"Lots of Talk, But Nothing Formal": Exploring Administrators' Sensemaking about the Recruitment and Retention of Women of Color Faculty in STEM

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Women of color (WOC) —identified as Alaskan Natives, Asian Pacific Islanders, Black/African Americans, Latinx/Hispanic Americans, Native Americans, Native Hawaiians-comprise only 2% of tenured STEM faculty (National Science Foundation, 2017). WOC faculty encounter a number of challenges in STEM such as disproportionate teaching and service loads, difficulty building networks and collaborations, lack of quality mentoring, and ambiguous promotion guidelines (Corneille et al., Liu et al., 2019). Additionally, interventions designed to support marginalized groups in the STEM professoriate often lack an intersectional lens (Armstrong & Jovanovic, 2017). Consequently, more research is needed that considers institutional and departmental actors (and actions) who play a role in facilitating systemic and structural change in the academy (White-Lewis, 2022). Thus, the purpose of this study was to examine how institutional administrators make sense of factors that inhibit and facilitate the recruitment, retention, and advancement of early-career WOC STEM faculty, and the ways they support (directly and indirectly) their access to and success within these roles.

Researchers underscore the discretion institutional leaders and faculty have that may influence the continued underrepresentation of women of color STEM faculty (Griffin, 2019; O'Meara, 2021; White-Lewis, 2022). O'Meara (2021) defines discretion as "the freedom to make decisions within a set of boundaries set by our institutions and fields" (p. 557). In particular, a great deal of discretion emerges in hiring and tenure and promotion (T&P) processes. While the guidelines could be broadly interpreted, the sensemaking of individuals or small groups take precedent on what is decided (Griffin, 2019; White-Lewis et al., 2022). For example, sensemaking about rigorous scholarship continues to be a contested issue in academia (White-Lewis et al., 2022), where personal preferences and expectations may drive the conversation. Discretion is also relevant to the extent to which institutional leaders aggressively recruit and retain women of color STEM faculty or see the need to do so (Bilimoria & Buch, 2010). Sensemaking about how discretion is interrupted and applied may be the key to understanding how to increase representation of women of color STEM faculty. Sensemaking is an ongoing process that rationalizes and organizes ambiguity while also utilizing social cues (Weick et al., 2005). Consequently, it is important to study sensemaking to unearth latent perspectives and biases that shape the policy framework (i.e., decision-making and policy development). Without such knowledge, it may be difficult to ascertain how and why support for women of color faculty is minimal or non-existent in many institutional contexts.

Literature Review

While there is a growing body of literature on women of color STEM faculty and their experiences entering and navigating the academy, far too little research discusses the roles of institutional leaders in shaping those experiences. Thus, we use the extant literature to show how administrators support or inhibit the success of women of color STEM faculty through examining notions of power and their authority to make change. While the current study focused on women of color STEM faculty, most of the available literature looks at women or faculty of color in the aggregate without an intersectional approach.

Research shows that strong and supportive leadership is critical to recruiting, retaining, and promoting faculty of color. In a case study on two ADVANCE programs, Bilimoria and Buch (2010) uncovered how deans among other senior leaders were active participants in faculty search processes. They provided written documents and contributed to training highlighting the importance of faculty diversity. In another study, Bilimoria et al. (2008) concluded that the involvement and commitment of senior leaders is necessary in advancing faculty diversity efforts. Researchers assert that clear guidelines and expectations can ease the concerns of early career faculty and mitigate biases that emerge in the tenure and promotion processes (Griffin, 2019; Laursen & Austin, 2020). Still, Griffin (2019) argued "institutional leaders must understand and address how sexism and racism are embedded in academic structures, systems, departments, colleges, and programs in a comprehensive way to truly understand why they have failed to or have made minimal progress towards increasing the number of women and men of color on their faculties" (pp. 279-280). In the absence of such actions, we can expect little progress in diversifying the professoriate.

Burgeoning research illuminates the power of department chairs to advance diversity goals. In a survey study investigating department chairs and their capacity to advance faculty gender diversity strategies in their departments, Su et al. (2015) found that administrative power was a critical factor in these efforts. As middle managers who are localized to the department, department chairs may be able to respond more quickly to issues with faculty gender diversity than decentralized institutional structures allow for. Additionally, Su et al. (2015) uncovered that department chairs who were more conscious of the shortage of women faculty were more likely to act. Similarly, Gonaim (2016) posited that department chairs may be more likely to know the barriers to organizational change at the department level than deans. In a qualitative study examining faculty search processes, White-Lewis (2021) uncovered that department chairs possess substantial authority with establishing plans for search processes, hiring, and communicating information between faculty and administrators. Concerning searches, department chairs can prioritize teaching and research emphases as well as aim for candidates who meet a need for diversity. Department chairs may also have the power to make the final hiring decision; though more research is needed in this area (O'Meara et al., 2021). As such, understanding how department chairs perceive and exercise their roles to advance the needs of women of color STEM faculty is important for supporting their success.

Chief diversity officers (CDOs) also play an important role in advancing faculty diversity on campus (Leon, 2014). Some of the ways they do this work is through hosting implicit bias workshops; allocating resources to further faculty diversity efforts; and educating departments on diversity, equity, and inclusion (DEI) issues (Leon, 2014). However, research shows their efforts may be undermined due to gendered racism and delegitimization (Nixon, 2017). While they may be hired to improve diversity and inclusion on campus, they may not be empowered to implement change by senior leaders (Nixon, 2017). This may be due to senior leaders having a "diversity-focused perspective" which focuses on numerical representation and assimilation of faculty of color to

the cultural values of the academy (Griffin, 2019, p. 281). In contrast, Griffin argued that institutional leaders should have an "equity-minded perspective" which entails examining institutional members, policies, and practices that contribute to the pervasive disenfranchisement and marginalization of faculty of color (Griffin, 2019, p. 281).

Theoretical Framework

We applied sensemaking theory to the analysis of our data in this study. As previously stated, sensemaking is a continuous process wherein individuals seek understanding about nebulous phenomena by reconstructing events and justifying plausible action (Weick et al., 2005). The process entails deconstructing language, action, and identity to organize information and generate better clarity (Bien & Sassen, 2020; Weick et al., 2005). Language, as communication through conversation or text, is said to "talk events or organizations into existence" or to ascribe meaning to situations that are occurring in the organization (Weick et al., 2005, p. 413). Talk then informs action, which works as a cycle with talk (Weick et al., 2005). Identity can take the form of self-identity or organizational identity and explains who we think we are and why we enact certain actions (Weick et al., 2005). Of additional note is sensemaking has transformed into a theory to include organizations and not just individuals (Weick et al., 2005). Humans make sense of activities, power, policies and experiences that shape organizations and organizational change (Weick et al., 2005).

Multiple studies that have explored sensemaking in a variety of contexts within organizations. For instance, Bien and Sassen (2020) sought to better understand sensemaking within the concept of sustainability in higher education. The study found three discourse strategies, deconstruction, simplification, and trivialization, that were related to power and sustainability transition in higher education institutions (Bien & Sassen, 2020). Kezar and Eckel's (2002) study investigated change as a process and viewed sensemaking as a subsequent strategy of transformational change. Sensemaking aided institutional administrators, faculty, staff, and students to make new meaning of their roles, skills, and institutional engagement and it was found to be pivotal in four of the five core strategies for transformational change across institutions (Kezar & Eckel, 2002). The five core strategies were senior administrative support, collaborative leadership, robust design, staff development and visible action (Kezar & Eckle, 2002). Furthermore, we applied sensemaking theory in this study to illuminate how administrators make meaning of their organizations and assign meaning to changes that occur within the organization (Kezar & Eckel, 2002).

Methods

We elected to conduct a qualitative study using interviews as a naturalistic inquiry (Creswell, 2014) to understand how institutional administrators make sense of their role in supporting women of color STEM faculty at research universities in the United States (U.S.). A qualitative study focuses on participants' views, their interactions with others, and the assigned meanings of their experiences based on their values, beliefs, assumptions, and feelings (Creswell, 2014). From an interpretative dimension of people's lived experiences (Marshall & Rossman, 2016), the qualitative study enabled us to understand how the behaviors and perspectives of social actors are shaped by power dynamics and interlocking systems of oppression. Specifically, we sought to answer the following research questions: How do institutional administrators at research universities in the U.S. make sense of efforts to recruit, retain, and advance women of color STEM faculty? And, how does their sensemaking influence their actions?

Participants

We used a combination of purposeful and snowball sampling to recruit participants. We emailed prospective participants at select research universities, using our criteria explained below, and invited them to participate in the study. We also reached out to STEM networks and asked them to recommend participants for the study, which we then emailed those suggested individuals. Our criterion sampling entailed using predetermined criteria to identify participants within the case study sites (Patton, 2002). Our criteria included: 1) Chairs of STEM departments, including STEM education as well as the social, behavioral, and economic sciences; 2) Diversity administrators, including administrators who are chief diversity officers (CDO) (or those who are at the assistant or associate level of the CDO office organizationally), diversity administrators in STEM colleges, and/or administrators who work in faculty affairs and are responsible for diversity, equity, and inclusion initiatives; 3) administrators who formerly (or currently) worked with the ADVANCE grant; and 4) Deans including associate or assistant. Accordingly, the following ten participants were in our study (see Table 1 for details).

Data Collection

After the Institutional Review Board (IRB) approval, we conducted 60-minute semi-structured, one-on-one interviews via Zoom web conferencing technology. The interviews occurred from September 2021-May 2022. Interview protocols included questions concerning re-

Pseudonym	Position	Institution [a] Type	Gender	Race/Ethnicity
Ashley	ADVANCE Program Director	HBU (HRA)	Female	African American
Bradley	College of Liberal Arts and Sciences Dean	HWI (HRA)	Male	White
Christina	Political Science Department Chair	HWI (VHRA)	Female	Mexican
Frank	Sociology Department Chair	HSI (VHRA)	Male	White
Heather	Chemistry Departmental Diversity Liaison	HWI (VHRA)	Female	Asian/White/Asian American
Leonard	Earth & Atmospheric Sciences Department Chair	HSI (VHRA)	Male	White
Mark	Graduate College Associate Dean	HBU (HRA)	Male	Black or African American
Sabrina	College of Science Diversity Liaison	HWI (VHRA)	Woman	Latina/White
Steven	STEM Education Department Chair	HSI (VHRA)	Cisgender Man	White
William	Psychology Department Chair	HSI (VHRA)	Cisgender Male	White

Note. In Table 1, we provide information based on self-reported data from each participant, excluding the pseudonyms. [a] We also classified the different types of research institutions (research university with very high research activity [VHRA] and research university with high research activity [HRA]) based on The Carnegie Classification of Institutions of Higher Education (n.d.). Additionally, HSI accounts for Hispanic Serving Institutions; HWI for Historically White Institutions; and HBU for Historically Black Universities.

Table 1. Participant Demographic Information

cruitment strategies, policies and practices that support or hinder retention and advancement, and merit review and T&P processes. After the interview data were transcribed by a professional service (TranscribeMe), we began data analysis.

Data Analysis

We analyzed the data using a thematic analysis approach (Robson & McCartan, 2016), enabling us to make meaning of the data by categorizing emerging patterns into themes as part of the coding process. Both open and a priori coding were used in establishing a codebook (i.e., "a set of codes, definitions, and examples used as a guide to help analyze interview data") (Decuir-Gunby et al., 2011, p. 38). Open coding allowed us to generate codes from the initial review of the data using participants' words and phrases (Saldaña, 2021). A priori codes were generated from the literature and the theoretical framework. Once the research team reached a consensus on codes (Harry et al., 2005), the codebook was uploaded into the Dedoose analysis software. Once uploaded in Dedoose, we engaged in focused coding by assigning codes to excerpts of data. Two coders were assigned to each transcript. In our final stage of analysis, we applied axial coding, sorting the codes among three themes associated with our research questions: recruitment and hiring, retention, and advancement (Saldaña, 2021).

Trustworthiness

To establish the trustworthiness of the data, we used the following approaches: multiple coders and triangulating analytical memos and interviews. Multiple coders entailed cross checking codes among members of the research team to refine codes, develop the codebook, and interpretation of data (Barbour, 2001). Triangulating analytical memos and interviews involved the comparison of all researchers' analytical notes and using multiple researchers as interviewers during data collection for the accuracy of the data and the strength of our research (Merriam & Tisdell, 2015).

Findings

We report our findings about administrators' sensemaking using three themes aligned with our research questions: (1) recruitment and hiring, (2) retention, and (3) advancement. Sensemaking about recruitment and hiring entailed how participants understood recruiting women of color STEM faculty and when to disrupt practices that limited access to the pool for this group. Concerning retention, several participants discussed the need to create welcoming environments and a sense of belonging on their campuses as precursors to retaining women of color faculty. Lastly, advancement focused on how participants were making sense of tenure and promotion policies and processes.

Recruitment and Hiring

Participants reported disrupting bias and traditional norms that prevented efforts to increase faculty diversity. Some of these strategies included challenging who was being excluded from the interview pool or making fellow colleagues consider their biases when selecting candidates. Bradley shared how he intervened in a math department search because of his beliefs about the urgency to hire more diverse faculty,

The department ranked the candidates, and there was a Black woman candidate who was ranked eighth. Because there were so many candidates, the difference between one, two, and three and eight was minuscule. I called the chair and said, "You're interviewing number eight because we value diversity. It's part of our mission of the college. We need to do a better job representing the face of the students and the faculty." And they interviewed that person and she won the job on her own. I did nothing after asking them to interview her. And she did a terrific interview, and she's coming this fall. From my perspective, we have diverse pools but challenging departments to take time to consider where their values are. I've talked to the chairs about this quite a lot. The difference between three peer-reviewed publications for a new faculty member and two peer-reviewed publications is almost meaningless. But yet they're ranking people based on those kinds of things. Instead of ranking people based on these quantitative things, put some qualitative indicators in there that really go at the heart and soul of our mission and the needs of our student body.

In the previous quote, Bradley shared that some of the approaches search committees employ to narrow down their pool are trivial. As he illustrated, such practices could exclude women of color faculty if equity-minded leaders are not involved in the decision making of identifying an interview pool. Also, he demonstrated that though he has the authority to alter the search process, he only intervened when necessary. He still gave the committee the autonomy to move forward with the interview process as they saw fit. He also noted that qualitative measures should be considered in the hiring process. At this institution, the president set a clear expectation that they would be an anti-racist institution. Thus, when Bradley mentioned "the heart and soul of our mission", he was referring to the president's stance on how they should function as an institution as well as recognizing the fact that they have an increasingly diverse student body, and the faculty should reflect that diversity. William shared how faculty members' affinity for candidates like themselves can negatively impact a faculty search,

I remember being on a committee and they liked this one candidate who was kind of a White man. But he really didn't bring anything that we didn't already have as a collective, even respective of the majority

group that he came from. And I can remember kind of like almost suckering them in. I said, "Oh, I could see where, yeah, he would fit in," and we would make jokes and things at department meetings that he has a similar background. He had a connection with Northwest or something to me, and I could see where we'd be friends. I could see the committee kind of nodding like, "Oh, good, he's going to be on board," and then I said, "But we're not hiring a friend for me. We're hiring the best candidate we can for the department and somebody who brings strengths that are unique to our setting, and some of that includes people from different backgrounds and different orientations." So anyway, but that mindset of sort of saying, "All right. Not looking for something-- I'm going to have a tendency to find appealing what is a part of my identity. Therefore, I got to at least sort of be aware of how that skews the way that I look at all the candidates." And that includes making sure that we all have conversations about the ways that we rate individuals as they come through and the rubrics, etc.

William illustrated how even when White men candidates may not have anything substantial to add to the candidate pool, committees may be more likely to select them because of their similar identities and backgrounds. However, in William's case, he did not perceive he could come out and say that directly, so he baited them until he could explain to them how this approach was problematic. In William's interview, he also indicated how his department was struggling to recruit and retain Latinx faculty though they were an HSI. Moreover, participants in the study underscored the tendencies of committees to identify candidates that were akin to the existing faculty, and some faculty did not see a problem with this action. This sensemaking led to efforts to increase implicit bias training to mitigate such biases from negatively influencing hiring processes.

Retention

Retention efforts indicated in the study included salary modifications, stopping the tenure clock or providing additional years toward tenure due to the impacts of COVID-19, parental leave, mentoring support, and writing retreats to buttress publication submissions and grantsmanship. While these policies are consistent with best practices in the literature, some were designed for all faculty, and they did not necessarily consider the unique factors of women of color faculty (Armstrong & Jovanovic, 2017). For example, while some institutions provided leave time for taking care of aging parents, others did not. Additionally, mentoring support varied a great deal. Consequently, at the time of the study, several departments and institutions were still trying to establish a mentoring structure for early career faculty. Specifically, the lack of intersectional approaches to mentoring may have been

due to some stakeholders' limited understanding of how compounded oppression shapes faculty life. Sabrina, at an HWI, argued,

> We talk about gender, we talk about race, and the intersectionality just goes over people's heads. So, it's something also that we have to be very intentional about. I'm not sure that we have anything in place, however, I do know that the academic deans that I work with - and we have conversations about this - are very keen about understanding that women of color face multiple challenges, intersectional challenges, and especially they also happen to be a member of a sexual minority, or they have a disability.

Ashley, at an HBU, shared the following,

> Folks at HBCUs don't really realize that there are some DEI issues and -- race and ethnicity may not play a factor, but we do have issues around gender, and there's ageism, colorism, all the other -isms.

Because Sabrina and Ashley were aware of the resistance to address intersectionality in their respective institutions, they worked with empathetic senior leaders who could help reinforce their messages. For example, Ashley shared how her provost would compel trainees to consider the following "how would you feel if this is your daughter going through this and every time she tried to move forward, there was a barrier put in place that did not have to be there?" She felt messages such as these were critical as she stated the following,

> There's still resistance, but I know over the last four years, I've actually seen a change. And it helps to have your provost in the room when you're talking about this to the chairs and showing the importance of the role that they play in setting up a culture that is supportive of all faculty, regardless of their gender, their race or whatever.

Sabrina put it best when she explained the "three R's" necessary for retaining women of color faculty,

> But this cannot happen unless we have the three R's, which I like to refer to as the resolve at every level, but it has to come from the top. You've got to have the resources available to do this. The system is not going to change absent resources. Unless we provide mentoring stipends, programming, training, the type of support that's needed, nothing is going to happen. In addition to the resolve and the resources, we need to have responsibility that is shared across the board. You can't just hire one person and say, "Oh, we've checked that box. Let's move on." Everybody has to be held accountable and has to embrace that responsibility.

Sabrina's sensemaking about what it will take to improve conditions for women of color faculty was echoed throughout the participants in this study. Though many were working within the resource constraints provided to them, they had the resolve and shared the responsibility of desiring to do more. However, some still struggled with making sense of the unique needs of women of color faculty and how best to support their retention.

Advancement

Several sub-themes emerged under the superordinate theme of advancement. These sub-themes included: redefining scholarship, discretion and bias in T&P processes, and preparing candidates for T&P. Further, participants' sensemaking about redefining scholarship in the T&P process reflected equity-mindedness. They wanted to be fair in how they evaluated candidates holistically. Several participants argued that for some candidates teaching and mentoring should be considered as part of their scholarship because of the excellence they demonstrated in those areas and how they contributed to institutional goals. Others pointed out that the quantity of traditional forms of scholarship (e.g., publications, grants) were insufficient to determine one's contributions to the institutional mission and candidate's professional field. Heather argued,

> Does it need to be that narrow definition of scholarship? Can scholarship also mean changing the academy to be more inclusive so that other scientists who follow can just be scientists and not have to worry about changing the whole system? I mean, isn't that original, creative work that's highly important?

Christina also raised concerns about the ways her institution defined scholarship, and she advocated for a more inclusive approach. She stated,

> New faculty who come in and say, "I really want to teach. I want to reach the students that see themselves in me. I want to empower students." And someone's gotta do it. How can we find that added value and at the same time accommodate their research agendas? The academy wants us to all be very narrow, "This is the path to success. And if you don't fit this mold, you're not going to be successful." [Women of color] are not that narrow in our thinking. We're more holistic. We're more community-oriented.

Other participants asserted that the academy was advancing an individualistic approach to research though communities of color tended to be collectivist in their thinking and scholarship. Additionally, many extended their scholarship to teaching and mentoring of students. This collectivist nature was also perceived as an issue when evaluating the dossiers of faculty of color, which demonstrated how discretionary bias can impact the T&P process. For example, William observed that committee members were assessing how many single-authored articles appeared on a CV, even though this practice was not in the T&P guidelines. William challenged this by stating,

> Our department doesn't have [a policy that] differentiates between second, third, fourth authors and certainly not anything where we prioritize independently authored publications in the department T&P criteria. But someone will say you've got too many articles with other people [a circumstance] which is related to collectivist perspectives of certain cultures. I've seen it from committees where they're like, "Oh, so-and-so has three independent [articles]." "If it doesn't carry any weight and it's not a part of your criteria, why are you even pointing this out?" Opposed to saying, "Hey, they've written five pieces with other people, and they've included students on three of those pieces.".

William, like other participants, advocated from reframing how committees made sense of candidates' dossiers. Given that faculty of color tend to engage in more non-traditional scholarship, redefining scholarship and reframing how it gets evaluated would better serve women of color faculty as noted by some of the participants.

Lastly, candidate preparation for T&P was another area where there was much discussion about how to approach it and questioning if faculty had equal access to information. For example, Sabrina was doubtful that women of color in her college were receiving the same information on T&P as white men faculty. She asserted,

> Very little happens by way of mentoring and preparation for promotion and tenure, submission of materials. In talking to male colleagues, from day one, some senior colleague took them aside and say, "You need to stay away from service. You need to focus on this. Let's collaborate on this so you have your own research program, but you also have collaborative stuff. Teach only one course and teach that over and over again so you have to reduce your prep." When I talk to women, nobody has pulled them aside, and especially women of color. They're asked to step up to service, and even by the chair who should be protecting them. How are they going to say no to that chair? In terms of having your materials read and re-read and reviewed and given advice for how to craft the dossier, I don't think women of color have that level of support.

When probed about why she believed this was happening, she explained,

> One of them is the stereotypic, "Oh, she's so independent," or, "She doesn't want my help," or, "I don't want insult her by offering her help." So all these reasons that people imagine and come up with, I call them 'thought distortions' because there's nothing wrong with saying, "Hey, I'm here. I'm your colleague. If there's any way I can help, let me know." That's not insulting. That's not racist. But people don't even bother to do that. The other part is, people still outright don't think that women of color belong in the academy. So it's very blatant. It's not just the implicit bias, but the explicit bias that you face. And then other people who want to argue fairness and say, "Well, everybody kind of has to pull themselves up by their bootstraps and do it on their own, so she should be able to do it if

she needs to."

Sabrina's perspective is consistent with Gasman's (2016) assertion that more faculty of color are not in the academy because they are not wanted. To mitigate these issues in her college, Sabrina focuses on moving faculty and administrators beyond "awareness and understanding" to "reflection and guiding people through action plans". As she saw it, "if we want an inclusive institution, and I believe we can use women of color as the proverbial canary in the mine, if they're thriving, whatever we do to help them will actually help the whole system."

Discussion

The purpose of this study was to investigate how administrators at select research universities made sense of efforts to recruit, retain, and advance women of color STEM faculty at their institutions. Findings revealed that participants employed an equity-minded perspective when considering how to address the underrepresentation of faculty of color in STEM. For those with power and authority to make change, they were more direct in their approaches questioning practices and intervening in aspects of the hiring process as needed. For those with limited power and authority, namely diversity professionals, they focused on educating and training campus stakeholders. For all participants, they felt compelled to act because of what they observed on their campuses. They did not ignore the inequities hoping they would resolve themselves (Gasman, 2016).

Sensemaking was a useful framework for exploring how administrators were perceiving and acting upon inequities within their institutions. As previously stated, identity, language, and action are among the tenets that inform the sensemaking construct. Relevant to the current study, discussions about organizational and individual identity and the roles they play in evaluating and selecting candidates proved to be helpful tools in unearthing latent biases. In William's department, committee members were making decisions that supported their self-interests. In Bradley's college, search committee members were failing to remember the institutional mission, values, and changing demographics when potentially excluding women of color faculty from the pool, even when they were qualified for the role. In both cases, it took leadership elucidating these practices were problematic for advancing DEI goals. As the research shows, universities will not be able to increase representation of faculty of color unless leaders are involved and deliberate about improving faculty diversity (Bilimoria & Buch, 2010).

Another component of the sensemaking framework is language, and this concept emerged when administrators were attempting to help stakeholders understand how intersectionality was relevant to understanding their campus cultures and providing better support for women of color faculty. Sabrina highlighted that a lack

of understanding may have been slowing down progress in this area. For Ashley, at an HBCU, her struggles were slightly different. Most people equated diversity with race. Because there were no perceived racial issues on their campus, people were less apt to consider other forms of oppression that were shaping faculty life. Despite these misunderstandings, Ashley did see progress happening on her campus. Through the ADVANCE grant, she was able to bring greater awareness about the intersectional needs of women of color faculty and develop some programming specifically for that population. On Sabrina's campus, progress was slower. At the time of data collection, mentoring programs that centered the needs of women of color faculty were being discussed, but as Sabrina shared nothing formal had emerged. This was an unfortunate gap in potential retention strategies. As Sabrina noted, women of color faculty were not receiving the same information as white men faculty for navigating the T&P process. While department chairs and senior colleagues in the department can be alternative sources of this information, there seemed to be a reluctance to provide advice to women of color faculty. According to what had been passed on to Sabrina, bias and assumptions that these women were "too independent" to need support resulted in senior colleagues choosing not to share information and resources. Circumstances such as these point to why Liu et al. (2019) argued that institutions should find ways to help early career women of color faculty establish networks on campus. Through these networks, they can gain access to information especially when they may lack supportive colleagues or mentors.

The last tenet of sensemaking that we drew upon in this study was action. Action was more complicated to execute because it largely depended on one's access to power and serving in positions of authority. Deans and department chairs were able to directly influence institutional change through making directives, while diversity professionals worked directly with women of color faculty equipping them with information and resources to be prepared for the T&P process. Another strategy employed by diversity professionals was educating institutional leaders and training a variety of stakeholders for search committees and T&P committees. Despite some progress in their respective institutions, participants also expressed concerns that action was incremental at best and slow at worst. Though Weick et al. (2005) argued talk should inform action, "talk" often took precedence over instituting actual policy and structural changes. While some action was happening, it often occurred in small groups and among individuals who had an existing equity-minded perspective. For example, Frank asserted,

> there have been several surveys, climate surveys, work-life balance surveys. I've been on a couple of those committees trying to figure out [best practices], but I haven't seen clearly a lot of policy coming out of that." Part of this may be due to as Heather put it,

"equity is a newer term for [people], and the identity-based way of looking at the world is new and super uncomfortable for a lot of people.

Moreover, until key stakeholders can become more comfortable discussing and enacting equity-informed practices, policy change will continue to be slow. However, talking and action will have to be done in tandem, like Weick et al. (2005) suggests, if anything is to improve, in the near future, for women of color STEM faculty.

Conclusion

Increasing access to and success of women of color STEM faculty in the professoriate requires intentionality that recognizes their unique perspectives and background. From an institutional standpoint, this requires a concerted effort from administrators who are pivotal to diversifying the professoriate. This study reports how institutional administrators at research universities make sense of their role in recruiting, retaining, and advancing women of color STEM faculty. Participants demonstrated an equity-minded perspective which was essential to facilitating the participation and success of women of color faculty in STEM. Given the myriad of challenges in STEM departments, administrators are critical to promoting institutional change and transforming academic culture. Administrators' involvement in ensuring that systematic and structural barriers inhibiting the hiring and advancement of women of color STEM faculty are alleviated is significant to ensuring that the professoriate mirrors their student population. This involvement also reflected the administrators' engagement with diverse institutional stakeholders on the relevance of promoting DEI initiatives to diversify the professoriate.

References

Armstrong, M. A., & Jovanovic, J. (2017). The intersectional matrix: Rethinking institutional change for URM women in STEM. *Journal of Diversity in Higher Education, 10*(3), 216–231. https://doi.org/10.1037/dhe0000021

Barbour, R. S. (2001). Checklists for improving rigour in qualitative research: a case of the tail wagging the dog? *BMJ*, Vol.32, 1115-1117. Doi: https://doi.org/10.1136/bmj.322.7294.1115

Bien, C., & Sassen, R. (2020). Sensemaking of a sustainability transition by higher education institution leaders. *Journal of Cleaner Production, 256*, 120299.

Bilimoria, D. & Buch, K. K. (2010). The search is on: Engendering faculty diversity through more effective search and recruitment. *Change: The Magazine of Higher Learning, 42:4*, 27-32. DOI: 10.1080/00091383.2010.489022

Bilimoria, D., Joy, S. & Liang, X. (2008). Breaking barriers and creating inclusiveness: Lessons of organizational transformation to advance women faculty in academic science and engineering. *Human Resources Management, 47*(3): 423—441.

Corneille, M., Lee, A., Allen, S., Cannady, J., & Guess, A. (2019). Barriers to the advancement of women of color faculty in STEM: The need for promoting equity using an intersectional framework. *Equality, Diversity and Inclusion: An International Journal, 38*(3), 328-348.

Creswell, J. W. (2014). Research Design: Qualitative, Quantitative and Mixed Methods Approaches (4th ed.). *SAGE Publications, Inc*.

DeCuir-Gunby, J. T., Marshall, P. L., & McCulloch, A. W. (2011). Developing and using a codebook for the analysis of interview data: An example from a professional development research project. *Field methods, 23*(2), 136-155.

Gasman, M. (2016). The five things no one will tell you about why colleges don't hire more faculty of color. The Hechinger Report.

Griffin, K. A. (2019). Institutional barriers, strategies, and benefits to increasing the representation of women and men of color in the professoriate: looking beyond the pipeline. *Higher Education: Handbook of Theory and Research:* Volume 35, 1-73.

Griffin, K., Bennett, J., & York, T. (2020, June 24). Leveraging Promising Practices: Improving the Recruitment, Hiring, and Retention of Diverse & Inclusive Faculty. https://doi.org/10.31219/osf.io/dq4rw

Gonaim, F. A (2016). Department chair: A life guard without a life jacket. *High Education Policy, 29*, 272—286. https://doi.org/10.1057/hep.2015.26

Harry, B., Sturges, K. M., & Klingner, J. K. (2005). Mapping the process: An exemplar of process and challenge in grounded theory analysis. *Educational Researcher, 34*(2), 3-13.

Kezar, A., & Eckel, P. (2002). Examining the institutional transformation process: The importance of sensemaking, interrelated strategies, and balance. *Research in Higher Education, 43*(3), 295-328.

Laursen, S., & Austin, A. E. (2020). Building gender equity in the academy: Institutional strategies for change. Johns Hopkins University Press.

Leon, R. A. (2014). The Chief Diversity Officer: An examination of CDO models and strategies. *Journal of Diversity in Higher Education, 7*(2), 77-91.

Liu, S.-N. C., Brown, S. E. V., & Sabat, I. E. (2019). Patching the "leaky pipeline": Interventions for women of color faculty in STEM academia. Archives of Scientific Psychology, 7(1), 32—39. https://doi.org/10.1037/arc0000062

Marshall, C., & Rossman, G. B. (2016). Designing Qualitative Research (Sixth ed.). SAGE Publications, Inc.

Merriam, S. B., & Tisdell, E. J. (2015). Qualitative research: A guide to design and implementation. John Wiley & Sons.

National Science Foundation, National Center for Science and Engineering Statistics. (2017). Women, minorities, and persons with disabilities in science and engineering: 2017. Special Report NSF 17-310. Arlington, VA. Retrieved from www.nsf.gov/statistics/wmpd/.

Nixon, M. L. (2017). Experiences of women of color university chief diversity officers. *Journal of Diversity in Higher Education, 10*(4), 301-317.

O'Meara, K. (2021). Leveraging, checking, and structuring faculty discretion to advance full participation. *The Review of Higher Education, 44*(4), 555-585.

Patton, M. Q. (2002). Qualitative research & evaluation methods. SAGE.

Robson, C., & McCartan, K. (2016). Real World Research: A Resource for Users of Social Research Methods in Applied Settings. Wiley.

Saldaña, J. (2021). T*he Coding Manual for Qualitative Researchers*. SAGE.

Su, X., Johnson, J., & Bozeman, B. (2015). Gender diversity strategy in academic departments: Exploring organizational determinants. *Higher Education, 69*(5), 839-858.

The Carnegie Classification of Institutions of Higher Education (n.d.). About Carnegie Classification. Retrieved July 21, 2022, from https://carnegieclassifications.acenet.edu/.

Weick, K. E., Sutcliffe, K. M., & Obstfeld, D. (2005). Organizing and the process of sensemaking. *Organization science, 16*(4), 409-421.

White-Lewis, D. K. (2021). Before the ad: How departments generate hiring priorities that support or avert faculty diversity. *Teachers College Record, 123*(1), 1-36.

White-Lewis, D. K. (2022). The Role of Administrative and Academic Leadership in Advancing Faculty Diversity. *The Review of Higher Education, 45*(3), 337-364.

White-Lewis, D. K., Bennett, J. C., & Redd, K. (2022). Framing the Dialogue for Systemic Equity Reform in STEM Faculty Careers. https://osf.io/qzmea

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