The Development and Perceived Impact of Mentor-Mentee Retreats on the Long-Term Development and Enhancement of Mentor-Mentee Relationships

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Abstract—This research to practice full paper reviews and implements evidence-based strategies to develop and institute the Pitt STRIVE annual mentor-mentee retreat at the University of Pittsburgh. While many institutions have successfully increased underrepresented scholar enrollment in doctoral engineering programs, evidence suggests that successful completion of degrees is not only dependent on student aptitude, but also an established community, immersion, and a sense of belonging within the institution.

The overarching goal of the retreat is to have a sustained long-term, positive impact on mentor-mentee relationships. Thus, we chose to design an annual mentor-mentee retreat, to meet the following objectives: 1) encourage and promote cultural awareness among faculty and graduate students, 2) to humanize perceptions of faculty and graduate students to one another, 3) to create a community founded upon the desired success of underrepresented graduate students, and 4) to encourage deeper relationships among faculty and their graduate students, as well as other underrepresented graduate students, to promote academic growth and success. Given that our retreat was constructed based on developing an understanding of the University of Pittsburgh’s current climate, as well as evidenced practices, we hypothesized that measurable changes could be assessed, and serve as encouragement for other institutions with similar goals.

Through field notes, analyzing the structures and agendas of the retreats, post-retreat feedback surveys, as well as reflective interviews with veteran mentors and mentees, we link assessment data to various structures of the retreat and offer a model for other graduate programs to adopt. We aim to inform other STEM graduate programs on how to adapt the retreat to improve faculty engagement and academic climate change to ensure underrepresented doctoral student success.

Index Terms—retreat, mentor, mentee, relationships, underrepresented, graduate student, faculty

I. BACKGROUND

Historical institutional exclusion of underrepresented persons from educational opportunities contributes to low persistence and retention of underrepresented groups who pursue engineering at the graduate level, with only 14.1% and 11.1% of master’s and doctoral degrees in 2018, respectively [1]. Research founded in strength-based theories suggests that aptitude, interest, nor ability to conduct research are major deterrents from pursuing STEM at the doctoral level [2], [3]. The greatest deterrent and/or lack of persistence is rooted in the psychological concept of sense of belonging within an institution [4]. Thus, the lack of minority representation in STEM is attributed to systemic racism, rather than academic capability.

The Meyerhoff Scholars Program1, along with several others, have successfully actuated the importance of establishing community, immersion, and a sense of belonging within an institution at the undergraduate level. This model has produced a record number of graduates from the program that continue to pursue masters and PhDs within STEM fields. The networks and community established at this level are lifelong. However, many graduate programs and cultures still lack elements of inclusion among students, and, given the independent nature of many graduate programs, can leave underrepresented students feeling excluded, isolated, and disconnected more so than their majority counterparts [5]. This is perhaps not much different than those feelings felt by many graduate students; however, it is further accentuated for underrepresented students.

1https://meyerhoff.umbc.edu/
Regardless of ethnic origins and/or associations, the relationship between a graduate student and their dissertation advisor is the hallmark for any graduate experience [4], [6]. Research shows that successful relationships between graduate students and advisors contribute to persistence and retention in graduate programs, and troubled relationships can contribute to early termination of graduate programs. One of the greatest barriers to the development of positive relationships has been the climate within institutions, which, assumes the comfortability of the majority population in engineering [7], [8]. Thus, institutions that desire cultural change and desire to contribute to the development of an inclusive and diverse workforce must actively work to develop a culture of inclusion that fosters stronger bonds, acceptance/celebration of differences, and understanding between students from diverse backgrounds and their mentors [6], [9]. In concert with intentional fostering of a graduate student community, literature suggests that faculty engagement and buy-in can significantly influence student retention and success [10].

The National Science Foundation (NSF) has been instrumental in funding programs to broaden the engineering workforce [7]. In 2015, the University of Pittsburgh was awarded the Alliances for Graduate Education and the Professoriate-Knowledge Adoption and Translation (AGEP-KAT) grant from the NSF to adopt and adapt evidence-based strategies to improve the academic climate and success of underrepresented doctoral students in engineering (NSF HRD-EHR #1433012). This funding supported the inception of the Pitt STRIVE Program, which was designed through the adoption/adaption of evidence-based strategies practiced by the University of Maryland Baltimore County’s (UMBC) Meyerhoff and PROMISE programs to develop and cultivate an inclusive environment such that retention of underrepresented minority US PhD students was maintained.

While some institutions adopt or adapt evidence-based strategies towards increasing minority completion of PhDs in STEM, the specific activities employed to implement these changes can differ. Thus, data-driven assessment of the existing climate within an institution is necessary to determine the ideal mechanisms to support change.

The Pitt STRIVE Program administered a graduate student cultural-awareness climate survey to all engineering graduate students to assess current perceptions of mentorship and departmental culture and climate. This survey, among others, aided the Pitt STRIVE program in identifying that: 1) URM students within the School of Engineering felt that mentoring relationships were lacking, 2) Some faculty reported that they may be uncomfortable while attempting to engage in heterogeneous relationships, and 3) some faculty may be overestimating their ability to understand or identify with the barriers that URM students may face. When comparing URM responses to non-URM responses, it became clear that URM students, significantly more so than non-URM students, felt less support from their departments.

Based on this assessment of the existing climate, as well as evidenced-based practices, the Pitt STRIVE program chose to design an annual mentor-mentee retreat, to meet the following objectives: 1) encourage and promote cultural awareness among faculty and graduate students, 2) humanize perceptions of faculty and graduate students to one another, 3) create a community founded upon the desired success of underrepresented graduate students, and 4) encourage deeper relationships among faculty and their underrepresented graduate students to promote academic growth and success.

The overarching purpose of the retreat was to develop and sustain long-term positive mentor-mentee relationships. With that said, decisions and details surrounding the purpose, promotion, participants, program structure and place for this annual event all contributed in developing and/or enhancing the mentor-mentee experience. Having now completed four years of retreats, analysis of assessment data and an investigation of the literature reveals the content topics, interaction structures, as well as type of activities that best promote and maintain mentor-mentee relationships. Through field notes, analyzing the structures and agendas of the retreats, post-retreat feedback surveys, as well as reflective interviews with veteran mentors and mentees, we linked the assessment data to various structures of the retreat and offer a model for other graduate programs to adopt. We aim to inform other STEM graduate programs on how to adapt the retreat to improve faculty engagement and university climate to ensure underrepresented doctoral student success.

II. OVERVIEW OF THEORETICAL FRAMEWORK

To develop a retreat towards accomplishing the above objectives, we first determined that two primary questions needed to be addressed for the foundation of the retreat:

- How do people develop and maintain relationships? (i.e. What are critical theories surrounding relationships?)
- Can a retreat be a vehicle through which healthy relationships are developed and sustained? (i.e. What program elements contribute to successful retreats?)

A. Foundational Theories of Relationships

1) Relational Mentorship Model: Relational mentorship is a dynamic process through which organizations cultivate cultures and climates that minimize barriers/impediments and encourage the development of healthy relationships between mentors and mentees. Ultimately, the relationship between the mentor and mentee thrives when there is intentional connection, trust, and development/agreement on common goal(s) [3], [6], [11].

2) Psychological Sense of Community: Psychology literature suggests that relationships are built upon commonality and understanding among individuals and groups of individuals. Commonalities can include nationality, family cultures, similar experiences, and most specifically for our purposes, shared experiences. Thus, the bonding of two individuals who may

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2https://www.engineering.pitt.edu/STRIVE/

3https://promiseagep.com/
be from different backgrounds can begin organically through a shared experience [12]–[15].

B. Characteristics of Successful Retreats

Although there is sparse literature regarding quantitative evidence on the benefits of retreats, general recommendations regarding successful retreats were applied as the framework for developing our retreat. Retreats are characterized as purposeful gatherings of individuals for a shared common purpose. While retreats can consist of formal elements, they are generally structured to be more informal than one’s standard work setting in order to promote environments that are conducive to reaching the established common purpose or goal. In order to develop the Pitt STRIVE Mentor-Mentee retreat, we sought to build upon best practices identified as contributing to positive outcomes. Common characteristics of effective retreat experiences include [16]–[19]:

1. Retreat/travel expenses covered for all participants
2. Participants should share a common goal, derived prior to retreat commencement
3. Structure must be provided for activities, and time built in for reflection
4. Opportunities to mingle organically should be dispersed throughout the retreat
5. Rules/guidelines that outline boundaries of the safe space should be established prior to the retreat
6. It is imperative that the groundwork established through retreat goals is carried out, or revisited between retreats to sustain relationships and enthusiasm towards desired goals
7. Data should be collected towards assessing retreat impact and participant suggestions

III. THE DEVELOPMENT OF THE PITT STRIVE ANNUAL MENTOR-MENTEE RETREAT

The Pitt STRIVE program has organized an annual mentor-mentee retreat for engineering faculty and PhD students [21]. The goal of these events is to support the success of PhD students from underrepresented groups in STEM by providing opportunities for relational mentorship [20]. Ultimately, the retreat was designed to help improve communication and deepen personal and professional bonds between students and their mentors. Strengthening these relationships may better equip faculty and students with the tools necessary to not only identify, but also address challenges as they arise. To date, the program has hosted four mentor-mentee retreats (2016 - 2019). Here, we describe logistics and an overview of the core components utilized in the retreat.

A. Logistical Components of the Mentor-Mentee Retreat

Details regarding the retreat, including the date, location, and theme are disseminated starting approximately six months prior to the retreat to enable participants to plan accordingly around other academic and/or family commitments, and to establish the common goal surrounding the retreat. Table I provides a high level overview of the dates, location, and themes for each retreat.

Advertisements are shared by word of mouth, the Pitt STRIVE Program website, emails to and through department chairs, and graduate student organization mailing lists to invite and encourage minority graduate students, faculty, administrators, staff, and their family members to attend. The importance of extending invitations to the families of participants is critical in helping to humanize relationships among participants, and promote a sense of inclusion and comfort.

<table>
<thead>
<tr>
<th>Year</th>
<th>Theme</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>“Creating Faculty Student Shared Vision for a Culture of Excellence”</td>
<td>Aug. 11-13 (2 Days)</td>
</tr>
<tr>
<td>2017</td>
<td>“Achieving a Supportive Inclusive Culture of Excellence”</td>
<td>May 18-20 (2 Days)</td>
</tr>
<tr>
<td>2018</td>
<td>“Achieving Inclusive Excellence Within and Beyond the Walls of the Swanson School of Engineering”</td>
<td>Aug. 9-10 (1 Day)</td>
</tr>
<tr>
<td>2019*</td>
<td>“Advancing Pitt STRIVE’s 5 I’s of Inclusive Excellence: Community Identity, Interaction, Involvement, Integration and Impact”</td>
<td>Aug. 8-9 (1 Day)</td>
</tr>
</tbody>
</table>

*All four retreats were housed at Oglebay Resort in West Virginia.

To lessen the financial burden on students, take the focus off of economic differences, and establish retreat participants on a common ground, all costs for the duration of the retreat are covered up-front – including lodging, meals, and transportation.

Consistent with recommendations from prior work, all four retreats were held at an off-campus location in an effort to create a safe-space for participants to engage with each other without many of the pressures associated with being on campus (e.g., traditional power dynamics, need to always be professional) and to promote the development of personal relationships in informal contexts [3]. The location was selected due to the relative proximity to campus (about 1.25 hours by car), and availability of activities and resources for hosting both structured and unstructured social activities. While there is limited academic literature examining retreats or their ideal lengths, based on our observation, interviews, and survey feedback, we have found that the ideal time of year and length for our institution is 1.5 days in August.

B. Core Components Of Mentor-Mentee Retreats

Table II provides an overview of the 2019 retreat schedule. All four retreats were structured to encompass a variety of activities and interactions among participants. These activities can be categorized as alternating between structured activities led by moderators or speakers (e.g. Program Overview, Ice Breakers, Keynote, etc.), and informal community building periods where participants had opportunities to interact organically (i.e. mentor/mentee time, meals, coffee breaks, happy hour, etc.).

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<th>Length</th>
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</thead>
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<tr>
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*All four retreats were housed at Oglebay Resort in West Virginia.
TABLE II
SAMPLE SCHEDULE FROM 2019 RETREAT

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00 - 2:15 PM</td>
<td>Welcome Address/Program Overview</td>
</tr>
<tr>
<td>2:15 - 3:00 PM</td>
<td>Icebreaker Activity: Building Exceptional Teams</td>
</tr>
<tr>
<td>3:00 - 4:00 PM</td>
<td>Insight</td>
</tr>
<tr>
<td>4:00 - 4:15 PM</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>4:15 - 5:30 PM</td>
<td>Building community</td>
</tr>
<tr>
<td>5:30 - 6:30 PM</td>
<td>Dinner</td>
</tr>
<tr>
<td>6:30 - 7:15 PM</td>
<td>Keynote Address</td>
</tr>
<tr>
<td>7:15 - 7:45 PM</td>
<td>Audience Response to Keynote</td>
</tr>
<tr>
<td>7:45 - 8:15 PM</td>
<td>Award presentation</td>
</tr>
<tr>
<td>8:15 PM</td>
<td>Meet and Mingle</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 - 9:00 PM</td>
<td>Breakfast</td>
</tr>
<tr>
<td>9:00 - 11:00 AM</td>
<td>Mentor and Mentee One-on-one Interaction</td>
</tr>
<tr>
<td>11:00 - 11:45 AM</td>
<td>Faculty as Change Agents: You Got This!</td>
</tr>
<tr>
<td>11:45 - 1:00 PM</td>
<td>Debriefing and Mentor-Mentee Competition</td>
</tr>
<tr>
<td>1:00 - 2:15 PM</td>
<td>Lunch</td>
</tr>
<tr>
<td>2:30 - 3:30 PM</td>
<td>Operationalizing the 5 “I”s of Inclusive Excellence</td>
</tr>
<tr>
<td>3:30 - 3:45 PM</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>3:45 - 4:15 PM</td>
<td>Wrap Up Session</td>
</tr>
<tr>
<td>4:30 PM</td>
<td>Closing Remarks</td>
</tr>
</tbody>
</table>

The Pitt STRIVE leadership team took care in selecting external moderators, workshop leaders, and speakers to emphasize that faculty and minority students were equal participants in all activities. A primary external moderator was selected each year to support community building based on their expertise in working with diverse populations, with special emphasis on minority populations and encouraging heterogeneous relationships among participants. Furthermore, the external moderators were key in maintaining the momentum of the retreat, and ensuring that participants were engaged. Many of the workshop leaders and speakers also demonstrated specific expertise in defining and addressing minority barriers either through their lived experiences, careers, or research expertise. This step was especially critical to help break down power structures and barriers to relationship-building typically experienced within university environments.

Thus, the dynamic of the retreat was immediately established as an environment in which students and faculty, rather than performing or serving one another in an academic capacity, were to be equally immersed in the retreat experience. The immersive experience was created through a mixture of activities that ranged from ice breakers and introductions, friendly competitions, to very emotional, serious, and relevant discussions regarding how to actualize the retreat themes and lessons throughout the academic year and within the University setting. Figure 1 illustrates a gathering of students and some faculty debriefing at the end of the 2016 retreat.

IV. EVALUATION METHODOLOGY

At each retreat, the assessment team took field notes, and conducted a post survey of attending mentor and mentees. These methods are described below:

A. Direct Observation

Each year, two trained observers recorded field notes from participant arrival to departure, and did not participate in retreat activities. Special attention was given to the verbal and physical interactions between participant groups (e.g., graduate students and faculty members) and participant engagement levels with ongoing activities. Furthermore, the duration, event, and location of interactions were recorded (e.g., mingling during a coffee break). These field notes were used to supplement findings from post-retreat interviews and surveys.

B. Post-retreat Interviews

Post-retreat interviews were conducted in 2019 with 20 mentor-mentee pairs from previous retreats in order to assess the impact of the retreat, and memorable aspects of the retreat. Four concepts were investigated during the one-on-one interviews (each lasting approximately 30 minutes). The first was the intended purpose of the individual going to the retreat(s) and their personal motivations for their attendance. The second reflection was to garner aspects of the program that were salient to them after one, two, and three years. The third reflection was to determine what each individual felt was a new change for them after the retreat was over. The fourth reflection was to decipher the nature of the mentors’ and mentees’ relationship. Figures 2 and 3 highlight common themes that were extracted from interview questions 3 and 4.

C. Post-retreat Surveys

To collect anonymous feedback from participants, Qualtrics surveys were emailed to all participants at the end of each retreat. All surveys contained a mixture of Likert-scale response items and open-ended questions to evaluate the impact and relevance of specific retreat components, invited speakers, workshops, and retreat structure. Open-ended questions prompted and allowed participants to provide more detailed feedback regarding aspects that they enjoyed, as well as suggestions for improvements.

Table III summarizes demographic information about participants each year, demonstrating that fairly consistent attendance and participation was maintained. While the overall number of participants is small relative to the size of Engineering departments and student populations, the collection of mixed-methods data provides strong evidence that suggests participation in the retreats results in a positive and transformative experience for most participants.

<table>
<thead>
<tr>
<th>Year</th>
<th>Grad</th>
<th>Faculty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>17</td>
<td>13</td>
<td>30</td>
</tr>
<tr>
<td>2017</td>
<td>15</td>
<td>14</td>
<td>29</td>
</tr>
<tr>
<td>2018</td>
<td>23</td>
<td>17</td>
<td>40</td>
</tr>
<tr>
<td>2019</td>
<td>14</td>
<td>11</td>
<td>31*</td>
</tr>
</tbody>
</table>

*Number includes alumni and staff.

The following sections highlight key observations and findings from four years of retreats.

A. Participant Reflections on the Development of Mentor-Mentee Relationships

During post-retreat interviews, participants were asked to reflect on the retreat (Section IV-B). Graduate student participants responded that the retreat helped to further humanize their mentor, and that they better understood their mentors. Students also expressed that they felt that these events helped them feel more comfortable being open with their advisors, and contributed to a further sense of community (Figure 2).

![Fig. 2. Word cloud depicting student reflections on new changes for them after the retreat was over.](image)

Faculty mentors felt that the change in environment was particularly important in developing relationships with their mentees. Like their graduate counterparts, faculty reported feeling that they had developed a better understanding of their mentees and their motivations, that they could communicate more openly with their mentees, and therefore could better support them. Several faculty indicated that they would now make it a goal to get to know their mentees better (Figure 3).

![Fig. 3. Word cloud depicting faculty reflections on the nature of their mentor-mentee relationship.](image)

1) Actions Taken By Faculty Post-Retreat: Faculty attendees shared concrete examples of the types of actions that they would take after returning to campus. Three such examples are shared below:

- “Promote URM students more in the department through leading efforts and recruiting others to the cause”
- “Continue to improve on utilizing a relational mentor-ship approach to interacting with the students in my laboratory. Try to regularly ask myself if my perspective is potentially inhibiting the progress of those in my laboratory.”
- “To learn more about an individual’s background through questions and their stories/experience.”

B. Participant Feedback on Retreat Structure

One of the most successful annual components of the mentor-mentee retreats builds upon the informal one on one mentor-mentee time. During a morning or afternoon of the retreat, mentor-mentee pairs are established. Pairs are given a few hours to find an activity to do or experience together, while also reviewing a list of over 100 questions to get to know your mentor/mentee. During the mentor-mentee time, attendees would engage in a variety of activities at the conference center such as fishing, walking, boating etc.

During the game, mentor-mentee pairs played in several rounds of questioning, with the pair correctly identifying the highest number of matches moving to the next round. Participants often explained that this activity was one of the most memorable because of the facts learned about one another, the comical reactions to incorrect answers to questions, and the friendly yet competitive nature inspired by playing on a team against others. Furthermore, the unique structure of the dating game would often incite a palpable change in the atmosphere of the retreat room. Consider this quote from a 2018 faculty mentor which describes how the competitive aspects of this game were fun and impactful for them.

“It’s clear to me that the devoted mentor-mentee time and subsequent game show is one of if not the most fun and impactful activities at this retreat. My
guess is that our [AGEP] group thrives on competition! So I would encourage our guest leader/speaker and all others to incorporate as many competitive games into their message as possible (as makes sense)” – Faculty Mentor After 2018 Retreat

Survey results from the first three years supported this notion as well – the mentor-mentee outing has been one of the best received activities among both faculty and students, with mean ratings between 3.6 - 4.9 (on a 5 point scale).

VI. OUTCOMES FROM THE 2019 MENTOR-MENTEE RETREAT

Overall, we found that participants were largely positive about their experiences at the 2019 retreat in their survey responses (Section IV-C). All faculty (1 somewhat agree, 10 strongly agree), and most students (1 not sure, 5 somewhat agree, 8 strongly agree) responded that the retreat was effective in strengthening the University of Pittsburgh’s Pitt STRIVE community. Additionally, all faculty (11 very likely) and students (5 somewhat likely, 9 very likely) responded that they were likely to continue attending future events within our AGEP community. Several faculty and student participants had attended one or more mentor-mentee retreats in the past (Table IV).

TABLE IV
NUMBER OF REPEAT ATTENDEES AT THE 2019 RETREAT

<table>
<thead>
<tr>
<th>NUM. RETREATS ATTENDED</th>
<th>1 Time</th>
<th>2 Times</th>
<th>3 Times</th>
<th>4 Times</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Students</td>
<td>3</td>
<td>6</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Faculty</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

A. Survey Responses On Mentor-Mentee Relationships

This survey also contained seven specific questions pertaining to mentor-mentee relationships. Participant responses are explored in further detail below:

Question 1: This retreat improved my ability to respond to unfamiliar perspectives when engaged in conversation.

The majority of student (10 agree, 3 strongly agree) and faculty (7 agree, 4 strongly agree) survey respondents indicated that attending the retreat improved their ability to respond to unfamiliar perspectives. However, one student attendee strongly disagreed with this statement (Figure 4).

Question 2: This retreat increased my self-awareness of my perspective

Students and faculty were also positive when asked to reflect on whether attending the retreat increased their self-awareness of their own perspective. All 11 faculty members, either agreed or strongly agreed with this sentiment. 13 graduate students agreed with this sentiment while one was unsure (Figure 5).

Question 3: This retreat improved my ability to engage in functional mentorship relationships

Participants were also asked to reflect on whether this retreat improved their ability to engage in functional mentorship relationships. Faculty members were more positive with all respondents either agreeing or strongly agreeing with this sentiment. While 11 graduate students also agreed or strongly agreed with this sentiment, 3 were unsure (Figure 6).

Question 4: This retreat improved my understanding of the research about the challenges majority faculty face in mentoring underrepresented graduate students

Responses were more mixed when asked to reflect on if whether attending this retreat provided them with a better understanding of relevant research on majority faculty mentoring underrepresented students. 7 faculty members agreed or
strongly agreed with this sentiment, while three were unsure, and one disagreed. 11 students agreed or strongly agreed, while three were unsure (Figure 7). These results suggest that this topic should be a greater point of emphasis during future retreats.

**Question 5: This retreat improved my understanding of how to identify barriers in mentee-mentor relationships**

Most participants felt that attending the retreat improved their understanding of how to identify barriers in mentoring relationships – nine faculty agreed or strongly agreed, 13 student agreed or strongly agreed. However, one student strongly disagreed with this sentiment (Figure 8).

**Question 6: This retreat improved my ability to connect across differences**

Most participants felt that attending the retreat helped them to be able to connect with others across differences – an important part of conflict resolution. 10 faculty and 12 students agreed or strongly agreed with this sentiment, one faculty member and one student were unsure, and one student strongly disagreed with this sentiment (Figure 9).

**Question 7: This retreat will help to improve mentee-mentor communication in the future**

When asked whether attending this retreat would help to improve mentor-mentee communication in the future, we found that faculty members were very positive, while students were more apprehensive. All faculty members agreed or disagreed with this sentiment while three students were unsure and one disagreed (Figure 10). We believe that these also highlight another important topic to address during future retreats.

**B. Survey Responses On The Most Impactful Retreat Activities**

Similar to previous years, attendees of the 2019 retreat responded positively to the mentor-mentee outing. All faculty respondents (n=8) found the mentor and mentee outing to have very high impact. While 13 students found this event to have either high or very high impact. The game was also well received by most faculty respondents – eight found this activity to be very high or high impact, one was unsure, and one found this activity to provide very low impact (n=10). 13 student attendees found this game provided either high or very high impact.

**C. Faculty Plans After The 2019 Retreat**

Like with previous years, we were encouraged to see that faculty mentors had a renewed interest in spending time to develop stronger relationships with their mentees. Consider this quote where a faculty member discussed the importance
of providing an open and safe environment for students to be able to share their experiences and needs:

“Invest in getting to know the URM of color and the challenges that they face... Give more time for the URM graduate students to tell their story in and environment that is open and safe. It would have been great to [know] what they need and what they are experiencing.” – Faculty member after the 2019 retreat

VII. DISCUSSION

After four years of implementation of this retreat and collection of data, this annual retreat remains a yearly highlight for faculty, students, alumni, and staff. This is evident through the number of repeat-attendees (Table IV).

While there were many memorable moments, highlights, and positive feelings as a result of the retreats, it is important to highlight some of the stories that occurred, albeit not a part of the formal observation process.

While not every faculty is able to attend the retreat, one particular year, a graduate student was in need of a faculty dissertation advisor. Coincidentally, a new faculty member was interested in being a part of the community, and did not have a student in the community. The retreat provided not only the foundation, but an opportunity for the two individuals to connect. A relationship that started casually by sitting at the same table during a retreat activity ultimately resulted in a mentor-mentee collaboration across disciplines, and the faculty member became the graduate student’s formal dissertation advisor. Thus, hosting the annual retreat can become a space where mutually beneficial and organic partnerships can form. Regardless of the survey results, anecdotes such as this are a true embodiment of the goal of the retreat, which was to have a sustained long-term positive impact on mentor-mentee relationships.

A. Future Recommendations for Long-Term Mentor Mentee Relationships

We found that the most effective methods for supporting the cultivation of long-term and meaningful mentor-mentee relationships was to find areas of commonality beyond the professional level. Taking the time to explore and learning the nuances and factors that make someone unique and embracing them, such as during the game, is a perfect example of developing a foundation for long-term relationships. Furthermore, in the event that mentor-mentee relationships are formed outside of the working lab, we found it critical to have check-ins multiple times of the year. In fact, sponsored faculty lunches were birthed and maintained from retreat feedback. Sponsored faculty lunches invite graduate students to meet a faculty for lunch off campus to foster and maintain mentor-mentee relationships.

VIII. CONCLUSIONS AND FUTURE WORK

In this paper we highlight our strategies for the design and implementation of an annual mentor-mentee retreat, to meet the following objectives: 1) encourage and promote cultural awareness among faculty and graduate students, 2) to humanize perceptions of faculty and graduate students to one another, 3) to create a community founded upon the desired success of underrepresented graduate students, and 4) to encourage deeper relationships among faculty and their graduate students, as well as other underrepresented graduate students, to promote academic growth and success. Based on four years of evidence, these objectives, while dynamic in nature, have been met to the best of our ability. While participation and notoriety surrounding the retreat continues to grow and feedback from participants has been positive overall, our results from 2019 still indicate areas in which the actuation of the retreat could be enhanced in the future. One of the most important takeaways is quality time with mentors-mentees is valued more than many other planned activities. Furthermore, planning too many activities can drain participant energy and morale-potentially detracting from quality relationship building.

As we continue to host and evaluate our annual mentor-mentee retreat, we aim to elicit more specific information and ideas from participants in order to make sure the community is ultimately a part of the planning process and feel involved. While several suggestions were made and implemented over the years, it is critical that we continue to do our best to implement these things.

Ultimately, this study suggests evidence of the positive impact and cultural changes that can be introduced and implemented through a carefully designed retreat. Although the needs of every institution may differ, the general concepts presented in this manuscript provide insight for implementing similar events at other institutions.

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