

## Goal-match Mentoring: A New Strategy for Faculty of Color in Engineering Academia

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Changing cultural perspectives as well as beliefs about the importance of purpose, values, and positive working relations through strategic and compassionate leadership defines the essence of the Leading Schools Forward philosophy; one designed for unique and sustainable organizational change that turns long-term mediocrity into sustainable superiority.

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# **Goal-Match Mentoring: A New Strategy for Faculty of Color in Engineering Academia**

## **Abstract**

This research paper explores the potential efficacy of a new mentoring strategy in which faculty of color in engineering are matched with emeriti faculty on a specific career goal. Through an instrumental case study (Stake, 1995) and a pragmatic lens (Patton, 2015), interviews were conducted with seven Black engineering faculty and seven emeriti faculty on the value of identifying a career goal and then selecting an emeriti mentor who can help the mentee achieve that goal. Interviews grounded by the mutual mentoring model (Yun et al., 2016) conceptual framework offered an in-depth understanding of the potential efficacy of goal-match mentoring. Deductive data analysis strategies established by Stake (1995) were utilized to examine the interview data. Three themes emerged on the potential efficacy of goal-match mentoring: (1) Identifying a career goal prior to the beginning of the mentoring match requires deep reflection on behalf of the mentee and promotes goal accountability; (2) The mentoring relationship quickly blooms as the nature of the mentoring need is identified early in the process; and (3) The expertise of the mentor is swiftly leveraged for the maximum benefit of the mentee. These findings reveal the value of mentoring relationships centered on specific goals that empower mentees to exhibit greater agency over their career trajectory.

## **Introduction**

This instrumental case study (Stake, 1995) explores the potential efficacy of a new mentoring strategy in which engineering faculty of color are matched with emeriti faculty on a specific career goal. Utilizing this strategy, the mentee must first identify a career goal and then select an emeriti mentor with the background and experience to help in achieving that goal. Emeriti faculty are engaged as mentors rather than senior faculty because they possess a wealth of experience, wisdom, and networks, as well as freedom from the responsibilities of full-time academic life (Mendez et al., 2019). The intention is for emeriti faculty to complement, not supplant, existing mentoring relationships, as a constellation of mentors is critical in academe. The mutual mentoring model (Yun et al., 2016) serves as the conceptual framework, and a pragmatic lens (Patton, 2015) is applied to the interviews with seven Black engineering faculty and seven emeriti faculty to focus on the practical implications of this mentoring strategy. Engineering academia and the academy at large may benefit from possessing a greater appreciation of this strategy, which focuses the mentoring relationship on a specific career goal, empowers the mentee to be active and purposeful in their career and professional development needs, and seeks to leverage the wisdom of emeriti faculty. This study is sponsored by a National Science Foundation INCLUDES Design and Developments Launch Pilot award (17-44500). The research question that guides this study is: What is the value attributed to the goal-match mentoring strategy by the engineering faculty of color mentees and the emeriti faculty mentors?

## **Literature Review**

Mentoring in academia is key in efforts to aid faculty in their professional advancement, to promote equity in higher education, to broaden institutional inclusion, and to diversify the

professoriate (Johnson, 2016; Zambrana et al., 2015). Successful mentoring not only provides support and counseling throughout a faculty member's career, but also it offers practical guidance, socialization to the norms and culture of the institution, and access to social capital (productive and meaningful relationships) that enable smoother navigation of tenure and promotion processes. Mentors generally are senior faculty who can orientate newer faculty in academic expectations, as well as aid them in developing a network of colleagues who will provide support through tenure, promotion, and beyond (Cawyer et al., 2012; Hyers et al., 2012; Zambrana et al., 2015). Faculty of color and female faculty particularly benefit from explicit guidance and mentorship, as often they do not receive informal career advice from peers, department chairs, and campus administrators as occurs for White men (Blood et al., 2012; Buzzannell et al., 2015; Hyers et al., 2012; Johnson, 2016; Mendez et al., 2020; Turner, 2002; Turner & Myers, 2000; Yun et al., 2016).

Successful and productive mentoring relationships are dependent upon clear communication between mentors and mentees regarding goals, roles, and expectations (Hund et al., 2018; Zellers et al., 2008). Early confirmation of goals allows mentors to better anticipate mentees' needs to appropriately support them. Perhaps one of the most important benefits of mentoring involves time protection. Managing the heavy workload and chronic stress related to the demands of the professoriate is the primary challenge often cited by early-career faculty (Rockquemore & Laszloffy, 2008; Soto, 2014). Thus, mentors not only provide coaching, but also provide protection from activities that do not directly advance the mentee's career. "Cultural taxation" includes service activities in which faculty of color often are expected to participate, such as equity and diversity committees and mentoring students of color (Griffin & Reddick, 2011; Turner, 2003). An overly extensive amount of time spent on these activities can interfere with teaching and research (Chadiha et al., 2014; Stanley, 2006). This in effect slows the progression of early-career faculty of color in meeting their career goals and achieving important scholarly milestones, subsequently reducing the possibility of earning tenure (Aguirre, 2000; Baez, 1999; Tierney & Bensimon, 1996).

When considering cross-race mentoring, Tillman (2001) studied the value of mentoring for faculty of color by assessing the experiences of 10 early-career African American faculty in predominantly White institutions. An emergent theme centered on mentor functions through mentees' descriptions of their mentors' career support (e.g., coaching, sponsorship, and protection) as more beneficial than psychosocial support (e.g., counseling, friendship, and role modeling). Tillman surmised this may be due to cross-race matching among the dyads. Mentees reported separating their personal and professional lives during mentoring with White mentors and sought more intimate support and counseling from others with whom they more strongly identified. This finding highlights the importance of mentoring networks in meeting the multifaceted needs of faculty of color, in addition to specific career support often provided by majority group members, which was noted by others (Crutcher, 2014; Guramatunhu-Mudiwa & Angel, 2017; Johnson-Bailey & Cervero, 2014; Mackey & Shannon, 2014; Noe, 1988).

Peterson et al. (2020) analyzed the mentoring experiences of four groups of six female faculty of color serving as virtual participants in the Amplifying Voices Project across 20 institutions. The authors noted the faculty group represented those most likely to leave academia. The facilitated bi-weekly Zoom meetings revealed reduced isolation, increased confidence, and enhanced self-

efficacy. Groups were comprised of women with similar career goals but different perspectives, experiences, academic ranks, and institutional affiliations who were considered most successful. This is an important finding since female science and engineering faculty of color often are challenged to locate disciplinary mentors who possess an understanding of the cultural perspectives and unique situations in which faculty of color are placed (Lewellen-Williams et al., 2006). This finding suggests mentoring networks must attend to specific career functions to meet the multifaceted needs of female faculty of color, which is noted in previous research (Blood et al., 2012; Buzzannell et al., 2015; Hyers et al., 2012; Pritchard & Grant, 2015; Schmidt & Faber, 2016; Tillman, 2001; Tran, 2014).

Yun et al. (2016) described the efforts of the Mutual Mentoring Initiative that occurred at a single university over an eight-year period. Designed in part to support the scholarly development of early-career faculty of color, the researchers first conducted a needs assessment that suggested a traditional mentoring model (i.e., one-on-one mentoring between junior and senior faculty) would inadequately support the participants' varied needs. Rather, they determined faculty would benefit from mentoring networks, a model acknowledging the increased presence of networks, not hierarchies, within academia. In order to aid in the success of the Initiative, nominal grants were awarded to mentoring teams to develop a mentoring network aligned with the university's mentoring priorities: getting to know the institution, excelling at teaching and research, understanding tenure and evaluation, developing professional networks, and creating work-life balance (Yun et al., 2016). When examining the outcomes that resulted from this mentoring approach, tangible benefits were realized for participants who determined goals early in the process, such as the development of professional learning communities, interdisciplinary group discussions, mentoring/writing retreats, affinity mentoring groups, and pedagogical skill building. Further, the researchers found high levels of participation by senior faculty and speculated it was a result of clarity of expectations due to mentees' detailed and specific goals that were easier to accommodate. While the benefits of the Mutual Mentoring Initiative are clear, research on the processes and outcomes of this type of goal-matching strategy is severely limited, particularly related to faculty of color (Chadiha et al., 2014; Peterson et al., 2020; Thompson, 2008; Yun et al., 2016; Zellers et al., 2008). Given efforts in higher education to retain faculty of color through mentoring, more research in this area is crucial.

## **Conceptual Framework**

Upon a thorough investigation of mentoring frameworks, the mutual mentoring model that resulted from the Mutual Mentoring Initiative research of Yun et al. (2016) was chosen as the conceptual framework of this study. The model best aligned with the purpose of the goal-match mentoring strategy and was determined to be an efficacious tool with which to consider the value attributed to the goal-match mentoring strategy by the engineering faculty of color mentees and emeriti faculty mentors. Conceptual frameworks are applied in qualitative inquiry to serve as a foundation of established knowledge, to offer logical explanations for the relationships observed, and to reveal nuanced understandings of a phenomenon (Anfara & Mertz, 2014).

The Mutual Mentoring Initiative was designed to be a flexible, network-based model of faculty support in which mentees work with multiple mentors who lend their respective expertise to varied mentee needs, opportunities, and challenges. This model replaced the traditional singular

mentoring model. The Initiative was informed by an extensive review of research on new and early-career faculty mentoring programs, as well as findings from a quantitative and qualitative needs assessment at a university which included eight participating schools and colleges, 85 academic departments and programs, and over 1,200 full-time faculty (Yun & Sorcinelli, 2009; Yun et al., 2016). The five characteristics of the mutual mentoring model included the following: (1) diverse mentoring networks between peers and near peers and between early-career and senior faculty; (2) accommodation of preferences for contact; (3) focus on specific areas of needs, experiences, and expertise; (4) mutually beneficial partnerships; and (5) empowerment of mentees to ensure proactive and intentional career progression (see Figure 1).

The applicability of the mutual mentoring model to the goal-match mentoring model involved empowering the engineering faculty of color mentees to develop a career goal that attended to their career stage and intended career trajectory. Pre-tenure mentee career goals centered around tenure and promotion, while post-tenure mentee career goals were more individualized, such as moving into an administrative post. The mentees were required to select an emeriti faculty as a mentor to specifically grow their mentoring network; thus, the inclusion of emeriti faculty was meant to supplement not supplant any existing mentoring relationships. Collaboratively, the mentoring pairs were invited to co-determine a mentoring plan to include their planned mode and frequency of communication and shared mentoring goals. Therefore, the mutual mentoring model served as the foundation of the interview and coding protocol utilized during the data collection and analysis phases of the research, as well as a channel by which to consider the implications of the study (Anfara & Mertz, 2014).

**Figure 1.** *Mutual Mentoring Model (Yun et al., 2016)*

### **Mutual Mentoring Model**

Mentoring networks established with a wide variety of individuals, including peers, near peers, tenured faculty, chairs, administrators, librarians, and students

Mentoring approaches accommodated the personal, cultural, and professional preferences for contact (e.g., one-on-one, small group, and/or online)

Partnerships focused on specific areas of needs, experiences, and expertise rather than generalized, one-size-fits-all knowledge

Benefits were accrued by not only the person traditionally known as the mentee, but also by the person traditionally known as the mentor

A sense of empowerment was created for mentees, as they were expected to be proactive, intentional agents of their own career development rather than mere recipients of mentoring

## Methodology

**Research Design.** An instrumental case study design (Stake, 1995) was grounded by the mutual mentoring model (Yun et al., 2016) to explore the potential efficacy of a new mentoring strategy in which faculty of color in engineering are matched with emeriti faculty on a specific career goal. Instrumental case studies are valuable when seeking to illuminate a specific concern or problem within a setting that may be ambiguous to cursory observers (Stake, 1995). Thus, this study focused on the way in which the goal-match mentoring strategy informed and shaped their mentoring relationships. A pragmatic lens was applied in order to focus on the solutions and practical implications that resulted from this new mentoring strategy (Patton, 2015). Therefore, attending to context was foundational to the research design, data collection, data analysis, and interpretations. The research question that guided this study was: What is the value attributed to the goal-match mentoring strategy by the engineering faculty of color mentees and the emeriti faculty mentors?

**Participants.** The seven engineering faculty of color and seven emeriti faculty who engaged in the goal-match mentoring program were recruited to be interviewed, and all agreed to take part in this study. The individuals were paired relative to the career goal of the mentee and the willingness of the mentee-identified mentor to impart their expertise to the career goal at hand. None of the matches were from the same institution, nor had any held a personal relationship prior to their matching. All mentees self-identified as Black, and the sample was comprised of one female and six males ages 30-54. The mentees' ranks spanned Assistant to Full Professor and represented various engineering disciplines such as aerospace, chemical and biomolecular, civil and environmental, manufacturing, mechanical, and public policy. All mentors were emeriti faculty, with most still active in academia from teaching courses to serving as a provost. One self-identified as South Asian and all others as White; one was female and six were males ranging in age from 69-84. Disciplinary backgrounds included biomedical engineering, chemical and biomolecular engineering, manufacturing engineering, mechanical engineering, and urban geography. All are employed or retired from R1 doctoral universities with very high research activity. Demographics of the mentoring matches is displayed in Table 1.

**Table 1.** *Demographics of the Mentoring Matches*

Mentoring Pair	Race	Gender	Age	Discipline
Match 1				
Mentee	Black	Female	30	Civil and Environmental Engineering/Engineering Public Policy
Mentor	White	Female	78	Urban Geography
Match 2				
Mentee	Black	Male	36	Mechanical Engineering
Mentor	White	Male	69	Mechanical Engineering
Match 3				
Mentee	Black	Male	38	Chemical and Biomolecular Engineering
Mentor	White	Male	74	Biomedical, Chemical, and Biomolecular Engineering
Match 4				
Mentee	Black	Male	31	Mechanical Engineering
Mentor	White	Male	84	Mechanical Engineering

Match 5				
Mentee	Black	Male	35	Mechanical Engineering
Mentor	S. Asian	Male	73	Mechanical Engineering
Match 6				
Mentee	Black	Male	54	Manufacturing Engineering Technology
Mentor	White	Male	76	Manufacturing Engineering
Match 7				
Mentee	Black	Male	44	Aerospace Engineering
Mentor	White	Male	69	Chemical and Biological Engineering

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**Data Collection.** Per Institutional Review Board approval, all participants were provided with a consent form detailing the purpose of the study, interview procedures, and safeguards to protect anonymity. To date, two sets of interviews averaging 45 minutes in length were conducted, they were digitally recorded and administered one-on-one through web conferencing or phone. The use of multiple interviews allowed for member checks to be included naturally during data collection, which provided a successively deeper understanding of the efficacy of the mentoring relationships (Lincoln & Guba, 1985). An interview protocol was designed and grounded by the mutual mentoring model (Yun et al., 2016) in order to explore the value attributed to the goal-match mentoring strategy by the mentees and mentors. Queries focused on career goals, navigating academia, mentoring needs, and the design of the goal-match mentoring program. As a pragmatic lens was employed, great effort occurred to determine solutions to the challenges shared on traversing academia; thus, it was important to build rapport with the participants to ensure they felt heard and respected (Patton, 2015). This process created a natural, free-flowing dialogue with the interviewer serving as an active listener and participant. Upon completion of all interviews, the recordings were transcribed by a third-party service and permanently deleted once reviewed and cleaned.

**Reflexivity and Positionality.** Prior to data analysis, the researchers engaged in the process of reflexivity, in which experiences, beliefs, values, and assumptions on the ways in which mentoring is used in academe to support the career development of faculty were reflected upon individually and discussed collectively (Watt, 2007). Reflexivity is integral in qualitative research because it forces the consideration and exposure of researcher bias through analytical reflection and dialogue. The theoretical underpinnings of the pragmatic lens were revisited during the reflexivity process to ensure practical implications were foundational to the way in which the transcripts were assessed, and meanings interpreted (Patton, 2015). Per the guidance of Lincoln and Guba (1985), the positionality of the researchers must be clarified, as it directly influences the administration of the study, as well as the principal findings and interpretations. The research team included a demographically diverse group of professors, administrators, and graduate students with disciplinary homes in educational leadership, psychology, engineering, and computer science. All demonstrate a commitment to diversifying higher education from research lines to service endeavors that advocate for policies and practices to broaden participation. The researchers see great value in diversifying the professoriate as both a matter of social justice and for pragmatic national human capital ends. The practices of reflexivity and positionality were purposely embedded to ensure emphasis on the participants' experiences and perspectives rather than on the researchers' points of view.



**Data Analysis.** The interview data were analyzed using Stake's (1995) four-step deductive data analysis process of direct interpretation, categorical aggregation, pattern recognition, and naturalistic generalizations. A structured coding protocol was first designed using the mutual mentoring model of Yun et al. (2016) focusing on the successful features of their design, such as empowering mentees to be proactive and intentional in their own career development. Through the application of Stake's first step, an independent review of the interview transcripts was conducted to identify the salient elements of the goal-match mentoring strategy and mentoring match contexts. This process enabled researchers to individually draw direct interpretations from the data before discussing preliminary themes. In the second step, the researchers collaboratively accomplished categorial aggregation by synthesizing the overarching concepts drawn from the transcripts in the first step. This stage clearly revealed mentees' and mentors' appreciation of the early identification and clarification of mentee career goals.

Following Stake's (1995) third step of pattern recognition, precise content was developed through grouping associated data, developing fuse codes, and refining the identified themes. This process enabled the researchers to determine common contextual experiences that influenced the growth and enhancement of the mentoring relationships. For instance, all mentees and mentors spoke of the seriousness and intentionality in which their counterparts approached their relationship. In the fourth step, naturalistic generalizations occurred by evaluating the themes to ensure they represented the entirety of the data and could be applied broadly (Stake, 1995). At the conclusion of this step, three final themes were identified through a pragmatic lens: (1) Identifying a career goal prior to the beginning of the mentoring match requires deep reflection on behalf of the mentee and promotes goal accountability; (2) The mentoring relationship quickly blooms as the nature of the mentoring need is identified early in the process; and (3) The expertise of the mentor is swiftly leveraged for the maximum benefit of the mentee.

**Trustworthiness.** Multiple verification strategies ensured the findings were trustworthy by attending to issues of credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985). In order to address credibility, cross-case synthesis was utilized throughout the data analysis process to examine whether the themes were cases of similar or different perspectives of the participants and the procedures employed were made explicit (Hayes, 1997). To achieve transferability, thick, rich descriptions were utilized with participant quotes so readers could determine applicability to their own contexts (Lincoln & Guba, 1985). Bracketing through reflexivity and stating the positionalities of the researchers bolstered the dependability of the findings. Confirmability occurred by validating themes in the early and late stages of the data analysis process and by involving multiple researchers in evaluating the finding through engaging in several feedback loops on the identified themes (Miles et al., 2019).

**Limitations.** Only individuals who participated in the goal-match mentoring program were invited to participate in the interviews and to self-report their views and experiences (Lincoln & Guba, 1985). While we indicated there would be no penalty for choosing not to participate, they may have felt compelled or uncomfortable in declining participation. The study purposefully attended to exposing researcher bias through reflexivity and positionality, but we cannot entirely absolve ourselves from its potential in the findings and interpretations. The researchers consist of a diverse disciplinary team of education faculty and students, as well as computer science and engineering faculty; all are employed at higher education institutions and believe strongly in the

benefits of mentoring and the important role it can play in career advancement; therefore, the data were approached largely from an insider perspective. It was critical the researchers remained open to the possibility the design of the goal-match mentoring program may have been unsuccessful and faculty did not accrue benefits from participating. This stance may have been a difficult posture to maintain throughout the data collection and analysis processes.

## Findings

All goal-match mentoring participants had engaged in mentoring relationships, most informally but a few formally, as both mentors and mentees. Yet, none had participated in a program centered on a career goal, and nearly all were matched or formed organically around their disciplinary expertise. Thus, they found the structure of the goal-match mentoring program to be unique. Another distinctive aspect of this program involved the engagement of emeriti faculty as complementary mentors to existing mentoring networks, which participants acknowledged as innovative and beneficial for all. Deductive data analysis strategies established by Stake (1995) resulted in three themes regarding the potential efficacy of goal-match mentoring: (1) Identifying a career goal prior to the beginning of the mentoring match requires deep reflection on behalf of the mentee and promotes goal accountability; (2) The mentoring relationship quickly blooms as the nature of the need is identified early in the process; and (3) The expertise of the mentor is swiftly leveraged for the maximum benefit of the mentee.

**Theme 1: Requires Mentee Reflection and Promotes Accountability.** When queried on the program requirement of identifying a career goal prior to selecting a mentor, both mentees and mentors indicated the value of the exercise. Mentees noted it necessitated deep reflection and introspection, which resulted in feelings of confidence about their desire for a mentor and what the relationship would entail. A male assistant professor noted, “It helped me to be more focused and motivated about what I wanted from the relationship.” This sentiment was reiterated by another male assistant professor:

You made us think and be a little more introspective around, what are our needs coming into this? And what are we hoping to get out of this? And then, who are likely the individuals that could maybe give some guidance and wisdom in that space? And so I appreciate that approach.

Mentors also saw great value in this strategy, as expressed by a male emeriti professor: “It’s flexible enough to allow a lot of things to be customized to meet the person’s real needs.”

A female assistant professor believed this strategy to be integral to her receiving the type of mentoring she not only needed, but wanted:

It made me think about what I wanted. If I don’t know what I want, it’s hard for a mentor to help me get what I would want . . . I had to think about like, “What do I want from somebody new, what am I not getting?” It’s really easy to just say “Oh, I want you to teach me how to be successful,” but you don’t know what success means to you and you don’t know what you are missing, so that could be a challenge.

Her mentor, a female distinguished emerita professor, shared the same outlook and said, “For me being a mentor you help them where they want help . . . and I see what I can bring to bear.”

Clear articulation of career goals helped to facilitate the identification of emeriti faculty mentors who could not only effectively mentor and guide the mentees on their career paths, but also

could query them on that which should be considered as important milestones in order to accomplish a goal. A male emeriti professor stated, “I have tried to be responsive to his requests and ask a couple of questions to make sure he’s thinking about the real challenges that he’ll be facing in the future.”

Mentees indicated the identification of a career goal specific to their needs provided a level of autonomy and freedom they had not experienced in past mentoring relationships. Many shared they had participated in mentoring programs as graduate students or early-career faculty, but those were narrowly focused on an aspect of the professoriate that may not have been reflective of their specific needs or interests. A male associate professor noted, “From my perspective you allowed the mentee to kind of drive, in terms of what their goals are, what they’re looking for, versus having something prescribed.” Tenured participants noted this aspect was a particularly attractive component of the goal-match mentoring program because it spoke more directly to their career stage and allowed them to consider the direction they desired for their career. A male emeriti professor who was intent upon meeting the needs of his mentee and indicated, “Understanding the goal of the mentee is extremely important because you can confine your advice to what they wanted, as opposed to just telling them what you would like to see them do.”

A few mentees noted the benefit of identifying a career goal early in the process in order to remain accountable to themselves and the relationship. A male full professor indicated:

By making you say it out loud and getting some ownership and accountability behind the goals that we all have, I think that’s a great thing. Because a lot of time, I would definitely say as a URM [underrepresented minority] faculty member . . . it doesn’t feel as inviting to share our big picture goals.

He added at times he was cautious in appearing “too ambitious” and has been told by others to “worry about hitting the technical bar rather than becoming a center director or department head.” A male associate professor indicated this experience is all too common for Black faculty, particularly at predominately White institutions, because “it turns out part of the job requirement is to prove you belong so ambition can be seen as presumptuous.” Thus, identifying an ambitious career goal such as becoming a provost permitted mentees to seek a mentor who could provide the appropriate and strategic guidance and support needed to achieve their career goal. In the context of this mentoring program, the mentees were not compelled to worry about impression management and felt free to be open and honest about career intentions.

**Theme 2: Mentoring Relationship Quickly Blooms.** As career goals and needs are determined early in the mentoring relationship, participants shared their relationship quickly bloomed. The mentees felt a sense of gratitude and excitement about the program because the emeriti faculty agreed to mentor rather than be tasked with or expected to mentor. As stated by a male assistant professor, “My mentor really wants to mentor . . . I want to check in with him because I know he’s generally interested in how things are going with me and I’m generally interested in what his opinion actually is.” Many mentees indicated senior faculty offered to mentor them, but scheduling time to meet was difficult due to their demanding schedules. Thus, engaging emeriti faculty as mentors allowed them to easily schedule regular web conference meetings and ad hoc phone calls as needed. The mentors also noted their awareness of the way in which the mentees prepared to fully engage with them. A male emeriti professor who also serves as a provost said, “[my mentee] respects our time together; he keeps it really focused; he shares the topics and

questions in advance. He's just been ideal, organized, and respectful [of my time] so that makes it all the warmer relationship."

The mentoring conversations were focused from the beginning, as both mentees and mentors understood the nature of the relationship and its intended aim. A male emeritus professor shared, "[my mentee] brings me very specific and focused questions and topics and that allows me to opine on those issues." Several of the mentees believed they could be more direct in their communications with their mentors; they had no need to add pleasantries in their requests to meet and could be more straightforward. One male assistant professor noted, "I kind of feel like, based on the construct of the relationship, it seems very appropriate to just email [my mentor] very quickly and be like, 'Hey, I want to talk about this.'" Mentees also discussed their appreciation of mentors' direct feedback on goal progress. As noted by a male associate professor, "It helps to know he believes in me." A male assistant professor stated, "[the mentoring program] exceeded my expectations in terms of the utility of the relationship because [my mentor] is very motivated and helpful." His mentor, a male emeriti professor said, "He knows what he needs and what he wants so that make it a pleasure to help."

As mentees were aware of their career goals and needs, they felt they could "let their guards down" and ask questions that at times they were reluctant to ask internal senior colleagues or their department chairs for fear of appearing naïve or unknowledgeable. A male associate professor shared:

I think the most valuable thing though, is by him being an external mentor I feel that I can tell him more. I can feel comfortable and confident that I can tell him things I wouldn't tell other people. So that's helped to really get to the root of things . . . having someone with that experience who has no skin in the game, who's not a competitor on projects, or a boss or a superior, there's no reason for him as a mentor to misdirect me. But can often happen when you're in a competitive university system.

A concern arose in many interviews noting internal colleagues may "steal ideas" or "manipulate" if the mentees overly shared proposed research projects or institutional concerns. Mentees discussed "the need to protect" themselves and to engage in "self-preservation" in their departmental and university contexts, characterizing this mentoring relationship as a "safe" outlet to be honest and direct.

**Theme 3: Mentor Expertise is Swiftly Leveraged.** From the beginning of the mentoring program, the mentees effortlessly shared the ways in which they could leverage the expertise of their mentors for both personal and professional gains. Mentees were pleased their mentors could provide reassurance and a broad point of view concerning the ebb and flow of higher education, which eased some concerns about unique circumstances occurring in their departments and institutions. A male assistant professor indicated:

[My mentor] can give me that longstanding viewpoint of like, some of my concerns, he's like, "Don't worry about that. That's a blip in the radar. You need to be thinking about your overall trend" . . . so his ability to be able to say, "I've seen this play out long enough, that I call tell you where things are headed, or my estimate of where trends are going, and this is how you better position yourself in this environment."

The external voice of confirmation that mentees were on the right track and effectively navigating the highs and lows of the professoriate was comforting. Mentors also attributed

significance to offering encouragement, as noted by a male emeriti professor who said, “A little reassurance that he’s thinking along the right lines is useful.”

Mentors were genuinely excited about the mentees’ research, as noted by a female distinguished emerita professor who noted, “[my mentee] is working on very interesting and important problems. And so, if I can help her just jump another step that’s great.” Mentees appreciated the fresh insights and perspectives of the mentors, which allowed them space to assess their present circumstances and be more contemplative relative to their next move. A male regent emeriti professor indicated, “I’ve served as a sounding board for my mentee, an external check about how he’s doing and asking key questions.” A male assistant professor shared his mentor indicated he should “educate his chair on the fact that he was an experimentalist so it takes more time to get his research up and running but once he did, he would be well on his way in terms of productivity.” This advice calmed his fears and helped him to grasp the importance of “managing up” and not assuming others understood his research. His mentor, a male emeriti professor, stated, “I tried to emphasize how important it is for him to cultivate his relationship with his department chair and convey his research agenda,” which his mentee clearly welcomed.

Mentees also saw the advantage in having mentors with greater discretionary time, as discussed by a male assistant professor: “Other faculty who are full-time don’t have as much time to sit down every week, have two hours of discussion, and actually think about and plan our conversations.” A male associate professor summed up his satisfaction with his mentor: “Even when this program ends, I’m not going to let go of this mentor. There’s too much knowledge that I don’t have, and I don’t have anyone at my institution offering it.” In that same vein, a female assistant professor shared her mentor poured through a grant proposal in a way she had never experienced. She said, “Not even in graduate school, have I had a faculty member really look at every single word and think about how to make it better.” Her mentor, a female distinguished emeriti professor, stated, “[my mentee] was grateful [about her grant proposal review], and she understood that what I gave her was a gift. It was a huge gift of my time and she understood that.”

Mentees were in awe of the way in which their mentors flexed their networks for their mentee’s benefit. Some had not considered the droves of the mentors’ former students and colleagues who could be called upon to support their career advancement. A male assistant professor noted, “Very recently he got me in contact with someone at the Air Force, and I think that’s going to be a fruitful relationship, I applied for some funding based on the connection that he provided.” Another male assistant professor discussed the benefit of his mentor reviewing his curriculum vitae and highlighting the “questionable areas needing more substance.” Furthermore, he indicated, “[my mentor] has connected me with people who could write letters for my tenure package which will be invaluable when the time comes.” A male associate professor noted his mentor offered to nominate him for a career award and to gather supporting letters within their disciplinary society, which is critical for moving to full professor status.

Some of the mentoring matches shared sub-disciplinary expertise and “spoke the same language,” as noted by one mentee. A male assistant professor said, “Having someone who understands your science that you can actually get meaningful feedback from has been great.” And even those from different disciplines saw great value in acquiring a wider view of the

professoriate; thus, both the technical and larger views of university life were appreciated by all. A male full professor who was matched with a mentor in a different engineering field found great value in understanding the way in which he observed the role of equity in the higher education setting:

Some discussions that we've had around diversity, equity, and inclusion, getting his perspective as a Provost of a major institution has been important. I chair the College of Engineering Diversity and Inclusion Committee and where these conversations should be going and he was very honest about where the sticking points were and what the future was going to require, so that was good. And he has some interesting perspectives on courage . . . he said "You're going to have to have some courage to take these things on. There's a reason there is a problem."

This mentee was particularly grateful his mentor was active in these conversations and an advocate for diversifying the professoriate. His mentor's commitment to these aspects aided his comfort level in discussing matters of diversification and the common struggles faced by faculty of color in academia. His mentor, a male professor emeritus/provost, also reflected on this conversation and stated, "You got to have a certain resilience and a certain constitution, you got to have the guts to just stick it out and you go to have good instincts. . . and I see [my mentee] doing this well." Affirmation that the mentee was well-suited for the hard work of moving the institutional needle on diversity efforts was not only appreciated but also energizing.

In general, the mentees believed the mentoring they received through this program was more practical and beneficial than that obtained from senior faculty at their institution who often were overextended with their primary teaching, research, and service responsibilities. A male emeritus professor/provost indicated he enjoyed the mentoring program and noted:

The lessons that we learned from our life we always try to translate into wisdom. And what good is wisdom if you don't share it? It's kind of wasted. And so I really kind of cherish this opportunity to just allow [my mentee] to learn from my mistakes so that he can have a better experience.

Relatedly, a male assistant professor stated the methodological way in which his mentor shared his expertise and insights was pivotal:

When you talk to senior faculty, they usually give you some advice, but it's kind of difficult to understand what it means unless you know how to do it. And at that point it's not very helpful, but [my mentor] says, "Okay. Step one, this. Step two, this." For my stage that's very helpful.

The mentees indicated they truly benefited and were able to capitalize on the years of professional experience of their mentors. Both mentors and mentees placed great value on bringing these two groups together and believed it was of value to both parties.

## **Discussion**

The purpose of this research study was to understand the value attributed to the goal-match mentoring strategy from the perspective of the engineering faculty of color mentees and the emeriti faculty mentors. The goal-match mentoring program required mentees to identify a career goal before selecting a mentor who possessed the background and experience to tangibly help with achieving that goal. Findings indicate this strategy was successful, as both mentees and mentors believed identifying a career goal prior to the beginning of the mentoring match required

deep reflection on behalf of the mentee and promoted goal accountability; the mentoring relationship bloomed quickly as the nature of the need was identified early in the process; and the expertise of the mentor was swiftly leveraged for the maximum benefit of the mentee. The importance of identifying mentoring goals early in the process and developing responsive mentoring matches coincide with and extend the sparse literature on this topic (Chadiha et al., 2014; Hund et al., 2018; Peterson et al., 2020; Yun et al., 2016; Zellers et al., 2008).

Despite race, age, and even disciplinary differences, the mentees and mentors found their commitment to the mentoring relationship and process mediated any potential conflicts that could have arisen from these discrepancies. This commitment may be attributed to the mentor selection process and the onboarding that occurred by the program designers, which facilitated clear expectations and understanding of the way in which the relationships were intended to ensue. Unfortunately, cross-race disciplinary mentoring often is the norm for Black engineering faculty because they are severely underrepresented in the engineering professoriate and concentrated in the early- and mid-career ranks—2.9% of assistant professors identify as Black, 3% of associate professors, and only 1.9% of full professors (Roy, 2020). No data have been found on emeriti faculty representation by race/ethnicity.

The conceptual framework for the mutual mentoring model (Yun et al., 2016) was a useful tool for considering, organizing, and communicating ideas about structuring and appraising the goal-match mentoring program. The themes resonated well with the components of the framework, as the mentoring matches developed into true partnerships in which both parties' preferences for contact were accommodated, the focus was on the mentees' identified career goals, both mentees and mentors benefited from the relationship, and the mentees were agents of their own career development—an important skill to instill for faculty across the professoriate. While this paper does not address the benefits accrued by the mentors, a growing body of research exists on the importance of aiding in the transition of faculty retirees because many possess the capacity, networks, and desire to continue to contribute to academia (Goldberg & Baldwin, 2018; Mendez et al., 2019; Van Ummersen et al., 2014); thus, this strategy holds strong promise in advancing this endeavor.

**Practical Implications.** This study illuminates critical implications for faculty mentoring program designers, as it brings to light the importance of empowering mentees to own their mentoring relationships by reflecting on their career goals and identifying those who can aid in goal achievement. While engineering faculty of color were the primary audience of the goal-match mentoring program, study findings suggest this could be an effective strategy across higher education. In this study, emeriti faculty were highlighted as effective mentors, but mentors also may include industry leaders and faculty peers since the emphasis is on a career goal rather than tapping those with more experience or seniority. Including emeriti faculty who agreed to mentor also was key to the design of the goal-match mentoring program because it signaled to the mentees they were not only interested in mentoring, but also were willing to carve out the time to fully participate in the relationship and to invest in their career advancement. Finally, the importance of mentor selection must be considered. The emeriti faculty who engaged in this program not only possessed a willingness to mentor, but also they had the background and experiences to bear on the career goals of the mentees in order to facilitate fruitful relationships.

Not all emeriti faculty may be suitable mentors; emphasis should always be placed on appropriate matching to yield mutually beneficial and successful relationships.

**Future Research.** Future exploration is warranted on the ways in which goal-match mentoring aids in successful mentoring relationships, as limited study has been conducted despite goal-matching being present in some mentoring models. A focus is needed on the career benefits for mentees and successful retirement transitions for mentors due to the scant research available on the efficacy of matching current and emeriti faculty for mentoring. Additional research also is warranted concerning the caution shared by two of the male mentees around appearing “too ambitious.” Engineering academia and higher education as a whole would benefit from diversifying their leadership ranks; therefore, this caution is a problem to be studied and solved. While the utility of cross-race mentoring has been studied, little research has addressed this issue with emeriti faculty in mind, which suggests future research is essential to explore the potential efficacy of this specific component of the goal-match mentoring strategy. Additionally, in order to ensure successful mentoring of the faculty mentees, further attention is needed on the ways in which to effectively orientate emeriti faculty to the existing career expectations of new faculty, which may be substantively different than their own academic experiences.

## **Conclusion**

Through the use of a pragmatic lens (Patton, 2015), this instrumental case study (Stake, 1995) provides a rich understanding of the value of the goal-match mentoring strategy from the perspective of the mentees and mentors, two invaluable higher education stakeholders. When centered on specific career goals, the utility of matching engineering faculty of color with emeriti faculty is evident, as this strategy empowers mentees to take ownership of their career and professional development needs and engages emeriti faculty in offering their professional insights, networks, and expertise. While academic mentoring relationships tend to be designed to connect early-career and senior faculty along disciplinary lines, incorporating this new strategy as an additive to the traditional mentoring model may yield substantive benefits to the academy at large.

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## **References**

- Aguirre, A., Jr. (2000). Women and minority faculty in the academic workplace: Recruitment and retention, and academies culture. *ASHE-ERIC Higher Education Report*, 27(6).  
<https://files.eric.ed.gov/fulltext/ED447752.pdf>
- Anfara, V. A., & Mertz, N. T. (Eds.). (2014). *Theoretical frameworks in qualitative research* (2nd ed.). Sage.



- Baez, B. (1999, Fall). Faculty of color and traditional notions of service. *Thought and Action*, 12, 131–138.
- Blood, E. A., Ullrich, N. J., Hirshfeld-Becker, D. R., Seely, E. W., Connelly, M. T., Warfield, C. A., & Emans, S. J. (2012). Academic women faculty: Are they finding the mentoring they need? *Journal of Women's Health*, 21(11), 1201–1208.  
<https://doi.org/10.1089/jwh.2012.3529>
- Buzzanell, P. M., Long, Z., Anderson, L. B., Kokini, K., & Batra, J. C. (2015). Mentoring in academe: A feminist poststructural lens on stories of women engineering faculty of color. *Management Communications Quarterly*, 29, 440–457.  
<https://doi.org/10.1177/0893318915574311>
- Cawyer, C. S., Simonds, C., & Davis, S. (2002). Mentoring to facilitate socialization: The case of the new faculty member. *International Journal of Qualitative Studies in Education*, 15(2), 225–242. <https://doi.org/10.1080/09518390110111938>
- Chadiha, L. A., Aranda, M. P., Biegel, D. E., & Chang, C. (2014). The importance of mentoring faculty members of color in schools of social work. *Journal of Teaching in Social Work*, 34, 351–362. <https://doi.org/10.1080/08841233.2014.937891>
- Crutcher, B. N. (2014, Spring). Cross-cultural mentoring: A pathway to making excellence inclusive. *Liberal Education*, 100(2).  
<https://www.aacu.org/liberaleducation/2014/spring/crutcher>
- Goldberg, C. E., & Baldwin, R. G. (2018). Win-win: Benefits of expanding retirement options and increasing the engagement of retired faculty. *New Directions for Higher Education*, 182, 69–74.
- Griffin, K. A., & Reddick, R. J. (2011). Surveillance and sacrifice: Gender differences in mentoring patterns of Black professors at predominately White research universities. *American Educational Research Journal*, 48(5), 1032–1057.
- Guramatunhu-Mudiwa, P., & Angel, R. B. (2017). Women mentoring in the academe: A faculty cross-racial and cross-cultural experience. *Mentoring & Tutoring: Partnership in Learning*, 25(1), 97–118. <https://doi.org/10.1080/13611267.2017.1308095>
- Hayes, N. (Ed.). (1997). *Doing qualitative analysis in psychology*. Psychology Press.
- Hund, A. K., Churchill, A. C., Faist, A. M., Havrilla, C. A., Stowell, S. M. L., McCreery, H. F., Ng, J., Pinzone, C. A., & Scordato, E. S. C. (2018). Transforming mentorship in STEM by training scientists to be better leaders. *Ecology and Evolution*, 8(20), 9962–9974.  
<https://doi.org/10.1002/ece3.4527>
- Hyers, L., Syphan, J., Cochran, K., & Brown, T. (2012). Disparities in the professional development interactions of university faculty as a function of gender and ethnic underrepresentation. *The Journal of Faculty Development*, 26(1), 18–28.
- Johnson, W. B. (2016). *On being a mentor: A guide for higher education faculty* (2nd ed.). Routledge.
- Johnson-Bailey, J., & Cervero, R. M. (2004). Mentoring in Black and White: The intricacies of cross-cultural mentoring. *Mentoring & Tutoring: Partnership in Learning*, 12(1), 7–21.
- Lewellen-Williams, C., Johnson, V. A., Deloney, L. A., Thomas, B. R., Goyol, A., & Henry-Tillman, R. (2006). The POD: A new model for mentoring underrepresented minority faculty. *Academic Medicine*, 81(3), 275–279.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage.

- Mackey, H., & Shannon, K. (2014). Comparing alternate voices in the academy: Navigating the complexity of mentoring relationships from divergent ethnic backgrounds. *Mentoring and Tutoring: Partnerships in Learning*, 22(4), 338–353.
- Mendez, S. L., Tygret, J., Keith, R., Conley, V. M., Haynes, C., & Gerhardt, R. A. (2019). Emeriti faculty as mentors: The benefits and rewards of mentoring the next generation. *Mentoring & Tutoring: Partnership in Learning*, 27(4), 439–457.
- Mendez, S. L., Tygret, J., Conley, V. M., Haynes, C., & Gerhardt, R. A. (2020). Exploring the mentoring needs of early- and mid-career URM engineering faculty. *The Qualitative Report*, 25(4), 1186–1203.
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2019). *Qualitative data analysis: A methods sourcebook* (4th ed.). Sage.
- Noe, R. A. (1988). An investigation of the determinants of successful assigned mentoring relationships. *Personnel Psychology*, 41, 457–479. <https://doi.org/10.1111/j.1744-6570.1988.tb00638.x>
- Patton, M. Q. (2015). *Qualitative research and evaluation methods* (4th ed.). Sage.
- Petersen, S., Pearson, B. Z., & Moriarty, M. A. (2020). Amplifying voices: Investigating a cross-institutional, mutual mentoring program for URM women in STEM. *Innovative Higher Education*, 45(4), 317–332. <https://doi.org/10.1007/s10755-020-09506-w>
- Pritchard, P. A., & Grant C. (Eds.). (2015). *Success strategies from women in STEM: A portable mentor* (2nd ed.). Elsevier Academic Press.
- Rockquemore, K. A., & Laszloffy, T. (2008). *The Black academic's guide to winning tenure—Without losing your soul*. Lynne Rienner Publishers.
- Roy, J. (2020). *Engineering and engineering technology by the numbers, 2019*. American Society for Engineering Education. <https://ira.asee.org/wp-content/uploads/2021/02/Engineering-by-the-Numbers-FINAL-2021.pdf>
- Schmidt, E. K., & Faber, S. T. (2016). Benefits of mentoring to mentors, female mentees and higher education institutions. *Mentoring and Tutoring: Partnership in Learning*, 24(2), 137–157.
- Soto, M. (2014). *Women of color faculty in STEM: Successfully navigating the promotion and tenure process* (Publication No. 36312580 [Doctoral dissertation, Michigan State University]). ProQuest Dissertations and Theses Global.
- Stake, R. E. (1995). *The art of case study research*. Sage.
- Stanley, C. A. (2006). *Faculty of color: Teaching in predominantly White colleges and universities*. Anker.
- Thompson, C. Q. (2008). Recruitment, retention, and mentoring faculty of color: The chronicle continues. *New Directions for Higher Education*, 143, 47–54. <https://doi.org/10.1002/he>
- Tierney, W. G., & Bensimon, E. M. (1996). *Promotion and tenure: Community and socialization in academe*. State University of New York Press.
- Tillman, L. C. (2001). Mentoring African American faculty in predominantly White institutions. *Research in Higher Education*, 42, 295–325.
- Tran, N. (2014). The role of mentoring in the success of women leaders of color in higher education. *Mentoring and Tutoring: Partnership in Learning*, 22(4), 302–315.
- Turner, C. S. V. (2003). Incorporation and marginalization in the academy: From border toward center for faculty of color. *Journal of Black Studies*, 34(1), 112–125.
- Turner, C. S. V. (2002). Women of color in academe: Living with multiple marginality. *Journal of Higher Education*, 73, 74–93.

- Turner, C. S. V., & Myers, S. L. (Eds.). (2000). *Faculty of color in academe: Bittersweet success*. Allyn & Bacon.
- Van Ummersen, C. A., McLaughlin, J. M., & Duranleau, L. J. (Eds.). (2014). *Faculty retirement: Best practices for navigating the transition*. Stylus.
- Watt, D. (2007). On becoming a qualitative researcher: The value of reflexivity. *The Qualitative Report*, 12(1), 82–101.
- Yun, J. H., & Sorcinelli, M. D. (2009). When mentoring is the medium: Lessons learned from a faculty development initiative. *To Improve the Academy*, 27, 365–384.
- Yun, J. H., Baldi, B., & Sorcinelli, M. D. (2016). Mutual mentoring for early-career and underrepresented faculty: Model, research, and practice. *Innovative Higher Education*, 41, 441–451. <https://doi.org/10.1007/s10755-016-9359-6>
- Zambrana, R. E., Ray, R., Espino, M. M., Castro, C., Douthirt Cohen, B., & Eliason, J. (2015). “Don’t leave us behind.” The importance of mentoring for underrepresented minority faculty. *American Educational Research Journal*, 52(1), 40–72. <https://doi.org/10.3102/0002831214563063>
- Zellers, D. F., Howard, V. M., & Barcic, M. A. (2008). Faculty mentoring programs: Reenvisioning rather than reinventing the wheel. *Review of Educational Research*, 78, 552–588. <https://doi.org/10.3102/0034654308320966>