



International Journal of Mentoring and Coaching in Education

Understanding how diversity training impacts faculty mentors' awareness and behavior

Stephanie C. House, Kimberly C. Spencer, Christine Pfund,

Article information:

To cite this document:

Stephanie C. House, Kimberly C. Spencer, Christine Pfund, (2018) "Understanding how diversity training impacts faculty mentors' awareness and behavior", International Journal of Mentoring and Coaching in Education, Vol. 7 Issue: 1, pp.72-86, <https://doi.org/10.1108/IJMCE-03-2017-0020>

Permanent link to this document:

<https://doi.org/10.1108/IJMCE-03-2017-0020>

Downloaded on: 19 April 2018, At: 07:11 (PT)

References: this document contains references to 41 other documents.

To copy this document: permissions@emeraldinsight.com

The fulltext of this document has been downloaded 76 times since 2018*

Users who downloaded this article also downloaded:

(2017), "Organizational diversity learning framework: going beyond diversity training programs", Personnel Review, Vol. 46 Iss 6 pp. 1120-1141 <<https://doi.org/10.1108/PR-09-2015-0254>>

(2018), "Developing student teachers' teaching self-efficacy through Shared Mentoring in Learning Environments (SMILE)", International Journal of Mentoring and Coaching in Education, Vol. 7 Iss 1 pp. 35-53 <<https://doi.org/10.1108/IJMCE-02-2017-0014>>

Access to this document was granted through an Emerald subscription provided by

Token: Eprints:XR4XTCWZ8FAMJXJDZBXP:

For Authors

If you would like to write for this, or any other Emerald publication, then please use our Emerald for Authors service information about how to choose which publication to write for and submission guidelines are available for all. Please visit www.emeraldinsight.com/authors for more information.

About Emerald www.emeraldinsight.com

Emerald is a global publisher linking research and practice to the benefit of society. The company manages a portfolio of more than 290 journals and over 2,350 books and book series volumes, as well as providing an extensive range of online products and additional customer resources and services.

Emerald is both COUNTER 4 and TRANSFER compliant. The organization is a partner of the Committee on Publication Ethics (COPE) and also works with Portico and the LOCKSS initiative for digital archive preservation.

*Related content and download information correct at time of download.

Understanding how diversity training impacts faculty mentors' awareness and behavior

Stephanie C. House, Kimberly C. Spencer and Christine Pfund
*Institute for Clinical and Translational Research,
University of Wisconsin Madison, Madison, Wisconsin, USA*

72

Received 21 March 2017
Revised 12 July 2017
5 September 2017
27 October 2017
15 November 2017
14 December 2017
Accepted 14 December 2017

Abstract

Purpose – The purpose of this paper is to explore how a mentor training intervention affected research scientists' perceptions of diversity and their subsequent behaviors.

Design/methodology/approach – Data were originally collected as part of a randomized controlled trial measuring the effectiveness of a research mentor training intervention that covered six mentoring competencies, including addressing diversity. Here, the results of a secondary qualitative analysis of interviews with trained mentors, 135 faculty from 16 institutions from across the USA and Puerto Rico, are reported.

Findings – Analyses provide insights into how the diversity content of a mentoring intervention is interpreted, internalized, and acted upon. Mentors reported increased awareness, an expanded understanding of diversity and the implications of human differences, as well as a greater recognition of personal biases. While some were able to act on that increased awareness and make changes to their mentoring practice, most did not report doing so.

Social implications – Well-designed mentor training incorporating culturally aware practices could better prepare mentors to work successfully with mentees from diverse backgrounds. Cultivating a more culturally diverse scientific community is of benefit to science as well as society.

Originality/value – Little is known about how faculty perceive diversity or internalize training content on the topic, either within the context of mentoring or more broadly. This exploratory study provides unique insights into these phenomena and invites further research. Implications for mentoring relationships, mentor training initiatives, and efforts to address diversity are discussed.

Keywords Bias, Mentorship of early career faculty members, Mentor training, Diversity training, Culturally aware mentoring, Faculty professional development

Paper type Research paper

Increasing diversity within the scientific workforce is critical for fostering innovation and advancing discovery (Holdren, 2013; National Institutes of Health, 2012). The benefits of cultivating academic environments that are supportive of the cultural diversity reflected in the general population are well established (Valantine and Collins, 2015). Indeed, private and federal funding agencies have increasingly focused on this issue, supporting initiatives to identify best practices and promising interventions to promote diversity, create more inclusive environments, reduce health disparities, and foster innovation (e.g. <https://diversity.nih.gov/>; www.fordfoundation.org/). The mentoring process is a key factor in these initiatives (Ragins and Kram, 2007; Solorzano, 1993). For students from underrepresented groups, mentoring has been shown to enhance recruitment into research-related career pathways, as well as positively impact success and persistence (Cora-Bramble *et al.*, 2010; Gloria and Robinson Kurpius, 2001; Hathaway *et al.*, 2002; Hunter *et al.*, 2007; Junge *et al.*, 2010; McGee and Keller, 2007; Nagda *et al.*, 1998; Solorzano, 1993; Williams *et al.*, 2015). Despite its importance, faculty do not often receive training on how to be effective mentors (Committee on Strengthening Research Experiences *et al.*, 2017; Keyser *et al.*, 2008; Pfund *et al.*, 2006; Silet *et al.*, 2010).

Formal training for research mentors has been shown to improve mentoring relationships. In 2014, the first randomized controlled trial (RCT) of a successful intervention to improve competence among science faculty mentors was published; mentors



reported gains in their mentoring skills across all six targeted competency domains (Pfund *et al.*, 2014). This intervention, *Mentor Training for Clinical and Translational Researchers*, included a session focused on building mentors' ability to effectively address equity and inclusion within their mentoring relationships (Pfund *et al.*, 2012). In post-training interviews, mentors were asked if they had changed their behavior in each of the six domains. It was found that 97 percent of trained mentors reported their mentoring behavior in one or more of the competency domains was impacted; 87 percent reported an implemented change, while an additional 10 percent described an increased awareness or intent to change their behavior (Pfund *et al.*, 2014). The data reported here result from a deeper, secondary qualitative analysis of these responses to better understand not just *if*, but *how* mentors' understanding, attitudes and behaviors changed after training, specifically in relation to diversity.

Because equity and inclusion was only one of six topics addressed during the training, it was not anticipated that there would be dramatic impacts on mentors' understanding of diversity. Therefore, the analysis here does not focus on the extent of impact; rather it provides the opportunity to explore how faculty think about and address diversity in their mentoring relationships as a means of informing further intervention. The central question is, when mentors report that the training influenced their thoughts and behavior, what does that change look like? Much has been published on whether diversity training has an impact on participants, but very little on how (for review, see Kulik and Roberson, 2008). Patterns that emerged from this analysis begin to fill that gap.

Diversity training research

A wide array of diversity trainings implemented in varied contexts, from business to academic to clinical settings, has generally shown some benefits (Bianchini *et al.*, 2002; Carnes *et al.*, 2015; Celik *et al.*, 2012; Devine *et al.*, 2012; Gandhi *et al.*, 2014; Johnson and Gandhi, 2015; King *et al.*, 2012; Kulik and Roberson, 2008; Madera *et al.*, 2013; Morgan *et al.*, 2013; Post, 2007). A review of four decades of outcomes from adult diversity trainings in academic and organizational settings illustrates an overall trend of positive outcomes, particularly in knowledge gains and attitudinal shifts, but much less on skills and behavior (Kulik and Roberson, 2008). Few studies have captured actual behavioral changes, or the thinking processes leading to such changes, despite behavioral change being the primary goal of most interventions.

The few exceptions include a study reporting improved patient interview skills (Juarez *et al.*, 2006), one on improved awareness of personal bias and its implications for patient care (White *et al.*, 2017), and another showing improved trainee performance as measured by the Instructor Cultural Competence Questionnaire (Roberson *et al.*, 2002). The one exception in the context of mentoring interventions is the assessment of the University of California, San Francisco "Mentoring the Mentor" workshop, a training which aims to improve mentors' ability to work with diverse mentees (Gandhi *et al.*, 2014; Johnson and Gandhi, 2015). As part of their assessment, Gandhi *et al.* (2014) qualitatively analyzed the mentoring action plans participants completed during training to explore mentoring strengths and weakness, as well as challenges and potential solutions. In relation to diversity, challenges such as unconscious bias, having few diverse mentees, and difficulty discussing diversity were noted. Solutions tended to be more extrinsic and structural than personal in nature, such as further training, greater recognition of mentoring, support for minority faculty, and structured mentoring programs. This is distinct from the current analysis, which focuses on the personal impact of the training on mentors. These findings provide unique insights into shifts in mentors' individual perceptions and behaviors, providing important clues about how participants interpret and act on content, or fail to act. This is critical information for modifying and improving interventions.

The training intervention

The intervention investigated here, *Mentor Training for Clinical and Translational Researchers*, was designed for the mentors of junior faculty and postdocs and focuses on research dyads engaged in a traditional research apprenticeship model where mentors and mentees participate in a collaborative relationship (McGee, 2016; Pfund *et al.*, 2012). This voluntary eight-hour training employs a process-based approach to raise awareness while using the collective knowledge of the group to provide strategies to facilitate behavioral change (Pfund *et al.*, 2013). Administered as four two-hour sessions, training was centered on six mentoring competency domains: maintaining effective communication, aligning expectations, assessing understanding, addressing diversity, fostering independence, and promoting professional development (Pfund *et al.*, 2013). These topics are bookended by an introductory and final reflective session. In addition to the hour-long session dedicated to addressing diversity, the topic was incorporated throughout the other sessions. For example, one of the learning objectives for the communication session was to “communicate effectively across diverse dimensions, including varied backgrounds, disciplines, generations, ethnicities, positions of power, etc.”

In the addressing diversity session, the topic is introduced in very general terms, noting that diversity presents both challenges and opportunities, and that learning to identify, reflect on, learn from, and engage with diversity is critical to an effective mentoring relationship (Pfund *et al.*, 2012). The learning objectives are aligned with three corresponding activities. First, mentors shared and discussed an experience in which they felt like an outsider. Second, they read and discussed excerpts from a series of studies on implicit racial, ethnic, and gender bias; they were provided with a short supplementary reading that elaborates on this research. Last, they discussed a case study, *Is It OK to Ask?*, that prompted participants to discuss if and how issues of race and other forms of diversity should be discussed in mentoring relationships.

Theoretical approach

As noted above, the mentor training intervention aims to raise awareness as a first step toward behavioral change. This approach was informed by the transtheoretical model, which posits that people move through stages of change toward modifying a behavior, beginning with precontemplation, moving on to contemplation, and eventually to action (Pfund *et al.*, 2014; Prochaska and DiClemente, 1983). This model informed the original content analysis of all six competency domains of the RCT data (Pfund *et al.*, 2014); it was maintained here as a means of framing a deeper exploratory analysis around addressing diversity. This paper does not purport to answer the question of how mentors move from one stage to another, but rather provides examples of what change looks like within each stage.

Methods

Data collection methods

This is a secondary analysis of data collected as part of an RCT conducted in 2010-2011 with 283 mentor/mentee pairs across 16 academic health centers in the USA and Puerto Rico (Pfund *et al.*, 2012, 2013, 2014). Structured telephone interviews were conducted three months post-intervention with 277 mentors by three white female research staff at UW-Madison. During these interviews, respondents were asked if their understanding of effective mentoring had changed and if they had made any modifications to their mentoring practices in each of the six mentoring competency domains. In relation to addressing diversity, mentors were asked, “Since the baseline interview, have you changed the way you think about diversity, and how it may impact the mentoring relationship? Here, diversity is broadly defined to include age, race, gender, class, culture, sexual orientation, religion, etc.” Interviewers were instructed to ask follow-up questions as appropriate to elicit more information, such as “how so” or “why not.”

All participants were asked the same core questions in the interview, but because the original intent of the interviews was to capture change overall and not necessarily about any particular competency, the depth of follow up varied. The level of probing was affected by the amount of information participants volunteered, time constraints, the perceived comfort of the interviewee, and interviewer variability. Interviews were not audio recorded due to Institutional Review Board limitations but were manually transcribed by interviewers and reviewed for accuracy immediately after each interview.

Current study population

The current analysis includes the responses of all mentors who attended at least one session, or two hours of the training, as part of the RCT ($n = 135$). Of these, the majority were male ($n = 87$, 64 percent), White ($n = 126$, 93 percent), and had an average age of 50 years. Other non-mutually exclusive race and ethnicity categories include Black or African American ($n = 2$, 1 percent), American Indian or Alaskan Native ($n = 1$, < 1 percent), Asian Indian ($N = 3$, 2 percent), Chinese ($N = 3$, 2 percent), Japanese ($n = 1$, < 1 percent), Korean ($n = 1$, < 1 percent), Arabic ($n = 1$, < 1 percent), Puerto Rican ($n = 5$, 4 percent), and other ($n = 5$, 4 percent).

Mentors were primarily senior faculty with an average of 14.5 years of mentoring experience. The group consisted of 77 professors (57 percent), 43 associate professors (32 percent), and 15 assistant professors (11 percent). The majority of mentors came from fields in medicine ($n = 84$), such as neuroscience, psychiatry, physiology, and obstetrics. Others included professional programs such as dentistry, physical therapy, and pharmacy administration ($n = 20$), behavioral health disciplines such as public health, psychology, sociology, epidemiology, and population health ($n = 17$), and "other," which includes molecular biology, genetics, and biochemistry ($n = 14$).

Qualitative analysis

All interview transcripts were uploaded into NVivo 10 and responses to the full open-ended section were included in the analyses. Using directed content analysis, the coding structure originally used to analyze if mentors changed in any way was maintained here to provide a framework for exploring how mentors changed around issues of diversity (Pfund *et al.*, 2014). In an adaptation of the transtheoretical model, all mentor responses were coded into the mutually exclusive categories of no change, awareness only, intent to change, or implemented change in behavior. All data were analyzed by two researchers (first and second authors), with an inter-rater reliability of 95 percent for the content analysis (Prochaska and DiClemente, 1983). Change was assessed conservatively, mentors were required to both identify changes and relate these to the topic of diversity. For example, mentors may have reported tailoring expectations for each mentee, but it was not counted unless they related that change to diversity. Further, responses were not coded as intent to change behavior unless explicit plans were indicated.

An inductive approach employing constant comparison was used to capture themes that arose within and between these four categories (Corbin and Strauss, 2015). Seeking to understand how mentors did or did not change, themes that arose from all participants were summarized. With very few exceptions, the quotes included represent unique participants. Response frequency is only distinguished by whether ideas were shared by "some" mentors or limited to "one" participant.

Results

Reported changes regarding diversity

Mentors' responses fell into three of the four "stages of change" categories: those who did not describe any change (37 percent, $n = 50$), those who only described an increased

awareness of diversity (47 percent, $n = 64$), and those who reported an implemented change in behavior to address diversity in their research mentoring relationships (16 percent, $n = 21$). None of the responses fit the criteria for “intent to change.” Responses across each of these three categories are described in detail below.

No changes in awareness or behavior regarding diversity. Some mentors did not report any changes regarding diversity or elaborate as to why not. Among those who did offer an explanation, some mentors stated that diversity was not an issue or problem affecting their mentoring relationships, or implied they were already managing it well. Some noted that they currently have diverse mentees:

So, it's not really an issue, I do have a minority mentee, but it's not been a problem in the past and I haven't really changed anything.

I think there's a lot of diversity here and that's not a problem for me.

I don't really think I've changed that. For me I don't think that's a big problem, I think other problems overshadow that here, at least as far as I can tell.

In contrast, others stated they had not had the opportunity to change because they did not have diverse mentees, even after hearing the broad definition of diversity.

Some mentors acknowledged that diversity in mentoring relationships is important, but implied that they did not change because training content was familiar. These responses included personal examples of experiences with diversity, including being a minority themselves or having family members who are:

Not really because I'm a minority myself so I came in with that mentality. I know I'm very sensitive to ethnicity, where they are from, what religion. I'm not American, I'm American now by citizenship but I'm sensitive to those things already.

No I don't think so, being a sexual minority myself, I know how that affects what happens to you, so I think I was very well aware of diversity issues.

Others cited professional experience, noting that they work with diverse mentees, diverse study populations, or engage in diversity-related research:

I don't think that changed at all. I've always had a very diverse lab in terms of gender or racial and ethnic backgrounds, perhaps more so than others, so I learned early on to negotiate the issues that arise between myself and other individuals, but also between other lab members and those individuals. I have a pretty good awareness of what is going on.

Diversity is very important, one thing we're very open about [...] we do research on underrepresented populations and so we have a lot of people in our group from underrepresented populations.

So I work in women's health, and we think about gender and sexuality issues all the time. I'm not sure I learned anything particularly new from this.

Finally, some of these participants offered critiques of the training, saying the topic was “inadequately addressed.” One offered a suggestion:

I wish there could have been more about how to deal with people you know are not sensitive to those things and how to help your mentee who is dealing with it.

Changes in diversity awareness. Mentors' responses regarding increased diversity awareness in their mentoring relationships spanned a wide range, from general comments about giving the topic greater thought to elaborations on specific insights. Responses fell into three broad categories of awareness: general awareness, awareness of human differences, and awareness of bias.

General awareness. Some mentors commented that the training made them think more about diversity, be “more sensitive to diversity,” or “pay more attention” to the topic, but did not elaborate. Some said they were already sensitive, describing themselves as “liberal” or “open-minded.” Similarly, one mentor noted, “As a middle class, Caucasian, male I’ve always tried to be extra conscious of diversity issues.” Others credited their awareness to their personal or professional life experiences.

Some of these mentors went on to explain why they had not gone on to implement changes. Even after the broad definition of diversity was included in the question, some related that they did not currently have diverse mentees, explaining they are not in “a very diverse world.” For example:

Well I think it may have changed the way I think about it, but it hasn’t changed my interactions with others, because I’m still interacting with the same people. [...] In other words, the people that I work with are not very diverse and that hasn’t changed.

If I was in a situation with a mentee who had more cultural diversity than I’m used to, I’d be somewhat better equipped to deal with it.

Awareness of difference. Consistent with the diversity session’s first learning objective, to “improve understanding of individual differences and cultures, and how they influence interactions,” participants described an increased awareness about the ways people can be different and the implications of those differences. These responses include a broadened definition of diversity, recognizing that a person’s background influences how they communicate and understand the world, and that the same approach cannot be used for everyone.

Some mentors stated that they gained “a wider definition of what constitutes diversity” and began to conceptualize it as representing more than race, gender, and ethnicity. One mentor stated that “there’s so many ways a student could be different that hadn’t occurred to me.” Some participants went on to note specific ways their understanding expanded:

Now I think about learning issues, maybe a verbal issue, understanding issue, could be an accessibility issue, lots of different ways to frame [diversity].

I thought about diversity being about ethnicity and gender just as main things and I think really the understanding is that there is more diversity than, just that there’s disadvantaged backgrounds, regions of country, from where you came from, rural vs urban, whether your parents went to college, just so many different types of diversity that affect what you think grad school is about and learning about and how motivated you are. It’s just amazing to me there’s much more diversity than I was ever thinking of.

These respondents included international mentors who said that while diversity was always something they thought about due to their own status as a minority, they also began to think of it in broader terms, considering factors like age and whiteness. One mentor stated that he realized “that even the Caucasians feel different in a lab that is very international.”

An increased recognition that not everyone learns, communicates, and perceives the world in the same way was also a prominent theme. Mentors noted increased awareness about the salience of mentees’ individual backgrounds. They described thinking “about where people are coming from,” being “more sensitive to people’s differences,” and “what different perspectives may bring to the relationship.” There was a realization that some “mentees do not approach their work the same way” as their mentor. One mentor described how it was helpful to be reminded “that different life experiences affect and paint how a person views things.” Some talked about how these differences can affect communication, expectations, and understanding:

The most effective thing I took from it was more explicit understanding of how different educational as well as personal characteristics will affect their abilities and expectations, some with regards to gender and some with regards to coming from a very different educational background.

Just to acknowledge that [my mentee's] not going to see things exactly like me and therefore I have to listen and understand where he is coming from, and acknowledge it's okay if somebody disagrees with me on my approaches or whatever because that's what strengthens it.

Yes, well I think the biggest thing for me was learning about how different people's backgrounds, races and gender impact their feelings towards work and their feelings towards me and the fact that probably different strategies are needed for different people.

As noted in the final quote above, some mentors discussed how increased awareness about human difference led them to consider ways to tailor their mentoring and apply different strategies. They described being exposed to a diversity of mentoring perspectives from the other mentors in their group and gaining a "recognition and that there are a wide array of mentoring approaches that can be highly effective." One mentor described the most significant thing he gained from the training was "a much greater appreciation of the range of different approaches that can be used" and that you need to assess individual needs "rather than doing a cookie cutter approach to every person." In contrast, another mentor became aware of an approach she wanted to avoid:

I think some group members took a hard line approach; that students need to learn to be this way or act this way. And when other people said it, it struck me as wrong, even though I thought that way myself at one point. And I said, wow, if that is how I'm perceived by my mentees [...].

Some mentors gained awareness about a need to come to an understanding of these differences when interpreting mentee behavior. Mentors realized they may need to seek out the "root problem" or have "a little sensitivity to what is going on outside the work place that may be influencing their ability to do their work, or how happy they are in their work." The importance of communicating about these differences was also acknowledged: that they needed to "be more upfront about possible issues in diversity." Similarly, another related that the training gave her "a sense of how to talk about these things, especially with this undergraduate student, who is from a different culture." Some gained a new awareness about how they could address the needs of particular groups. They described hearing how other mentors had adjusted timelines for new mothers and found writing assistance for those whose first language is not English.

Awareness of bias. In alignment with the session's second objective, to "recognize the impact that conscious and unconscious assumptions, preconceptions, biases, and prejudices bring to the mentor-mentee relationship and how to deal with them," some respondents discussed gaining insights into bias, in particular unconscious bias. Mentors tended to discuss this new awareness in very general terms, though some noted this recognition as the most significant thing they gained from the training:

I enjoyed the, all of the assessing unknown biases and prejudices you can have and not be aware that you have them. I thought that was interesting and some resources looking at other assessment tools out on the internet were interesting too. I think the one they pointed to was from Harvard [...] a tool that looked at bias.

I think for me the most interesting thing was learning about the research on biases that are unknown to the individual, where they don't realize they have a bias to a particular group or gender. I think that was the most eye-opening to me. It was good for me to keep that in mind.

One participant specified recognition of a specific bias:

I realized I have an age bias. When students want to get a doctorate in their late 50s, just as an end product, I didn't see the point. But why can't they do it - a 65 year old could have another 10 or 15 years.

One hinted that his new awareness prompted a possible behavioral change, noting that he realized he should “be on the lookout for those sorts of hidden biases.” Taking meaningful action around reducing the impact of bias was acknowledged as difficult:

I think I feel weak, I'm not always sure that being aware is enough and that maybe I'm not always sure exactly whether there is anything I can do to make things better to disarm any issues or anything that is likely to be a stumbling block for a mentee.

Changes in behavior regarding diversity. The diversity session's third learning objective was to move participants toward behavioral change by focusing on “concrete strategies for learning about, recognizing, and addressing issues of diversity and engaging in conversations about diversity with their mentee.” However, translating increased awareness about diversity to behavioral change did not seem to be an easy task for participants. One mentor simply stated, “I thought this was actually one of the toughest parts of the course because it raised awareness but I didn't feel it gave me the tools to do it better.”

Among those mentors who noted behavioral changes, some simply reported moving from recognizing the importance of mentees' differences or the potential impact of unconscious bias to actively seeking out those differences or biases:

Because we come from different disciplines it's made me think about the differences in our training and backgrounds, helped me understand potential sources of conflict and try to be more active in considering those and resolving those.

I tend to look more for things that are different that people may not be aware of, things that neither the mentee or myself are consciously aware of.

I'm trying to be as good a listener as I can and trying to dispel any biases that I have.

Given that the training included discussion of strategies to “engage in conversations about diversity with their mentee,” it is not surprising that the changes mentors described focused on improved communication. They discussed changes to the ways they communicate, being able to have more open discussions with mentees, and how increased understanding allowed them to better tailor their mentoring to mentees' needs. Some mentors noted active listening as the foundation of this process:

I'm able to focus more on listening to the mentee and understanding where they are coming from rather than just teaching. Understanding their background and perspectives and level of knowledge.

The one that comes to mind is a combination of better active listening and issues that came up in mentoring somebody from a different culture and with a different language as their primary. So my ability to listen and give nonverbal communication has improved; it must have improved because I probably wasn't aware of it as much before.

Some mentors connected their improved listening to being able to better understand their mentees' perspectives, assess understanding, and allow them to achieve greater autonomy:

I think I'm listening better and not jumping in so quickly to give my opinions, and trying to get them to solve the question before I tell them what to do. I think that is the big take home. And I do mentor some people who are culturally or ethnically different from me. And I'm really trying hard to address that up front, getting to know them somewhat and trying to get a sense of what our differences might be.

I'm much more, much better listener. I think I've always listened to their requests and complaints and issues and so forth but now I'm trying to understand why they would [...] trying to understand why they feel that way. Now I realize it's all this cultural stuff. My logic and ideas are different from theirs.

Having more open conversations about diversity and individual needs was a prominent theme. One mentor commented that the training made her feel “more comfortable that [she] was acknowledging and talking to people about their diversity, rather than ignoring or trying to treat individuals in a blind manner.” Another noted, “I think we’ve been more open in terms of discussing problems and expectations and I hope that he’s more comfortable with addressing things, and I think he is because he sends me emails that make fun of me.” Another mentor sought more open discussions with mentees as a means of understanding root problems; rather than assuming that canceled meetings signal a lack of motivation, she began asking if there were outside factors at play such as work-life issues or differences in communication style. Other conversations centered on mentees’ sense of belonging in their department or research group:

Discussing more with people are they happy or feeling like they fit in, can I help with anything. I don’t think I’ve ever asked people that question, are you happy in the lab [...] is it working for you. Before the mentoring meeting I hadn’t thought about it [...] I thought people are so happy and grateful to be here and actually some were struggling with different things.

I am much more concrete in a way that it is okay to talk to people about being a minority and how that impacts them in the work environment. And that was really helpful, something I traditionally honestly avoided. [...] So there is a fellow who joined us as junior faculty. [...] I just sort of talked to him about how things are going and how he felt being part of a clinical and research group and being the only minority [...] and he was pretty open and felt like there are parts of his job that he felt like people looked at him different, especially in the clinical arena, and it was good to talk to him about it, and he actually ended up as a junior faculty member applying for a diversity initiative. [...] He just got funded for that actually and I think that helped him, to steer him in that direction.

Some mentors described having more frank discussions with their mentees about issues outside of work that may be affecting their productivity or satisfaction:

Definitely had some discussions with people about strategies where someone had other life responsibilities that maybe didn’t fit with what would have been the normal work life in the lab and coming up with strategies to accomplish things; [there were] things going on in their life that were different maybe from other people in the lab.

Yes, I gained further insight into the impact of a variety of situations on success and succeeding and balancing career and family life. Yes I would definitely have more conversations about their feelings toward their work and their ability to balance that. I’ve already done that a few times.

Mentors also reported adapting their communication styles for mentees with unique or particular needs, including those whose first language is not English. Some mentors noted that they are more explicit about their expectations or having mentees repeat everything back to them at the end of meetings to assess their understanding. Others discussed conversations they had with pregnant women or new mothers about potential adjustments to their workload or timeline. They talked about “setting goals and priorities that were not overwhelming” and helping them “decide how it is going to impact them, and be realistic about that impact, but maintaining a level of productivity [needed] to keep the research going.” Still others mentioned adapting to mentees’ individual styles:

I’ve changed my communication a bit as I’ve realized that she is from a culture that speaks very bluntly and I tend to be overly polite, so now I see that she has a different style and that’s OK I just have to adapt to it.

I’ve changed my ability to respect others’ coping styles. [...] Particularly with him, he sends these long emails thinking out loud and he’s very nervous and I used to think he needs to stop doing that, but now I realize he does not need to stop doing that, that’s his style and I need to respond to him. There is no reason to change people or give them advice on their personalities or how to be more professional. And a little is ok but it tends to homogenize people. They should be able to express themselves how they see fit as long as it’s not offensive to others.

Challenging their own assumptions, be they about expectations, motivation, or abilities, was also discussed. One mentor related, “I’m less likely to impose my expectations upon people, but rather take them as they come, and see what kind of resources they need, and try to get [those] to them.” She went on to describe how taking this approach helped one of her mentees be more successful:

She has a very unique outlook on life and once I realized that and understood that about her, instead of trying to make her fit in a PhD mold, and learned about her and her perspective on things, once I tried giving up some of those preconceived notions, it made things a lot smoother and a lot more successful. I’m very confident she’s going to defend her thesis well in the next month. She’s gone a long way.

Some mentors also reported a strengthened resolve to bring more diverse mentees into their programs. For example, one mentor sought to recruit more international students.

Discussion

Understanding how participants internalize training concepts and translate them into increased awareness, and ultimately into action, is critical to promoting real change toward diversifying the workforce. The data here provide scattered pieces of a puzzle that can help fill in a bit of the picture of how participants interpret and act on training content. As we sought meaning among these pieces, we noticed patterns that begin to illuminate the ways in which mentors changed.

How did the training impact mentors’ awareness and behavior regarding diversity?

As noted, the central question here is, when mentors report that the training influenced their thoughts and behavior, what does that change look like? Using an inductive approach, the qualitative analysis reported here begins to answer this question. The emerging themes broadly mapped onto the diversity session’s learning objectives, suggesting that some participants internalized content. Mentors described understanding diversity as being about more than race, gender, and ethnicity. They noted increased awareness that mentees learn, communicate, and understand things differently and gained strategies from their peers for adapting their mentoring accordingly. They described enhanced recognition of unconscious bias and its impact on mentees. Finally, they sought ways to better communicate with their mentees about diversity, sense of belonging, and other issues that may affect the research experience. In particular, they described listening more actively and not being so quick to make assumptions about mentees’ understanding, motivation, or ability. In relation, mentors described becoming more aware of their own communication styles and assumptions about research and academia.

While mentors’ responses demonstrated an increased awareness about diversity, relatively few reported concrete behavioral changes. Further, some reported no changes, explaining they did not find the content new or relevant. This raises the question of how the curriculum could be adapted to amplify its effectiveness and further contribute to changes in awareness and behavior.

Lessons learned: facilitators and barriers to change

Several interrelated aspects of the eight-hour training seemed to have facilitated the changes around diversity mentors reported. First, it is possible that the time and space faculty were provided to openly share their ideas and concerns around mentoring with one another were itself a catalyst for change (Terhune, 2006; White *et al.*, 2017). A survey completed by mentors immediately after training confirms the value participants placed on time with their peers (Pfund *et al.*, 2013). This “safe space” allowed them the protected time to reflect on

their practices, to be exposed to new approaches, and gain awareness about potential challenges they may not have directly faced yet themselves.

Second, throughout the training, mentors were encouraged to treat mentees as individuals. For example, they were encouraged to use and customize mentoring compacts and individual development plans. This practice, also known as individualizing, is a means of addressing implicit biases by encouraging mentors to move past group stereotypes and assess the present situation in context (Devine *et al.*, 2012).

Finally, the curriculum prompted participants to consider multiple perspectives and possible explanations for mentee behavior, encouraging mentors to challenge their assumptions. This holistic approach may be why topics not directly addressed in the curriculum, like work-life balance, arose with some frequency. Mentors became open to discussing additional topics and described changes in their approach, such as making accommodations for new mothers, though none mentioned doing so for fathers.

These data also provide insights into barriers to raising awareness and promoting behavioral change around diversity. More than one-third of the participants did not describe any changes related to diversity. While some did not see the issue as having great salience, most who offered an explanation felt it was something they already knew about, either from their personal or professional experience. The content may have been too elementary for some; yet comments like those citing a lack of diversity among mentees as a reason they did not have an opportunity to change suggest these mentors continued to define diversity in narrow terms. While these same mentors may have reported changes in other competencies addressed in the curriculum, such as aligning expectations, demonstrating they were tailoring their mentoring to individuals, they did not seem to perceive these changes as related to diversity. This lack of generalization also held for those who only noted a general increased awareness. These mentors raised the topic only when asked directly about the diversity session, not when asked about other competencies. This suggests that broadly emphasizing individualizing one's approach is not salient enough for many to prompt generalized insights about diversity and mentoring practices.

Even for those who did report increased diversity awareness, the inability to act on that awareness was an additional challenge, a challenge that has been reported elsewhere (Roberson *et al.*, 2009). While the process-based strategy of eliciting mentoring strategies from the group seemed effective for other competencies, participants seemed less confident in their ability to generate effective strategies in this area. This is particularly true for addressing implicit or unconscious bias, where mentors did not name any strategies they employed aside from "being on the lookout" for them.

Informing future interventions and research

The current analysis suggests a need to provide participants more "transfer strategies," tools to translate knowledge to practice (Roberson *et al.*, 2009). To address this need, future trainings could include materials that name forms of bias and provide evidence-based strategies to "break the bias habit" (Carnes *et al.*, 2015; Devine *et al.*, 2012). Participants could then gain confidence by practicing these strategies in a safe space within the workshop, thereby increasing the likelihood of implementation (Saddawi-Konefka *et al.*, 2016). Addressing bias directly is critical because merely becoming aware of individual differences that impact relationships does not ensure that stereotypes are challenged. Further, it may create opportunities for minority participants to feel that they have more to personally gain from the training and that their participation extends beyond educating majority colleagues about their experiences.

The lack of reported changes, particularly implemented changes, further reinforced a clear need to explicitly dedicate more time to this topic. To address the need for more in-depth training, researchers through the National Research Mentoring Network (NRMNet.net) have developed and pilot-tested a six-hour culturally aware mentoring module. While still using the

process-based approach, it also includes didactic material to help fill any knowledge gaps and provide concrete strategies for change. It further places greater emphasis on prompting mentors' to reflect inwardly on factors influencing their own cultural identity and perspective, particularly around race and ethnicity, rather than outwardly on the diversity of others (Byars-Winston, personal communication, (March 3, 2017)).

Considering future research for our team and others, a longitudinal study that captures participants' perspectives on diversity at multiple time points could shed greater light on how they move through the stages of change and identify key stimuli. Our results suggest that it may be important to include questions that illuminate how participants interpret that change to fully understand this process. It is further acknowledged that the current approach focuses on individual change and intrinsic factors leading to change; it is worth examining the impact on the climate participants inhabit. Carnes *et al.* (2015) found that when at least a quarter of the faculty and staff of a particular department attend training aimed at bias reduction, it impacted the overall climate of those departments. The impact of mentors' actions on mentees also remains unexamined and would be an important measure of meaningful change (King *et al.*, 2012; Pacquiao, 2007). Mentees in the RCT paired with trained mentors reported more positive changes in their mentors' behavior (Pfund *et al.*, 2014), but the nature of that change has not yet been analyzed.

Limitations of the study

These analyses were limited since the primary aim of the original study was not to explore participants' perceptions of diversity, and thus, interviewers lost opportunities to probe more deeply. Given this fact, caution was taken in interpreting mentors' comments. Analysis was also limited to self-reported data, which could be influenced by social pressures to avoid the appearance of bias around this charged topic (Kulik and Roberson, 2008). This is partially mitigated by asking mentors to describe their awareness or behavioral change, rather than reporting a dichotomous "yes/no" response. In addition, interviews were conducted three-month post-training, limiting findings to short-term outcomes. While this may exceed assessments that are commonly administered immediately following training, it is still not long enough to measure true long-term impacts (Kulik and Roberson, 2008).

Conclusion: why understanding change matters

The results reported here provide unique insights into what change can look like, using participant voices to illuminate how content is interpreted and acted on, information that is greatly lacking in diversity intervention research. Understanding how participants interpret and act on the information they receive provides important insights into how interventions can be tailored to maximize impact. Some mentors gained insight into their assumptions about mentoring and mentees, learned alternative strategies, and discovered ways to improve communication. Others reported little to no change. These results suggest that providing a space for peers to reflect and share perspectives, outlining strategies for individuating approach, and illuminating personal bias and multiple explanations for behavior, encourage participant insight. Lengthening the diversity session, adding time to consider and practice concrete strategies for change, may amplify its impact. These insights are critical in the development of meaningful tools to impact behavior in ways that support a more inclusive and diverse workforce.

Acknowledgments

The authors would like to thank the authors' colleagues, Angela Byars-Winston, Anna Kaatz, Nora Jacobson, and Simon Williams, for their careful review of drafts of this manuscript at various stages. The authors would also like to thank members of the ICTR

Qualitative Research Group for their valuable feedback on multiple points in the authors' analyses and writing process. This project was supported by the Clinical and Translational Science Award (CTSA) program, through the NIH National Center for Advancing Translational Sciences (NCATS), grant UL1TR000427. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH.

References

- Bianchini, J.A., Whitney, D.J., Breton, T.D. and Hilton-Brown, B.A. (2002), "Toward inclusive science education: University scientists' views of students, instructional practices, and the nature of science", *Science Education*, Vol. 86 No. 1, pp. 42-78.
- Carnes, M., Devine, P.G., Manwell, L.B., Byars-Winston, A., Fine, E., Ford, C.E., Forscher, P., Isaac, C., Kaatz, A., Magua, W., Palta, M. and Sheridan, J. (2015), "The effect of an intervention to break the gender bias habit for faculty at one institution: a cluster randomized, controlled trial", *Academic Medicine*, Vol. 90 No. 2, pp. 221-230.
- Celik, H., Abma, T.A., Klinge, I. and Widdershoven, G.A. (2012), "Process evaluation of a diversity training program: the value of a mixed method strategy", *Evaluation and Program Planning*, Vol. 35 No. 1, pp. 54-65.
- Committee on Strengthening Research Experiences for, Board of Science Education, Division of Behavioral and Social Sciences and Education, Board on Life Sciences, Division on Earth and Life Sciences, Academies of Sciences, Engineering, and Medicine (2017), *Undergraduate Research Experiences for STEM Students: Successes, Challenges, and Opportunities*, The National Academies Press, Washington, DC.
- Cora-Bramble, D., Zhang, K. and Castillo-Page, L. (2010), "Minority faculty members' resilience and academic productivity: are they related?", *Academic Medicine*, Vol. 85 No. 9, pp. 1492-1498.
- Corbin, J.M. and Strauss, A.L. (2015), *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*, 4th ed., SAGE, Los Angeles, CA.
- Devine, P.G., Forscher, P.S., Austin, A.J. and Cox, W.T. (2012), "Long-term reduction in implicit race bias: a prejudice habit-breaking intervention", *Journal of Experimental Social Psychology*, Vol. 48 No. 6, pp. 1267-1278.
- Gandhi, M., Fernandez, A., Stoff, D.M., Narahari, S., Blank, M., Fuchs, J., Evans, C.H., Kahn, J.S. and Johnson, M.O. (2014), "Development and implementation of a workshop to enhance the effectiveness of mentors working with diverse mentees in HIV research", *AIDS Research and Human Retroviruses*, Vol. 30 No. 8, pp. 730-737.
- Gloria, A.M. and Robinson Kurpius, S.E. (2001), "Influences of self-beliefs, social support, and comfort in the university environment on the academic nonpersistence decisions of American Indian undergraduates", *Cultural Diversity and Ethnic Minority Psychology*, Vol. 7 No. 1, p. 88.
- Hathaway, R.S., Nagda, B.A. and Gregerman, S.R. (2002), "The relationship of undergraduate research participation to graduate and professional education pursuit: an empirical study", *Journal of College Student Development*, Vol. 43 No. 5, pp. 614-631.
- Holdren, J. (2013), "Federal science technology, engineering, and mathematics (STEM) education 5-year strategic plan: A report from the committee on STEM education national science and technology council", Executive Office of the President National Science and Technology Council, Washington, DC.
- Hunter, A.-B., Laursen, S.L. and Seymour, E. (2007), "Becoming a scientist: the role of undergraduate research in students' cognitive, personal, and professional development", *Science Education*, Vol. 91 No. 1, pp. 36-74, doi: 10.1002/sci.
- Johnson, M.O. and Gandhi, M. (2015), "A mentor training program improves mentoring competency for researchers working with early-career investigators from underrepresented backgrounds", *Advances in Health Sciences Education*, Vol. 20 No. 8, pp. 683-689.
- Juarez, J.A., Marvel, K., Brezinski, K.L., Glazner, C., Towbin, M.M. and Lawton, S. (2006), "Bridging the gap: a curriculum to teach residents cultural humility", *Residential Education*, Vol. 38 No. 2, pp. 97-102.

- Junge, B., Quiñones, C., Kakietek, J., Teodorescu, D. and Marsteller, P. (2010), "Promoting undergraduate interest, preparedness, and professional pursuit in the sciences: an outcomes evaluation of the SURE program at Emory university", *CBE-Life Sciences Education*, Vol. 9 No. 2, pp. 119-132.
- Keyser, D.J., Lakoski, J.M., Lara-Cinisomo, S., Schultz, D.J., Williams, V.L., Zellers, D.F. and Pincus, H.A. (2008), "Advancing institutional efforts to support research mentorship: a conceptual framework and self-assessment tool", *Academic Medicine*, Vol. 83 No. 3, pp. 217-225.
- King, E.B., Dawson, J.F., Kravitz, D.A. and Gulick, L. (2012), "A multilevel study of the relationships between diversity training, ethnic discrimination and satisfaction in organizations", *Journal of Organizational Behavior*, Vol. 33 No. 1, pp. 5-20.
- Kulik, C.T. and Roberson, L. (2008), "Common goals and golden opportunities: evaluations of diversity education in academic and organizational settings", *Academy of Management Learning and Education*, Vol. 7 No. 3, pp. 309-331.
- McGee, R. (2016), "Biomedical workforce diversity: the Context for Mentoring to Develop Talents and Foster Success Within the 'Pipeline'", *AIDS Behavior*, Vol. 20 No. 2, pp. 231-237.
- McGee, R. and Keller, J.L. (2007), "Identifying future scientists: predicting persistence into research training. CBE-Life", *Science Education*, Vol. 6 No. 4, pp. 316-331.
- Madera, J.M., King, E.B. and Hebl, M.R. (2013), "Enhancing the effects of sexual orientation diversity training: the effects of setting goals and training mentors on attitudes and behaviors", *Journal of Business and Psychology*, Vol. 28 No. 1, pp. 79-91.
- Morgan, W.B., Walker, S.S., Hebl, M.M.R. and King, E.B. (2013), "A field experiment: reducing interpersonal discrimination toward pregnant job applicants", *Journal of Applied Psychology*, Vol. 98 No. 5, p. 799.
- Nagda, B.A., Gregerman, S.R., Jonides, J., Hippel, W. and von, Lerner, J.S. (1998), "Undergraduate student-faculty research partnerships affect student retention", *The Review of Higher Education*, Vol. 22 No. 1, pp. 55-72.
- National Institutes of Health (2012), "Biomedical research workforce working group report", Bethesda, MD.
- Pacquiao, D. (2007), "The relationship between cultural competence education and increasing diversity in nursing schools and practice settings", *Journal of Transcultural Nursing*, Vol. 18 No. S1, pp. 28S-37S.
- Pfund, C., Maidl Pribbenow, C., Branchaw, J., Miller Lauffer, S. and Handelsman, J. (2006), "Professional skills. The merits of training mentors", *Science*, Vol. 311 No. 5760, pp. 473-474, doi: 10.1126/science.1123806.
- Pfund, C., House, S., Asquith, P., Spencer, K., Silet, K. and Sorkness, C. (2012), *Mentor Training for Clinical and Translational Researchers*, 1st ed., Entering mentoring series, W.H. Freeman and Co., New York, NY.
- Pfund, C., House, S., Spencer, K., Asquith, P., Carney, P., Masters, K.S., McGee, R., Shanedding, J., Vecchiarelli, S. and Fleming, M. (2013), "A research mentor training curriculum for clinical and translational researchers", *Clinical and Translational Science*, Vol. 6 No. 1, pp. 26-33.
- Pfund, C., House, S.C., Asquith, P., Fleming, M.F., Buhr, K.A., Burnham, E.L., Gilmore, J.M.E., Huskins, W.C., McGee, R., Schurr, K., Shapiro, E.D., Spencer, K. and Sorkness, C.A. (2014), "Training mentors of clinical and translational research scholars: a randomized controlled trial", *Academic Medicine*, Vol. 89, pp. 774-782.
- Post, D.M. (2007), *An Evaluation of Individual Learning among Members of a Diversity Scorecard Project Evidence Team*, ProQuest Information and Learning Company, Ann Arbor, MI.
- Prochaska, J.O. and DiClemente, C.C. (1983), "Stages and processes of self-change of smoking: toward an integrative model of change", *Journal of Consulting and Clinical Psychology*, Vol. 51 No. 3, pp. 390-395, doi: 10.1037/0022-006X.51.3.390.
- Ragins, B.R. and Kram, K.E. (Eds), (2007), *The Handbook of Mentoring at Work: Theory, Research, and Practice*, Sage Publications, Los Angeles, CA.
- Roberson, L., Kulik, C.T. and Pepper, M.B. (2002), "Assessing instructor cultural competence in the classroom: an instrument and a development process", *Journal of Management Education*, Vol. 26 No. 1, pp. 40-55, doi: 10.1177/105256290202600104.

- Roberson, L., Kulik, C.T. and Pepper, M.B. (2009), "Individual and environmental factors influencing the use of transfer strategies after diversity training", *Group & Organization Management*, Vol. 34 No. 1, pp. 67-89.
- Saddawi-Konefka, D., Schumacher, D.J., Baker, K.H., Charnin, J.E. and Gollwitzer, P.M. (2016), "Changing physician behavior with implementation intentions: closing the gap between intentions and actions", *Academic Medicine*, Vol. 91 No. 9, pp. 1211-1216, doi: 10.1097/ACM.0000000000001172.
- Silet, K.A., Asquith, P. and Fleming, M.F. (2010), "A national survey of mentoring programs for KL2 scholars", *Clinical and Translational Science*, Vol. 3 No. 6, pp. 299-304.
- Solorzano, D. (1993), *The Career Paths of Chicana and Chicano Doctorates: A Study of Ford Foundation Minority Fellows in California*, The California Policy Seminar, Berkeley, CA.
- Terhune, C.P. (2006), "Can we talk? Using critical self-reflection and dialogue to build diversity and change organizational culture in nursing schools", *Journal of Cultural Diversity*, Vol. 13, p. 141.
- Valantine, H.A. and Collins, F.S. (2015), "National institutes of health addresses the science of diversity", *Proceedings of the National Academy of Sciences of the United States of America*, Vol. 112 No. 40, pp. 12240-12242.
- White, A.A., Logghe, H.J., Goodenough, D.A., Barnes, L.L., Hallward, A., Allen, I.M., Green, D.W., Krupat, E. and Llerena-Quinn, R. (2017), "Self-awareness and cultural identity as an effort to reduce bias in medicine", *Journal of Racial and Ethnic Health Disparities*, pp. 1-16, doi: 10.1007/s40615-017-0340-6.
- Williams, S.N., Thakore, B.K. and McGee, R. (2015), "Coaching to augment mentoring to achieve faculty diversity: a randomized controlled trial", *Academic Medicine: Journal of the Association of American Medical Colleges*, Vol. 91 No. 8, pp. 1128-1135, doi: 10.1097/ACM.0000000000001026.

Corresponding author

Stephanie C. House can be contacted at: house2@wisc.edu

For instructions on how to order reprints of this article, please visit our website:

www.emeraldgroupublishing.com/licensing/reprints.htm

Or contact us for further details: permissions@emeraldinsight.com