Ideal Mentoring Behaviors: Perceptions of Latino International Students Enrolled in STEMM Disciplines

Alejandra Durán Trinidad
Melanie Morgan*
Purdue University

Mentorship is a concept that has existed for thousands of years (Crisp and Cruz 2009). Some researchers have argued that the mentor relationship is the most impactful component of the graduate student experience (Crisp and Cruz 2009; Tuma et al. 2021; Wrench and Punyanunt 2004). When graduate students engage in quality mentoring relationships with faculty, those relationships that provide both task and emotional support, students experience more satisfaction with their graduate program, even up to 15 years later (Callahan and Watkins 2018; Clark, Harden, and Johnson 2000; Johnson 2014; Mangione et al. 2018).

The benefits of effective mentoring begin on day one with mentors guiding students' socialization. Research indicates that mentors play an important role in socializing students into their departments and fields (Green 1991; Weidman and Stein 2003). Mentor support in the socialization process may also include providing students with exposure to other faculty, professionals, and advanced students who can help them transition to and navigate graduate school (Paglis, Green, and Bauer 2006).

Effective mentoring also includes helping students manage stress and anxiety produced by the pressures of the graduate school environment as well as helping students develop strategies for balancing work and life spheres (Brunsma, Embrick, and Shin 2017). Mentors also play an important role in helping students manage and rebound from setbacks or other challenges (Stoeger et al. 2013). For example, effective mentoring may include helping students manage the common feeling and challenge of imposter syndrome. Without support from a mentor, graduate students may succumb to challenges and choose to leave their programs. It has been reported that mentoring is a successful method for increasing retention in graduate programs and predicting success in careers, particularly in STEMM programs (NASEM 2019; Stelter, Kupersmidt, and Stump 2021).

Li, Malin, and Hackman (2018) also indicate the importance of helping students understand the hidden and unhidden policies and politics of academic institutions. This is something that can be extremely beneficial for underrepresented and international students because their perspective of

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* **Corresponding Author:** Melanie Morgan, The Brian Lamb School of Communication, 100 North University Street, Beering Hall, West Lafayette, IN 47907. Email: morgan3@purdue.edu.
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their discipline and academic and social environments will not be the same as other students (Brunsma et al. 2017; Omar et al. 2016).

Graduate students who have an involved mentor are also more likely to receive better research-oriented training (Li et al. 2018) and to experience higher research productivity (Lunsford 2012; Paglis et al. 2006). Strong mentorship contributes to the solid formation of science or researcher identities, which means mentees have confidence in their abilities and potential to contribute as scholars to their fields (NASEM 2019; Stelter et al. 2021).

International Students and Mentoring

International graduate students may rely even more on mentorship and support from faculty mentors given the unique challenges they experience upon arrival in the United States (Hyun et al. 2007; Yang, Orrego Dunleavy, and Phillips 2016). International graduate students may encounter social isolation, discrimination, separation from family, lack of familiarity with academic culture, cultural adjustment, and language barriers (Ku et al. 2008; Omar et al. 2016; Yang et al. 2016). These challenges can lead to more stress, manifesting in physiological and psychological conditions (Mori 2000). It may also potentially lead to greater feelings of imposter syndrome, as well (Addison and Griffin 2022). Although effective mentoring may be a way to support international students enrolled in STEMM programs, researchers have identified challenges with effectively mentoring this population (Hyun et al. 2007). For example, international students are more hesitant to discuss problems with their mentors and mentors were also found less able to identify mental health symptoms in their international students due to cultural differences.

The United States is one of the leading countries for attracting international students for graduate school (Yang et al. 2016). One out of every five graduate students enrolled in a master's or PhD program in the U.S. are international (Okahana 2020). As of 2021, it was recorded that approximately 329,272 international graduate students were studying in programs in the United States (Duffin 2021). The Council of Graduate Schools (2020) reports that students from Latin America made up one of the three largest segments of international students in 2020. Not only do international students enroll in U.S. graduate programs in high numbers, but the majority are enrolled in STEMM disciplines (Bhojwani et al. 2020).

Although international students, and specifically Latinos[1], make up a significant portion of STEMM students in the U.S., we know little about their experiences, especially as they relate to mentoring (Ku et al. 2008). It is important that we investigate these relationships more thoroughly so that we can better support these students if we want them to succeed in our programs.

Effective Mentorship in STEMM

Recently, effective mentorship has gained more attention by academic researchers in the fields of science, technology, engineering, mathematics, and medicine (STEMM) because of its influence

[1] In this article, we use the terms Latino and Latinos to refer to male and mixed-gendered groups with heritage in a Latin American country. We also use the term Latina to refer to a woman also with Latin American heritage (Comaz-Diaz 2001).

on developing the future STEMM workforce (NASEM 2019). This impact has spurred the National Academies of Sciences, Engineering, and Medicine (NASEM), which is made up of experts in higher education and industry in these fields, to develop a robust report titled *The Science of Effective Mentoring in STEMM* (NASEM 2019) that outlines findings and recommendations for effective mentorship. It is important to note that this report was funded by U.S. agencies and while it establishes robust recommendations, it does not explore the experiences of international students and their mentoring relationships.

The NASEM report defines mentoring as a relationship between a faculty member and a graduate student as, "a professional, working alliance in which individuals work together over time to support the personal and professional growth, development, and success of the relational partners through the provision of career and psychosocial support" (NASEM 2019:37). As indicated in this definition, an emphasis is placed on the personal and professional growth and development of graduate students through both career and psychosocial support. The report outlines six specific behaviors that contribute to positive mentoring relationships: align expectations, assess understanding, communicate effectively, address equity and inclusion, foster independence, and promote professional development. This study explores the experiences of International Latino STEMM graduate students and their perceptions of ideal mentoring behaviors in relation to these six specific behaviors. The Ideal Standards Model (ISM) in close relationships is used as a guiding framework to help us understand if students' ideal behavioral expectations of mentors align with NASEM's recommended behaviors and if there are other ideal behaviors that are important to students. This study makes specific recommendations to faculty for navigating mentoring relationships with these students.

Theoretical Framework

The authors draw on the Ideal Standards Model (ISM) in close relationships (Simpson, Fletcher, and Campbell 2001) to understand perceptions of an ideal mentoring relationship for international students. ISM postulates that individuals' perceptions of consistency between their ideal standards and their perceptions of their current partner and relationship help to do the following three tasks. Make evaluations about the quality of their partner/relationship, explain or better understand both positive and negative aspects of the relationships (e.g. relationship conflict or satisfaction), and regulate or make changes to the relationship (Simpson et al. 2001).

People establish ideal standards in many different types of interpersonal roles and relationships (e.g. Christopher 2012; Sriram and Navalkar 2012; Sternberg and Barnes 1985; Tyler 1964). In Campbell et al. (2013), it has been found that relational partners who failed to match their partner's ideals were less satisfied with the relationship. Similar findings were found in the context of workplace mentoring, for example, Haggard (2012) found that negative mentoring and outcomes were more likely to occur when mentors failed to meet mentee's expectations or ideals. Mentees were also more likely to experience decreased loyalty to the organization and decreased job satisfaction. Therefore, the extent to which relational partners match each other's ideal standards can influence the relationship and outcomes.

Knowing that graduate students enter relationships with expectations of their mentor, as informed by Kram's (1983) stages of mentoring and ISM, and that international students may have more initial expectations of support from their mentors, it is important to know what the

perceptions of the ideal mentoring relationship looks like for these students. International graduate students have been largely excluded from summative reports of effective mentorship and best practices; therefore, it is important to explore if their experiences and expectations of effective mentorship align with data from these reports, particularly the report by NASEM. We, therefore, posed the following research question: What mentor behaviors constitute an ideal mentoring relationship for international Latino graduate students in STEMM?

Methods

For this study, 30 semi-structured interviews lasting 30-60 minutes in length were conducted with Latino international graduate students in STEMM programs at a large mid-western university recognized nationally for STEMM excellence. The study was approved by the Institutional Review Board (IRB-2020-1612). The participants included 10 female and 20 male students from Latin American countries including Colombia, Costa Rica, Mexico, Venezuela, Ecuador, and Honduras. Students' time in their program ranged from first year master's or PhD students to late stages of a master's or PhD degree, having completed prelims or qualifying exams. Of the 30 students who were interviewed 22 were in PhD programs and 8 in master's programs. Additionally, the students who participated are enrolled in a variety of fields including engineering, food science, statistics, and medicinal chemistry and medical pharmacology. Recruitment for participants was conducted through snowball sampling as this network sampling method is considered an effective strategy for locating a few key initial participants who then refer other participants, who fit the criteria for the study (Merriam and Tisdell 2016).

More specifically, participants were recruited through social media and the first author's social network. During recruitment for this study, there was a high response rate from the initial group of participants who were recruited and the subsequent recommended individuals. All individuals who were recruited or recommend showed up for the interview. To minimize bias when selecting participants, the researchers set a clear inclusion criteria and the first author selected an initial group of participants that included not just close friends but also acquaintances, such that participants fit the study criteria but did not necessarily have a close relationship with the researcher. Further, when participants were asked to recommend individuals for the study, they were asked to do the same.

To qualify for this study, participants were required to be current graduate students in either a master's or PhD program and have an established relationship with a faculty member for at least a year for the relationship to have had time to evolve. Participants received a $10.00 Amazon gift card for their participation. Given the ongoing pandemic, the interviews were conducted via zoom in English and recorded for transcription. The recording tool on zoom allowed for verbatim transcription. Although confidentially was guaranteed, participants were also allowed to turn off their camera, they were given a pseudonym, and they were reminded that they could choose to exit the interview process at any point.

Once the interviews were finalized, automatic-generated interview transcripts were checked for accuracy and any information that might have been able to identify participants was removed before moving to coding and analysis. To help with this task, two undergraduate research assistants helped the authors verify the accuracy of the transcripts. The undergraduate research assistants were not involved in the coding or analysis process.

For the first round of analysis, and using NVIVO as a tool, the authors used a deductive approach such that the data was coded using NASEM's six recommended behaviors as initial codes. Some of the key interview questions that revealed the emergence of these themes included the following. How would you describe your relationship with your mentor? This question led to students describing the mentoring style of faculty members and how this worked or did not work with their expectations and preferences. We also asked: Do you experience struggles with your mentor? Does your mentor encourage open communication, why or why not? How do you communicate your academic or research needs to your mentor? Is diversity and inclusion part of the culture of your lab/work environment or relationship? These questions revealed several of the initial six themes.

During this round of coding, themes outside of the initial six emerged. These additional themes emerged primarily through careful probing throughout the interviews and by allowing interviewees to have some control on the direction of the interview so as to reveal themes the researchers had not considered. These additional themes centered on establishing a close interpersonal relationship or a "deeper relationship" and "feeling cared for" or seen by their mentor. The theme of "culture" and "cultural understanding" also emerged in relation to building a deeper and trusting relationship. Some interview questions that revealed these themes included: How do you communicate your personal needs to your mentor? What encourages or discourages you from discussing your personal needs and life?

Additionally, using ISM to understand students' perceptions of ideal mentor behaviors and how it affects their relationship, the researchers also asked the following questions. How did you come to work with your academic mentor? This question helped elicit the initial interest and expectations that students had for working with their faculty mentors. We also asked, how would you describe your relationship with your mentor? This question helped to compare students' initial expectations about the relationship with the actual relationship. Students were also asked, what is an ideal mentoring relationship look like to you? Would you say your current relationship is ideal for you, why or why not? What would you change about your relationship? These final questions revealed some of the discrepancies in the mentoring relationships, if any, and revealed specific behaviors that students would like from their mentors.

After a first round of coding, the authors re-read through the transcripts and initial codes and narrowed down the coding system. Narrowing the codes was done by eliminating codes that were originally thought to be more prevalent and combining those that were describing the same meanings.

Findings

According to ISM (Simpson, Fletcher, and Campbell 2001), when students initiate relationships with faculty mentors they will formulate expectations or ideals of that relationship, even prior to joining it. As the relationship develops, students will constantly compare their experiences with their initial ideal conceptualization. Interviews with Latino international graduate students revealed that students had established some perception of what an ideal mentoring relationship looks like.

In response to our research question: what mentor behaviors constitute an ideal mentoring relationship for international Latino graduate students in STEMM? Our findings revealed students' ideal mentor behaviors are in strong consensus with five of the six mentor behaviors described in NASEM's 2019 report. These behaviors are: align expectations, assess understanding, communicate effectively, foster independence, promote professional development, and address equity and inclusion. In regard to aligning expectations, students described being able to set realistic expectations and renegotiate them when necessary. Students also described an ideal mentor as one who can identify their "weaknesses" in terms of their abilities or skills and help to develop them, which aligns with the behavior of assessing understanding.

There was also a strong consensus about the importance of communication. Students described effective communication as the basis for a good relationship with their mentor. Fostering independence and promoting professional development were also identified as ideal mentor behaviors. Students described wanting mentors who can "show them the ropes" so they can become independent researchers. Regarding professional development, students described an ideal mentor as someone who cares about their career goals, provides them with resources, and helps them build their professional network. Our findings did not directly align with addressing equity and inclusion because students did not see themselves impacted by domestic issues of equity and inclusion as most do not identify as minority students. However, this does not mean that topics of equity and inclusion are irrelevant to these students, but rather they experience equity and inclusion differently.

For example, students expressed that it is important for a mentor to acknowledge that international students have unique needs, different learning preferences, and are affected differently by everyday events in the U.S. Cameron, a fourth year PhD student, described an ideal mentor as someone who has awareness of these differences among students.

> Ideally someone who understands the cultural differences. it would be nice to have a mentor that understands that I'm Latino, I'm from a different culture and country, and I care about different things. I'm in the U.S. but I'm affected by different topics compared to someone that is Black or White or Asian. It would be nice if these differences were understood. And I don't learn the same way compared to others, so you should have different expectations for me.

While there was strong consensus with five of the mentor behaviors previously identified for effective mentoring, our interviews also revealed additional behaviors beyond these that are unique to these students' experiences. There were two major findings. First, students described wanting to build a more meaningful mentoring relationship with their mentor. A meaningful mentoring relationship is an interpersonal relationship in which students perceive to be cared for and know that they matter to mentors. Second, students want mentors to be curious about their culture and incorporate it into their mentoring.

Interpersonal Relationship

Students described wanting a more significant relationship with their mentor, that is, an interpersonal relationship where students perceive care. Showing "care" means mentors

genuinely care about students' well-being, personal, and professional success and can empathize with them. Students said this may mean "checking in" on workload and stress levels, helping with issues related to their status as international students, helping them figure out how to buy a car, what credit cards to use or what bank to join, these topics being especially important for international students who may not have an established support system in the U.S.

Demonstrating care requires a delicate balance between care and professionalism. Students reported that a mentor should be caring and approachable, but this care should not feel invasive or unprofessional. Gabrielle, a fifth year PhD student, described this balance in the following way.

> I do think my mentor is this nice combination of warmth, but also extremely professional. He cares about my personal matters, but in a way that never felt invasive. For example, he cares a lot about my family, he's also an immigrant so he understood a lot and he empathized with the fact that you cannot always see your family. He was very considerate if you were sick. He balanced that with professional things very well. I do not feel any fear to share things. I feel comfortable sharing.

An interpersonal relationship is also one that is built on trust. One way students can build trust with a mentor is through normalizing setbacks. For example, mentors can develop trust when they show care by asking students about the challenges or setbacks they may be experiencing and helping them through those experiences.

Imposter syndrome is a common challenge that graduate students will experience at some point in their academic career, and international students can experience imposter syndrome in ways related to their status as international students. Kendal, a second year PhD student, says the following about how her mentor helped her through imposter syndrome.

> During my first-year evaluation, I was asked, do you feel you make any progress? And I said, no. Do you feel like you understand a concept? I would say, barely. I just put myself in a very low position. She [mentor] was like you feel you have made no progress because you are comparing yourself with people who were born here and had college in great universities. You just cannot do that because your progress is different from everybody else. That was a struggle for me because I knew she was mad at it, and I was scared of seeing the relationship change with her like, oh my gosh she's going to think I'm weak or I am a depressed person that is always thinking bad about herself or stuff like that. But then it was all right because we talked about it and she's like, your progress is yours and that's how I failed when I was in grad school. It's a normal feeling to feel like you're always behind but you're doing a second language and learning from zero. That helped a lot.

Failure is an inevitable part of graduate school. Mentors can forget to discuss failure as a normal part of students' academic experience. In an ideal relationship, mentors should care to ask students about the challenges they are experiencing and discuss failure openly. Kendal's mentor also reveals to her that she "failed" in a similar way when she was in graduate school, and this further helps the student normalize her experience and build trust with her. A third year PhD

student, Joshua, discussed how failure is an important part of graduate school and a mentor's role is to help students navigate failures successfully.

> You are working on something that has never been done before, it is research. It is something that is new and you need to learn through the process, you need to fail. You need to try new things, and the way I thought of a mentor was they have projects, they have funding for projects, and you must reach a goal. There are some ways of reaching that goal, but you are going to have to kind of figure it out by yourself and they are going to be there to help you out, give you advice, give you suggestions from their point of view, from their experience.

Students who can discuss feelings of insecurity in their abilities that surface when experiencing imposter syndrome and who can also discuss failure as a normal part of the graduate school experience with their mentors may rebound from setbacks more effectively.

Cultural Understanding

An important topic for international Latino students that is largely excluded from recommendations of mentor behaviors is the influence of culture on these students. For example, family is one of the most important cultural values for Latinos as it represents an unconditional support system. Not surprisingly, it is a factor influencing students' academic experience. One of the biggest concerns graduate students described was the limited time and opportunities they have to be close to family when they become graduate students. Students discussed the frustration of not being able to travel home during academic breaks. Students mentioned that often their mentors do not allow them to travel home during breaks because they feared students would not be productive at home. In the case of the students interviewed in this study, they were prepared to travel home and be productive as their work could be completed remotely. To the researchers' knowledge these students did not face additional barriers, such as readmission to the United States, if granted permission to travel home.

One student discussed missing out on important family events, such as her sister's pregnancy, because her mentor did not like it when she asked for permission to travel home, and how this was a once in a lifetime opportunity that she would have to miss, which affected her mental state. She felt her mentor did not understand, "that we have needs of resting and seeing our families." Students mentioned ideal mentors should prioritize their needs to be close to family, their support network, as this would promote students' feeling "happy," which would also enhance their productivity.

For students, their obligation to family also means that they expect mentors to be flexible or renegotiate expectations when they need to care for family concerns. However, some mentors do not accept personal or family obligations as appropriate reasons for adjusting expectations. Jack, a second-year master's student, said,

> I don't know he kind of doesn't accept… He expects results kind of regardless of whatever is going on outside of research. So, it's happened to me a couple of times that I had some personal things to take care of and I didn't really have a lot of progress that

> particular week, and he got upset about that. So, I guess I wouldn't feel comfortable bringing it up or anything like that.

On the other hand, students who have the support of their mentors to take care of family or personal matters end up feeling a stronger trust in the relationship. Frank, a first year PhD student, recalls a family emergency he had where his mentor was supportive of him and his decision to travel outside of the country to care for his family. Frank recalled,

> After that happened, I knew that I could share anything with her and that she was going to be understanding of the situation... after that I knew that I could tell her whatever I needed to tell her.

As in this example, mentors who support students in terms of their value for family foster trust with their students. Also, mentors who routinely asked about students' families were seen positively by students and this, too, seemed to help students trust their mentors and develop a deeper relationship.

One solution to acknowledging students' culture is to assign students like mentor pairs (e.g. international mentee, international mentor). While this match can create understanding it doesn't always have that impact. For example, some students who had Latino mentors identified culturally with them. The fact that they speak Spanish, had similar educational backgrounds, and had similar expectations in terms of personal closeness made the relationship more meaningful. Students who could identify culturally with their mentor, made it clear this made their experience more gratifying. These students felt they could talk about research in Spanish and understand each other better, as well as exchange experiences of how they experienced graduate school in similar ways. Anthony, a third year PhD student, feels he can have a close interpersonal relationship with his mentor because they can relate as Latin Americans.

> I think that Latin American people are more open to talk about like personal stuff. So, for example, he [mentor] feels comfortable about asking, how's your family back in Mexico? How are you doing with your stuff, in general, here at school? Not work-related but, in general, how do you feel? And I feel comfortable talking about that with him.

However, not all students who have a Latino mentor felt that they could identify with them or had a stronger relationship due to their shared nationality or international status. Carrie, a second-year master's student, communicated that although her mentor is also Latina, they did not connect.

> It's just weird, because I don't have anything in common with her. I've met different Latino professors or Latino students and I think somehow you connect or you relate culturally, but with her that's just not existing. You wouldn't think she is Mexican. And she doesn't even talk to me in Spanish every conversation we have is in English. We just never talk about it.

Mentors might want to keep the relationship culturally neutral if they perceive that they are helping students to acculturate to American culture and preparing them better for a future career

in the U.S. The key, however, is to communicate this intention clearly to the student, otherwise, it may create a discrepancy in ideal expectations for students.

To summarize, these students shared many of the same perceptions of an "ideal" mentor as detailed in the NASEM's 2019 report, however, there were some differences. The desire to have a close interpersonal relationship imbedded in cultural understanding with the mentor dominated the discussion with student participants.

Discussion

An ideal mentor relationship may not exist in reality. One person is unlikely to fulfil all of the needs of a student. However, students will form ideal standards of this relationship and they will seek to understand, explain, or adjust their relationship based on those ideals. Having a relationship that closely matches individuals' ideals is important because it has been shown that individuals with fewer discrepancies between their actual and ideal relationship are more satisfied, and they may experience more positive outcomes as individuals perceive they can more easily reach relational goals (Simpson et al. 2001). Therefore, this study aims to describe the experiences of 30 Latino international graduate students in STEMM and explores their perceptions of mentor behaviors that constitute ideal mentoring.

Overall, we found that Latino international graduate students agree with five of the six recommended behaviors presented in NASEM's report on effective mentorship. That is, students agree that the following behaviors are essential and ideal in a mentoring relationship: align expectations, assess understanding of their capabilities, communicate effectively, foster independence, and promote professional development. As far as addressing equity and inclusion, students said it was not important to them because they did not identify as minority students, but they did care about their mentor knowing where they come from and about their backgrounds. This indicates that although students may not want to address domestic topics of equity and inclusion, they do want mentors to see them as a unique individual with a different background and set of experiences compared to other students and may require a different approach to learning and being mentored, even when their mentor is from the same culture.

Beyond these mentor behaviors, however, students identified wanting a more meaningful relationship that demonstrates care. In most cases students reported being dissatisfied with the mentoring relationship when it failed to provide both task and psychosocial support. As noted in the definition of mentoring (NASEM 2019), both types of support are essential.

One possible explanation for why faculty members may not provide both kinds of support is that mentors hold competing roles when working with graduate students, that is, they are advisors, supervisors or principle investigators (PIs), and mentors (Rose 2005). These roles may blur boundaries and mentors may feel uncomfortable crossing into emotional territory because they don't feel prepared to offer that type of support.

Although our participants did not address equity and inclusion in conventional ways, it was extremely important for their distinct cultures to be recognized and adapted to. For example, students reported the value of family as extremely important in Latino culture. They wanted their

mentor to appreciate this aspect of their background and make accommodations for them when they needed to travel back home or adjust workloads.

Although we typically believe that mentor pairs who are matched on important characteristics such as background and social identification will have similar outlooks and understandings, our data indicated that this wasn't always the case. Several of the students interviewed reported that although they shared a cultural heritage similar to their mentor, it didn't feel like they did and this left students disappointed in the relationship.

As graduate programs in STEMM are likely to recruit more and more students from across the globe, it becomes important that faculty and administrators reflect on those behaviors that students believe are ideal for successful mentoring. Below we outline some specific applications of the findings presented here.

1. Meet with students regularly providing time for one-on-one conversations. If this is not possible, mentors should consider carefully how many students they can mentor.
2. Designate some lab meetings for work and others for building rapport with students.
3. Develop an individual development plan (IDP) and explore students' desired career plan. Take the opportunity to discuss strengths and weaknesses during meetings and make sure a discussion occurs at the beginning of the year and at the end of the year. This will facilitate an understanding of students' goals.
4. During meetings for building rapport with students, be curious about students' culture and background. Ask about: important cultural traditions or holidays, family well-being, and personal well-being.
5. Provide psychosocial support to students. If providing this kind of support is an area of weakness for mentors, bring in individuals whose role is to provide this support to students. For example, a lab coordinator, not a graduate student, who can check on students' psychosocial needs and be an expert on identifying resources and solutions to help meet their needs.
6. Learn in-depth about the resources on campus and be prepared to refer students. For example, be aware of relevant workshops or other programming on campus for international students such as ones that cover the topics of imposter syndrome, academic writing, financial preparedness, health insurance, mental health and wellness, international student services, etc.
7. Be an active listener. Listening has been identified as one of the most important skills of mentors by students and multi-tasking in meetings shuts down conversation. An active listener is more likely to create opportunities for students to disclose about their needs.
8. Don't assume that just because you share a similar background with a student that you shouldn't discuss culture and how it relates to the current tasks of the research.
9. Attend mentoring workshops on your campus. Get involved with a mentoring center and work to improve your skills.

This list of recommendations echo several of the NASEM report's recommended behaviors particularly on emphasizing effective communication, cultural understanding, and promoting professional development. However, these recommendations go beyond NASEM's report by including other essential behaviors and describing to mentors how they can enact the behaviors

in their labs. We emphasize how mentors can enact psychosocial support as this seemed to be the most difficult part for mentors according to students. Additionally, while there are differences between students, such as domestic, underrepresented minorities, and Black, Indigenous, and people of color, we believe these recommendations for effective mentoring may be applied to many not just international students.

This study is not without limitations, primarily, this study focuses only on graduate student perspectives. Future research can explore faculty members' perspectives in regard to their approach for working with international students. While studies have explored faculty members perspective, to the authors' knowledge, no one has asked faculty what their ideal mentoring relationship looks like. A comparison of both perspectives may reveal unique findings about ideal relationship match or mismatch.

Another limitation of this study is that our data was gathered from one academic institution. Therefore, there is potential of our data reflecting mentoring practices that are prevalent in this one institution and not necessarily as salient at other institutions with many international students enrolled. Further studies may seek to collect data from various institutions to see if there is any overlap in mentoring behaviors.

Additionally, this study focused on Latino international graduate students as the Latino population is one of the top three groups in graduate school and the university where this study was conducted has a large population of Latino students in STEMM. Originally this study was open to all international students, but Latino students were the primary group to respond to the call for participants, showing unique interest and motivation to contribute to the mentoring body of knowledge through their experiences. We aim to contribute to creating better conditions and opportunities for Latino graduate students in STEMM. Future research can be extended to include international students from various countries to support a larger community of international graduate students.

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