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Efficacy of a mentor academy program: a case study

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ABSTRACT
The purpose of our study was to report the long-term impact or training efficacy of mentor training from the perspective of mentees at a single institution. Twelve mentees representing seven faculty graduates of a mentor training program were interviewed. Data were analyzed using grounded theory. Training resulted in improved goal setting and meeting frequency and increased attentiveness to career development. Results related to communication styles shared expectations, difficult conversations, and promoting scientific independence were mixed. Changes to instructional practices and the implementation of active learning experiences are recommended to enhance the efficacy of the program and to address mentee’s professional developmental needs.

KEYWORDS
Mentor training; mentoring skills; mentee perceptions; training efficacy; grounded theory; qualitative analysis

Introduction
Mentor training programs aim to improve mentoring skills (Brody et al., 2016; Byington et al., 2016; Chen, Sandborg, Hudgins, Sanford, & Bachrach, 2016; Feldman et al., 2012; Haines & Popovich, 2014; Jackevicius et al., 2014; Ogunyemi, Solnik, Alexander, Fong, & Azziz, 2010; Pfund et al., 2014, 2013, 2015; Phitayakorn, Petrusa, & Hodin, 2016). The reported benefits of mentor training include participant confidence in mentoring skill (Feldman et al., 2012; Pfund et al., 2015), program satisfaction (Haines & Popovich, 2014; Jackevicius et al., 2014; Pfund et al., 2014, 2013), and career development (Brody et al., 2016; Byington et al., 2016; Chen et al., 2016; Ogunyemi et al., 2010; Phitayakorn et al., 2016). Specifically, Pfund et al. (2014) found that the participants were more likely to discuss mentee’s expectations, converse about mentoring with others, and pay attention to diversity issues. Smith and Nadelson (2016) suggested that mentors gained new ideas, increased reflection on their practice, and increased engagement with students following participation in a mentoring program. Pfund et al. (2013) surveyed the participants six months after training and found that it resulted in high satisfaction and self-reported skill gains. Pfund et al. (2013) also reported more than 50% of the mentors reported that they had implemented a change in their mentoring practices.
Feldman et al. (2012) reported that two-thirds of the 38 participants frequently applied the knowledge, attitudes, and skills from training to their mentoring one to three years after completing the program. However, few researchers have rigorously evaluated the effect of mentoring on career paths for medical school faculty (Ries et al., 2009).

Researchers have reported that mentor training programs also promote best practices in mentoring. Hudson (2013) showed that mentoring programs as a form of professional development led to enhanced communication skills and advanced pedagogical knowledge. Irby, Lynch, Boswell, and Hewitt (2017) wrote that as a form of professional development, mentor training can improve faculty retention and productivity, enhance their commitment, and facilitate socialization into the workplace environment. Nick et al. (2012) stated that best mentoring practices should result in (a) appropriately matching mentors and mentees (p. 3); (b) establishing clear mentorship purpose and goals (p. 1); (c) solidifying the mentor–mentee relationship (p. 3); (d) advocating for and guiding the mentee (p. 3); (e) integrating mentees into the academic culture (p. 3); and (f) mobilizing institutional resources (p. 3). Hudson (2016) reported 'that positive relationships required the achievement of trust and respect by sharing information, resources, and expectations and by being professional, enthusiastic, and supportive with collaborative problem-solving' (p. 30) to promote best practices in mentoring. However, there has been a little real-world example to delineate the best mentoring practices.

To our knowledge, previous researches have not explored the potential of a long-term impact or training efficacy, as it relates to the quality and effectiveness of the mentee–mentor relationship. From the mentee’s perspective, there is little to no evidence in the current literature, which supports that longevity or training efficacy occurs from participation in mentor training. (Bolton, 1980; Brody et al., 2016; Byington et al., 2016; Chen et al., 2016; Feldman et al., 2012; Haines & Popovich, 2014; Jackevicius et al., 2014; Ogunyemi et al., 2010; Pfund et al., 2013, 2014, 2105; Phitayakorn et al., 2016). Notably, claims of the mentoring effect, derived from self-report, have been testimonials or opinions. Thus, reports of a mentoring effect have been made in the absence of accepted standards that govern mentor preparation. The aforementioned impact of mentoring training, all based on small sample sizes, may be insufficient to support their conclusions (Raudys & Jain, 1991). A few studies have included focus groups, reflective writings, or project development. Researchers recommended studying the sustainability of training in ways that exceed self-reports of participant satisfaction or perceived gains. One approach to exploring training efficacy is to ask the immediate beneficiaries – the mentees – to describe if and how their mentoring interactions have changed (Behar-Horenstein et al., 2019; Behar-Horenstein & Prikhidko, 2017; Behar-Horenstein & Zhang, 2018; Morzinsk, 2005).

The purpose of our study was to describe the efficacy and long-term impact of mentor training from the mentee's perspective. This study is grounded in Kram’s descriptive theory on mentoring (Kram, 1983) and Galbraith and Zelenak (1991)
transactional framework theory. Kram’s theory described the dynamic phases of a mentoring relationship, while Galbraith and Zelenak’s theory highlighted the importance of mentoring as a partnership. They postulate that both mentor and mentee may derive significant benefits during the initiation and cultivation phases of their relationship. (Allen, Eby, Poteet, Lentz, & Lima, 2004; Burke, Burgess, & Fallon, 2006). Thus, the implementation of mentoring programs is seen as important to both mentor and mentee development. Survey results from our local Mentor Academy suggest that participants felt more confident and competent in their ability to mentor. What is not known is if and how Mentor Academy training affects the students that they mentor.

In this study, we sought to answer the following questions. (a) How efficacious is mentoring training? (b) How does Mentor Academy impact the mentees of mentors who completed training? and (c) What suggestions if any, do the mentees recommend to guide change or improve the Mentor Academy program?

**Methods**

**Description of mentor academy**

The Mentor Academy is offered during the Fall and Spring semesters, twice a month for four months. Each of the sessions is three hours. Based on the work of Pfund et al. (2013); Pfund et al. (2014); 2015), Mentor Academy topics include: identifying communication styles, learning effective communication strategies, establishing expectations addressing diversity, and developing strategies for guiding professional development.

The purpose of the mentor academy is to provide faculty with information and tools that they can use to foster mentee career development, scientific thinking, research skills, and independence. The intent of the training is to aid mentors in their quest to help students self-actualize professionally and obtain employment in a university or college, industry, government or a pharmaceutical company.

Initially, we developed a database that listed faculty (n = 28) who completed the Mentor Academy between Spring 2015 and Spring 2017. We randomly selected 75% (n = 22), contacted them via email and explained the purpose of the study. We also asked them to provide the names and email addresses of three to five mentees who they worked with continuously, that is, prior to and after Mentor Academy training. Next, we contacted the potential participants (mentees) via email, sent the informed consent, and schedule of interview questions (see Table 1). For those who did not respond to our initial invitation, we contacted those individuals three more times. Six mentors and the mentees of five other mentors did not reply to our invitations. Also, the list of mentees provided by one mentor did not meet the study criteria. Three other mentors reported that they were not currently mentoring students. Drawing upon the remaining seven (32%) of the selected sample of mentors, we conducted 12 interviews with mentee participants.
Of the 12 mentees interviewed, they were five males (42%), seven females (58%), four African Americans (33%), four Whites (33%), three Hispanics (25%), and one Asian (9%). Eight interviewees were doctoral students (66%), three were junior faculty (25%) and one was a postdoctoral researcher (9%). Four (33%) of mentees had worked more than one but less than three years with the mentor, while eight (67%) had worked more than three but less than six years with the mentor. Interviews were conducted using Zoom technology. Audio-tapes were sent to a transcription service unaffiliated with the study. To protect the anonymity of participants, individuals provided a five-digit code and the first initial of their first and last names, which was used as the identifier for the interview transcript. De-identified transcripts were sent back to the first author who verified their accuracy. To further ensure the anonymity of the participating mentees, we replaced the coded transcripts with pseudonyms. The duration of interviews ranged from 18:39 to 35:34 minutes/seconds, an average of 29:30. The collective set of interviews was 354:10.

**Data analysis**

A doctoral graduate student in education and a senior professor of education independently read each individual transcript. They met and identified emergent themes that were representative of the dataset. After developing an agreed upon set of themes, both researchers extracted text that aligned with the themes. To ensure the accuracy of coding, they compared their extracted text and reached

Table 1. Interview Questions.

<table>
<thead>
<tr>
<th>Question</th>
</tr>
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<tbody>
<tr>
<td>(1) How long have you worked with your mentor? When did you join your mentor’s research group?</td>
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<tr>
<td>(2) How have the mentor’s goals for your scientific research and career development changed, if at all, after your mentor completed his/her Mentor Academy training? Provide some examples to support your response.</td>
</tr>
<tr>
<td>(3) Describe how the nature, frequency, or duration of meetings with your mentor changed, if at all after your mentor completed his/her Mentor Academy training. Provide examples to support your response.</td>
</tr>
<tr>
<td>(4) How, if at all, did your mentor change the ways that s/he communicated with you after completing his/her Mentor Academy training. Provide examples to support your response.</td>
</tr>
<tr>
<td>(5) Following your mentor’s completion of the Mentor Academy training, has s/he and you had what you would characterize as a ‘difficult’ conversation? Did your mentor approach or handle this ‘difficult’ conversation differently than prior to his/her Mentor Academy training? Provide examples that support your response.</td>
</tr>
<tr>
<td>(6) How does your mentor create shared expectations with you? Has this process changed since your mentor completed the Mentor Academy training? Provide examples that support your response.</td>
</tr>
<tr>
<td>(7) How is your mentor promoting your independence in becoming a scientist? Has this process changed since your mentor completed the Mentor Academy training? Provide examples that support your response.</td>
</tr>
<tr>
<td>(8) If there anything else that has changed in the nature of your mentee–mentor relationship that you believe is attributable to your mentor’s training in the Mentor Academy? Provide examples to support your response.</td>
</tr>
<tr>
<td>(9) Please provide the following demographic information: (a) your gender, (b) self-reported race/ethnicity, and (c) program major.</td>
</tr>
<tr>
<td>(10) For diverse mentees only. How, if at all, has your mentee–mentor relationship changed since your mentor completed training in the Mentor Academy? Provide some examples to support your response.</td>
</tr>
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</table>
consensus. The researchers analyzed the data by applying a constructivist, grounded-theory (GT) approach as described by Charmaz (2014). Seven themes emerged including (a) guiding research goals and career development; (b) changing meeting structures; (c) enhancing communication styles; (d) handling difficult conversations; (e) creating shared expectations; (f) promoting mentee independence and; (g) suggesting changes to Mentor Academy. Conceptual definitions for each theme were developed (see Table 2). An audit trail shows the progression from selected interview data to open coding, categorization, and themes.

Attention to credibility, transferability, and confirmability facilitated establishing trustworthiness. Credibility, confidence in the truth of the findings, was achieved through triangulation and peer debriefing. Triangulation was accomplished by (a) using two analysts; (b) reviewing multiple interview transcripts; (c) using qualitative line by line coding and peer debriefing to ensure the accuracy of interpretations. Transferability, the degree to which results of qualitative research can be transferred to other contexts or settings, was addressed by using the same cohort group in the analysis (Lincoln & Guba, 1985). Confirmability was achieved by engaging more than one person in analyzing the data.

**Results**

Findings depicting the seven themes: (a) guiding research goals and career development; (b) changing meeting structures; (c) enhancing communication styles; (d) handling difficult conversations; (e) creating shared expectations; (f) promoting mentee independence and; (g) suggesting changes to Mentor Academy are presented in this section.

**Guiding research goals and career development**

Seven (58%) of the mentees reported positive changes in the goals that mentors set for their scientific research and career development. Mentees confirmed that their mentor became increasingly more focused on their careers, a practice that was consistent with the Mentor Academy curriculum. In the session on promoting professional development, mentors learned how to develop strategies that guide professional development. They were encouraged to recognize and engage mentees in open dialogue about how to balance the competing demands, needs, and interests of becoming a scientist (Pfund et al., 2013). Steve shared that, ‘[the mentor] figure(s) out my goals … [and] what sort of grant I can apply [to]…’ Maryiem reported, ‘when I came in [the university], [the mentor] explained how to successfully go through the tenure process …’ Mentees appreciated that mentors set specific goals for their achievement (Burgess, van Diggele, & Mellis, 2018; Ramani, Gruppen, & Kachur, 2006; Zachary, 2011). Arthur mentioned, ‘[the mentor] discuss[ed] certain [faculty] positions that would become available’ and how those positions aligned with his interests. Participants reported that Mentor
Table 2. Audit Trail Progression: Selected Interview Data, Open Coding, Categorization Themes, and Conceptual Definitions.

<table>
<thead>
<tr>
<th>Interview data</th>
<th>Open codes</th>
<th>Categorization</th>
<th>Themes</th>
<th>Conceptual definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘I still feel like his directions are not focused enough.’</td>
<td>Remaining unfocused</td>
<td>Mentee development</td>
<td>Guiding research goals and career development changed</td>
<td>Describing if and how mentor guidance for research goals and career development changed</td>
</tr>
<tr>
<td>The frequency has increased ‘a little bit.’</td>
<td>Increasing frequency</td>
<td>Meeting frequency</td>
<td>Changing meeting structures</td>
<td>Describing new approaches to mentor-mentee meetings</td>
</tr>
<tr>
<td>‘I think he asks a lot more questions and he had started giving many examples from either his own life or what someone told him.’</td>
<td>Asking more questions</td>
<td>Communication</td>
<td>Enhancing communication styles</td>
<td>Explaining changes in the quality of interactions</td>
</tr>
<tr>
<td>‘He said basically he will be mad if the work is not done, but if it’s done and then this is what I get, the results are the results.’</td>
<td>Sharing failed lab results</td>
<td>Difficult conversations</td>
<td>Handling difficult conversations</td>
<td>Describing if and how difficult conversations were handled</td>
</tr>
<tr>
<td>‘The mentor spent more time and more meetings to draw out outlines for the mentee. The mentor did this before but now it becomes more frequent.’</td>
<td>Drawing outlines more frequently</td>
<td>Shared expectations</td>
<td>Creating shared expectations</td>
<td>Explaining changes in how the mentor developed mutual goals for the mentee.</td>
</tr>
<tr>
<td>‘In terms of the independence, it is more like push instead of support or guide. The mentor calls himself as a mentor now but is still like a boss.’</td>
<td>Discouraging mentee independence</td>
<td>Mentee independence</td>
<td>Promoting mentee independence</td>
<td>Described if and how the mentor proactively fostered mentee development as an independent scientist.</td>
</tr>
<tr>
<td>‘Everybody should take a Mentor Academy training, especially an early professor.’</td>
<td>Taking a mentor course</td>
<td>Mentor course</td>
<td>Suggesting changes to mentor academy</td>
<td>Mentee recommendations for improving mentor training</td>
</tr>
</tbody>
</table>
Academy training promoted mentor awareness of research interests and career. Sera said, ‘goals became more narrow… [the mentor] began [to clarify and list] the details of [my] dissertation.’ Mentees also reported that mentors ensured that the mentees identified their own goals. Simon pointed out his mentor wanted his proposal ‘to be really good… [and that] he [the mentor] read [it] every week.’ Among the seven who reported positive changes, five attributed them directly to the mentor’s participation in the Mentor Academy. Others including Arlene and Maryiem claimed that they were uncertain whether this change was attributable to the Mentor Academy because their mentors were supportive from the beginning of their relationship.

The changes described resonate with the training provided in the academy. During their training, they were also expected to write their own mentoring philosophy as well as plan and reflect on how the training experience might facilitate prospective behavioral changes. Seemingly these activities influenced their thinking and practices about setting goals for mentee scientific research and career development. These findings suggest how these mentees benefited from this session.

Five (42%) others reported no changes in the mentor’s efforts to set goals for their scientific research and career development. James said that there had been no change in how the mentor guided his development in this regard. While he believed that the mentor was doing his job well, he hoped that the mentor would address other students who were not doing the work that was expected. Used to his mentor’s hands-off style, Mark claimed that he worked well with the mentor regarding research goals and career development. Three mentees reported no change and were unsatisfied with their mentor’s guidance. Judy could not start a project because of a lack of clear direction. She asserted that ‘students’ scientific research was not a priority for the mentor.’ Akamie stated that the mentor’s ‘directions are not focused enough’ and that this thwarted her ability to successfully complete laboratory tasks.

Overall, most of the mentees noticed that mentors became more focused on their careers. Although the mentor’s effort to foster mentee development differed, they focused more frequently on the mentee’s ability to achieve their goals in short-term research and long-term career planning. The findings confirmed that the program’s emphasis on developing strategies for guiding professional development is efficient. In this manner, the Mentor Academy has had a positive impact on the mentees. In contrast, some mentees struggled with finishing projects and achieving research objectives because of a lack of scientific guidance. This finding illustrates that the mentoring relationship, like other types of relationships, may not be without problems. Difficulties can arise because of a lack of clarity and understanding regarding the roles of the mentor and mentee as well as the boundaries of the relationship (MacLeod, 2007). This less than positive findings might reflect a lack of prior dialogue and agreement about the mentor’s expectations for mentee work and productivity.
**Changing meeting structures**

Seven (58%) of the mentees indicated that meeting frequency increased following Mentor Academy training (Burgess et al., 2018; Zachary, 2011). Sera mentioned having ‘weekly meetings’ whereas previously they were scheduled ‘as needed.’ Steve said his meetings were also more ‘focused’ and that his mentor checked on ‘the mentee’s progress.’ Ella mentioned that her meetings become more ‘focuses[d] on specific questions and concerns.’ Similarly, Mark described receiving more feedback. In addition to increased frequency, James also experienced better-structured meetings. He shared that his mentor ‘became much more focused ... and more aware of his progress.’ Arlene explained that the mentor began to email her with a summary of ‘all the topics that [they] had spoken [about along] with [corresponding] deadlines.’ Sayda reported that increased individual meetings were dedicated to discussing the co-authored articles they were writing. These changes are also consistent with mentor training, which focused on the importance of establishing group dynamics and setting ground rules for working together. In general, the strategy of improving meeting structure is relatively straightforward and the changes are obvious. Mentees indicated that the structure, such as the content, frequency, and duration of the meetings, reflected the effectiveness of the mentor–mentee relationship, and they seemed satisfied with these changes. Also, the mentees believed they could achieve successful outcomes when they had meetings with explicitly clear direction from their mentors.

However, meetings did not change uniformly and were not productive for all mentees. Five (42%) of the mentees reported no change in meeting structure or frequency. Although the meeting structure or frequency did not change, Arthur and Mariyem felt satisfied with the current meeting plans. Sayda, Judy, and Akamie who shared the same mentor, just hoped that the structure of their meetings would improve. Judy described meetings as a ‘tangent’ in which the mentor ‘just ranted.’ Akamie reported that meetings were not necessarily about her research. She just wanted ‘regular meetings [guided by a structured] agenda’ [that would] advance her research. These findings highlight the mentor’s lack of awareness regarding mentee’s experiences and suggest that there was little mentor-mentee dialogue. These students seemed to be working in the absence of scientific guidance (MacLeod, 2007; McDonald & Hite, 2005; Mohtady, K önigs, & van Merriënboer, 2016).

**Enhancing communication styles**

Five (42%) mentees suggested that their mentor’s communication style changed. After attending the Mentor Academy, they reported that communications became more open, flexible, positive, and consistent. Prior to mentoring training, Ella characterized her mentor’s communication style as ‘pretty aggressive.’ Following training, the mentor became more invested in her personal goals. He made ‘sure that [he] really understands what I’m asking before he gives an answer.’ His
perspective became ‘more inclusive, much [and] more open to alternate possibilities.’ Mark reported that his mentor did a better job cultivating two-way communication. Prior to training, the mentor would say, ‘there’s more than one approach, but he didn’t provide examples.’ Following training, ‘[the mentor] started giving many examples from either his own life or what someone told him.’ James reported that his mentor began imposing timelines and expectations for completing individual projects. These findings suggest that some mentors provided more substantial guidance as they learned how to communicate differently with their mentees (Burgess et al., 2018; Ramani et al., 2006; Zachary, 2011).

Others (25%) reported that one mentor’s communication styles thwarted their development (McDonald & Hite, 2005; Mohtady et al., 2016). Sayda’s mentor remained ‘hypercritical [and that] I haven’t seen improvement.’ Communications were unstructured; the mentor offered unclear direction. While she opined that her mentor may have ‘developed an increased awareness of what he says or does,’ Judy exclaimed that it ‘never seemed genuine.’ Akamie, who had the same mentor indicated that he persistently blamed graduate students for disappointing laboratory results but did not demonstrate how to troubleshoot so as to achieve improved outcomes. Hoping that the mentor would say, ‘Okay, this is what went wrong, and this is how we can fix it,’ this type of guidance was not provided. It seems that not all mentors were able to apply what they learned from the Mentor Academy or effectively evaluate their own communication styles.

One academy session focused exclusively on the effectiveness of communication. Participants took the DISC personality inventory (https://discinsights.com/disc-theory) to identify: (a) their unique personal preferences within different environments; (b) how to communicate with others; (c) their ability to organize; (d) reactions or avoid conflict and; (e) other communication styles. The DISC identifies four traits: Dominant (D) Type, outgoing and task-oriented; Inspiring (I) Type, outgoing and people-oriented; Supportive (S) Type, reserved and people-oriented; and Cautious (C) Type, reserved and task-oriented. Use of DISC results is intended to result in improved communication, cooperation and productivity, less conflict and misunderstanding, shorter meetings, and effective teamwork. Also, they discussed strategies that could lead to improve communication among mentees with diverse backgrounds. Although the Mentor Academy placed a central focus on the mentor–mentee interaction and communication styles, how mentors enacted their knowledge and skill did not always yield successful outcomes.

**Handling difficult conversations**

Difficult conversations centered around issues related to teamwork, productivity and salary. Half of the participants reported no difficult conversations; however, others did. For some, these matters were handled with relative ease while for others, interactions remained contentious. After discovering that his staff was not implementing the required research protocol, Arthur...
sought his mentor’s advice. His mentor suggested that he convenes regularly scheduled meeting ‘between you and your people that you’re leading just to have them available to you for an update.’ In this way, the mentor showed Arthur how structured meetings could be used as a mechanism to establish expectations and hold people accountable (Burgess et al., 2018; Ramani et al., 2006; Zachary, 2011).

Sera, who was unable to critique mentor changes before and after training, reported a potential difficulty when discussing expectations for her stipend. ‘I was worried going into it, but I think we came to a good compromise.’ This outcome signified the mentor-mentees ability to reach mutual understanding and the mentor’s willingness to listen to the mentee (Burgess et al., 2018; Zachary, 2011).

For a few, mentor training becomes instrumental in promoting positive interactions. Prior to her mentor’s participation in the academy, Ella reported that their interactions were contentious. On more than one occasion her mentor admonished, ‘Don’t criticize things you don’t understand.’ After the training, the mentor told her that, ‘I’ve been doing this for my whole career. You don’t know what you’re talking about. When I want your advice, I’ll ask for it.’

Following the mentor training, Akamie described how her mentor’s communication became more focused on the science and research (Burgess et al., 2018; Ramani et al., 2006; Zachary, 2011). She described the changes in her mentor’s attitude towards learning about inconsistent experimental results. Prior to mentoring training, Akamie shared that she, ‘was hesitant about sending [results] to him.’ However, following training, the mentor’s response softened and became more reassuring. Putting her mind at ease, the mentor explained that he would only ‘be mad if the work is not done.’ However, if work was ‘done and then this is what I get, the results are the results.’ These mentors remained attuned to the inherent challenges that their mentees experienced and provided supportive communications after attending training. These findings signify that how the mentor handles the difficult conversation is crucial to the mentor–mentee relationship. When problems were properly solved, the mentee was more likely to trust and rely on the mentor guidance.

However, not every mentor applied Mentor Academy knowledge proactively in practice. For some mentees, mentor training seemed inconsequential. Judy, Sadya, and Akamie who worked with the same mentor experienced continuous and unproductive interactions. This example suggests that the mentor may need to pay more attention to student experiences and the inherent challenges in conducting scientific research (McDonald & Hite, 2005; Mohtady et al., 2016). After working with her mentor for more than four years, Judy explained that trying and unpleasant conversations were standard. Despite the mentor asserting that he was wearing his ‘mentor hat,’ Judy scoffed at this characterization. She claimed a long-standing practice of distrust and accusatory exchanges during interactions remained unchanged. She described being kicked out of a lab meeting while discussing ideas about how
to change a particular procedure. Once when the mentor asked a question about this laboratory procedure, another student responded. The mentor became irate and said, ‘Is this some kind of game you’re trying to play … and kicked me out of lab meeting.’ Caught off guard by his anger, she ‘just left, and I honestly didn’t say a word.’ Unfortunately, this was not an isolated event.

Another mentee described similar antagonistic interactions. Sayda shared that she had fostered a network connection to position herself for employment post-graduation. A week after sharing this information, the mentor reported that he told a former graduate student that he would not be writing them ‘a letter of recommendation if they continued to have a bad attitude.’ This veiled threat was not lost on her. On other occasions, she sought guidance about making presentations. In response, the mentor stated, ‘I’m not prepared to have this conversation with you right now.’ Unwilling to accept this feedback, Sayda told the mentor that this was not ‘constructive criticism.’ These types of interactions did little to promote student skill development or foster independence. Surely there were not designed to instill confidence among young research scientists. While these interactions were representative of a single mentor, the quality of these exchanges invokes a sense of wonderment regarding why they continued even after mentor training.

Creating shared expectations

Some participants (42%) attributed a change in the mentor’s approach to creating shared expectations to mentor training (Burgess et al., 2018; Ramani et al., 2006; Zachary, 2011). Notably, one mentee reported using the mentor agreement, the independent development plan (IDP), something that was discussed during the training program. Ella stated that she was asked to ‘fill out and sign the (IDP) [outlining the constraints and expectations of the mentor relationship] which I don’t think he ever would have done before.’ James reported that his mentor ‘more recently communicated expectations for completing individual aspects of projects in terms of timelines.’ The mentor also encouraged him to develop an IDP although the mentor did not review it. Sera’s mentor, ‘spent more time [at] meetings to draw out outlines for her.’ Essentially the training led some mentors to an improved ability to establish expectations and address diversity.

Although his mentor developed shared expectations about planning experiments and applying for grants, Steve suggested that his approach was indirect. The mentor told Steve, ‘It’s really up to you. It’s your goals but if you want to be successful here, you should think of doing this and maybe not focusing on this other stuff.’

A few others reported little to no effort to create mutual expectations. Arthur reported no changes in the mentor’s approach to creating shared expectations. Arthur reported that ‘The mentor [has] always been very clear
with the expectations from the very beginning.’ Maryiem, a faculty member, reported that her mentor became less focused on academic domains and more attentive to her ‘people skills.’

Akamie reported that clear and shared expectations were not established. Although her mentor did review experimental results, he seemed unwilling to accept those that were dissatisfying. Akamie surmised that, ‘I still think that he’s still not comfortable when I give him results that he’s doubtful of.’ Rather than create shared expectations, Sayda stated that her mentor, ‘was aggressive in his communication, emphasized his contributions,’ but neglected ‘to recognize my strengths.’ The findings demonstrate that some mentors encouraged a mutual understanding of expectations and built a plan to achieve those outcomes (Burgess et al., 2018; Ramani et al., 2006; Zachary, 2011). Others seemed unable to foster shared expectations. The findings suggest some mentors were not utilizing strategies taught during the session on diversity. Notably, this session was designed to cultivate an improved understanding of individual differences and imparted information about the importance of establishing expectations by using clear communication and aligning expectations. ‘Setting expectations early and often can help ensure that both parties remain content with the relationship’ (Lee, Anzai, & Langlotz, 2006, p. 558).

**Promoting mentee independence**

Several participants reported different ways that the mentor promoted their independence following academy training (Burgess et al., 2018). Several (25%) of the mentees described how mentoring became more intimate and collegial. Following training, Maryiem reported that, ‘mentorship became a two-way street, it wasn’t just a mentor providing knowledge and words of wisdom . . ., it was more of a dialogue.’ Ella found her mentor more supportive and willing to engage in bi-directional communication. The mentor offered concrete goals and expectations that no longer felt ‘rigid as they once were’ to aid her development. The mentor’s definition of success changed and was no longer limited to a single authoritative definition. Following training, Ella’s mentor became more accommodating. He tried ‘to identify ways that I can do [things] without giving suggestions where before it was – he was trying to fix my research.’ Akamie reported that her mentor placed more value on ‘my thinking and my knowledge’ than prior to training. She viewed this change as his willingness to now listen to her point of view. For example, when Akamie shared that, ‘This is what I’ve seen based on the literature, and this is what I think would be a plausible idea that we could follow,’ the mentor no longer ‘close[d] himself up to the idea.’

A fourth of the participants described how mentors attempted to enhance their recognition through publications and presentations. James’ mentor afforded him opportunities to assist in drafting manuscripts and book chapters. He also funded his travel and lodging to ‘a small symposium to present some
data.’ Steve’s mentor fostered his independence by offering speaking opportunities, ‘to go as an invited speaker and talk about my research.’ Steve reported that his mentor became ‘more focused on trying to integrate [me] directly into the field.’ The mentor encouraged him to network, attend conferences, and meet other researchers. He also promoted independence in decision-making, by ‘let[ting] me get data and results … decide on assigned experiments and how I pursue things.’ Mark’s mentor encouraged ‘us to attend international and national meetings’ [and] ‘showcase what we have doing.’ Sera’s mentor allowed her to supervise both an undergraduate and a beginning doctoral pharmacy student during summer. Signifying her confidence in Sera, the mentor also allowed her ‘to coordinate all the work that they were doing.’ Also, to deepen Sera’s scientific reasoning skills, the mentor also forced her ‘to come up her own idea[s].’ These findings suggest that the session on diversity and understanding individual differences and cultures helped mentors use strategies to foster mentee independence. This finding also illustrates how mentors became more proficient in assessing mentee knowledge and while using strategies to enhance their understanding of the mentee (Burgess et al., 2018; Zachary, 2011).

A few others explained that their mentor did not promote scientific independence. Judy described her mentor’s approach as a ‘more like push’ instead of providing support or guidance. Despite referring to himself as a mentor, he was ‘still like a boss.’ Sayda flatly denied that the mentor promoted her independence. As a result, she sought feedback from other people who were ‘more nurturing and capable of mentoring.’ Arthur reported that there had been no changes. He explained that his mentor consistently encouraged him to be an independent leader in his own project and to seek grant funding. Generally, however, mentors were more willing to cultivate the mentee’s ability to work independently following participation in the Mentor Academy.

**Suggesting changes to mentor academy**

Arthur, Ella, and Sadya suggested that the mentor academy focus exclusively on training and recruiting new and younger faculty. Hearing from colleagues who had mentors, that did not ‘have a clue what’s going on or how to [mentor],’ Arlene urged that clinical faculty be invited to seek academy training and be incentivized to mentor.

A third of the participants suggested implementing standardized approaches to identify faculty that needed to improve their mentoring skills. James pointed out that certain faculty ‘have recurring issues’ evidenced by students leaving their labs ‘because of personal conflicts’ with the mentor. He recommended inviting faculty who suffered student attrition to seek training. Judy recommended holding ‘exit interviews with students’ to identify faculty who could benefit from mentoring. James agreed and suggested ‘taking recommendations from doctoral students’ by using an anonymous process to identify faculty. Along the same lines,
Simon suggested asking ‘first year, second year, and final year students to identify [which faculty] should participate in the Mentor Academy.’ Sera also advised asking students and junior faculty to identify candidates who would benefit. Akamie recommended conducting studies that aimed to identify successful mentor behavior. She suggested using this model of expertise as the starting point for training and recruitment. Overall, the primary recommendation was to implement targeted recruitment efforts.

Discussion

Mentor Academy training benefitted most mentors and their mentees. The findings support the assertion that orienting, and training mentors are likely to positively influence the effectiveness of mentor–mentee interactions (Galbraith & Cohen, 1996). The finding also illustrated the importance of mentoring as a partnership (Galbraith & Zelenak, 1991).

Most mentees reported that they experienced positive changes one year after their mentors completed the Mentor Academy. The majority of the mentors considered various aspects as their mentoring responsibility, such as mentee’s confidence and future development (West, 2016). Other mentors focused on selected aspects in the mentoring process such as research productivity. Findings show the importance of sponsoring programs like the Mentor Academy, which encouraged and supported mentor self-awareness and development (Galbraith & Cohen, 1996). Training promoted improvement in goal setting and guiding career development in the long term and led to improved organizational structure and meeting frequency. For others, training was inconsequent because non-constructive and unsupportive interactions prevailed before and after training. Nearly half of the participants reported having difficult conversations with their mentors and achieving a satisfactory resolution, while the half did not. Regarding the potential of changes in the mentor’s approach to creating shared expectations, the results were mixed. Recommendations to improve mentor training, focused mostly on targeted training for junior or clinical faculty. Others suggested implementing standardized approaches to identify faculty who needed to enhance mentoring skills. One unique recommendation centered on identifying successful mentor behaviors and using those data as the starting point for developing programmatic training.

According to the four-stage mentoring framework provided by McKimm, Jollie, and Hatter (2007), study findings focused on the second and the third stages of mentoring practice. Specifically, the following four themes: (a) guiding research goals and career development, (b) changing meeting structures, (c) enhancing communication styles, and (d) handling difficult conversations reflected the second stage, were demonstrated by mentees’ reports of mentor behavior. The themes of creating shared expectations and promoting mentee independence illustrated the third stage – mentors encouraging mentees to (a)
reflect; (b) see things differently; and; (c) identify potential changes s/he might wish to make.

While mentor training cannot be expected to result in efficacy for all mentors, realizing that some mentor interactions remained unchanged suggests the need for more robust evaluation processes during training. Some mentees pointed out that the difficulties they endured were present prior to training. The use of experiential activities during training might have helped these concerns surface. With an understanding that these problems existed, the academy instructor or other designated administrators might have interceded on the mentor’s behalf to avert an unsuccessful mentoring relationship (McDonald & Hite, 2005).

We indirectly assessed the degree to which mentor competency was realized in mentor–mentee interactions. The findings provided evidence for Zachary’s (2011) best practice mentor skills such as brokering relationships, building and maintaining relationships, communicating, facilitating goal setting, managing conflict, problem-solving, and providing feedback. The findings in our study suggest that several of Burgess et al. (2018) best practices were stressed including: ‘(a) allow the mentee to be a part of planning future projects; (b) provide opportunities for mentees to assess their own needs; (c) encourage the joint formulation of learning objectives; (d) identify resources needed to achieve personal and work goals; and (e) support mentees’ attempts to achieve their goals’ (p. 199). We believe that study findings also provided support for the program’s effectiveness for four of Ramani et al.’s (2006) best practice mentor skills including the mentor’s need to (a) provide clear expectations of roles; (b) listen and offer feedback; (c) participate in a forum that provides mentor support; and (d) challenge and support mentees. Yet, owing to difficulties described by some mentees, the findings demonstrate that there is a need for the Mentor Academy to augment mentor awareness of culture and gender issues.

Findings from the study can be used to modify the Mentor Academy curriculum. The first suggestion relates to learning experiences. To promote deep learning, participants need to use what they are learning and discover how well it aids their mentoring practice. Simply presenting and discussing information may be insufficient for promoting change. Second, implementing learning activities that require participants to apply what they are learning outside of the program as well as report those outcomes are recommended. Implementing application and assessment processes while mentors are enrolled in training is likely to foster greater understanding and future use.

Several mentor academy graduates that we contacted reported that currently they were not actively mentoring graduate students. Thus, third, since institutional resources are used to offer this training, perhaps future academy enrollment should be based on evidence that a faculty member is actively and currently mentoring students. Hudson (2013) concurs. He reported that mentor program participants are likely to be more effective when they have undertaken a mentor role. Asking prospective enrollees to identify research projects and student roles
in those projects would ensure that academy participants will be positioned to immediately use what they are learning. Fourth, developing an application process whereby selection is made by a committee is recommended to ensure a system of accountability that relies on group input.

Developing mentoring programs are important to both mentor and mentee development. More importantly, these programs are critical to the institution’s ability to cultivate and sustain a culture of mentoring. Mentoring plays a substantial role in faculty retention and workplace satisfaction, mentee productivity, self-efficacy, and career satisfaction (Morzinsk, 2005; Niehoff, Chenoweth, & Rutti, 2005). While this is just one study to report mentees’ perspectives, more studies are needed to support the longevity or training efficacy and to justify the expenditure of funding on this resource. In light of these findings, the need to develop a set of accepted standards that govern mentor preparation becomes ever more apparent (Morzinsk, 2005).

An over-reliance on surveys as the preferred method for assessing mentor training outcomes, while expedient, fails to detect the nuanced impact that is described in this study. As previous researchers have shown (author, masked for submission), quantitative results should also be verified by other sources of evidence such as qualitative inquiry or by measuring the potential for social desirability bias (Furnham, 1986). Future researchers should implement the simultaneous use of qualitative and quantitative research which may offer insight into how mentoring programs build institutional mentor capacity.

The findings in our study demonstrate the importance of assessing the rigor of instruction and ensuring competency-based and practice-centered mentor academy training. As the mentor academy programs continue to proliferate in AHCs, we urge that expectations for more robust evaluation studies become the norm rather than an occasion.

**Limitations of the study**

The findings in our study were based on a self-selected sample at a single institution. Also, there was an imbalance in the number of mentees who represented some mentors. For example, three students represented one mentor. Three mentors were each represented by two mentees. Despite this, mentee reports of their experiences were similar across respondents. It is important to point out that study findings are limited to those mentees who elected to participate and the degree to which they were willing to disclose their experiences. The sample size also elucidates the challenges in acquiring participants who are willing to partake in interviews. It is unknown why some mentees declined to participate. The findings reported in this study should not be generalized to those faculties who completed mentor training but whose mentees did not participate. Although the sample size is low, the information
gained from the results has the potential to expand the knowledge of increasing and improving mentor training in multiple professions.

We did not directly assess the impact on mentor training on the mentor–mentee relationship. As suggested by Kram (1983); Kram & Isabella (1985), future researchers should explore how a professional mentoring program enhances the early-stage mentoring partnership (Galbraith & Zelenak, 1991) by conducting parallel interviews with mentors and mentees and exploring the similarities and differences in group perceptions.

**Conclusions**

The purpose of our study was to assess the effectiveness of the Mentor Training Academy beyond self-report methods. The findings suggest that the Mentor Academy has been effective in ensuring that mentors engage mentees in goal setting and career development. An increase in meeting frequency and focus was also observed. The findings regarding if the program: (a) enhanced communication styles; (b) promoted mentor ability to effectively handle difficult conversations; (c) created shared expectations; and (d) promoted scientific independence was not uniformly positive. Instructional practice and learning activity changes that may bolster the program’s efficacy for mentees are recommended.

In this paper, we described the components of the mentor training and discuss research on building the mentor’s skills. We added new knowledge to the literature on mentor training in relation to creating mentor academies and mentoring junior faculty. As described in the findings, we shared differing perspectives among mentees as well as their mentoring experiences. We also offered examples of best practices. Utilizing the mentee’s perspective, we presented a comparison of changes among the mentors following their attendance in mentor training. Results from the mentee interviews substantiate a need to revise the mentor selection process for academy participation. The findings also suggest that the selection of mentor-mentee pairs should be more carefully considered and evaluated. Faculty often do not have a space to explore their communication styles with one another. However, as the findings suggest, with the support of mentor academy training, the ability to have difficult conversations for the sake of learning may be fostered.

**Disclosure statement**

No potential conflict of interest was reported by the authors.

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