

# Facilitated Peer Group Mentoring for Underrepresented Biomedical Researchers: Facilitators' Experiences and Implications for Dissemination of a Curriculum

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Peer group mentoring facilitated by senior faculty represents an effective approach. However, for underrepresented biomedical researchers, access to senior faculty from underrepresented racial/ethnic groups is limited. We explored motivations, benefits, and challenges for facilitators enrolled to deploy an intervention in the context of a randomized controlled trial that tested two peer group mentoring strategies for underrepresented early career researchers. Peer group sessions were co-facilitated by two senior underrepresented faculty. Thirty-six faculty were recruited as facilitators over four years. The facilitators' primary motivation was advancing the diversity of the workforce, the primary benefit was satisfaction from helping underrepresented researchers, and the primary challenge was time. Understanding motivations, benefits, and challenges of facilitators informs efforts in recruiting and retaining facilitators and disseminating this curriculum and others like it, to the broader community.

*Keywords:* biomedical research, mentoring, underrepresented researchers, peer mentoring

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## Introduction

Currently, the biomedical research (BMR) workforce is not representative of the diverse racial or ethnic populations in the United States (Valantine & Collins, 2015). Non-Hispanic Black (Blacks) and Hispanic/Latino faculty comprise only 3% and 5%, respectively, of research faculty at U.S. academic institutions, and American Indian or Alaskan Native, Native Hawaiian or other Pacific Islanders, and multiracial individuals combined comprise only 2% of academic research faculty (Women, Minorities, and Persons with Disabilities in Science and Engineering, 2017). Although Asians are typically not considered to be underrepresented in biomedical research, individuals of South Asian ancestry are underrepresented in medical schools and report similar lived experiences of discrimination as those who identify as Black or Hispanic/Latino in the United States (Hassouneh et al., 2014; Nadimpalli et al., 2016).

In 2012, the National Institutes of Health (NIH) implemented a comprehensive set of actions to increase diversity in the biomedical workforce. These included forming the Diversity Program Consortium (DPC) and programs like the PROMISE study (<https://thepromisestudy.web.unc.edu>) to develop best practices for mentoring and training for mentees and mentors (Davidson et al., 2017; Hurtado et al., 2017). Recruiting and retaining

ethnically and racially diverse individuals in the biomedical research workforce is critical to solving complex health problems and scientific questions. Different perspectives, skills, strengths, and lived experiences drive innovative ideas, research, and discovery forward (Bernard et al., 2021; Collins et al., 2021; U.S. National Science Foundation, n.d.).

Scientists from underrepresented groups continue to experience barriers to career progression. Compared to Whites, racially/ethnically underrepresented faculty are promoted at lower rates (Erwin et al., 2002; Fang et al., 2000; Palepu et al., 1998), report lower career satisfaction (Palepu et al., 2000; Peterson et al., 2004), and are less likely to have mentors (Johnson et al., 1999; Ramanan et al., 2002). Published research to date has identified several factors contributing to the persistent lack of diversity in the biomedical research workforce. Among the factors cited in the literature are reduced access to role models, less effective mentoring, and reduced social capital (Beech et al., 2013; Ginther et al., 2011; Ramanan et al., 2006; Williams et al., 2021). Traditional dyadic mentoring can be of high quality with positive outcomes for the mentee (Eby et al., 2008; Mayer et al., 2014; Nick et al., 2012; Schrodt et al., 2003; Sorkness et al., 2017). However, for underrepresented individuals at predominantly white academic institutions to find mentors who have shared lived experiences,

cultural backgrounds, similar demographics, and deep-level similarities who can address the sense of belonging and cultural capital in the research community is usually a challenge (Bussey-Jones et al., 2006). Existing research supports the benefits of mentor-mentee concordance and its impact on UR students psychosocial support, recruitment, career advancement, career satisfaction and retention. (National Academies of Sciences, Engineering, and Medicine, 2019)

Peer mentoring is a strategy that builds a mentoring community and is characterized by mutual support, shared learning, allowance of different perspectives, and collaborations (DeCastro et al., 2013; McDougall & Beattie, 1997). It can build a sense of research self-efficacy, belonging, cultural capital and promote professional identity as a member of the biomedical research community partly via building a network of mentors and peers with shared backgrounds, cultures, and goals (Orr et al., 2021). Peer group members also perceive that such mentoring supports academic outcomes (Mayer et al., 2014). While peer lead mentoring groups can be effective in providing support to members, the presence of a more experienced faculty researcher to facilitate peer discussions offers an opportunity for peers to obtain answers to questions, advice on addressing challenges, navigating mentoring relationships, and accessing additional resources (Mayer et al., 2014). Research on academic peer mentoring groups facilitated by senior faculty has shown promising outcomes in scientific writing, research project development, collegiality, sense of belonging, retention, and publishing (Mayer et al., 2014; Pololi et al., 2002; Pololi et al., 2005). Further, the limited controlled research utilizing a facilitated peer group mentoring model suggests that this model may represent a viable approach to mentoring underrepresented biomedical researchers (Lewis et al., 2016; Lewis et al., 2017). For example, a recent study (Pololi et al., 2023) tested facilitated peer group mentoring in a national sample of diverse early midcareer research faculty using a rigorous randomized controlled design. In that study, positive outcomes were seen in the active facilitated peer intervention group versus a waitlist control group for measures of vitality, self-efficacy, and other skills such as cultural awareness, appreciation of diversity, and mentoring self-efficacy.

Despite the promise of facilitated peer group mentoring for academic mentees, including those from underrepresented backgrounds, little, if any, information has been provided in the research to date on the characteristics of those that serve as facilitators or on their motivations to participate as a facilitator for peer mentoring groups. If facilitated peer group mentoring is a viable model for mentoring underrepresented biomedical researchers, then it is critical to understand how to attract, recruit, train, and retain senior biomedical researchers to effectively facilitate peer group meetings. Understanding biomedical

researchers' motivations and their perceived benefits and challenges derived from facilitating peer group mentoring discussions of early career underrepresented researchers is key to recruiting and supporting peer group facilitators. This manuscript represents the first report, to our knowledge, on the motivations, benefits, and challenges perceived by peer group facilitators who themselves are underrepresented biomedical researchers.

## Method

### Overview of The Study Protocol

The PROMISE study is part of a national effort funded by the National Institute of Health-PROMISE to identify best mentoring practices for underrepresented scientists in biomedical research. The PROMISE study (NIH U01-GM132374) is a two-site initiative involving public and private academic institutions in the Southeast of the United States. Using a randomized controlled trial design, the study tested two facilitated peer group mentoring models.

One peer group model was focused exclusively on skills development (e.g., grant writing and review, generating research questions) and professional development topics (e.g., negotiation, working with program officers, etc.). The other peer group model retained select skills and professional development topics but added facilitated discussions on psychosocial topics relevant to underrepresented scholars (e.g., persistence racism, microaggressions, intersectionality, etc.). The facilitated peer group interventions were modeled, in part, after the work of Pololi and colleagues (2015) in that a semi-structured curriculum for each session and each topic was designed for the PROMISE study to be interactive and process oriented. Peer groups met for two hours twice per month for 8.5 months. Each hour of the two-hour meeting was devoted to discussions around a different topic. PROMISE launched cohort 1 in 2019 and will complete the 10<sup>th</sup> and last cohort in May 2024.

Peer group members were postdoctoral fellows or early career faculty in the rank of medical instructor or assistant professor. Each peer member identified as being from racial/ethnic underrepresented groups and engaged in biomedical research at Research 1 universities across the southeastern United States. Each participant was randomized to one of the two facilitated peer group models. Each peer group comprised of 6 - 12 peer group members.

Facilitators in the PROMISE study were recruited to be underrepresented, to have experience with biomedical research funding, and to have experience mentoring early career researchers. As part of the study, we asked facilitators about prior formal facilitator training. The facilitators represented the same racial/ethnic underrepresented groups as the participants. Each peer group was assigned

two co-facilitators who facilitated the peer group meetings with their group for the entire 8.5-month intervention period. Typically, the two facilitators each led one of the two topics for any session. If a facilitator could not attend a specific session, another trained facilitator substituted during that session. Facilitators received \$100 as a small token of recognition and appreciation for each hour session they prepared for and facilitated. The role of the facilitator was not to act as a mentor but to facilitate peer group discussions, ensure that all voices were heard, keep time, and adhere to the curriculum activities and content so that over the 4-year study period, all peer groups received similar exposures to the interventions.

### Recruiting and Training of Facilitators

PROMISE eligible facilitators included those who self-identified as Black or African American, Hispanic or Latino, South Asian, or Multiracial. Facilitators were associate or full professors, had experience mentoring postdocs or early career faculty, and at least one facilitator in each group had a history of NIH grant funding for biomedical research. Recruitment methods included campus-wide announcements, personal contacts, and presentations by the Principal Investigators to Department Chairs, Vice Chairs for Research, and Deans. The Principal Investigators (PIs) recruited facilitators from their respective institutions. Those who responded as being interested in facilitating were contacted by one of the Principal Investigators to discuss the study and facilitator responsibilities in more detail, confirm their interest, and evaluate their eligibility. The sole exception to this facilitator recruitment strategy occurred before launching cohort 9 when it was recognized based on the participants feedback and the review of the meetings recordings that not all facilitators were as effective at facilitating discussion around difficult psychosocial topics such as structural racism. Consequently, a facilitator with experience leading discussions around sensitive topics was brought into the PROMISE study to serve as a co-facilitator for cohorts 9 and 10 and facilitate the discussions on psychosocial topics. Like all other facilitators, this individual identified as underrepresented. However, unlike the other facilitators, this facilitator was not currently in an academic faculty role and did not have a history of biomedical research funding, though her co-facilitator did have such a history of funding.

Facilitators attended a 90-minute training session using the Zoom platform. The training was led by the study Principal Investigators and the study Co-Investigators who had developed the curricula of discussion topics and activities. Structured facilitation guides and corresponding slides and handouts for each session topic were developed specifically for this research study. These guides were modeled in style and format after the facilitator guides used by the PROMISE study in their mentor training curriculum (CIMER Curricula,

n.d.). The facilitator training was modeled in part after other mentor training research (Prunuske et al., 2013) and covered the following: 1) Aims and structure of the study 2) Use of the facilitation guides; 3) Role and expectations of facilitators; 4) Strategies to facilitate discussion among the peer group members; and 5) Discussion, questions, and exchange with other facilitators. When possible, facilitators who had already led a PROMISE group participated in the training of new facilitators to share their experiences and provide advice and tips on effectively facilitating the peer mentoring groups. In this way, there was an attempt to build a community of facilitators. The facilitators had access to the Principal Investigators and Co-Investigators throughout the study if they had questions, suggestions or encountered any challenge while facilitating a group.

#### Survey Development and Distribution

A survey was developed to identify motivations, benefits, and challenges relevant to serving as a co-facilitator in a peer group mentoring context. The survey was developed by the PROMISE study investigators in collaboration with the University of Odum Institute for Research in Social Science. Expert survey design consultants at the Odum Institute provided extensive input on survey design, question wording, strategies for maximizing response rate, and best practices for conducting a high-quality web survey. All survey recipients had undergone facilitator training and had served as a facilitator for one or more peer groups. They were informed that their data would be treated confidentially, shared only among the research team members, and reported in aggregated, de-identified form only. By completing the survey, facilitators consented to participate in the research study. The survey was reviewed and approved by the Institutions' Institutional Review Boards. IRB protocol number 290661.

The survey included 10 multiple choice questions and two yes/no questions (appendix 1). Respondents could skip any question they did not wish to answer. Some questions allowed respondents to provide additional answers. If they rated 'fair' or 'poor' for the quality of their experience, they were prompted to elaborate. The survey was administered using Qualtrics<sup>®XM</sup> in February 2023 to the facilitators of the initial cohorts (cohorts 1-8), in October 2023 to cohort 9, and will be administered in May 2024 upon completion of the tenth and final cohort. It should be noted that the non-academic facilitator who was brought in to facilitate the psychosocial discussions for cohorts 9 and 10 was not administered the survey. This was an intentional decision since the objective of this research was to assess characteristics, motivations, benefits, and challenges that would be representative of an underrepresented biomedical research faculty member who might facilitate a peer mentoring group.

Data Reduction and Analyses: An ID code was assigned to each completed survey to de-

identify the survey responses for purposes of data analyses. The file linking the facilitator name with the code was stored separately from the data in a password-protected file. Descriptive statistics were used to summarize the quantitative data. A research assistant reviewed the data, and for each multiple-choice question, the frequency of each answer was tabulated. A second research assistant reviewed the data to confirm the accuracy of the tabulation. The percentage of respondents for each question was then calculated. In addition, narrative responses to open-ended questions for 'other' motivations, benefits, or challenges were recorded.

## Results

A total of 36 underrepresented biomedical research faculty members were recruited as facilitators over four years. However, due to schedule availability, only twenty-seven (75%) of those underwent facilitator training led by the PROMISE study investigators and served as a facilitator for one or more cohorts. Twenty-three (85%) of those twenty-seven facilitators completed the survey. Not all facilitators answered all the questions.

### Facilitator Characteristics

The self-reported characteristics of the facilitators who completed the survey are summarized in Table 1. Most facilitators (68%, n=15) identified as Black or African American. Regarding ethnicity, 18% (n=4) identified as Hispanic or Latino, 18% (n=4) identified as multi-racial, 5% (n=1) identified as South Asian, and 5% (n=1) identified as 'other'. The facilitator that chose 'other' did not specify further. Most facilitators (86%; n=19) reported having eleven or more years of experience as an academic faculty member. Seventy percent (n=16) reported no formal facilitator training before the training provided by the PROMISE study. Most of the facilitators (71%; n=15) identified as female, while 29% (n=6) identified as male.

### Facilitator Experiences

#### *Motivations, Benefits, Challenges*

Figure 1 summarizes the quantitative data on the various motivations endorsed for participating as a facilitator in the PROMISE study. Most facilitators (87%; n=20) were motivated to participate to advance the diversity of the biomedical research workforce and to give back to other underrepresented biomedical researchers (83%; n=19). Promoting the success of underrepresented biomedical researchers in academia and serving as role models were also motivators to facilitate, with 70% (n=16) and 65% (n=15) endorsing those motivations, respectively. Fewer facilitators were motivated by the opportunity to work with

other underrepresented researchers (30%; n=7) or to improve their facilitation skills (4%; n=1). In response to the prompt to list any additional motivations to participate, only one facilitator responded, indicating that "Networking: Get to know a wider cross-section of peers and potential collaborators."

In response to the question on benefits associated with their facilitator role, all facilitators (100%; n=22) reported that they benefitted and received satisfaction from helping other underrepresented biomedical researchers. Seventy-three percent (n= 16) reported receiving satisfaction from knowing that they were contributing to research on best mentoring practices, 64% (n=14) reported that their facilitation skills improved, 50% (n=11) indicated that they benefited from the opportunity to meet colleagues, 9% (n=2) reported they received recognition as a facilitator, and 5% (n=1) endorsed that they benefitted by their career advancement (Figure 2). In response to the prompt to list any additional benefits experienced as a facilitator, two facilitators responded. One stated "Refresh my skills on the research and grant writing techniques taught to participants" and the second stated "I learned as well from the group".

The most frequent challenges reported by facilitators were time commitment (48%; n=11) and scheduling conflicts (39%; n=9). Nine percent (n=2) of facilitators found it challenging to facilitate discussions on difficult topics (Figure 3). In response to the prompt to list any additional challenges experienced as a facilitator, one facilitator responded that "Full year of commitment as a facilitator" was a challenge.

### Facilitator Training

Facilitators were asked to rate the facilitator training provided by the PROMISE study. The vast majority rated the training positively, with 43% (n=10) rating it as excellent, 39% (n=9) rating it as very good, and 13% (n=3) rating it as good. One facilitator (4%) found the training experience fair. When prompted to elaborate further, the facilitator stated, "Brief and non-specific to the topics."

### Overall Facilitator Experience

Regarding facilitators' ratings of their overall experience as a facilitator, all facilitators rated their experience as excellent (55%, n=12) or very good (45%, n=10). No facilitator rated their experience as good, fair, or poor.

## Discussion

This study addresses a significant gap in the current research on facilitated peer group mentoring, particularly for underrepresented, early career biomedical researchers. This is the first study which we are aware of that provides insight of senior underrepresented

**Table 1**  
*Facilitator Characteristics*

<b>Characteristics</b>	<b>Frequency</b>	<b>Percent</b>
<b>Race</b>		
White/Caucasian*	1	5
Black or African American	15	68
East Asian	0	0
South Asian	1	5
American Indian/Native American	0	0
Alaska Native	0	0
Native Hawaiian or Other Pacific Islander	0	0
Multi-racial	4	18
Other	1	4
Prefer not to answer	0	0
<b>Hispanic/Latino</b>		
Yes	4	18
No	17	77
Prefer not to answer	1	5
<b>Gender</b>		
Female	15	71
Male	6	29
<b>Years in academia</b>		
Fewer than 5	0	0
5-10	3	14
11-15	8	36
16-20	4	18
More than 20	7	32
<b>Degree</b>		
MD	9	43
PhD	11	52
M.B.B.S	1	5
<b>Prior formal facilitator training</b>		
Yes	7	30
No	16	70
<b>Primary appointment</b>		
School of Medicine	16	76
School of Nursing	3	14
Biomedical Engineering	1	5
School of Dentistry	1	5

Note. N does not equal 23 in all cases as facilitators were not required to answer all questions. \*One facilitator self-identified as Hispanic/Latino and as White.

faculty members who are willing to serve as co-facilitators for peer mentoring groups. Our results contribute novel information on the motivations, benefits, and challenges experienced by senior faculty (associate or full professors) from racially underrepresented groups who were willing to serve as facilitators for peer mentoring groups. In this study, most facilitators were motivated in their facilitator role by the opportunity to give back and pay it forward to other underrepresented biomedical researchers, to support the success of others, to serve as role models, and to advance the diversity of the biomedical research workforce. Facilitators also reported benefiting personally from the experience, particularly by experiencing satisfaction from supporting underrepresented early career researchers and enhancing their own facilitation skills development. These motivators and benefits align with research conducted in more traditional 1:1 mentoring relationships. For example, other research confirms that faculty who value the opportunity to increase diversity in the academy are significantly more interested in serving as mentors (Morales et al., 2017). Additionally, the most frequent personal benefits reported by mentors tend to be intrinsic, such as helping and enabling mentees, increase diversity in the academia, experiencing personal satisfaction in the role (Ehrich et al., 2004; Prunuske et al., 2013; Morales et al., 2017). Other motivations previously cited include the anticipated gains in knowledge and skills by the mentor (Limeri et al., 2019) and jobs satisfaction and committed to the organization (Ghosh & Reio, 2013). Mentors also report benefits in terms of their own professional development, collegiality, and networking (Ehrich et al., 2004; Fulton-Ward et al., 2023; Hilsabeck, 2018), benefits that were also reflected in the responses of our facilitators.

While the facilitator role is different from a mentor role in that facilitators are mostly responsible for enable participants to engage in conversations, discussions and deploy specific material, the facilitators in this study experienced similar benefits to those reported by mentors in other published studies (Fulton-Ward et al., 2023; Morales et al., 2017). In this study, the facilitator's role was made explicit to each facilitator in that they should create a safe space for discussion, keep the discussion constructive and positive, give all participants a voice, resist the urge to fix problems and refrain from giving advice or counseling. Moreover, a ground rule of this study was that facilitators were not permitted to serve as 1:1 mentor to any participant nor meet or discuss session materials with any participant outside of the scheduled sessions. Facilitators were encouraged to reflect questions back to other peer members for them to share their experiences and if they have any recommendations. It is not that facilitators cannot share what they have done or what has worked for them, but we did not want facilitators to give direct advice. Despite these restrictions, the facilitators experienced

personal benefits like those seen in high quality, traditional mentoring relationships, such as the opportunity to contribute to diversity in academia (Morales et al., 2017). While the reason for the similarity in benefits seen in traditional mentors and our facilitators is not entirely clear, we can speculate that several factors might contribute to these perceived benefits including the length of the peer mentoring intervention, specifically 17 meetings over approximately 8.5 months, resulting in 34 contact hours. The benefits of peer-to-peer interactions potentially were also beneficial to our facilitators, some facilitators reported that one motivation for participate was to improve their facilitators skills and that participating in the study also helped them with their own research these may have contributed to providing consistent support that is characteristic of effective mentoring relationships, such as caring, trust, and observing growth (National Academies of Sciences, Engineering, and Medicine, 2019). We also note that despite conducting the peer group meetings using a virtual format (Zoom), both the benefits and challenges experienced by the facilitators parallel those seen in traditional, in-person mentoring relationships (Ehrich et al., 2004; Fulton-Ward et al., 2023; Hilsabeck, 2018; Prunuske et al., 2013).

The primary challenges reported by facilitators in our study were time, scheduling conflicts, and the duration of the commitment. The challenge of time is commonly reported by mentors in more traditional mentoring relationships (Ehrich et al., 2004; Prunuske et al., 2013). While underrepresented mentors positively impact racially and ethnically underrepresented mentees and increase their retention as researchers (Walters et al., 2016), this time investment is not without potential cost to the mentor. A previous study on the experiences of mentors who train underrepresented students noted that the time involved in training is a substantial commitment that detracts from the mentor's time for conducting their own research (Prunuske et al., 2013). Compounding the effects of increased time involved in training and advising underrepresented mentees, underrepresented faculty also experience marginalization, racism, and an unbalanced share of activities that do not advance their careers, such as serving on committees and engaging in community outreach (Beech et al., 2013). These challenges for underrepresented mentors have been shown to negatively impact their own advancement and retention in the academy (Beech et al., 2013). This phenomenon has been described as the "minority tax". Often, underrepresented faculty feel pressured into accepting roles that may be 'tokenized'. These roles are often not recognized in promotion criteria and, therefore, contribute to a major source of inequity in the academy. Paradoxically, although increasing diverse representation in committee work and other academic roles is important, it can, at the same time, have undesired effects contributing to

burnout and decreased representation of faculty of color in senior academic ranks and leadership roles (D'Arrigo, 2021).

Another challenge commonly reported in the mentoring literature is that mentors often feel that they have no training in being a mentor, nor do they understand the goals or expectations for the mentoring relationship (Ehrich et al., 2004; Sambunjak et al., 2010). We proactively addressed this challenge in advance of the first peer group meeting by providing a structured facilitator training session that most of the facilitators rated as excellent or very good. Given the overwhelming positive ratings that the training received, it is possible that the provision of such training enhanced the overall benefits and positive experiences reported by the facilitators in this study. If that is indeed the case, then our results suggest that provision of training using evidence based best practices should be considered in facilitated peer mentoring initiatives as a strategy for recruiting and retaining facilitators whether in the context of a research study or in the real-world setting. Another feature of the peer mentoring intervention employed in the present study was that facilitators received, at least one week in advance, all materials they would need to lead the groups, including the curriculum, slides, and handouts. Facilitation skills like cultural responsiveness can strengthen a facilitator for PROMISE. However, since not all were trained prior to joining our study, some facilitators were not as prepared as others. House et al created a list of Culturally Responsive Facilitator principles, the first principle being: "Educate yourself about the history and ongoing impact of systemic racism in the United States and in the local context" (House et al., 2023). An example of how we successfully implemented this principle in PROMISE is by providing facilitators with literature to help them prepare for the topic of discussion. This is further supported by Christine Pfund, *Entering Mentoring* book that states that "cultural responsive interactions between mentors and mentees can help historically underrepresented mentees successfully progress in their research careers, become effective mentors, scientific leaders, and research team members of the future" (Pfund et al., 2015). While speculative, there is a strong possibility that this organizational feature greatly enhanced the overall positive experience reported by our facilitators. However, it must be acknowledged that this administrative support was possible within the context of an NIH-funded, controlled trial.

Several significant strengths of this facilitator survey research and gaps addressed are worth noting. First, our results provide a relatively comprehensive set of characteristics that may be typical of those faculty members who would agree to serve as a peer mentoring group facilitator for underrepresented biomedical researchers. Second, to our knowledge, there is very limited, if any, research that assesses the motivations, benefits, and challenges encountered by senior faculty

facilitators of academic peer group mentoring models. This is particularly true of research on senior facilitators from underrepresented backgrounds. Thus, the results of this research are intended to inform recruitment and retention efforts of academic peer group facilitators in the future. Moreover, in contrast to other facilitated peer mentoring research, which is typically conducted at a single institution with a single facilitator (Pololi & Evans, 2015), the majority of facilitators in this study were drawn from two separate large academic institutions, one public and one private. The involvement of more than 20 facilitators across two different institutions increases the generalizability of our survey results to other underrepresented faculty facilitators at other Research 1-level institutions. Moreover, the time and length of commitment facilitators were asked in this study were considerable and reflective of common efforts by mentors. This feature of the study also increases generalizability to the real world, academic setting.

### Limitations

Despite strengths, there are several limitations to consider. First, the facilitator survey was confidential, but not anonymous. Thus, the facilitators' responses may have been skewed due to social desirability bias to be more positive. Second, the sample size was not selected a priori, and we employed descriptive statistics only to characterize this cohort of facilitators, who represent only the subset of facilitators who completed the survey. Third, there were variable intervals of time between the end of a facilitator's cohort and their completion of the survey, most facilitators completed the survey March of 2023, one completed February of 2023, and another in October of 2023. Thus, retrospective recall bias may impact the reliability of the findings. Finally, despite our cross-campus facilitator recruitment efforts at both institutions that were designed to recruit senior underrepresented faculty from a broad array of biomedical disciplines, facilitators from schools of medicine at both institutions were overrepresented in this sample. It is unclear why this is the case though one likely possibility is that both Principal Investigators have their primary appointments in their schools of medicine, recruited partly by using their personal networks, and schools of medicine at both institutions house a large proportion of biomedical scientists. While this may limit the generalizability of the current survey results, the overrepresentation of medical school facilitators is aligned with the fact that most peer group members were also from a school of medicine. There is an urgent need to recruit, mentor, and retain physician-scientists conducting biomedical research in the United States (Duncan et al., 2016). Thus, data on attracting underrepresented facilitators from schools of medicine is relevant to increasing the diversity of the physician-scientist biomedical

research workforce.

### Conclusion

In conclusion, within the context of an NIH-funded, randomized controlled trial, we found that senior underrepresented faculty that chose to participate as facilitators in this study were motivated largely by intrinsic factors (e.g., paying it forward, supporting other underrepresented researchers). At the same time, facilitators also reported deriving personal benefit in terms of satisfaction from supporting others and increasing the diversity of the biomedical workforce. They reported these benefits despite the time commitment challenge. These results suggest that facilitators may see the value of their participation despite existing challenges. Our novel findings on the motivations, benefits, and challenges associated with a peer group facilitator role, particularly for underrepresented faculty facilitators, are intended to inform recruitment and retention efforts for future academic peer group mentoring initiatives. Although our findings may not be fully generalizable to the real world setting because of the administrative resources and the modest monetary incentive provided to the facilitators that a funded study provides, our results do provide additional evidence that can inform recruitment of senior underrepresented faculty to facilitate peer group mentoring to underrepresented early career researchers. Institution-wide efforts to acknowledge the importance of mentoring underrepresented scientists and providing tangible support for that role are needed as a strategy to continue to support the recruitment and retention of a diverse biomedical workforce.

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- Women, minorities, and persons with disabilities in science and engineering. Statistics, N.C.f.S.a.E., women, minorities, and persons with disabilities in science and engineering:

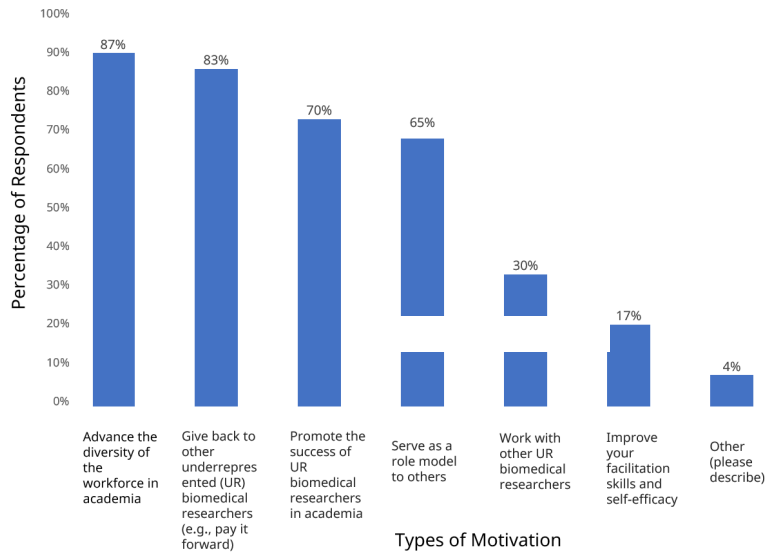
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## Appendix

**Figure 1:**



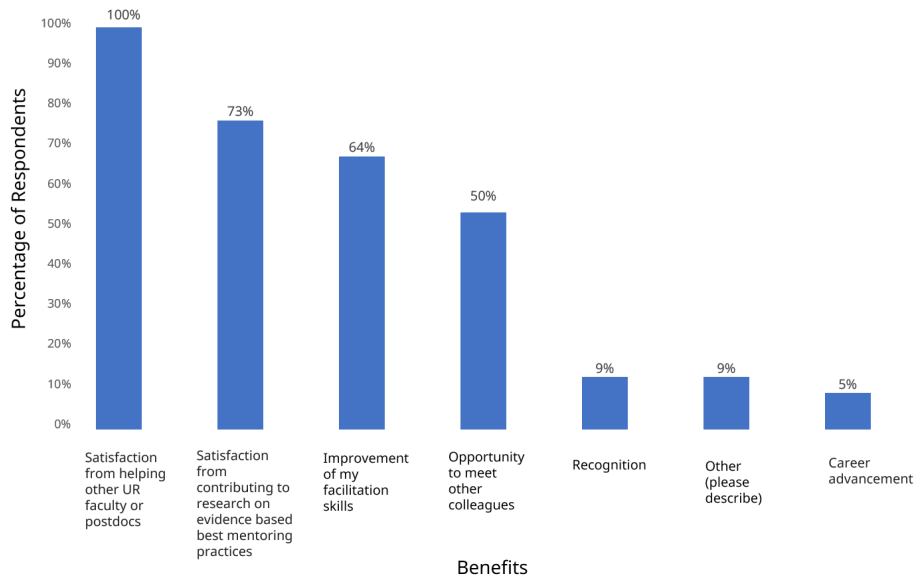
### *Percent of Respondents Who Endorsed Various Motivations to Participate as Facilitators*

Note: This figure shows the percentage of respondents who endorsed various motivations to participate as facilitators. Those that chose “other” elaborated further: “Networking: Get to know a wider cross-section of peers and potential collaborators.” The horizontal axis lists the various motivations to participate as a facilitator and the vertical axis shows the percentages. Facilitators could choose more than one answer; UR is an abbreviation for Underrepresented; n=23.

## Facilitated Peer Group Mentoring for Underrepresented Biomedical Researchers

**Figure 2:**

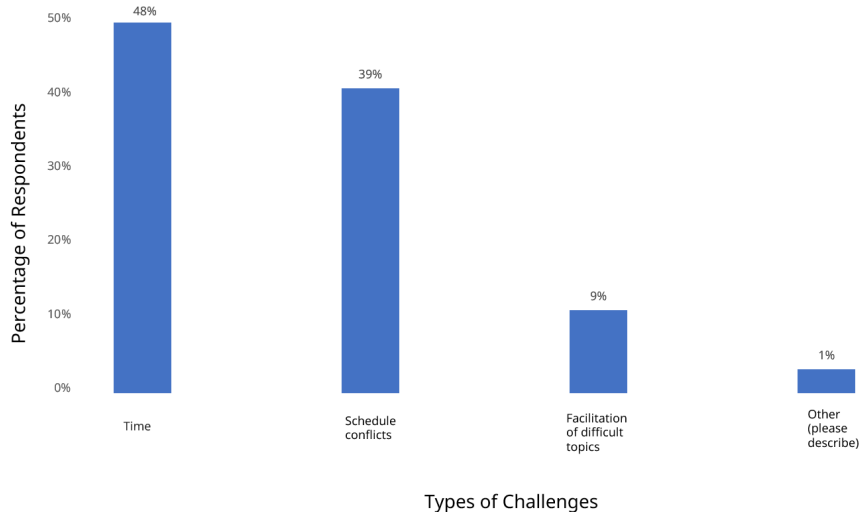
*Percent of Respondents Who Endorsed Various Personal Benefits of Participating as a Facilitator*



Note: This figure shows the percentage of respondents who endorsed various personal benefits of participating as a facilitator. The horizontal axis lists the various personal benefits to participate as a facilitator, and the vertical axis shows the percentages. Those that chose “other” elaborated further: “Refresh my skills on the research and grant writing techniques taught to participants” and “I learned as well from the group.” Facilitators could choose more than one answer; UR is an abbreviation for Underrepresented; n=22.

**Figure 3:**

*Percent of Respondents Who Endorsed Various Challenges They Experienced as a Facilitator*



Note: This figure shows the percentage of respondents who endorsed various challenges they experienced as a facilitator. Those that chose “other” elaborated further: “Full year of commitment as a facilitator.” The horizontal axis lists the various challenges they experienced as a facilitator, and the vertical axis shows the percentages. Facilitators could choose more than one answer; n=23.

### PROMISE STUDY FACILITATORS SURVEY

1. Please select any of the following motivations you had to participate in the PROMISE study as a facilitator.
  - a. Give back to other underrepresented (UR) biomedical researchers (e.g., pay it forward)
  - b. Advance the diversity of the workforce in academia.
  - c. Promote the success of UR biomedical researchers in academia.
  - d. Improve your facilitation skills and self-efficacy.
  - e. Work with other UR biomedical researchers in academia.
  - f. Serve as a role model to others.
  - g. Other (please describe)
  - h. None
2. Please select any of the following ways that you benefited individually from being a PROMISE facilitator.
  - a. Satisfaction from helping other UR faculty or postdocs.
  - b. Satisfaction from contributing to research on evidence based best mentoring practices.
  - c. Career Advancement
  - d. Recognition
  - e. Improvement of my facilitation skills
  - f. Opportunity to meet other colleagues.
  - g. Other (please describe)
  - h. None
3. What was the main challenge you encountered while being a PROMISE facilitator?
  - a. Time
  - b. Schedule conflicts
  - c. Facilitation of difficult topics
  - d. Other (please describe)
4. Have you had formal facilitator training before the training offered in the PROMISE study? Please do not include past experience with facilitating discussions.
  - a. Yes (please describe)
  - b. No
5. How would you rate the quality of the facilitator training provided by the PROMISE study?
  - a. Excellent
  - b. Very Good
  - c. Good
  - d. Fair (please indicate why)
  - e. Poor (please indicate why)
6. How would you rate the quality of the materials (e.g. facilitation guides, slides, handouts) you received in advance of each session that you facilitated?
  - a. Excellent
  - b. Very good
  - c. Good
  - d. Fair (please indicate why)
  - e. Poor (please indicate why)
7. How would you rate your overall experience as a PROMISE facilitator?
  - a. Excellent
  - b. Very good
  - c. Good
  - d. Fair (please indicate why)
  - e. Poor (please indicate why)
8. How can we improve the facilitation experience for PROMISE facilitators?
9. Approximately how many years have you been an academic faculty member?
  - a. Fewer than 5
  - b. 5-10
  - c. 11-15
  - d. 16-20
  - e. More than 20

10. Please select all of the races with which you identify.
  - a. White/Caucasian
  - b. Black or African American
  - c. East Asian
  - d. South Asian
  - e. American Indian/Native American
  - f. Alaska Native
  - g. Native Hawaiian or other Pacific Islander
  - h. Multi-racial
  - i. Other
  - j. Prefer not to say
11. Do you identify as being of Latino/Latina or Hispanic Origin?
  - a. Yes
  - b. No
  - c. Prefer not to answer
12. Are you interested in contributing to manuscript development and authorship on papers to come from this research? If you select Yes, we will be in touch with you in the future.
  - a. Yes
  - b. No

### About the Authors

**Bianca Avila**, B.A. serves as the Study Coordinator, at the University of North Carolina at Chapel Hill-Department of Psychiatry for the PROMISE study. Avila graduated from the University of North Carolina at Greensboro, in 2022, with a Bachelor of Arts in Psychology and minor in Sociology. She was the recipient of the Chancellors list for three consecutive semesters and graduated with Cum Laude Honors. She is a prior member of Psi Chi the International Honor Society in Psychology, working as social media chair. As well as a prior member of Alpha Chi Omega, Vice President of Philanthropy, responsible for coordinating and educating the group members on the national philanthropy domestic violence awareness. Simultaneously, collaborating with local organizations to raise funds for Clara House, a DV shelter. In addition, to her work in the sorority she volunteered at the Family services of the Piedmont, Avila reduced stress and trauma for victims by assisting advocates in overall service delivery, coordinated cases with law enforcement and the court system, and accompanied clients to legal or judicial procedures. Prior to PROMISE, she was a research assistant in the CAMINOS lab, working to understand protective and risk mechanisms for psychopathology in Latino adolescents and their families.

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**Dr. Enrique W. Neblett, Jr.**, PhD is a Professor of Health Behavior and Health Education at the University of Michigan School of Public Health and Associate Director of the Detroit Community-Academic Urban Research Center. Dr. Neblett is a leading scholar in racism and health, with a particular focus on how racism-related stress influences the mental and physical health of African American young people. He conducts community-based participatory research with an eye toward developing and implementing interventions, programs, and policies. His research has been funded by the National Institute of Mental Health, the National Science Foundation, the William T. Grant Foundation and the Robert Wood Johnson Foundation. He teaches courses on race, ethnicity, and mental health and population health determinants and disparities, and in 2023, was named Editor-Elect of Cultural Diversity & Ethnic Minority Psychology. He received the Society of Clinical Child and Adolescent Psychology (SCCAP) Distinguished Career Award in 2022 and, in 2021, was named the inaugural recipient of the National Institute of Mental Health James Jackson

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**Dr. Susan Pusek**, DRSc is the Director of Education Programs for the North Carolina Translational and Clinical Sciences Institute (TraCS). Dr. Pusek has over 30 years of experience in biomedical research, beginning as a research coordinator/program manager and now serving as an educator and program leader. She develops, implements, and evaluates training and mentoring programs for the next generation of researchers. Dr. Pusek consults with a diverse group of learners to identify and develop a career path in clinical/translational science, to find mentors, to create feasible timelines, and to solve challenges in mentoring or study implementation. At UNC, Dr. Pusek leads the annual Responsible Conduct of Research course and the TraCS Professional Development Seminar. She is a prior member of the leadership teams for the UNC BIRCWH K12 program, the Doris Duke Clinical Research Fellowship Program, and the TraCS postdoctoral (T) and junior faculty (K) training programs. She is currently on the leadership team of the TraCS K12. Nationally, Dr. Pusek is active in the NIH-funded Clinical and Translational Science Awards (CTSA) Consortium, serving as past Co-Chair of the Workforce Development Committee and participating in multiple workgroups. Dr. Pusek developed the skills curriculum of the PROMISE study.

**Dr. Susan S. Girdler**, PhD, FABMR, is Professor and Associate Vice Chair of Faculty Development in the Department of Psychiatry at the University of North Carolina (UNC) at Chapel Hill. Dr. Girdler has a long history of research funding from the National Institutes of Health, having served as PI on 11, RO1 grants to support her clinical research in women's reproductive mood disorders and her research in racial differences in endogenous pain modulation. Dr. Girdler also has long-standing involvement and commitment to mentoring. She developed and leads her departments' faculty mentoring program, she developed and co-directs an NIH postdoctoral T32 training program now in its 12th year, and she is a CIMER (Center for the Improvement of Mentoring Experiences in Research) trained facilitator who regularly provides mentor training to faculty across her campus. Dr. Girdler's commitment to, and effectiveness at mentoring, has been recognized with UNC campus-wide awards. Dr. Girdler is the UNC PI for the PROMISE study (NIH U01-GM132374).

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