

Mentoring as a Buffer for the Impact of Social Unrest due to Systemic Racism and Ambient Discrimination

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Mentoring may act as a buffer for the negative impacts of racial trauma. Building Up (conducted 2020-2024) is a cluster-randomized trial at 25 institutions of postdoctoral fellows and early-career faculty from underrepresented backgrounds. Generalized linear mixed models were used to identify mentoring competencies associated with the impact of social unrest due to systemic racism. Eighty-two percent of participants (n=143) identified as female, 33% as non-Hispanic Black, and 36% as Hispanic. Mentoring that aligns expectations and mentoring that assesses understanding were significantly associated with social unrest due to systemic racism impacting ability to work (OR=2.84 and OR=0.52, respectively) and conduct research (OR=4.21 and OR=0.41, respectively). Future research should elucidate specific aspects of mentoring relationships that serve as a buffer during times of social unrest.

Keywords: mentoring, mentoring competencies, social unrest, racial trauma, postdoctoral fellows, underrepresented students

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Introduction

Research identifies racism as the enablement and propagation of systems, structures, or processes that advantage some and disadvantage others based on demographic factors such as race (Braveman et al., 2022). A great deal of research specifically documents the negative impact of racialized trauma, which the Centers for Disease Control and Prevention considers a public health crisis within the United States (Walensky, 2021). Both experiencing and witnessing racial trauma through unconscious, subtle forms of discrimination and ambient discrimination result in similar negative effects (Braveman et al., 2022). Clearly, exposure to racialized social unrest (either direct or observed) poses a significant threat to overall health and well-being, especially for members of minoritized social groups (Braveman et al., 2022).

Recent research demonstrates that mentoring of all different forms or types (e.g., hierarchical, peer, group, etc.) is a buffer for the negative impact of racial trauma at the individual, organizational, and societal levels. For example, mentoring relationships act as a buffer for the negative impact of toxic workplaces and negative supervisory relationships (Braveman et al., 2022) and effective leadership development among African Americans (Ragins et al., 2017), thereby reducing the adverse consequences on important work-related outcomes. Scholars also argue for the importance of mentoring as a buffer to support ongoing efforts to advance diversity, equity,

and inclusion within academic medicine and the broader healthcare community (South-Paul et al., 2021). Some additional work shows that beyond traditional hierarchical (one-to-one) mentoring, peer mentoring may act as both a buffering effect and a safe space for identity-related conversations among minoritized group members (Murrell et al., 2021; Murrell et al., 2017; Pethrick et al., 2020; South-Paul et al., 2021). However, little research has examined which components of mentoring are important in this buffering effect against the impact of racial trauma (South-Paul et al., 2021). Our focus in the current research is on mentoring (both hierarchical and peer mentoring) for underrepresented faculty. Therefore, we aim to identify mentoring competencies that are significantly associated with the impact of social unrest due to systematic racism and exposure to racialized discrimination.

Methods

Design and Participants

Participants in this analysis were post-doctoral fellows and early-career faculty enrolled in Building Up a Diverse Workforce for Biomedical Research (Building Up), a cluster randomized trial (conducted from 2020-2024) at 25 academic medical institutions across the United States testing the effectiveness of an intervention designed to diversify the biomedical research workforce. Briefly, participants in this study 1) were from backgrounds underrepresented in

health-related sciences (National Institutes of Health, 2022), 2) had a terminal degree, 3) were a postdoctoral fellow or early career faculty within the first 6 years of appointment, and 4) committed to a career in clinical, basic, or translational research (White et al., 2021). The National Institutes of Health states that people underrepresented in science include people from racial or ethnic groups underrepresented in science, from disadvantaged backgrounds, with disabilities, and who identified as female in most biomedical-relevant disciplines (National Institutes of Health, 2022). A single institutional review board at the University of Pittsburgh approved the study protocol. Participants provided electronic informed consent.

The Building Up intervention has been previously described (White et al., 2021). Building Up had two 10-month long intervention arms comprised of monthly sessions, mentoring, networking, and coursework. Participants in both intervention arms were offered the opportunity to attend monthly leadership webinars. Participants in the “high touch” intervention arm additionally participated in monthly meetings led by a Building Up assigned near-peer mentor, experienced study assigned near-peer mentoring, participated in study-provided networking opportunities, and completed coursework in grant writing and scientific writing. Participants in the “low touch” intervention arm participated in these activities as usual. In other words, these mentoring, networking, and learning opportunities were not provided by Building Up.

Participants completed assessments pre-intervention, and annually for 3 years following the intervention. In 2021, in response to the 2020 Racial Justice Movement reawakened with the murder of George Floyd, we added a series of questions to the first follow-up assessment to measure the impact of social unrest due to systemic racism. Therefore, this manuscript only includes data collected during the second annual Building Up assessment (administered September 2021-January 2022) from both intervention arms.

Measures

Participants were asked to report their gender identity, race, ethnicity, highest degree achieved, and current career stage. Response options for gender identity included “male,” “female,” “transgender male,” “transgender female,” “non-binary,” and “other”. Due to the small number of participants who identified as “transgender female” or “transgender male” and to prevent identification of individuals, we combined “female” and “transgender female” into one category of gender identity and “male” and “transgender male” into a second category of gender identity. Race and ethnicity category response options have previously been described (Maccalla et al., 2020; Thakar et al., 2024). Due to small numbers, the race/ethnicity categories of Asian, North African, and Middle Eastern were combined into

one category.

Participants answered a series of questions on the impact of social unrest due to systemic racism: “The social unrest regarding systemic racism has impacted my ability to work,” “The social unrest regarding systemic racism has impacted my ability to conduct research,” and “I experienced psychological distress due to events of social unrest regarding systemic racism.” Due to small sample sizes in some groups, we collapsed categories for the impact of social unrest due to systemic racism into yes (strongly agree, agree) and no (strongly disagree, disagree, and neutral).

Science identity, the extent to which one views themselves as a “scientist”, was assessed using a validated 5-item questionnaire measuring the degree to which participants think being a scientist is part of their personal identity (Estrada et al., 2011). Each of the 5 items was rated using a 5-point Likert scale ranging from 1 (“strongly disagree”) to 5 (“strongly agree”). A total science identity score was calculated by summing and averaging the responses to the 5 questions; a higher score indicates stronger science identity.

Using the Mentoring Competency Assessment (Fleming et al., 2013), participants rated the competency of their mentor in six separate domains (Supplemental Table 1): maintenance of effective communication, alignment of expectations, assessment of understanding, fostering of independence, addressing diversity, and promotion of professional development (Fleming et al., 2013). Each mentoring competency domain was rated using a 7-point Likert scale ranging from 1 (“not at all”) to 7 (“extremely skilled”). Scores were averaged for a total mentoring competency score in each domain and for an overall composite score.

Participants also completed the Psychological Capital Questionnaire, a validated 24-item questionnaire assessing positive psychological development based on four components: efficacy, optimism, hope, and resilience (PsycTests Database, 2007). Each psychological capital component consisted of 6 questions that were scored using a 6-point Likert scale ranging from 1 (“strongly disagree”) to 6 (“strongly agree”). Scores for questions from each component were summed, and each component score had a range of 6 to 36, with a higher score indicating higher psychological capital in that component.

Data Analysis

Participant characteristics are reported as frequencies and percentages for categorical data and medians and 25th and 75th percentiles for continuous data. We conducted separate generalized linear mixed models to determine the association of each participant characteristic, mentoring competency, and psychological capital component with each of the three measures of the impact of social unrest due to systemic racism. Models included fixed effects for the

intervention group and a random effect for the academic medical institution to account for the cluster-randomized design. Next, using the same methods, we identified participant characteristics, mentoring competencies, and psychological capital components that were independently associated with each of the three impacts of social unrest due to systemic racism variables. For each model of social unrest due to systemic racism (i.e., impacted ability to work; impacted ability to conduct research; caused psychological distress), we entered participant characteristics, mentoring competency, and psychological capital component variables in Table 1 into a single generalized linear mixed model and retained variables via backward stepwise elimination if $p < 0.10$.

We used SAS version 9.4 (SAS Institute, Cary, NC, United States) for analyses. Reported p-values are two-tailed; p-values < 0.05 were statistically significant.

Results

One hundred and forty-three of 224 eligible participants (64%) completed the social unrest questionnaire (Figure 1). Of the 143 participants included in this analysis, 82% identified as female, 33% as non-Hispanic Black, and 36% as Hispanic (Table 1). Unadjusted associations of participant characteristics, mentoring competencies, and psychological capital with social unrest due to systemic racism are in Supplemental Table 2. Briefly, only gender identity was significantly associated with social unrest due to systemic racism leading to psychological distress. No other variables were significantly associated with the impact of social unrest variables in unadjusted models.

In multivariable models (Table 2), mentoring that aligns expectations was independently associated with higher odds that social unrest due to systemic racism impacted participants' ability to work [OR: 2.84 (95% CI 1.25, 6.42); $p = 0.01$] and conduct research [OR: 4.21 (95% CI 1.60, 11.0); $p = 0.004$]. Mentoring that assesses understanding was independently associated with lower odds that systemic racism impacted participants' ability to work [OR: 0.52 (95% CI 0.27, 1.00); $p = 0.049$] and ability to conduct research [OR: 0.41 (95% CI 0.19, 0.89); $p = 0.02$]. Female gender identity was independently associated with higher odds of psychological distress due to systemic racism [OR: 4.76 (95% CI 1.38, 16.4); $p = 0.01$]. Mentoring that fosters independence were retained in the models for impacts ability to work and impacts ability to conduct research but the association was not statistically significant ($p > 0.05$) in either model. No other participant characteristics, mentoring competency subscales, or psychological capital components were significantly associated with the social unrest outcomes.

Discussion

Our research is consistent with previous findings

that effective mentoring relationships can provide "holding environments," a concept that focuses on the giving and receiving of support, validation, and sensemaking (Kahn, 2001). In times of social unrest and conflict, interpersonal and identity-related anxiety can limit access of minoritized communities to traditional and or formal means of support. Our research is consistent with previous findings that find that in these anxiety-intense situations or environments, there is a greater need for a focus on the importance of the supportive aspects of mentoring relationship in addition to mentoring that focuses on career advancement and outcomes. These supportive aspects of mentoring can request a higher level of trust and identity-related connections compared to more career-focused mentoring.

These supportive aspects of mentoring are particularly relevant in times of social unrest that are also connected to personal identity dimensions such as race, gender, cultural sexuality, age, etc. According to Kahn's (2001) work, these holding environments can provide a range of needed support such as providing validation for different perspectives on social unrest based on diverse lived experiences. In addition, social unrest can prompt a need for extending compassion or withholding judgments when diverse perspectives are present and, in some situations exaggerated. Lastly, social unrest can prompt individuals to rethink their perspectives and expectations of diverse relationships in a way that leads them to engage in what prior research refers to as sensemaking (Clarke et al., 2021; Janssen et al., 2021). Social unrest can cause individuals to rethink their assumptions, biases, and prejudices based on a heightened sense of awareness of their impact on diverse individuals and communities. Mentoring relationships can provide what is often referred to as a "safe space" for engaging in sensemaking, providing compassionate support, and periods of self-reflection that may be shared with others (Randel et al., 2021). This also includes providing a safe space for the identity work and positive identity construction within the mentor-mentee relationship which prior research finds important for leadership development especially for diverse leaders (Murrell & Onosu, 2022).

An interesting finding is that mentoring relationships that included a focus on "aligning expectations" were associated with higher odds that systemic racism impacted participants' ability to work and ability to conduct research. This might suggest that those mentoring relationships are focused on objective aspects of the relationship and may have included significant "holding environments" to provide a foundation for challenging dialogs on racism. Prior research describes holding environments as providing a safe space for emotional expression, sharing personal experiences or insight, and affirming other's sense of identity, value, and knowledge. This could include statements such as "I understand" or "I have shared similar experiences" or "It is okay if

you feel or see things differently” between the mentor and mentee. Holding environments can also help to provide a context where the other person can discover a sense of competence and a positive sense of self. This may include affirmative statements such as “you have a right to your perspective in this situation” or validating responses such as “your unique perspective is also valid”. However, we didn’t content code individual statements across to dimensions of holding environments in the current research but relied on their responses to existing scale items to offer this as additional insight. While this is speculative based on the current findings, it does suggest an important area for future research to determine whether holding environments can provide a positive impact during times of extreme social unrest and racial tensions. Examining this question in future research is important to help both mentors and mentees become more aware of their importance especially when external environments are non-supportive and could alert there that more attention to these supportive functions of mentoring are necessary.

Given the ongoing need for dialog and discord on issues related to diversity, equity, inclusion, and belonging, we see the current findings as important for sparking additional research in this important area. Identifying research and tools to support or “buffer” researchers during challenging times of social unrest is critical to ensure that individuals’ careers and overall well-being are not negatively impacted. Mentoring relationships that assess understanding are shown in our data to buffer the negative impact of social unrest. Future work in this important area should examine the most effective strategies to build up mentoring competencies related to these holding environments so that the negative impact of social unrest can be effectively mitigated.

Our study also found that those who identify as female were more likely to experience psychological distress due to social unrest. It maybe that females, who tend to do the majority of caregiving, are already experiencing psychological distress with unreliable or no childcare. So, experiencing social unrest adds to their psychological distress. The year prior to the survey, most everyone worked from home where there were limited boundaries, and most of their research was out of their control. Those who worked in the lab did so on a limited basis. And when they went to work, perhaps their colleagues did not acknowledge the social unrest, which could also contribute to their psychological distress. These findings highlight the need for additional research to gain a better understanding of how being female affects the impact of social unrest on psychological distress.

The time period for our study also coincided with COVID-19 pandemic. A significant amount of research shows that the disruption of the pandemic was more severe for early career faculty, especially for women and people of color (Doyle et al, 2021; White et al., 2022). This included

losses due to lab research being interrupted, increases in clinical duties that came at the cost of research, and greater demands for working parents that disproportionately impact working women. The disproportionate impact of the increase in clinical workload was more significant for under-represented physicians and scientists as they are often working in under-served or poor communities as part of large and public academic medical facilities. While our findings are still important for this research question, there was also an impact on our response rates due to the disruption of the pandemic but did not lessen the importance of those responses that were collected and reported herein (White et al., 2022). Though we have published qualitative findings showing that the impact of the COVID-19 pandemic was felt disproportionately by participants who worked in the lab and who had childcare or elder care responsibilities, we did not collect this information as part of the larger study and therefore could not control for them in multivariable analyses.

This study does have some limitations. We are only using cross-sectional data. It could be the case that changes over time might manifest themselves in the mentoring relationship. However, the time-point that we used was over a year after the murder of George Floyd and the Black Lives Matter movement. While we expect that participants would have had sufficient time to garner perspective on the impact that mentoring has had on their careers and lives, we did not collect information on participants prior experiences with mentoring including the quantity and quality of mentoring they received prior to participating in Building Up. Another limitation is that not all participants responded to the social unrest questions. Perhaps those who did not experience social unrest were the ones who did not respond to the questions, but it could be equally true that those who significantly experienced social unrest were the ones who did not respond. It is impossible to know how the non-responders would have answered the questions; however, the majority of the participants did respond, so it is likely that we have good representation. Finally, this study is limited to postdoctoral fellows and early-career faculty. We do not know if the mentoring relationship differs at other career levels. However, for this population, mentoring can buffer the impact that social unrest has on one’s ability to work and conduct research.

Conclusion

We found that certain mentoring competencies contribute as well as decrease the impact of social unrest on work. Moreover, those who identify as female experienced higher psychological distress as a result of social unrest. We do know that social unrest can impact one’s work productivity and psychological distress. More research is needed to better understand these relationships so that we can find ways to bolster

the mentoring relationship to mitigate these effects. Mentoring can be a powerful relationship that can serve to buffer the relationship between social unrest and the ability to work and conduct research.

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Appendix

Table 1
Building Up a Diverse Workforce, 12-Month Follow-Up (N=143)

Characteristic	N (%) ^a
Age, median (25 th -75 th percentile)	37 (32-40)
Gender	
Identifies as male	26 (18.2)
Identifies as female	117 (81.8)
Race/ethnicity	
Hispanic/Latinx	51 (35.7)
Non-Hispanic White	21 (14.7)
Non-Hispanic Black	47 (32.9)
Non-Hispanic Multi-racial	11 (7.7)
Asian/North African/Middle Eastern	13 (9.1)
Type of highest degree achieved	
MD	42 (29.4)
PhD	86 (60.1)
Other	15 (10.5)
Career stage	
Postdoctoral fellow	72 (50.7)
Faculty	70 (49.3)
Science identity, median (25th-75th percentile)	4.2 (3.4-4.8)
Mentoring competency, median (25th-75th percentile)	5.3 (4.0-6.1)
Maintains effective communication	5.8 (5.0-6.5)
Aligns expectations	5.8 (4.6-6.6)
Assesses understanding	6.0 (4.3-6.7)
Fosters independence	5.7 (4.5-6.4)
Addresses diversity	6.0 (4.3-6.5)
Promotes professional development	5.6 (4.6-6.2)
Psychological capital, median (25th-75th percentile)	

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Hope	28 (25-31)
Efficacy	30 (27-32)
Resilience	28 (26-30)
Optimism	26 (23-29)
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Social unrest due to systemic racism	
Impacts the ability to work	41 (28.7)
Impacts the ability to conduct research	22 (15.5)
Leads to psychological distress	81 (57.0)

*Unless otherwise specified. The number of participants across categories may not sum to the total due to missing data.

Table 2

Adjusted associations between characteristics of underrepresented postdoctoral fellows and early-career faculty and the impact of social unrest due to systemic racism

Characteristic	Social unrest due to systemic racism					
	Impacts the ability to work		Impacts the ability to conduct research		Leads to psychological distress	
	OR (95% CI)	P	OR (95% CI)	P	OR (95% CI)	P
Identifies as female vs male	NA		NA		4.76 (1.38, 16.4)	0.01
Mentoring competency, per 1 point higher						
Aligns expectations	2.84 (1.25, 6.42)	0.01	4.21 (1.60, 11.0)	0.004	NA	
Assesses understanding	0.52 (0.27, 1.00)	0.049	0.41 (0.19, 0.89)	0.02	NA	
Fosters independence	0.48 (0.22, 1.04)	0.06	0.46 (0.19, 1.07)	0.07	NA	

CI, confidence interval; NA, variable excluded from model; OR, odds ratio
 Separate generalized linear mixed models were conducted for each social unrest due to systemic racism variable (i.e., impacts ability to work; impacts ability to conduct research; and leads to psychological distress). Models included fixed effects for the intervention group and a random effect for the institution to account for the cluster-randomized design. Each model included participant characteristics, mentoring competencies, and psychological capital component variables in Table 1 in a single generalized linear mixed model that were eliminated via backward stepwise elimination if $p \geq 0.10$. Only variables with $p < 0.10$ that were retained in final models are included in table.

Supplemental Table 1
Mentoring competency assessment domains and questions

Maintains effective communication
Active listening
Provides constructive feedback
Establishes relationship with you based on trust
Identifies and accommodates different communication styles
Employs strategies to improve communication with you
Aligns expectations
Works with you to set clear expectations of the mentoring relationship
Aligns their expectations with your own
Considers how personal and professional differences may impact expectations

Works with you to set research goals
Helps you develop strategies to meet research goals
Assesses understanding
Accurately estimates your level of scientific knowledge
Accurately estimates your ability to conduct research
Employs strategies to enhance your understanding of the research
Fosters independence
Motivates you
Builds your confidence
Stimulates your creativity
Acknowledges your professional contributions
Negotiates a path to professional independence with you
Addresses diversity
Takes into account the biases and prejudices they bring to your mentor/mentee relationship
Works effectively with mentees whose personal background is different from their own (i.e., age, race, gender, socioeconomic status, region, culture, religion, family composition, etc.)
Promotes professional development
Helps you network effectively
Helps you set career goals
Helps you balance work with your personal life
Understands their impact as a role model for you
Helps you acquire resources (e.g., grants, etc.)

Supplemental Table 2

Unadjusted associations between characteristics of underrepresented postdoctoral fellows and early-career faculty and impact of social unrest due to systemic racism

Characteristic	Social unrest due to systemic racism					
	Impacts the ability to work		Impacts the ability to conduct research		Leads to psychological distress	
	OR (95% CI)	P	OR (95% CI)	P	OR (95% CI)	P
Age, per 5 years higher	1.03 (0.69, 1.54)	0.89	1.02 (0.65, 1.62)	0.92	0.99 (0.66, 1.49)	0.96
Identifies as female vs male	1.19 (0.35, 4.06)	0.77	1.54 (0.34, 6.85)	0.57	4.49 (1.32, 15.3)	0.02
Type of highest degree achieved		0.52		0.33		0.93
MD	0.75 (0.14, 4.06)		0.33 (0.05, 2.26)		0.90 (0.18, 4.62)	
PhD	1.34 (0.28, 6.40)		0.92 (0.19, 4.52)		1.09 (0.23, 5.10)	
Other	1.0 (ref.)		1.0 (ref.)		1.0 (ref.)	
Career stage		0.81		0.72		0.56
Postdoctoral fellow	1.0 (ref.)		1.0 (ref.)		1.0 (ref.)	
Faculty	0.90 (0.37, 2.21)		1.20 (0.43, 3.37)		0.77 (0.32, 1.86)	
Science identity, per 1 point higher	1.11 (0.61, 2.03)	0.72	1.33 (0.65, 2.71)	0.43	1.33 (0.74, 2.40)	0.34
Mentor competence, per 1 point higher						
Maintains effective communication	0.78 (0.52, 1.17)	0.22	0.77 (0.49, 1.23)	0.27	0.82 (0.55, 1.23)	0.34

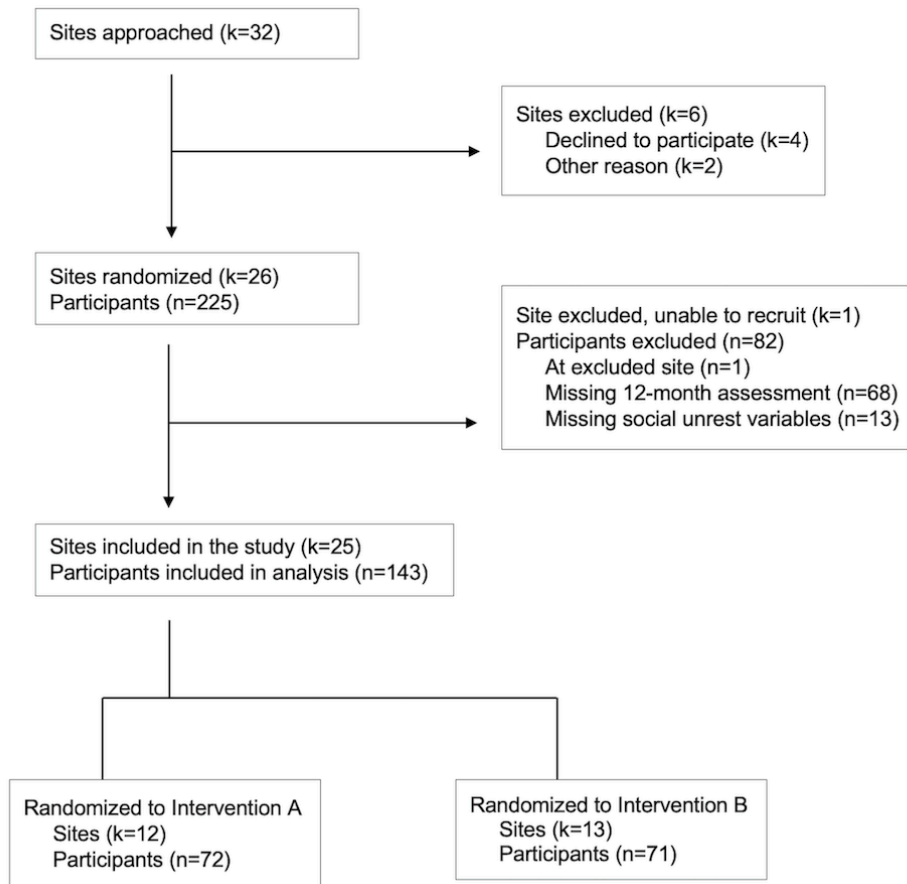
Mentoring as a Buffer for the Impact of Social Unrest due to Systemic Racism and Ambient Discrimination

Aligns expectations	0.91 (0.66, 1.25)	0.56	1.05 (0.71, 1.54)	0.81	0.94 (0.69, 1.30)	0.72
Assesses understanding	0.73 (0.53, 1.01)	0.06	0.77 (0.54, 1.10)	0.15	0.77 (0.55, 1.08)	0.13
Fosters independence	0.75 (0.54, 1.04)	0.80	0.82 (0.57, 1.19)	0.30	0.87 (0.62, 1.22)	0.42
Addresses diversity	0.87 (0.66, 1.15)	0.31	0.84 (0.61, 1.16)	0.29	0.85 (0.64, 1.14)	0.28
Promotes professional development	0.82 (0.58, 1.16)	0.25	0.85 (0.57, 1.25)	0.40	0.85 (0.59, 1.21)	0.36
Psychological capital, per 1 point higher						
Hope	0.81 (0.43, 1.51)	0.49	1.13 (0.54, 2.36)	0.75	1.05 (0.56, 1.96)	0.89
Efficacy	0.77 (0.36, 1.65)	0.49	1.19 (0.49, 2.88)	0.70	0.77 (0.36, 1.65)	0.49
Resilience	0.74 (0.33, 1.68)	0.47	1.18 (0.46, 3.03)	0.73	1.69 (0.75, 3.77)	0.20
Optimism	0.68 (0.35, 1.31)	0.24	0.83 (0.39, 1.76)	0.63	0.99 (0.51, 1.93)	0.98

CI, confidence interval; OR, odds ratio

Figure 1

Institution and Participant Flow Diagram for Building Up a Diverse Biomedical Research Workforce Trial



About the Authors

Dr. Audrey J. Murrell is currently a Professor of Business Administration, Psychology, Public and International Affairs at the University of Pittsburgh, School of Business. Dr. Murrell conducts research on mentoring, diversity, equity and inclusion and social issues in management. Her work has been published widely in management and psychology journals including several books: “Mentoring Dilemmas: Developmental Relationships within Multicultural Organizations” (with Crosby and Ely); “Intelligent Mentoring: How IBM Creates Value through People, Knowledge and Relationships” (with Forte-Trummel and Bing); and, “Mentoring Diverse Leaders: Creating Change for People, Processes and Paradigms” (McGraw-Hill) with Stacy Blake-Beard. Professor Murrell is an Associate Editor for Equality, Diversity and Inclusion: An International Journal and an Editorial Board member for the International Journal of Environmental Research and Public Health. Audrey is the co-founder and Deputy Chair for Food21 of Pennsylvania. She serves on the Hill District Community and Economic Development Association board and is a member of the Board of Trustees for the Meharry Medical College. She also serves as a consultant in the areas of mentoring, organizational effectiveness, diversity, and leadership development. This work involves public, private, and governmental organizations and includes numerous public forums and media appearances.

Dr. Doris Rubio is Professor of Medicine, Bioinformatics, Biostatistics, and Clinical & Translational Science at the University of Pittsburgh. She is the Assistant Vice Chancellor and directs the Institute for Clinical Research Education (ICRE), which is home to 7 degree programs and 15 career development programs including the KL2, TL1, Workforce Development, and Team Science for our Clinical and Translational Science Institute. Dr. Rubio is committed to diversifying the workforce. She started LEADS, which is a collaboration with nine Minority Serving Institutions to launch the research careers of junior investigators. She has the Building Up Grant: U01GM132133 to test an intervention across 25 CTSA for underrepresented researchers for retention. She received the Educator of the Year Award and the Award for Contributing to the Diversity and Inclusiveness of the Translational Research Workforce from ACTS. She was awarded the Chancellor’s Distinguished Public Service Award given her work on diversifying the workforce.

Maya S. Thakar is currently at the University of Pittsburgh Graduate School of Public Health. Her research interests include health disparities, social epidemiology, and neuroepidemiology.

Dr. Natalia Morone, MD, MS, Associate Professor of Medicine, Boston University (BU) Chobanian & Avedisian School of Medicine, Principal Investigator and Director of the BU Clinical and Translational Science Institute (CTSI) KL2 program, co-Director of the BU CTSI Career Development Award Writing Workshop. She has a long-standing commitment to fostering the careers of underrepresented groups (URG) in research and is currently multi-PI on two NIH awards to retain URGs in research through the evaluation and implementation of longitudinal career development programs. Over the past 20 years Dr. Morone established her research career in integrative nonpharmacological interventions to treat chronic pain, particularly mindfulness interventions for chronic low back pain. Her research portfolio also extends into mindfulness delivered via telehealth, community engagement, and translational research.

Dr. Gretchen White is an Assistant Professor at the University of Pittsburgh School of Medicine, School of Public Health, and Clinical and Translational Science Institute. Her primary faculty appointment is within the Institute for Clinical Research Education. Dr. White is a co-investigator on multiple studies seeking to develop and diversify the biomedical research workforce.