2019-2020 Bass Connections Student Focus Groups Summary

Overview and Methodology

To better understand the experiences of undergraduate and graduate students in Bass Connections, the 2019-2020 Bass Connections Student Advisory Council conducted a series of five focus groups in January 2020. This report summarizes findings from the focus groups and is meant to inform our understanding of the impact of the program on students, as well as opportunities for improving the program. This evaluation is complemented by our other program evaluation efforts as described in the 2019-2020 Bass Connections Annual Evaluation.

All active undergraduate and graduate students who had previously, or were currently, participating in the program were invited via the Bass Connections newsletter to participate in a focus group on a voluntary basis. Participants were provided lunch but no additional incentives were offered. Participants were assured that their comments would remain anonymous and would only be used to improve our understanding of the program. Focus groups were divided into three undergraduate student groups (total n=14) and two graduate student groups (total n=10). All students were asked to answer questions related to the following topics (see the Appendix for the full set of questions):

1. Motivation for applying to and joining Bass Connections
2. Benefits of participation
3. Factors that contributed to team success
4. Challenges that participants experienced
5. Opportunities for improvement

In addition to these questions, graduate students were asked to discuss the challenges and benefits of working with and mentoring undergraduate students, while undergraduate students were asked to describe their experience working with graduate students as well as their fellow undergraduates.

The focus groups were recorded and transcribed. The transcripts were analyzed and responses coded using NVivo qualitative data analysis software. This report summarizes findings from this analysis.

Motivation for Participating in Bass Connections

For both undergraduate and graduate students, the most commonly cited motivation for joining a Bass Connections team was to gain more research experience. Other common reasons cited by both student groups include being able to perform work that had a real-world application and to improve technical skills through project-based learning. One student from each student group also mentioned the opportunity to be involved in interdisciplinary work.

For undergraduates, multiple students said that they applied because the scope and focus of the project aligned with their interests. In contrast, graduate students were commonly encouraged to participate by faculty members with whom they were already working in some manner, regardless of whether the faculty member was working on the project. Other motivations included meeting a program requirement and help formulating a dissertation topic.

***Figure 1**: Number of coding references from focus group transcripts describing undergraduate student motivations for participating in Bass Connections*

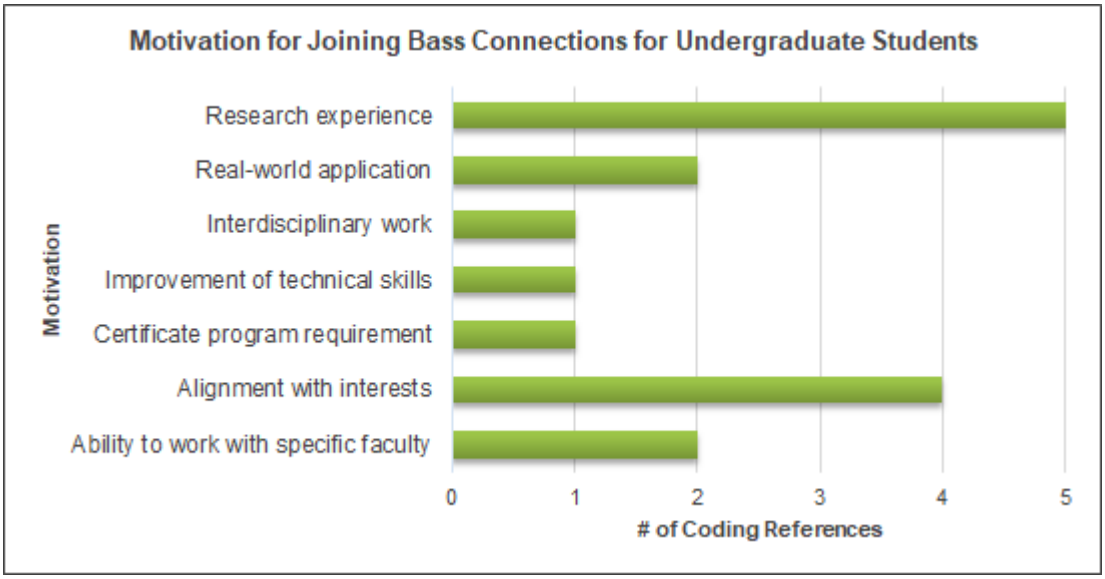
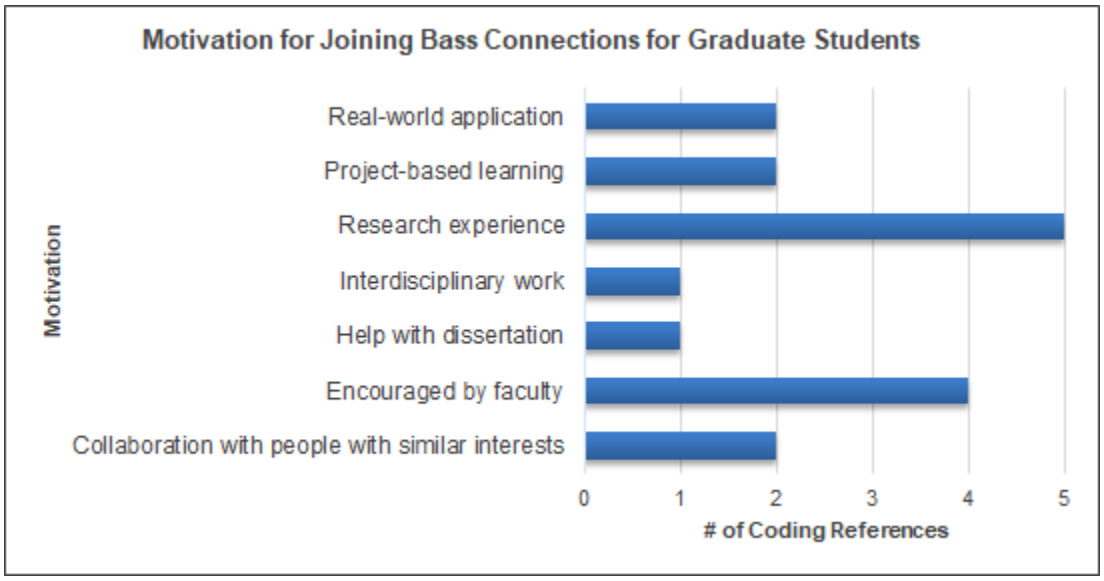


***Figure 2**: Number of coding references from focus group transcripts describing graduate student motivations for participating in Bass Connections*



Undergraduate Student Comments

"I just thought it was an interesting interdisciplinary project. It was an opportunity for me to apply some of the skills I was learning, especially given that I didn't have the credentials to do high-level computer science research. So, it allowed me to still access mentorship and work on an interesting project in an interdisciplinary fashion."

"I wanted to have an experience of understanding energy within the African continent, and then the first year I applied, there was a Bass Connections in Zambia so I thought that would be a good way to get a holistic view of lots of issues."

"I had just heard about Bass Connections and I read through and saw my team ... I thought that it was perfect for my interests and so I only applied to the one. I got in and I have loved it. I also wanted to get involved in research at Duke because that was the one thing that I haven't really been able to get into yet."

Graduate Student Comments

"For me, it was the project, which was very much in line with the things that I wanted to work on for my research, and were headed up by professors that I wanted to work with anyway. So the two of those combined made it a project that I wanted to get involved in."

"I thought it'd be really useful to do something that's more project-based learning, more practical."

"I was working with a professor on another research project the previous year that was heavily connected to undergraduate research … she started my project and asked me to be a graduate mentor."

"... my advisor was encouraging me to be involved in broader initiatives. So it wasn't necessarily me fumbling about in the dark. And ... collaborating with folks who are interested in similar concepts."

Benefits of Participation

Both students groups described a range of benefits from participating in the program, as noted in figures 3 and 4. The most common benefit described by both groups was gaining more research and project related skills, which, as noted above, coincides with the primary reason many students choose to participate. Other common benefits cited by both groups include being exposed to interdisciplinary research and making more connections with other students and faculty at Duke.

Undergraduates appreciated the opportunity to learn from others, increase their knowledge of specific topics and receive mentorship from graduate students and faculty. Graduate students valued the opportunity to mentor others as well as to develop their professional skills, including public speaking and team management. Some other benefits included networking opportunities and gaining a better idea of potential career paths.

***Figure 3**: Number of coding references from focus group transcripts describing undergraduate student benefits of participating in Bass Connections*

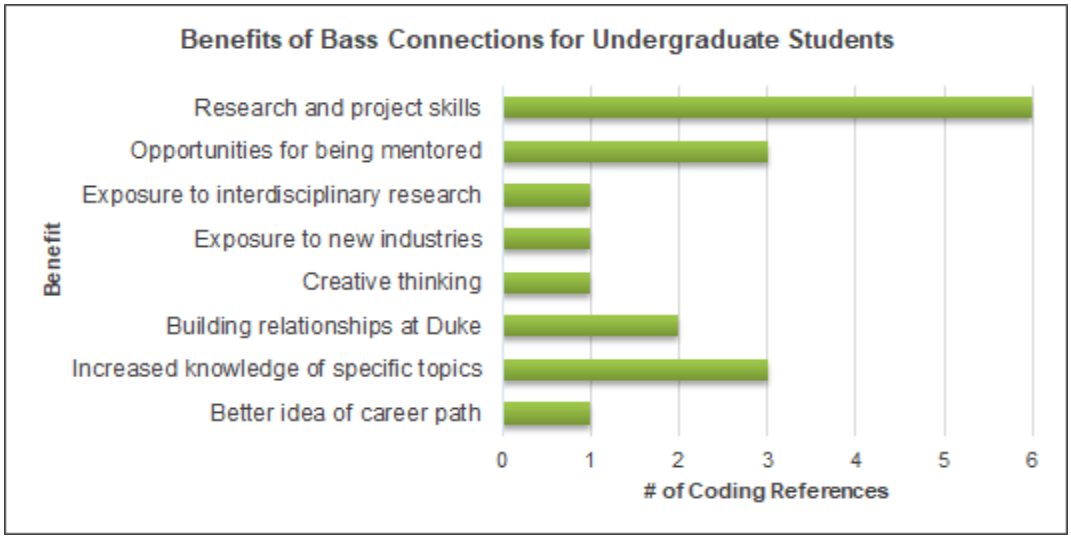
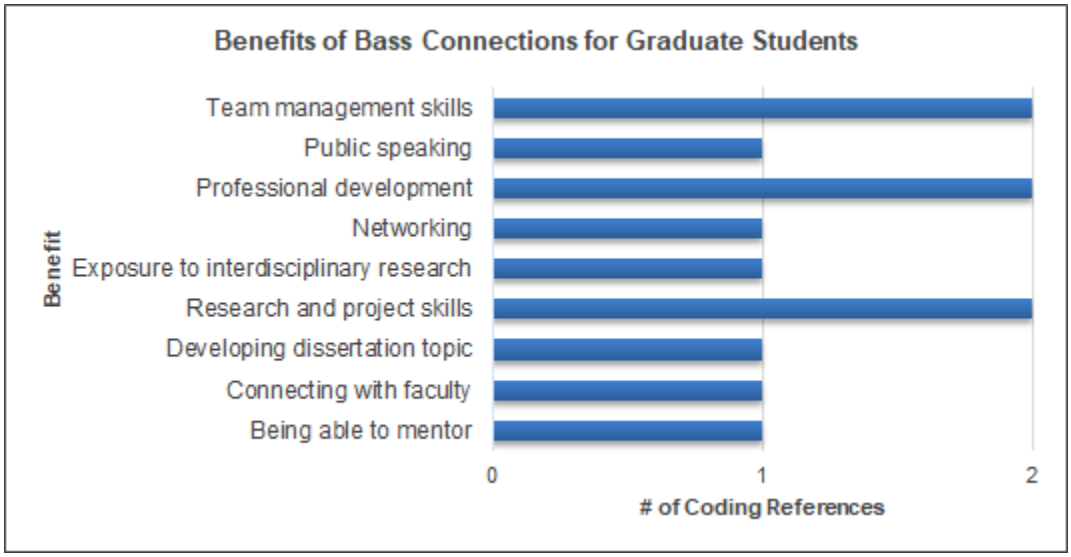


***Figure 4**: Number of coding references from focus group transcripts describing graduate student benefits of participating in Bass Connections*



Undergraduate Student Comments

"I actually think this kind of hands-on research experience is probably, at least in the global health area, the only way to really acquire those skills. So, I think I've actually developed a lot of skills ... through my time in Bass."

"I think my goals were kind of about gaining technical knowledge or technical skills and developing a bit of a relationship with professors and other students. And I think developing that relationship with professors as mentors and as very knowledgeable people to talk to, get a recommendation letter from, all of that, has been very successful."

"I would say ... applying to Bass with the hopes of getting real experience in this specific field and then gaining some specific skills in this field and then also ... the mentorship component, I think in terms of all of those three things, it's definitely been successful…"

"I think it's been a really good practice in experimental design and seeing an experiment all the way through from the beginning to the end."

"I've loved the program ... I think the first major step for me was choosing one that really aligns with what I want to do."

Graduate Student Comments

"I think that it's been great being able to take all this information, find a through-line and develop a project."

"... it's helped me a lot in gaining that experience in a different field that can help push me more towards where I want to be post-graduation, being able to publish a little bit different stuff."

"I was really drawn to the project because of its collaboration and getting to interact with the faculty on the project that I otherwise wouldn't have been able to have a relationship with. And so the learning has

been good, but I would say just participating in the project, and again, building that network has perhaps been even more important to me personally."

Factors That Contributed to Team Success

When participants were asked to reflect on factors that enabled their team's progress, both undergraduate and graduate students noted that having good communication among team members and a clear understanding of both roles and directions was important to team success. Respondents also noted that it was important for the team to have clear deadlines, tasks and division of responsibilities. These findings reinforce findings from the Bass Connections annual evaluation survey, which has repeatedly found that team success and satisfaction are strongly linked to whether a team has clear goals, roles and timelines.

Students also noted that it was important to have the necessary skills and training to contribute to the project. Several students on teams that had been running for more than one year noted that these projects typically had a strong foundation for success since there was less uncertainty about the project direction. There were no clear differences between graduate and undergraduate student responses to this item. A summary of these factors cited by each group can be found in figures 5 and 6.

***Figure 5**: Number of coding references from focus group transcripts describing factors that undergraduate students felt contributed to team success*

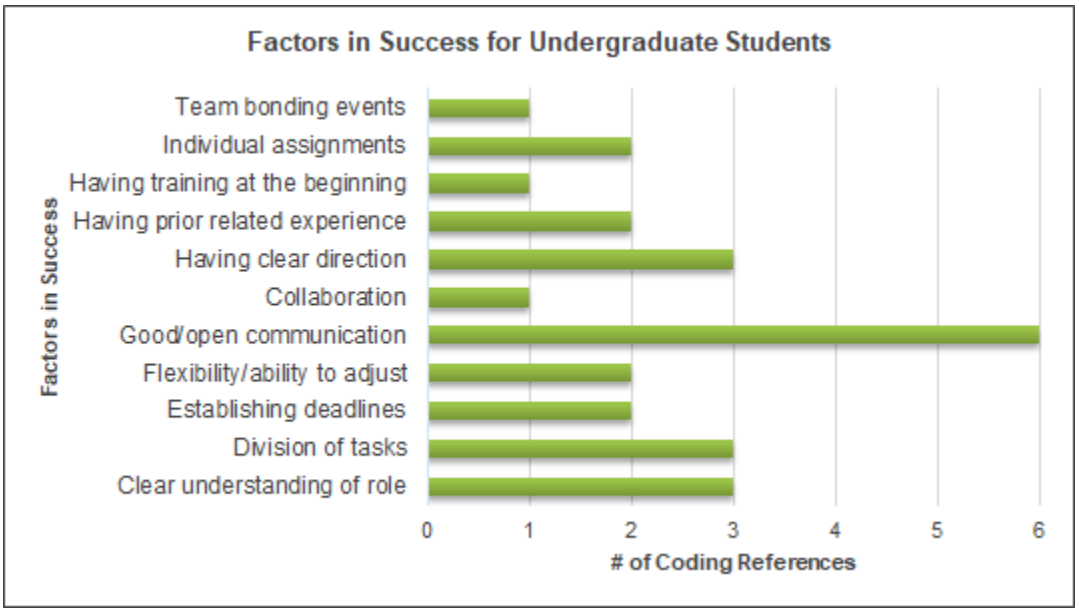
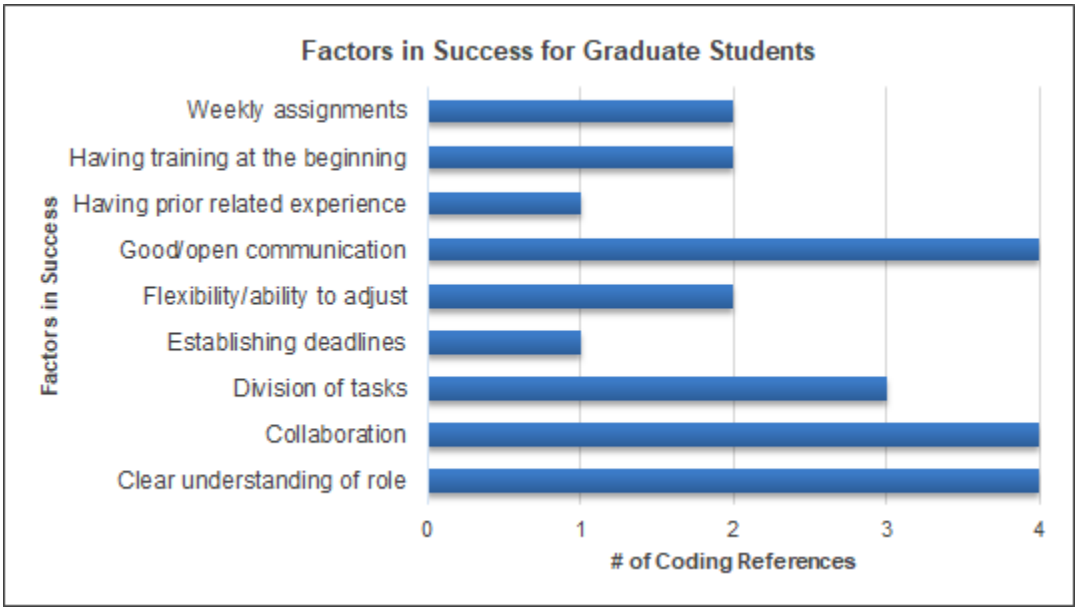


***Figure 6**: Number of coding references from focus group transcripts describing factors that graduate students felt contributed to team success*



Undergraduate Student Comments

"The first week there were very clear guidelines on what we were going to do for each month in the school year. And then we kind of set up projects to make sure we were on track for each one. So halfway we had a project that would have made sure we learn certain skills that we would need."

"I think our weekly meetings were very collaborative, and it was sort of a place where everyone could give their ideas on everything."

"We have this huge overarching goal that people have been working on over different projects over different semesters, and we kind of fine-tuned or found a niche we were each working on. I think within that small niche we're making good progress."

"For our class, we had the goal outline of the class and it laid out (a) schedule. The schedule we've stuck to on the dot, very consistently."

Graduate Student Comments

"There's skills that I have and skills that my teammates have that we all contribute. But we communicate in our subgroup very regularly and I feel like we have a really good sense of where we're going, especially now."

"I would say a good thing about communication is when we're all together, I think that everyone feels comfortable saying something regardless of where you fall on the undergrad to faculty spectrum. People feel open in expressing their comments or concerns."

"What I found really helpful is they actually did give me a (training) session at the beginning of the year…"

"We discussed some of the readings that had been assigned that week, and really had an opportunity to engage in mentoring, kind of modeling. The grad students had an opportunity to model what higher level discussion might be when it comes to engaging with text. The undergrads got to voice what they were engaging with, and we had a lot of immediate feedback sessions, where usually we would dedicate a good portion of that class meeting time to talk about current research projects that each individual was planning on proposing, and were able to do a live feedback session."

Beneficial Team Structure Components

When asked about how their team was structured and operated, both student groups noted that weekly team meetings were the most crucial to team success as they fostered better communication and ensured regular progress for the team. Undergraduate students also mentioned that dividing larger teams into subteams was a useful practice. Students in both groups mentioned the benefits of having a diverse team and a hierarchical structure that facilitated a layered mentoring model. At the same time, students also noted that the program creates an egalitarian structure that is beneficial for team collaboration.

***Figure 7**: Number of coding references from focus group transcripts describing components of team structure that undergraduate students found beneficial*

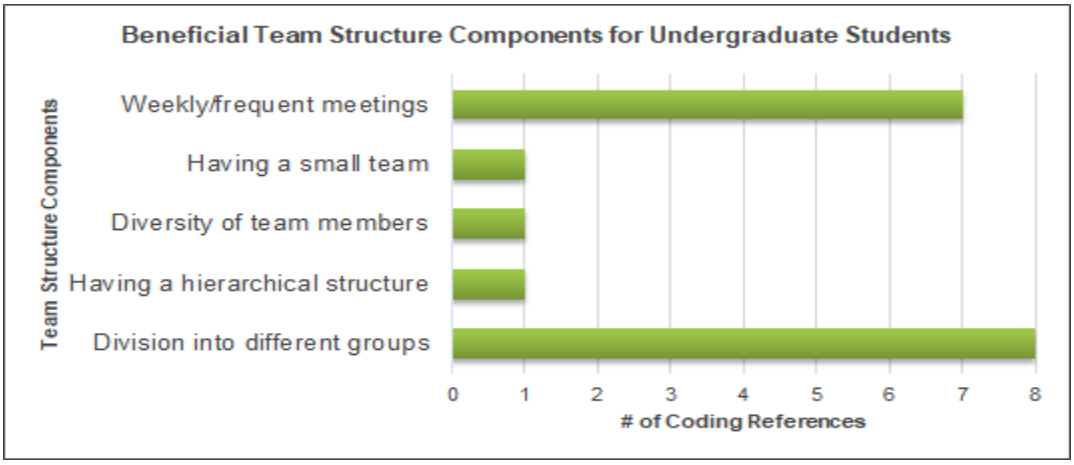
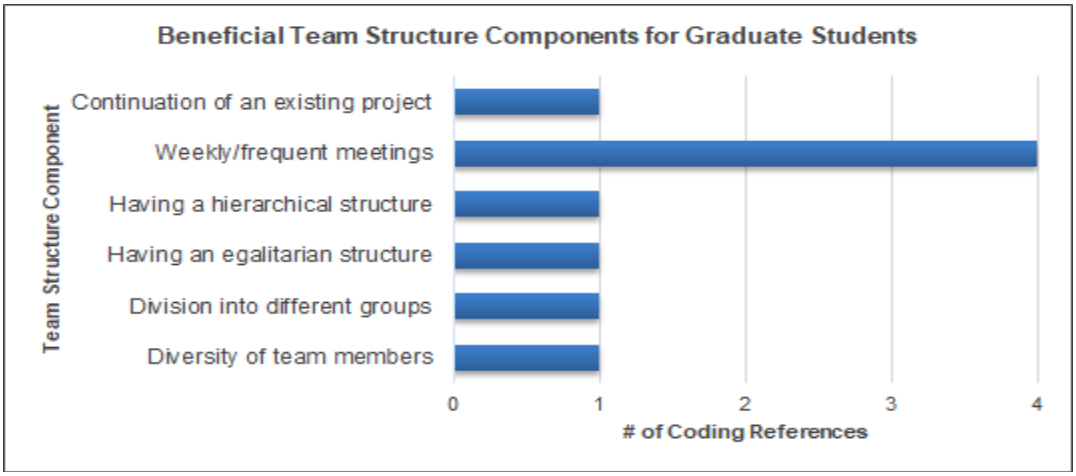


***Figure 8**: Number of coding references from focus group transcripts describing components of team structure that graduate students found beneficial*



Undergraduate Student Comments

"I would say, for us, the team structure is definitely very well delineated. My group of four is working on this specific project and each of us has a fairly well thought-out role within it. It has been very clear and well-delineated."

"I think that in the process of splitting up into subgroups, we've been able to more specifically utilize people's skills to reach our goals at the end of the day."

"I feel like our project (did) a great job of scheduling meetings but (also) meetings for the group because then everyone's held accountable for what they should be doing. I think it really makes it run smoothly and it's an amazing thing."

Graduate Student Comments

"We had check-ins where people would actually record what they were doing and how many articles they had screened. And that was very effective in terms of an extra form of communication, where you would look at it every day, and you could see where everybody else was. It would be good to do more of that."

"Last semester we met weekly for about two and a half hours or something ... that was helpful, I think, for everybody."

"We meet once a week on Mondays during our class, but each task force can meet on their own time once a week as well to discuss the current deliverables, what people have done this week and set new expectations for what people are expected to do by the next meeting."

Team Challenges

When asked about challenges to their team's success, both undergraduate and graduate students cited poor team organization as the largest barrier to team success. This finding reinforces the findings noted above that team success is supported by clear goals, roles and timelines. Other common challenges, as noted in figures 9 and 10, included unclear student roles and infeasible project goals. Students on larger teams also noted that larger teams introduced challenges with scheduling, poor communication and team division.

Because of their differing position on the team, some undergraduate students mentioned that they felt ill-equipped to contribute, while graduate students noted that it was at times a learning curve to learn how to manage a team, particularly where faculty leaders did not provide adequate support and guidance.

***Figure 9**: Number of coding references from focus group transcripts describing common team challenges cited by undergraduate students*

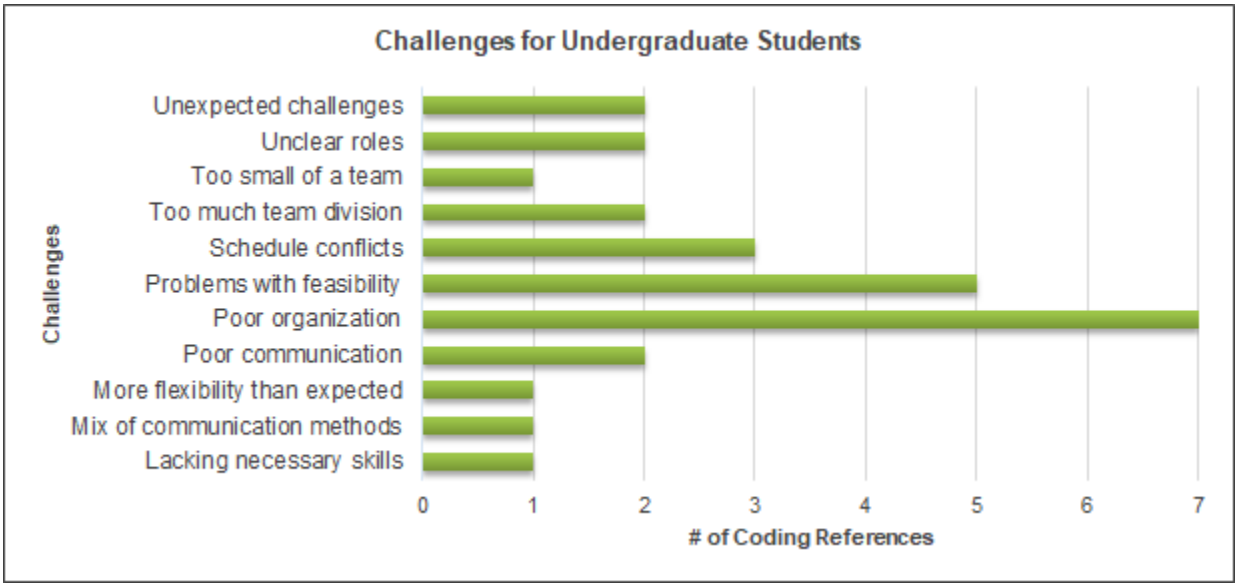
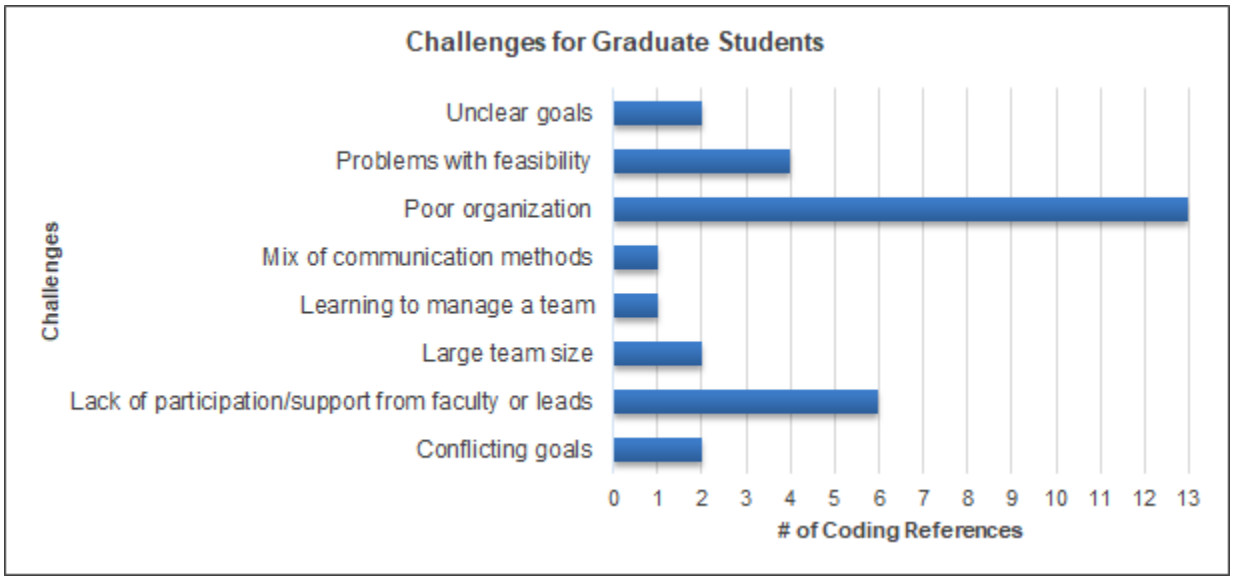


***Figure 10**: Number of coding references from focus group transcripts describing common team challenges cited by graduate students*



Undergraduate Student Comments

"... it's a little disorganized sometimes. That makes it hard to keep track of the work we do with one mentor and the work is not completely unrelated but just kind of dissonant from what you've been doing."

"... our team actually meets every week at a set time. But that time being the only time when everyone gets to come together and actually discuss future steps and the direction of the project hasn't seemed to be enough time. We always feel like we have to end mid-discussion. And I think that's been hindering our

progress. It's like, every week we are kind of coming back to the same conversation because we didn't get to finish it last week."

"I think we set a goal that the team will eventually accomplish but just not in the timeline of a year, and that became pretty obvious. The expectation the team leaders had didn't really correspond with the amount of time we are allocated and can realistically work on this."

"One thing that our team has been struggling with a lot has been team leaders and students not being on the same page."

Graduate Student Comments

"I think our project leaned too heavily on allowing students to generate, try to figure out, what things they're interested in and projects that they want to work on ... it led to us not really working on a clearly defined thing."

"I think our team struggled a bit because a lot of the decision-making and goal setting was happening outside of the team environment with the leads and it wasn't necessarily always communicated very transparently with the full collective. And I think the biggest cost to that has been in terms of the sense of engagement that is coming from folks who don't feel as included in the process and aren't as clear about the path forward."

"I also had similar goals of the project, aligning with my research interest and turning it into some type of deliverable in that regard, but, again, because the project was broad to begin with and it wasn't as specific as I thought it would be, I don't think it's going to happen by the end of the year."

"I think my team has leaned more into the class structure with weekly sessions and sometimes lectures and those sort of things, which I think has hindered some of our ability to function like a project in achieving some of our goals and hitting our deliverables."

Opportunities for Improvement

When asked how they would improve the program, both undergraduate and graduate students noted that their projects could have benefited from a more diverse interdisciplinary mix of participants and more guidance from Bass Connections on team goals and structure. As shown in figures 11 and 12, both groups also suggested opportunities for more formal skill development training and requiring a concrete deliverable at the end of their participation.

Undergraduates suggested that Bass Connections might provide more clarity about the necessary skills for a project at the onset[1] and help teams to establish clear goals and timelines. Some students also felt that teams should have a more egalitarian structure and more time devoted to getting to know one another.

Graduate students seemed to have a better understanding of their roles and wanted Bass Connections to provide more guidance and resources to teams such as a paid project manager[2] and research advisor on the Bass Connections staff.

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[1] When applying, students have access to a project description that includes a list of student backgrounds and skills needed for the project, but not all students may read this or it may need more specificity.

[2] Bass Connections does encourage teams to assign a project manager, which is generally a paid student role, but not all teams do so.

***Figure 11**: Number of coding references from focus group transcripts describing program improvements suggested by undergraduate students*

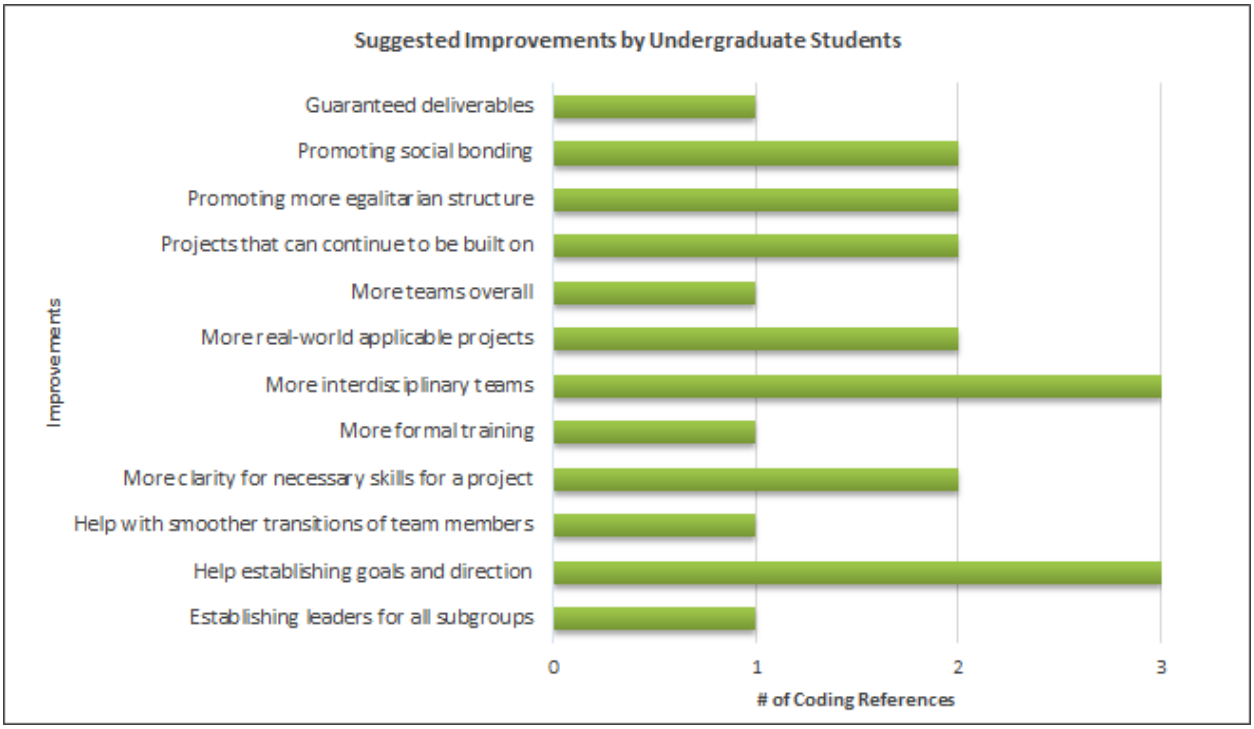
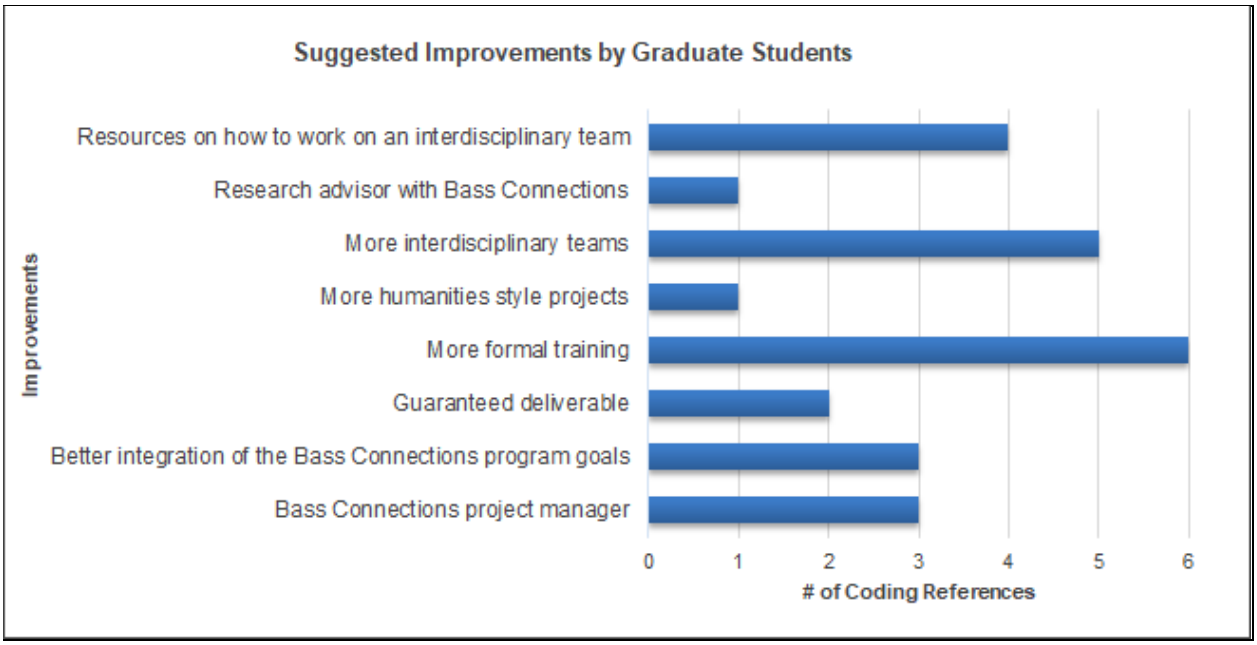


***Figure 12:** Number of coding references from focus group transcripts describing program improvements suggested by graduate students*



Undergraduate Student Comments

"At least make it clear what kind of skillset you're expecting from people in that project."

"I would say strong leadership, definitely clear structure of the program, probably should have a syllabus if it's a class, or just general goals at the beginning before you even start. Choose students that are involved, that are actually interested in the program and then assign them to different groups based on their skills. I think assigning based on skills is really important. And then ... making deadlines is really important. And having a list of deliverables with a deadline."

"Our research team should be much more diverse."

"I think picking projects that can continue in the future. I think sometimes it's kind of frustrating when you work so hard on something an entire year and that's the end of it."

Graduate Student Comments

"I think maybe additional investment in advertising, recruiting students from other programs would be helpful for getting that diversity."

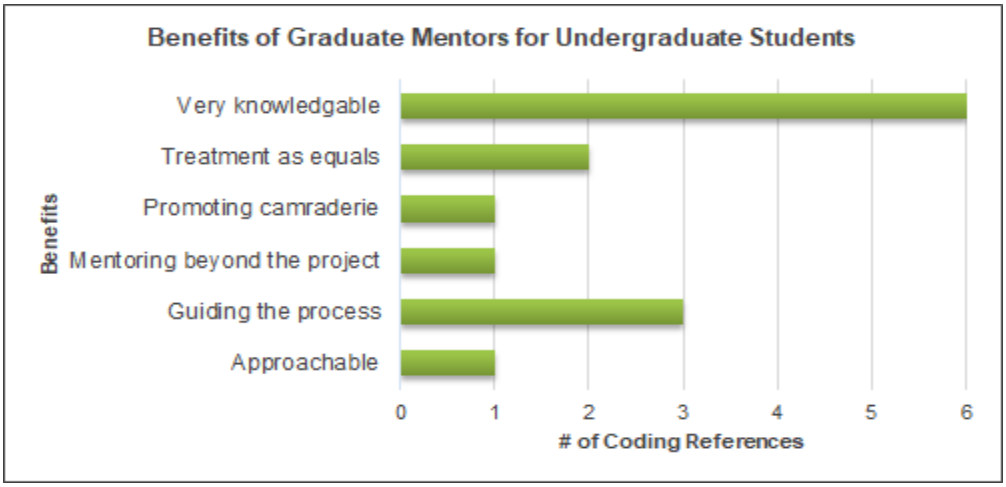
"It might be helpful as we're going through the onboarding process if we had a meeting with all Bass Connections teams ... It could even just be like a quick orientation module, or something that everyone just watches to kind of understand basically probably what the website said."

"I think if there was a way to guarantee that every project had some sort of productive deliverable ... if everyone could end a project with a publication or a presentation or something like that. If I had a magic wand, that would be really cool to see."

Undergraduate Experience with Graduate Students

Undergraduate students reported positive experiences with graduate student mentors on their teams. As noted in Figure 13, undergraduate students valued the knowledge of graduate students as well as their general approachability and willingness to provide guidance. At the same time, undergraduate students also appreciated that graduate students treated them as equal contributors to the project.

***Figure 13**: Number of coding references from focus group transcripts describing undergraduate experiences with graduate student mentoring*



Undergraduate Student Comments

"The grad students in the lab were always really helpful. If I ever had a question about anything, they normally could point me in the right direction, either give me advice or say, 'Oh, let's look online or let's look at this together.'"

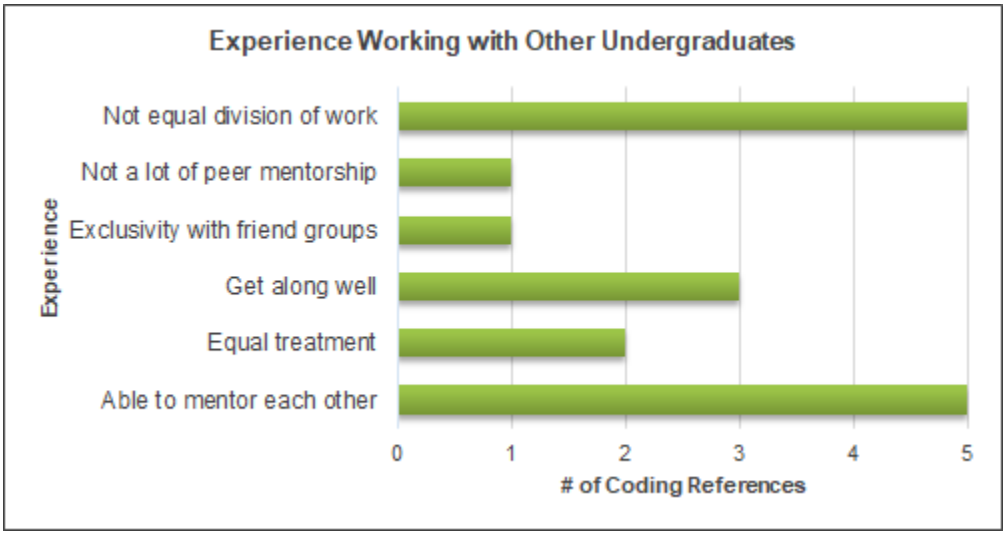
"In terms of the grad students that have been there for the entire two years, I always felt like they were really personable and I could always ask them any questions or if I needed to know where to look to get this stuff, they could give me pointers."

"... they're helping us ask certain kinds of questions and identify things to think about and be aware of."

Undergraduate Experience with Other Undergraduates

The undergraduates described both positive and negative aspects of working with other undergraduates, shown in Figure 14. Most undergraduates valued the opportunity to mentor and learn from one another and reported that they generally got along well and treated each other as equals. However, many students voiced frustrations that not all team members were doing equal amounts of work and not all undergraduate students were open to engaging as peers.

***Figure 14**: Number of coding references from focus group transcripts describing undergraduate experiences with other undergraduate students*



Undergraduate Student Comments

"For me, there's been a lot of mentorship from the juniors and seniors on the project that have been there longer than me."

"I'm really good friends with all the people and we do a lot of mentorship, especially with the freshmen we bring on. I think it's good."

"I don't know if I would say there's a ton of undergraduate mentorship."

"For us, I think it's kind of varied over the past two years in terms of the amount of work that everyone's doing. There are definitely some people, just because their tasks are in a different skill area, I guess, who

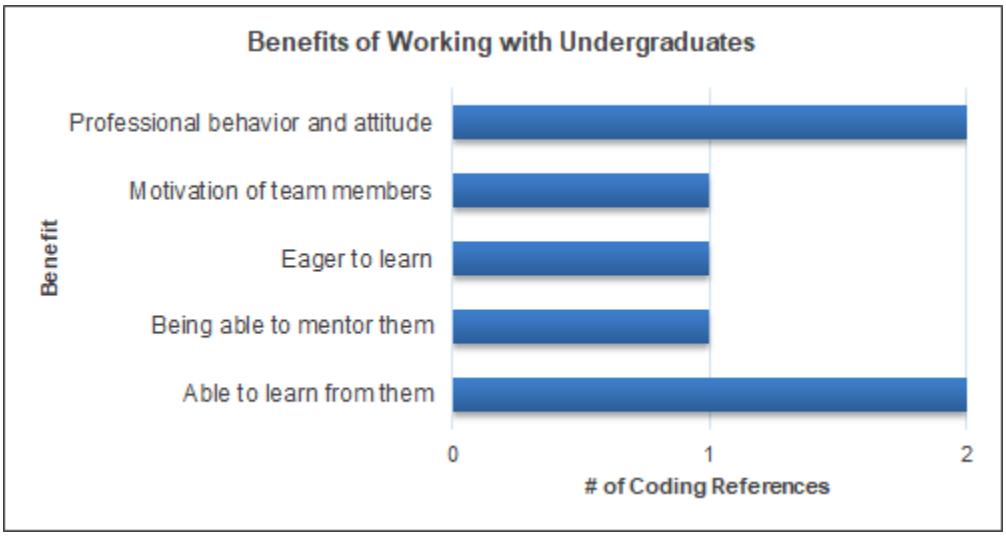
probably put in more hours than others. But then, also, everyone's kind of doing a different amount of work at different times throughout the year."

Graduate Student Experience with Undergraduates

Benefits of Working with Undergraduate Students

Graduate students reported that they generally had a positive experience with undergraduates, noting that most undergraduate students behaved professionally and were eager to learn. Graduate students also noted that they enjoyed the opportunity to mentor undergraduates and they also found themselves learning from the undergraduates, particularly when it came to various resources provided by Duke that they were unaware of.

***Figure 15**: Number of coding references from focus group transcripts describing the benefits of working with undergraduates for graduate students*



Graduate Student Comments

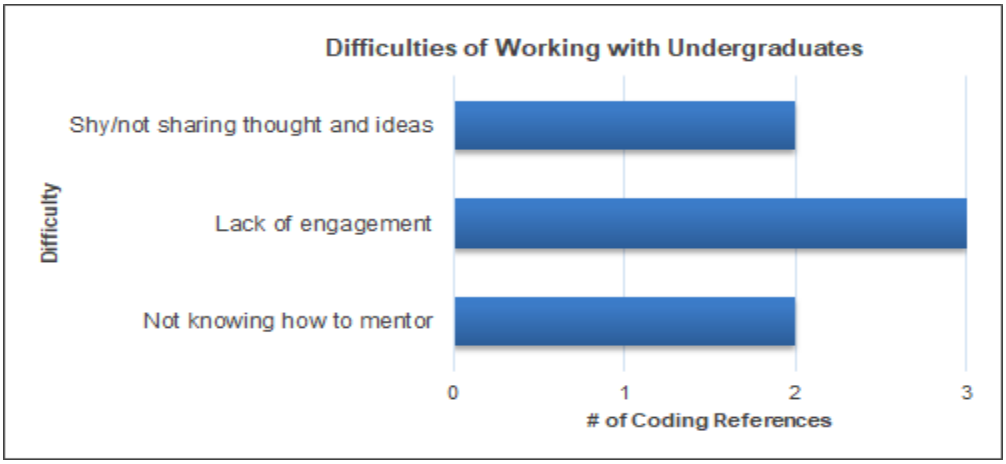
"I think the undergraduates on my team have been super professional to the point where I wouldn't even know if they were undergraduates. I've learned a lot from them in terms of resources that are available at the university, which has been really cool. So, from a leadership standpoint, I feel like, between the graduates and undergrads, there's been a pretty equitable exchange of ideas or benefits from working with each other."

"It's wonderful. Every undergrad on our team is a joy to work with. They're thoughtful, and considerate, and incredibly nimble once you give them the tools they need to do their research, and eager to learn. I think probably the most beautiful thing about working with them is their interest, willingness, whether passive or active, to then pay it forward to their peers. So they'll end up helping other project members out as they're doing their research. So it's a nice kind of chain of mentorship."

Difficulties Working with Undergraduate Students

That said, a few graduate students reported difficulties with some undergraduate students being unengaged in the project or unwilling to speak up. A couple of graduate students also felt uncertain in their ability to effectively mentor undergraduates.

***Figure 16**: Number of coding references from focus group transcripts describing the difficulties of working with undergraduates for graduate students*



Graduate Student Comments

"I think that ... as has been said, there definitely is an issue with engagement for the undergrads."

"There are a lot of undergrads who are not as willing to speak up in groups or say when there's more things they need from us."

"They've been a bit more hesitant to throw their voices into the ring as much, given where they feel like they are versus the grad students or the faculty."

Conclusion

The findings of these focus groups reinforce and add context to the Bass Connections annual program evaluation survey. They underscore that many students participate in Bass Connections to gain applied research and project management skills. Students report benefiting from hands-on research experiences, the opportunity to work with faculty and students at different levels, and the opportunity to work across disciplines.

The findings also identify opportunities for strengthening Bass Connections, including helping teams set reasonable goals and develop a work plan that will provide better team organization. This study also identified opportunities to provide more program-wide training on common team-based research practices.

Acknowledgements

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Appendix: Focus Group Questions

Student Motivation for Joining Bass Connections

1. Could you share with the group what led you to apply to Bass Connections in the first place?

Clarity of Expectations, Timeline and Goals

We're interested in learning about how team leaders communicate the project's goals, timeline and expectations to students. More specifically, we're interested in how team leaders communicate expectations *both* while you're applying to the project team and when you first join the team itself.

2. *Initial Explanation of Goals*: How were your project's goals, timelines and expectations described to you? Was this an accurate reflection of your current team goals, timelines and expectations?
    a. *Probe:* Did you use a team charter? Did your faculty lead track your progress?

3. *Understanding Role*: Do you understand your individual roles and responsibilities related to those of the rest of your team?
    a. To what extent did you feel like you were equipped or not equipped with skills and knowledge to meet the expectations of that role? (from personal experience and training from mentors)
    b. What additional training/support would have been helpful to you?

4. *Achievement of Goals:*
    a. Can you describe to what extent you feel your team achieved your project goals?
        i. What made it difficult to achieve those goals?
    b. Can you describe to what extent you achieved your own personal goals?
        i. What made it difficult to achieve those goals?
        ii. How would you describe your individual contribution to the broader team?

Roles and Structures

5. We know that Bass Connections teams operate differently – some are big, some are small, some meet at different frequencies, some have subteams, some have one large team, some do fieldwork globally, some stay local… We're interested in hearing from you about how your team is working together.
    a. Can you describe one thing about your team's structure that you think works really well?
    b. Can you describe one thing about your team's structure that you wish you could change?

Team Communication

6. *Medium of Communication* (e.g., meetings, email/Slack/GroupMe, sharing information, Google Drives, Sakai)**:** Please raise your hand if you use these specific modes of communication or methods for sharing documents:
    - Box
    - Google Drive
    - Email
    - Slack
    - GroupMe

    a. Are there other ways in which your team communicates?

7. Can you describe one thing about your team's communication that you think works really well?
    a. *Probe:* Can you describe one thing about your team's communication that you wish you could change?

Vertical Integration

8. What do you think makes for a good team leader or leaders?
    a. Why/why not?

9. **GRADS:** We know that many graduate students mentor undergraduates or serve in a leadership role.
    a. How would you assess your experience working with **undergraduates?** (especially their mentorship experience either as a leader and/or mentor) Feel free to touch on both the positive and negative aspects of your experience.
    b. If you served in a formal leadership role (e.g., project manager), to what extent did you feel supported by **faculty/staff leaders**?
    c. Do you mind telling us about mentorship between graduate students on your team?
        i. Is the work done equally between all graduate members of your team?

10. **UNDERGRADS:** We know that many undergraduate students on Bass Connections teams are mentored by graduate students and/or team leaders.
    a. In your experience, how have your **graduate student mentors** and/or **faculty/staff mentors** supported or not supported you?
    b. We've asked about relationships between students and graduate student or faculty mentors, but we are also interested in undergraduate to undergraduate relationships. Do you mind telling us about mentorship between undergraduates?
        i. Is the work done equally between all undergraduate members of your team?

Overall Improvements

11. Imagine you are the faculty lead of a Bass Connections team. Given your experience, what are the most important considerations (team norms, characteristics, etc.) to designing an effective team, leading to a good experience?

12. Imagine you were in charge of the Bass Connections program as a whole. What would be your top priority?

Wrap-up

13. Is there anything else you'd like to share?