micari & Pazos, 2012; Vogt, 2008). The relationship between students' retention in STEM majors and experiences with discrimination by professors is especially significant for women and underrepresented racially minoritized students. Park et al (2020) found that nearly half of the women and Black students who experienced sexism or racism were not retained in STEM and graduated with a non-STEM degree. However, positive impacts of student and faculty interaction may be conditional depending on the experience students have (Mayhew et al., 2016) and may differ by gender (Colbeck et al. 2001; Kezar & Moriarty, 2000; Sax et al. 2005) and race/ethnicity (DeAngelo, et al., 2021; Winkle-Wagner et al., 2020). Salazar et al. (2020) found that the experiences of women of Color and White women varied significantly. Although all of the women in their study indicated that they experienced sexism perpetrated by their faculty, the effects were sometimes either mitigated or exacerbated by their race and/or ethnicity. The authors found that White women, in particular, softened the negative impact of sexism with white privilege, relying on their race to help them form closer relationships with faculty. Conversely, women of Color found that race served as a barrier to relationship building with professors, which hindered their ability to access career-related opportunities. However, the findings of Salazar et al. (2020) also indicated that exposure to professors of Color facilitated relationships for racially minoritized students, which then gave these students access to networks that supported their career goals in STEM. Finally, the authors found that the effects of both racism and sexism were lessened when students were engaged in research. The findings of this

study highlight the complex nature of professor and student relationships and the varied effects, both positive and negative, of race and gender for undergraduate women. In short, shared racial or gender identities between students and professors, or conversely a lack of such commonalities, can significantly impact the results of these interactions, both negatively and positively (Park et al., 2020).

In engineering programs, women are largely underrepresented and earn only 20% of bachelor's degrees. Further, women of Color earn less than 4% of engineering degrees (Yoder, 2016). Research has shown that characteristics of the engineering environment, including culture and curriculum, can contribute to a "chilly" climate for women (Simmons & Lord., 2019). Studies have shown engineering to be gendered historically and in practice, featuring a culture that discourages and repels women (Ayre, et al., 2013; Faulkner, 2007; Simmons & Lord., 2019; Stonyer, 2002). Within this culture, poor relationships with faculty are likely to contribute to the "chilly" climate women experience (Salazar, et al., 2020).

Student Perceptions of Gendered Interactions with Faculty

The literature on undergraduate women in STEM and their perceptions of hostile climates within their disciplines indicate a range of attitudes held by students. However, both women and men in STEM hesitate to acknowledge the realities of gender-based hostility in their disciplines (Hall, 2016; Riley, 2019). For example, in one study, White women in majors like information technology and engineering asserted that their environments were less chilly than their peers in majors that are more balanced gender-wise (Morris & Daniel, 2008). However, these perceptions do not necessarily translate to welcoming environments, but rather could be women's attempts at managing challenging climates in men-dominated majors. Other studies have demonstrated that when women exhibit feminine behaviors and experience "gender role conflict," they posit that it

is valuable. Women claimed that the benefit was especially useful throughout the internship and job search process and in seeking academic help, even when support was provided with a patronizing attitude (Powell et al., 2009). Additionally, the women in this study minimized the effectiveness of resisting genderism and indicated that they believed that confronting hostility negatively impacted their sense of belonging within STEM environments. This literature is an important context for examining the approaches that women utilize to combat gender hostility, regardless of whether they refute the reality of the climate or attempt to mitigate the experience.

Theoretical Framework

Our theoretical framework helped us to interrogate how covert systems of gender and racial/ethnic oppression operate in the engineering environment, and how this impacts women's experiences in the classroom and their interactions with faculty. Using a gender lens to analyze the culture of today's engineering environment, we saw how genderism operates as a catalyst for othering women in a space in which they were historically excluded. This work is accomplished using feminist theory, which seeks to understand the role of gender in creating systems, experiences, and relationships rooted in exclusion and inequity.

For example, Butler (1997/2013) explains that gender identity is created by the repetition of performative acts that help to create a reality that upholds cultural understandings of what it means to be a woman. Butler's work, and feminist theory in general, can be used as a theoretical frame for understanding how gender is manipulated in the engineering space through historical and current structures of patriarchal power. Engaging with Ahmed (2007), we also grounded our work in the examination of the gendered and racialized body and their intersection. We also used Ahmed (2017) to offer an account of how power works with the engineering environment. This theoretical grounding was essential in our conceptualization of how the process of othering takes

place in engineering through power and exclusionary practices that exist in a highly White, men dominant, cis-gendered field.

Method and Data Sources

This study took place at a research institution in the Mid-Atlantic region of the United States, and was part of a larger, longitudinal qualitative study following a group of women engineering students during their entire undergraduate careers. The larger study seeks to understand issues of self-efficacy and sense of belonging throughout the college experience. The study we present here utilized data from three interviews conducted during the first college year, including the women's first few weeks of the fall term (2017), the end of the fall term (2017) and the end of the academic year (2018). Following the women closely during their first college year allowed us to capture women's initial interactions with faculty fully and how these interactions and experiences shaped their perceptions of themselves and what it means to be an engineer. 32 women participated in all three interviews (100% retention) and were asked questions related to their experiences in and perceptions of engineering classrooms, peer and faculty interactions, and gendered understandings of the environment. Of these women there were 5 Black, 5 Asian, 2 Latina, 5 Biracial, and 15 White students (see Table 1). Women of Color are overrepresented in the sampling as compared to the population of women of Color in the engineering program.

We utilized interpretative phenomenological analysis (IPA) (Smith et al., 2009) in our data analysis process. IPA focuses on understanding "lived experience" from the perspective of the "experiencing person" (Bazeley, 2013; Smith et al., 2009) and was used to examine and identify the key experiences or emergent themes for the experiencing group (Smith et al., 2009). In conjunction with our frameworks, IPA allowed us to emphasize the role of individual women as intertwined within a wider systemic patriarchal narrative of engineering, and further

understand *how* their interactions with faculty influenced their perceptions and experiences in the space.

Table 1

Participant Profiles

Pseudonym	Race	Intended Engineering Major
Angela	White	Bioengineering
Brianna	Latinx	Bioengineering
Elizabeth	White	Bioengineering
Genika	Black	Bioengineering
Grace	Asian	Bioengineering
Hailey	White	Bioengineering
Justice	Black	Bioengineering
Katherine	White	Bioengineering
Nicole	Black	Bioengineering
Charlotte	White	Chemical
Faith	Asian	Chemical
Lucy	Biracial	Chemical
Mia	White	Chemical
Jordan	White	Civil/Environmental
Chloe	White	Civil/Mechanical
Alexandra	Latinx	Electrical
Phoebe	White	Electrical
Hannah	Biracial	Industrial
Paige	White	Industrial
Taylor	White	Industrial
Ginger	White	Material
Cassandra	White	Mechanical
Emma	Asian	Mechanical
Monica	Black	Mechanical
Sophia	White	Mechanical
Aidia	White (Middle Eastern)	Undecided
Anna	Asian	Undecided
Britney	White	Undecided
Julia	Asian	Undecided
Michelle	Biracial	Undecided
Nasha	Black	Undecided
Samantha	White	Undecided
Shreya	Biracial	Undecided

Findings

The women engineering students in our study encountered a standard engineering curriculum where they were taught largely by men faculty in their first college year. As they were learning to understand the new expectations of a collegiate academic environment, many felt tension when interacting with their men professors in the classroom and in some cases during office hours. The women explained how they had experiences where they felt their gender played a role in faculty's interactions with them. Sometimes these experiences were more formal, and other times they felt like they weren't taken as seriously. Additionally, the women shared that their gender did not allow them to form the same relationships with men faculty as their men student peers. Although women clearly articulated gendered interactions with professors, they also expressed attitudes of gender-evasive and meritocracy in reflecting on these experiences. The women's experiences provide an understanding of how gendered behavior functions in today's engineering culture as a result of faculty interactions that are situated within a larger context of a historically patriarchal environment.

Genderism in Classroom Interactions

The women noticed that faculty relationships were gendered in the classroom, and that men faculty often made them feel like outcasts which othered them in the environment. Michelle explained that one of her men professors was much more relaxed in conversation with her men student peers like they were friends, yet when he spoke to women his demeanor became more rigid and less friendly:

> [Men faculty say] "Oh, what's up? Hey dude," or stuff like that because they're like friends or bros, but for girls they're like a little bit more not so relaxed. They're like more, "Oh, hello," or, "How are you," and things like that. They're like a little bit more formal, so, you feel like a little bit of more distance in between."

Hannah told the story of how her engineering professor singled out women's experiences making them feel superficial in comparison to her men peers:

> In my engineering class, my teacher bugged me. He likes to make conversation and make jokes but sometimes the jokes are aimed at girls rather than guys… He was going around asking students, 'what'd you do this weekend?' And he asked one girl, and she's like 'my sister visited.' And he's like 'oh, what'd you guys do?' She's like 'we went shopping.' He's like, 'what'd you buy?' She's like, 'a shirt.' And so now every [class] he'll make a comment like 'oh, you should buy a new shirt.' So, kind of brings it up again so you realize [the difference].

The way in which this particular faculty member chose to try to engage with this woman student is certainly framed through assumptions about gender, an approach he did not seem to take with the men students in the class.

Conversely, women students described their experiences with women faculty very differently, with Aidia stating:

> They're [professors] both women, they're both very helpful. I'm not afraid to approach either one. It's just hard to like a concept, focus on a concept that I don't like. Like my [course name] professor, if she's teaching next semester, I'm taking her again 'cause she tries to give you like every single resource you can. She'll be like, 'this is going to be on the test, you need to understand this part and all that stuff.' Same with my [course name] professor. She'll give you all the resources as well.

Even when interactions with men faculty are not explicitly gendered, women participants still seem to possess an awareness that they are being treated differently than their men classmates. For example, one participant told a story about a woman peer who tried to ask a

question of a man professor in class. The faculty cut her off mid-question, told her he'd answer her after class, and moved on to the next question. The participant shared that she did not think this would have been the experience if she were a man. She then went on to share that she doesn't speak in class and if she has a question about the course material, she waits to ask the professor one-on-one after the class concludes. Women's awareness of the likelihood that men faculty may gender them, based in many cases on previous experiences, created uncomfortable environments which perpetuated women's feelings of otherness in engineering classroom spaces.

(Un)Comfortable Formation of Faculty Relationships

Many of the women explained their lack of comfort in forming relationships with men faculty that were more informal like their men student peers. They saw their relationships with faculty as one that should be friendly but professional. The women were often intimidated or scared to interact with their faculty in a more informal manner like their men student peers. The women in turn perceived their men student peers to be forming closer bonds and relationships with their men engineering professors. Hailey explained the women's lack of friendly interactions with men professors compared to her men student peers: "I always see the kids with the professor and it is always a group of guys. They go up and talk to him and they are all friends and everything…. I never have seen any girls up there."

Grace explained her hesitation to become friendly with her men professors and how this was easier for her men student peers. Not only did she feel uncomfortable because of her gender, but also because of her perceived dichotomy between the professor/student relationship:

> In my engineering class last semester – the guys had – it was easier for them to make jokes with the professor than it would be for me to… I don't feel comfortable enough to

> say it, because I keep being like, "Oh, I'm a student." Also, I'm a female. So, I don't feel comfortable talking with an older man like that.

Monica reiterated Grace's experience and explained the lack of comfort she felt in pursuing casual interactions with men faculty. She saw her men student peers as having an advantage in their ability to pursue this type of relationship:

> I don't really interact with my professor, but they [men students] can talk really casually with him… most of my professors are guys, and I don't feel comfortable talking with them. Then also, for me, I can't get over the fact that they're much older than me. So, I don't feel comfortable talking with someone that's older than me, casually, but they [men students] seem fine with it.

Grace shared another story that expresses a similar sentiment, stating:

> One of my close guy friends work with me in internship. So, I feel fine if he's there. When he leaves – because it's normally just the two of us with one professor, but then when he leaves, it's just me with that old professor. We have to work really close together to do the experience, and then I don't feel so comfortable. Because it's an old guy, and I feel like I should be formal, and I can't be as open as I should be. I'm kind of also aware of what I wear if I'm alone. You know? Because it's just the two of us in that one lab, and there's nobody else. So, I should be aware of what I'm doing. But if my other guy friend is there, I feel comfier.

Despite some of the women's discomfort with the idea of conversing casually with men professors, a number of the participants in our study spoke about the benefits of attending office hours and saw this as a place where they felt more comfortable interacting with their men professors. This may indicate that women see this as a space where they can receive formal

assistance from faculty, and as a space that unlike the classroom is not dominated by their men student peers (DeAngelo, et al. 2020). For example, Alexandra shared:

> I find it to be really helpful to go to the office hours just so that they can put a name to a face really and then I can ask them [the men professors] all the questions that I might have been too scared to ask in the lecture just because there's so many people there and then being one-on-one is definitely easier to communicate.

Grace echoed Alexandra's sentiments, sharing that when she was struggling in a particularly difficult course, she did attend office hours, stating: "Outside of the classroom, I don't talk to my teachers that much, except for maybe a couple – yeah. I went to office hours once or twice for [course name], because I really thought I needed help…"

Participants also shared that when they needed assistance in a course, they often looked to Teaching Assistants (TAs) for support and sought office hours. Sarah shared:

> I haven't really gotten to know any of my professors really. But, I've gone to my engineering TA's office hours. So, I've gotten to know him, and he sees my face and how hard – me and my group [of women peers] often go together to his office hours. So, he sees how hard we're working…

Although not all women attended office hours with the intent for anything beyond securing academic support, some participants did, in fact, find it a space in which they could build relationships with faculty. Taylor, for example, shared:

> I think my [course name] professor is very supportive of me even though he has a lecture hall of 200 people. I go to his office hours once a week and I do my homework there. It's a couple of us and it's fun. I don't know. He and I have gotten close. He's great.

Many of the women in our study were uncomfortable attempting to build relationships with men faculty, especially in contrast to the informal and friendly connections that their men peers seemed to be able to form. In times where women may have needed to secure academic assistance, participants indicated that they preferred to utilize Teaching Assistants or visited their professors in office hours as opposed to asking for help in the classroom, as these alternative spaces were less intimidating without the presence of their men peers.

Gender-evasive and meritocratic mechanisms to deflect differential faulty support

Despite sharing stories of being gendered in the classroom by men faculty and feeling less comfortable engaging in informal interaction or building close relationships many of the women in the study used notions of gender-evasiveness and meritocracy as an explanation for their experiences with men professors, asserting that they "just see everyone as equal," as Cassandra exclaimed. Women may subscribe to these ideals as an unconscious mechanism for managing feelings about their underrepresentation in engineering and the resulting discrimination they experience. Their gender-evasive and meritocratic claims creates a contradiction in the perceptions that women articulate about their experiences with men faculty. For example, when asked about advice she might give to incoming women engineering students, Katherine shared:

> I would just tell them that no one is specifically gonna look at you differently. No one is gonna make comments that you're a female. Even if people do feel that way, it's just more of a reason to prove them wrong. It would be like, if somebody's looking down on you, just try harder. Then if they're ever looking down at you, you have a reason to say, 'Okay. But obviously that doesn't affect how I'm doing in classes and stuff.' I would just say, if anything ever does happen, don't listen to them, because it's not worth it. It's not

> worth stressing over something that really doesn't have any impact on your success. You should just worry about school, and if you do really well in school, that's all that matters. Because they're probably only trying to get in your head. It's not worth stressing over that when there's a million other things to stress about freshman year.

Here we see a kind of contradictory and tacit understanding of women being underrepresented in engineering and as a result, that this status shapes their experience, but this should not affect one's ability to perform at a high level academically. Another participant Cassandra shared similar thoughts on the matter, stating:

> I feel like I've always heard people talk about how they've had sexist professors and they don't like girls and stuff, and I don't know if I've never experienced that because I never see that in other people, or if because I've just never had a teacher that's sexist. I know there was definitely a lot more of my girlfriends that were complaining about my [course name] professor, which I thought was interesting because I never noticed that he would act that way, but they said that he was just really condescending if you asked him questions. . . So, that's why I've always just wondered, I don't know, are people just overreacting or maybe I really just don't see people being like that.

Later, Cassandra leans further into the value that she places on meritocracy, stating:

> So, whenever I have classes with a teacher that might be sexist, I don't see it because in my mind, I think everyone is equal, so I just assume that the professor thinks the same way, and I don't catch social cues like that.

Despite recognizing that women peers have had gendered experiences with men faculty, Cassandra claims that her women peers may be exaggerating the professor's behaviors. The participant also seems to oscillate between questioning women's perceptions of interactions with

faculty as gendered and claiming that if these experiences are reality, then she simply would not be able to recognize it as gendered because she believes all people are equal.

Even when participants clearly recognized that they were being treated differently than men peers, they questioned whether the treatment was simply a matter of how they interpret the interaction. For example, Nicole shared a story about trying to talk to one of her men professors about an exam grade and feeling dismissed. She describes how she assumed the interaction was an issue of her own making because of how she *perceived* the treatment she received as gendered. She stated:

> Other than my [course name] encounter, I wouldn't say anything was hostile. In terms of my [course name] thing, when I had gone to talk to my professor about the whole exam thing there had been another girl there asking to talk about her grade. It wasn't necessarily that he was being hostile towards her, but it was more like a well, 'what do you expect me to do kinda' thing. It was very much like 'that's your own fault,' even though she was just asking. She was saying she was concerned about her grade and [asking] what she could do to fix it and he was basically like, 'Well if you did well on the test, you wouldn't have to fix your grade.' Stuff like that. I don't know how hostile I'd call that. Verbally I think it was inappropriate. If you wanna say that there's nothing you can do to boost your grade, you can say that, but you don't have to say like, 'Well, if you would have just done better.' Other than him in particular and the experience that I've seen with him, I wouldn't say anything's been hostile.

Nicole went on to discuss how her multiple marginalized identities as a Black Caribbean woman complicated her perception of the interaction, sharing:

> It's not discourag[ing], but made me hesitant towards how people are treated in the field just because I wonder if I were a guy, if I were a White girl, if I were whatever, would the situation have gone the way it did. Like we were talking about before, I don't know if it's a me thing or a professor thing, him specifically. What the problem was there I guess, but like what I was saying, you shouldn't have to put up with stuff like that. So it's like is this what I'm gonna have to be doing for the rest of my engineering career. So it's a little disheartening I guess to think that that's something that I could have to deal with even though everybody tries to talk about how these fields that were mostly male dominated are so accepting of everybody. You know that that's an exaggeration of what's really happening.

The women in this study are clearly aware of the reality that men faculty gender their interactions and treat them differently than men peers; however, participants seem to utilize gender-evasive and meritocratic notions in an effort to manage or mitigate the consequences of their experiences. In doing so, many participants questioned their own perceptions of treatment by men professors, creating additional stress within already chilly and hostile learning environments.

Discussion

This study utilized interview data from 32 women across three interviews conducted during the participants' first year of college. In these interviews, we sought to to develop a comprehensive understanding of women's initial interactions with faculty and understand how these experiences informed their perceptions of self and what it means to be a woman engineer. Results from the study uphold previous literature on women's experiences with men faculty in STEM spaces (Colbeck et al. 2001; DeAngelo, et al., 2021; Kezar & Moriarty, 2000; Park et al.,

2020; Salazar et al., 2020; Sax et al. 2005), indicating that men faculty gender women in classroom interactions and as a result, participants experienced additional barriers in attempting to build relationships with men faculty that their men peers do not have to navigate. However, many of the participants also claimed a sort of gender-evasive and upheld the belief of meritocracy as an explanation for their gendered experiences with professors, with many women asserting that everyone is treated equally in engineering classrooms, which supports previous research on this topic (Hall, 2016; Riley, 2019). Women may adhere to these ideals in an effort to manage feelings about their underrepresentation in engineering, and the gendered interactions that they experience; yet, this support of gender-evasive and meritocracy produces a discrepancy between the perceptions that women articulate about their lived experiences with men faculty. This contradiction between women's perceptions and lived experiences then in turn supports the reification of the patriarchal system that allows men to remain the dominant majority in engineering.

Overall, our study suggests that gendered interactions with men faculty not only create more challenging classroom environments in an already difficult space for women, but also that these experiences disorient women, forcing them to question whether their perceptions are an accurate portrayal of their lived realities. These experiences seem to serve as a form of self-gaslighting that contributes to the perpetuation of women self-policing their own behaviors (e.g. not asking questions for fear of being judged) in engineering contexts. In downplaying or dismissing gendered interactions with faculty, women are not only forced to navigate these additional barriers that make classroom environments more challenging for individual women, it also reifies men's dominance in engineering by allowing for this treatment of underrepresented populations to continue.

This study contributes theoretically to the literature by suggesting that despite efforts to address climate issues within engineering, men faculty continue to negatively impact the experience of women students. As a result, the women in our study engaged in a sort of self-monitoring of their behaviors so as to not draw additional attention to themselves within classroom environments. This remained the case even when participants needed academic support or assistance. However, our finding that women felt more comfortable working with Teaching Assistants or in some cases, visiting men faculty during their office hours, suggests that the absence of men peers creates contexts in which women can engage with faculty more fully. While this finding may be helpful in identifying ways that women might more comfortably and successfully build relationships with men faculty, it should implore all who work with women in these contexts to consider new ways that we can shift the reality of gendered interactions for engineering students so that they benefit all and not simply men. Given the additional barriers that women engineering students are already forced to navigate, it is unfair to expect them to not only find ways to overcome gendered interactions so that they can connect with men faculty, but also to reckon with the validity of their own perceptions of how they are treated.

Conclusion

The benefits of faculty interaction are well documented in prior literature, however this study, and the preliminary findings presented here, provide a new opportunity to understand *how* women in engineering grapple with issues of patriarchal power in the space, and *how* these interactions in turn influence their experience, perceptions and uptake of gendered understandings about what it means to be a woman in engineering. While classroom interactions may seem casual from an outsider's perspective, the microaggressions women engineering students experience in the space are meaningful. These experiences influence how women

interact with faculty and can prevent them from having the same opportunities for engagement as their men peers. This may limit women from reaping the positive benefits associated with positive faculty interaction. Women engineers' negative experiences with men faculty during their first year should be considered as we seek to understand how these interactions shape experiences within women's collegiate careers, and to provide us more concrete knowledge on how we can create more equitable learning environments for women in engineering and promote a culture that supports women engineering students to persist through their degree programs.

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