



**Bass Connections Annual Evaluation
2022-2023**

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Executive summary

This report summarizes key findings from the Bass Connections annual program evaluation, which seeks to understand the experiences of team leaders, graduate/professional students and undergraduate students who participated in one of the program's 55 year-long project teams in 2022-2023.

Teams produced a range of impressive research [outputs](#) including new data sets, interventions and prototypes, white papers and publications, oral histories, websites and applications, training programs and service delivery models. This report, however, focuses on understanding the experience of students and faculty in the program to identify the challenges and solutions that teams encounter on their path towards these deliverables. Each year, the program uses information from this evaluation to identify new ways of supporting teams to enable productive research and learning experiences.

Key findings from this year's report include:

- **Satisfaction:** More than 7 in 10 participants from all survey groups reported being either “very” or “extremely” satisfied with their experience and 9 in 10 participants said that they would recommend the program to a colleague or friend. Graduate/professional student satisfaction increased significantly from last year after a decline in 2021-2022.
- **Team organization and culture:** Three-fourths of participants reported that their team followed common best practices for team organization (e.g., setting clear goals, building team camaraderie, using project charters) but there is room to improve the extent to which teams have a clear project timeline and define clear roles for all team members.
- **Team leader benefits:** Team leaders reported that the program helped them develop new knowledge and expertise, build new relationships and generate new research findings. When asked about the most meaningful outcomes of their teams' work, team leaders referenced data collection and analysis, applied research outputs and the impact on student development.
- **Student growth:** Undergraduate students indicated that the program helped them develop research skills, gain knowledge and expertise in a topic and learn to communicate within a team. The top three skills that graduate students reported developing include the capacity to organize and manage projects, communicate within a team and work across diverse areas of knowledge.
- **Student benefits:** Graduate and undergraduate students reported that the program helped them gain deeper insight into a societal challenge and develop new relationships with faculty and students outside of their social circles. Large numbers of undergraduate students also noted that the program helped them learn how to conduct applied research.
- **Impact on graduating seniors:** When comparing responses to the Duke senior survey between students who participated in one or more Bass Connections experiences during their undergraduate career and students who did not participate in the program, we see a range of differences including increased satisfaction with opportunities to participate in research with faculty; increased engagement in research and service experiences; an increase in students feeling that they had the opportunity to apply their academic knowledge to issues of social importance; greater development of research and critical thinking skills; and stronger relationships with faculty. Graduating students who participated in Bass Connections were more likely to be enrolling in additional education in the fall and were more likely to foresee a career in the public or non-profit sector.

- **Reflections on the most valuable aspect of Bass Connections:** In written reflections, participants were most likely to highlight how the program helped them build new connections, do meaningful project work and develop new skills. Faculty and graduate students also frequently highlighted the opportunity to mentor students.
- **Reflections on the most challenging aspect of Bass Connections:** Common challenges noted by all groups included unclear or changing project goals and timelines; a lack of time or engagement for both team leaders and students; and challenges related to project coordination and teamwork.

Overview and methodology

Since the Bass Connections program began in 2013-2014, we have administered an annual end-of-year survey to participants to understand factors that influence team success and the impact of the program on students and faculty. Each participant group — team leaders, graduate/professional students and undergraduate students — receives a different survey version that includes common questions across all three participant groups as well as questions specific to each group. Most survey questions are repeated each year to allow for trend analysis. Survey topics include overall satisfaction, factors for team success and the impact of the program on participant development. Responses from this annual survey provide an important barometer of the program’s impact and areas for improvement. The survey is conducted during the first three weeks of April as teams prepare to wrap up their work.

In addition, for undergraduate student participants, we analyze data collected from a survey administered to all graduating seniors to compare how the experiences and post-graduation plans of students who participated in the program differ from those who did not.

Response rates

A total of 267 surveys were completed. Response rates for each survey population are detailed below.

Table 1: Response rates

Survey population	Surveyed	Respondents	Response rate
Undergraduate students	421	115	27%
Graduate/professional students and postdocs	173	73	42%
Faculty and staff team leaders	123	79	64%
Total	717	267	37%

These response rates are a “rebound” from last year when the response rate was 24% but are similar to response rates prior to the pandemic. The response rate for team leaders increased from 30% to 64% and the undergraduate student response rate increased by 10%. The graduate student response rate remained steady.

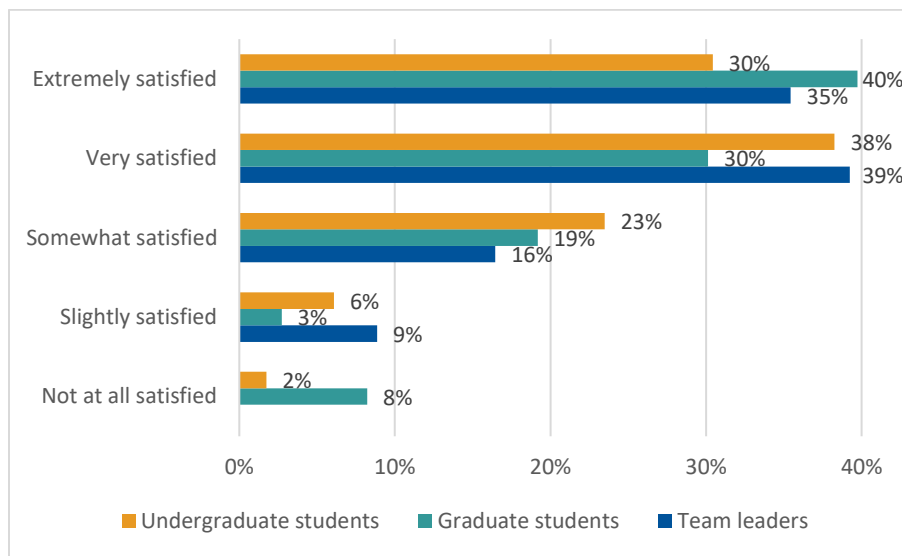
Team leader respondents include both faculty and staff members leading a team. Graduate/professional student and postdoc respondents (referred to hereafter as “graduate students” for simplicity) include 42 master’s/professional students (57%), 20 doctoral students (27%), 6 medical students (8%) and 5 postdocs (7%).

Satisfaction with the Bass Connections experience

Most respondents reported being either “very” or “extremely” satisfied with their Bass Connections team experience. That said, there are a few participants in all survey groups who report being dissatisfied with their experience. Graduate students tend to report the most variable experiences.

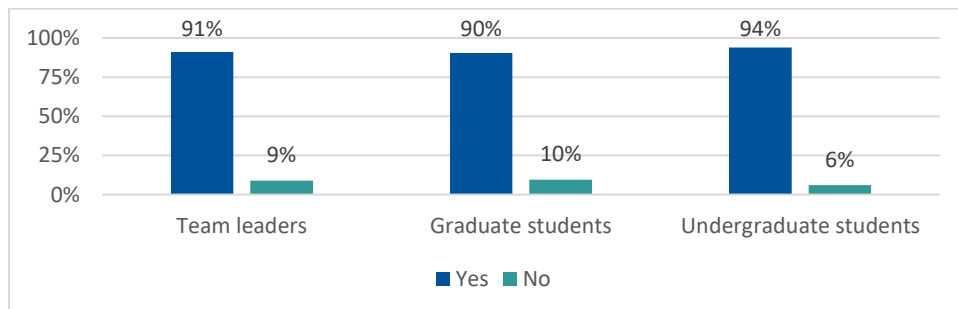
These satisfaction levels are similar to last year’s, although the average satisfaction of team leaders decreased while graduate student satisfaction increased — on a 5-point scale ranging from “not at all satisfied” (1) to “extremely satisfied” (5), the average response for team leaders dropped from 4.2 last year to 4.0 this year, while the average response for graduate students increased from 3.75 to 3.9. Chart 1 shows satisfaction levels by response group.

Chart 1: Satisfaction rates among Bass Connections participants



As another measure of participant satisfaction, we ask whether students and team leaders would recommend the program to a friend/colleague. As shown below, more than 90% of all respondents would recommend the program, with undergraduate students being the most likely to recommend the program. Compared to last year, both graduate and undergraduate student recommendation rates increased, up from 82% and 89% respectively. However, the percentage of team leaders who said they would recommend the program dropped slightly from 93%.

Chart 2: Recommendation rates among Bass Connections participants



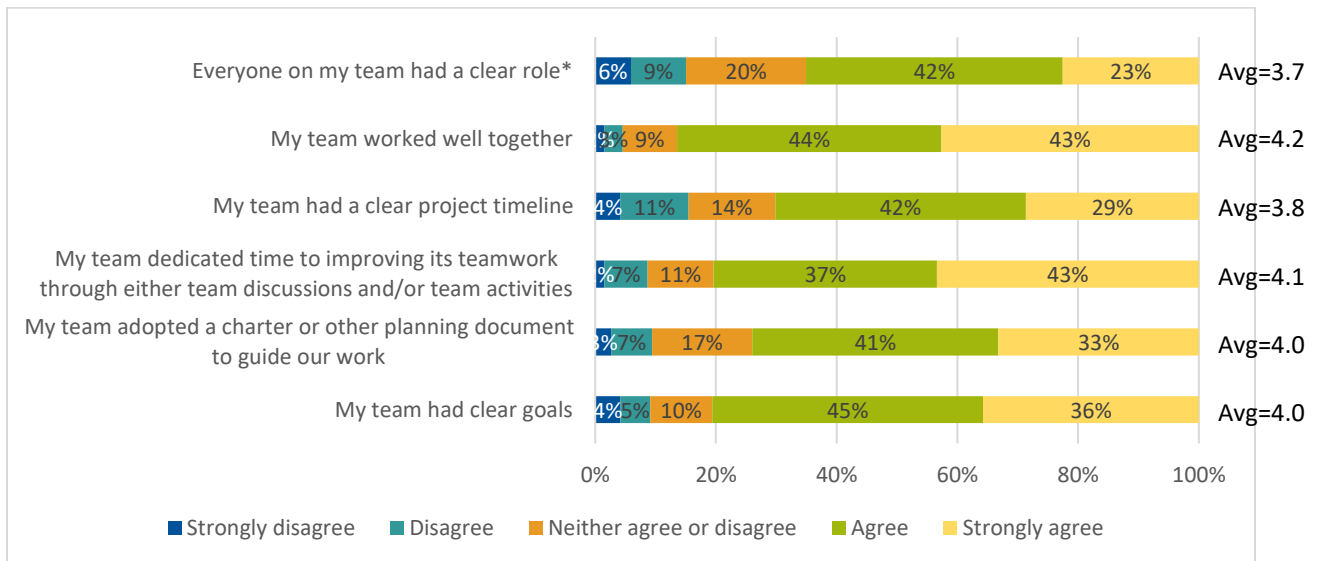
Team organization and culture

Our program evaluation efforts over the past nine years have repeatedly demonstrated the connection between team organization and culture and participant satisfaction and research outcomes. As such, we ask a set of questions intended to assess how well teams are operating.

All survey populations were asked to respond to a set of questions designed to assess the extent to which participants had a clear sense of the project goals and timeline, understood their role in contributing to the project and felt that the team worked well together. On a five-point scale, where 1=strongly disagree and 5=strongly agree, the average response on most questions was around a 4, which translates as “agree.” However, as shown below, a small number of respondents did not agree with these statements. Respondents were most likely to disagree that they had a clear role on the team and a clear project timeline.

The chart below represents responses for all graduate and undergraduate students and team leaders combined. Responses were aggregated across survey groups because there was minimal variability in the sentiment across these populations. One notable exception to this is that team leaders were more likely to agree that their team had a clear timeline and goals. We have observed similar discrepancies in prior years, and we hypothesize that the difference arises because team leaders tend to have the best sense of the project direction but do not always succeed in communicating this information to students — either because they do not share the information, or because they do share it, but students do not internalize it as communicated.

Chart 3: Extent to which participants agree that their team followed teamwork best practices



* Only graduate and undergraduate students were asked this question; all other items were asked of graduate and undergraduate students and team leaders.

Select survey groups were asked a few additional questions regarding team organization and challenges, as noted in table 2.

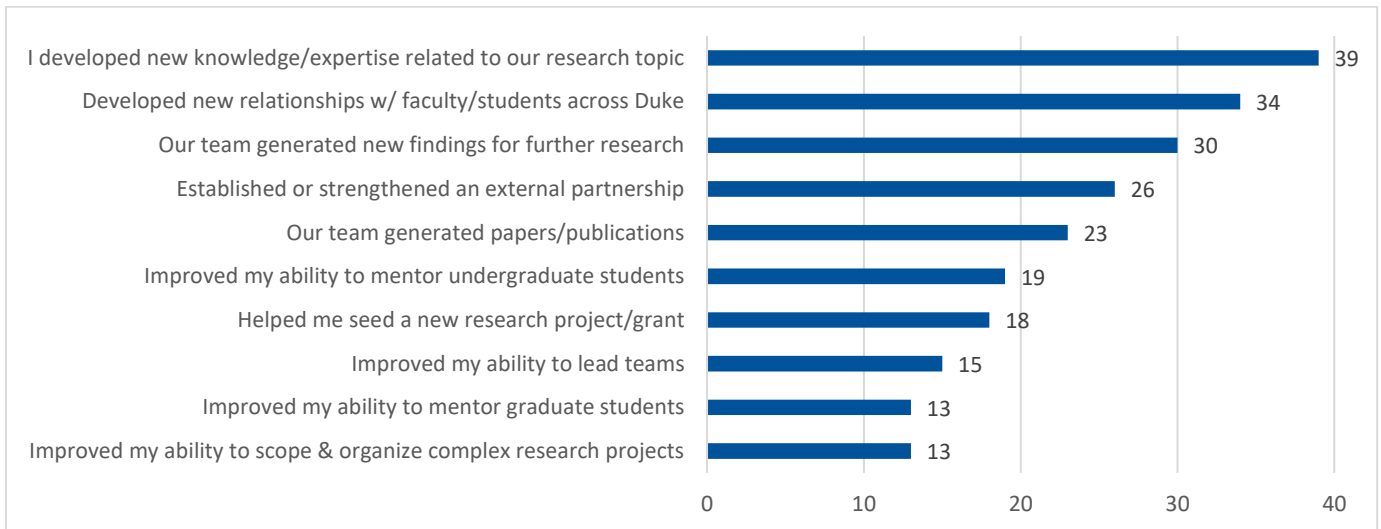
Table 2: Agreement rates related to program support and initial communications

Question	Survey group	Average response on 5-point scale
I felt supported by my theme leader(s) and staff	Team leaders	4.5
The goals for the Bass Connections program (i.e., not just my team) were clear to me from the start	Team leaders	4.4
Bass Connections/my team leader provided clear information before the program began	Graduate and undergraduate students	3.8

Team leader benefits

When team leaders were asked to rank the top three ways in which they benefited from participating in Bass Connections, their responses spotlighted the opportunity to develop new knowledge and expertise, build new relationships and generate new research findings. Compared to last year, team leaders were significantly more likely to report that they developed new knowledge or expertise.¹

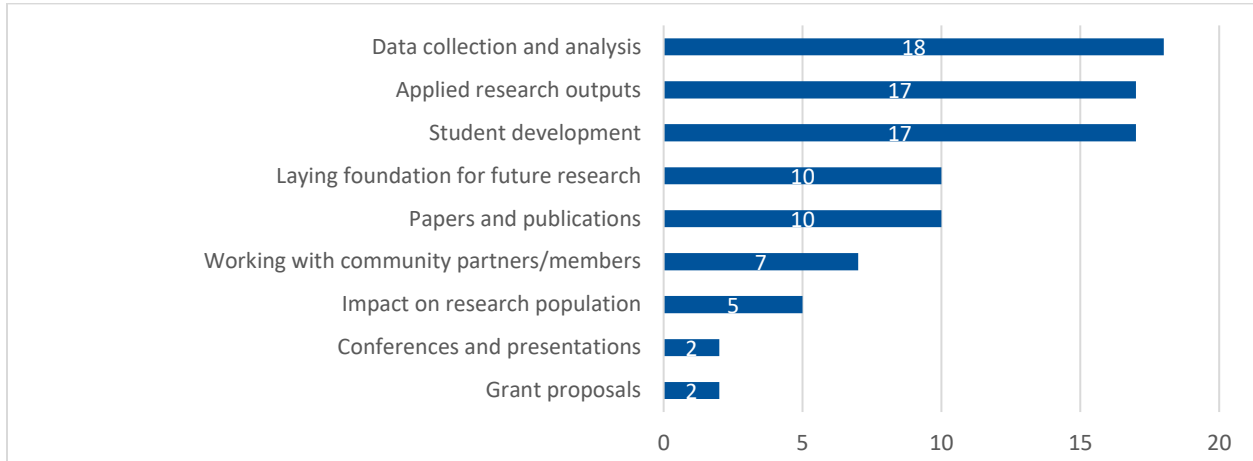
Chart 4: Top three benefits as ranked by team leaders



To assess the range of research outcomes from teams, we asked team leaders to respond to an open-ended question about the most meaningful outcome of their teams' work. While this question was designed to address project outcomes, it is interesting to see that "student development" was one of the most cited outcomes. Chart 5 shows themes coded from the 60 written responses received.

¹ In 2021-2022, this was the sixth most cited benefit, whereas this year it was the most common.

Chart 5: Coded themes from written team leader responses regarding the most meaningful outcome of their teams' work



We have listed a sampling of responses below to add context to these themes. Although we have grouped these comments by topic, many comments span more than one topic. It is also important to caution that individual comments do not necessarily represent the experience of most participants.

Data + Papers and publications

“We currently have a one-of-a-kind dataset and a paper that is drafted and being prepared for publication that demonstrates how the team’s work increases the ability for satellite-based analysis of infrastructure and natural resources to be scaled up; this is good news for monitoring changing energy infrastructure and its real-time impact on climate change.” — Team leader

“Incredible data that we will publish soon.” — Team leader

Applied research outputs

“Development of a court observation tool that will not only be used in our research, but can also be a valuable tool for trauma education efforts within any court system.” — Team leader

“A very promising technical result that can be developed into a major breakthrough.” — Team leader

Student development

“Ph.D. student leadership development.” — Team leader

“I feel like the students have learned how to exercise autonomy and creative problem solving in their work rather than simply answering a detailed prompt or checking a box to get a grade.” — Team leader

“All students got a lot of hands on experience ... They are coming away with a really meaningful skillset and they were able to apply that knowledge to independent research questions.” — Team leader

Laying foundation for future research

“Just building the scaffolding for the research has been huge — we have begun collecting data as well, but building the tools was the most helpful “lift” the team provided this year.” — Team leader

“A sense of community and laying the foundation for future research, really sharpening how I want to engage art+science in my own scholarship and creative work.” — Team leader

Working with community partners/members

“Developing deep relationships with community partners, peer institutions and fellow researchers. By virtue of our research work with Bass Connections, we are in prime position to impact children and families through external funding opportunities and the development of future practitioners trained in the implementation of our work.” — Team leader

Impact on research population

“More high-risk, underserved people feel cared for and remembered.” — Team leader

Grant proposals

“The data will contribute to at least two publications (with the team members as co-authors) and constitute a foundation for future collaborative grants from extramural sources.” — Team leader

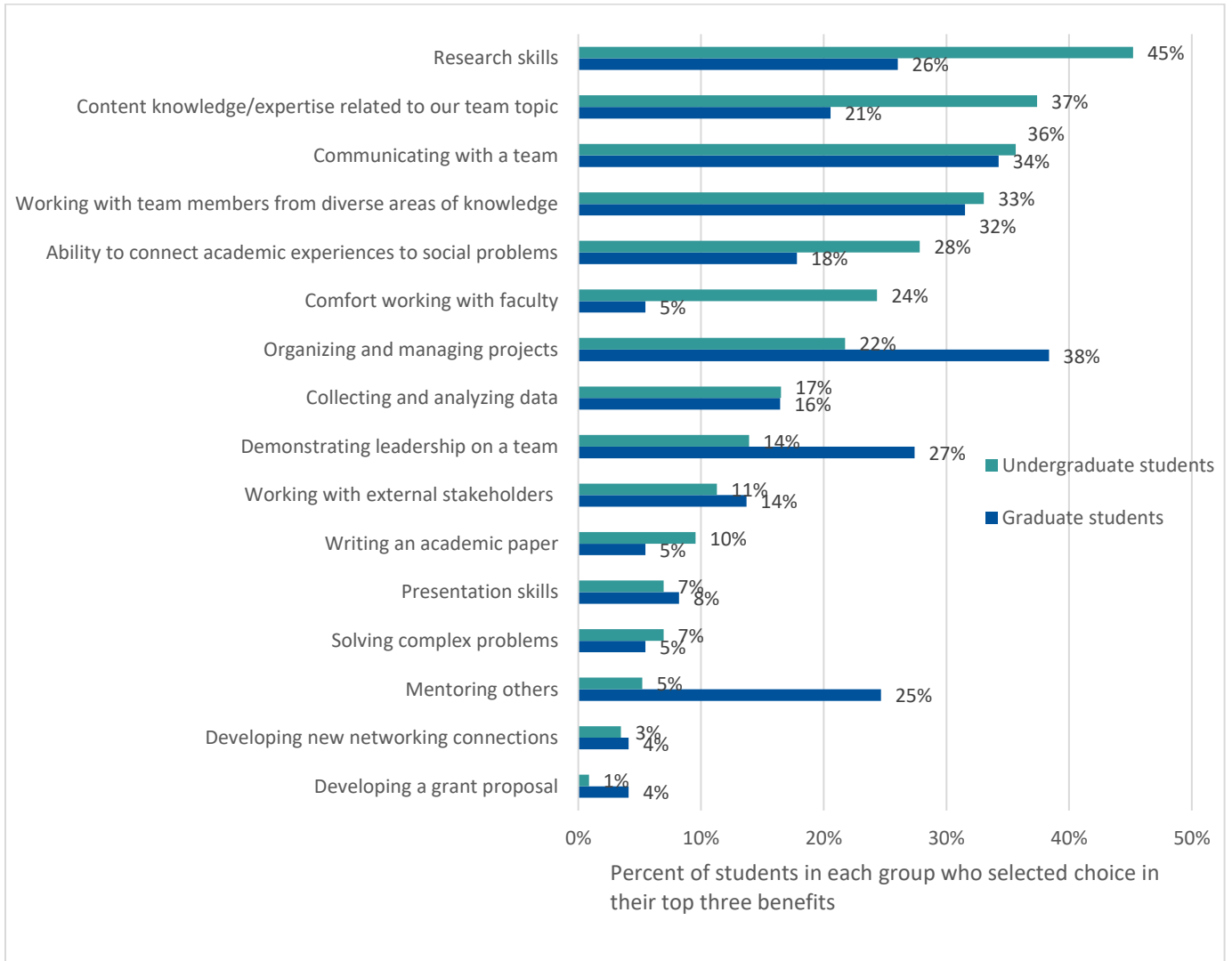
“Collaborations and opportunities for future funding.” — Team leader

Student growth

When undergraduate and graduate students were asked to rank up to three skills that they believed they most improved upon because of their participation in Bass Connections, students reported a diverse range of benefits, with the ability to communicate within a team placing in the top three for both undergraduate and graduate students (#3 for undergraduate students and #2 for graduate students). For graduate students, “organizing and managing projects” was the top benefit. Graduate students were also far more likely to select “mentoring others.” These differences make sense in the context of student level and the different roles that graduate and undergraduate students often play on Bass Connections teams.

Chart 6 shows the number of students that selected each skill among their top three areas of development.

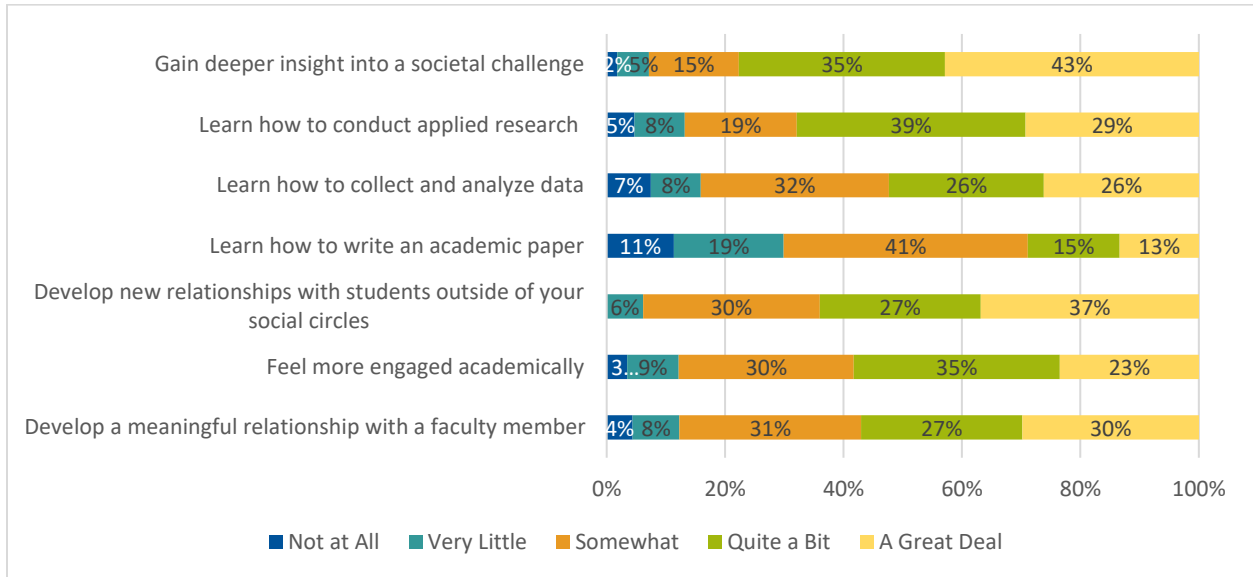
Chart 6: Top three skills students report developing because of participation



Student benefits

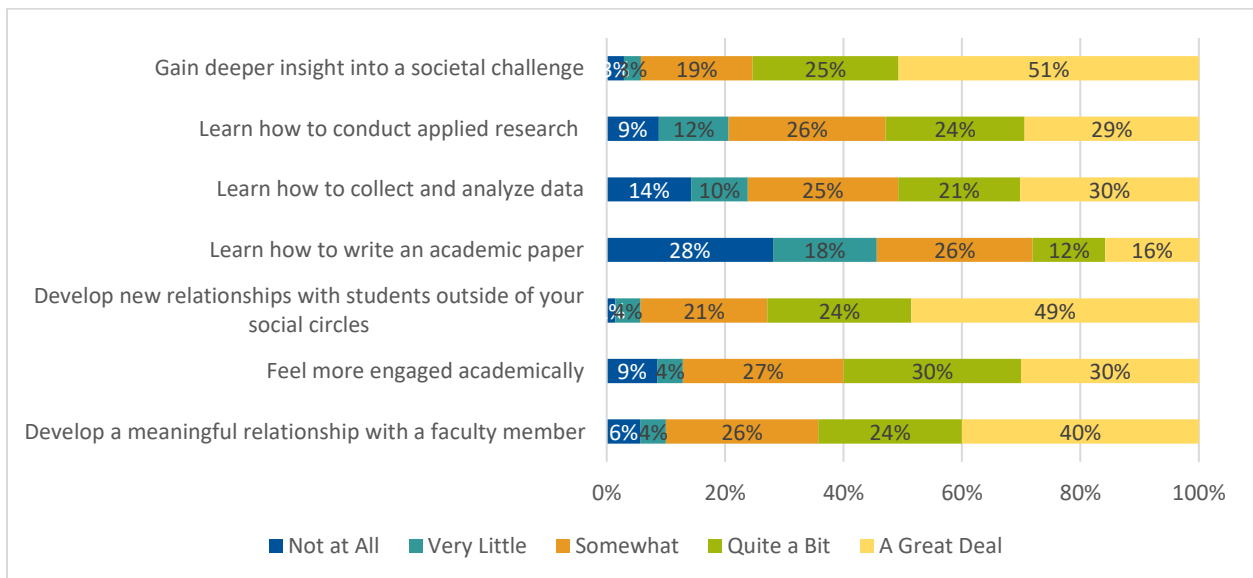
When undergraduate students were asked to what extent the program helped them develop skills, connect with others and develop an academic passion, most students reported positive benefits. In particular, high numbers of students reported that the program helped them gain deeper insight into a societal challenge, learn how to conduct applied research and develop new relationships with different students. Students were least likely to report that the program helped them learn how to write an academic paper, which makes sense given that not all teams produce such works.

Chart 7: Extent to which undergraduate students agree that the program helped them ...



When graduate students were asked the same question, they were also most likely to report that the program helped them gain deeper insight into a societal challenge. Compared to undergraduate students, graduate students were more likely to respond that the program helped them develop meaningful relationships with faculty and develop relationships with students outside of their social circles, whereas undergraduate students were more likely to indicate that the program helped them learn how to conduct applied research.

Chart 8: Extent to which graduate students agree that the program helped them ...



When graduate students were asked to comment on how they envision applying the skills they developed through Bass Connections in their future career, students most frequently mentioned a range

of “soft skills” including leadership, communication, teamwork and project management (n=23).² The second most frequent theme students mentioned related to the development of technical knowledge and skills, particularly related to research (n=17). Other themes included the development of teaching and research management skills that students believe will benefit them in future academic careers (n=10), the ability to work with external community members and partners (n=6) and the opportunity to develop a network that students can rely on in the future (n=3).

A sampling of comments include:

“As the project manager, I have demonstrated team management and effective interpersonal skills. Often academics are pigeon-holed as not being team leaders, and this a great experience to show otherwise.” — Graduate student

“I feel much more confident that I can lead a team of undergraduate and graduate student researchers to do meaningful work.” — Graduate student

“I worked a lot with GIS [Geographic Information System] in my project and GIS is something that I will be using in my job after graduating as well.” — Graduate student

“Taking a leadership role within my Bass Connections team has given me experience in managing teams with diverse skillsets and differential engagement. I could foresee this skillset being particularly helpful in residency where one must manage the competing priorities and varying stages of training to make a cohesive team and further care for the patient.” — Graduate student

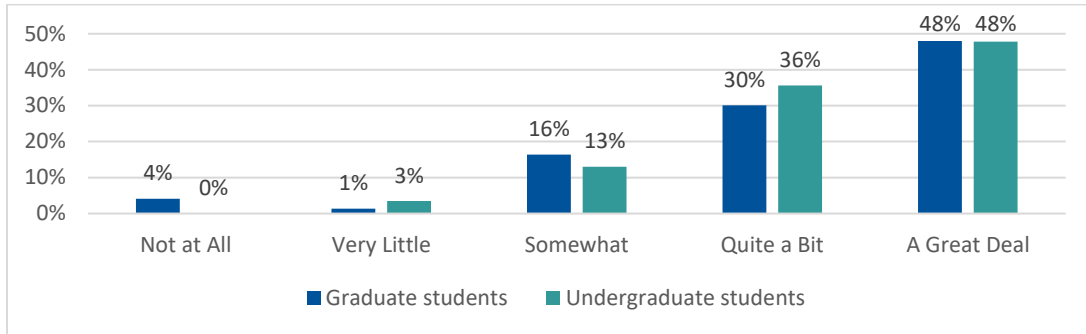
“The skills I built from working and leading a team that seeks to transfer research and data findings from an academic setting to policy or community-based interventions are transferable skills for my future career path, where I seek to work in health equity and equal access to health care services.” — Graduate student

“Upon graduation, I hope to pursue a career in academia. The leadership, teaching and mentoring experience I’ve gained through Bass Connections position me to be a strong job market candidate in the fall.” — Graduate student

When graduate and undergraduate students were asked to what extent the program provided something unique to their learning experience at Duke, 84% of undergraduate students and 78% of graduate students either said “quite a bit” or “a great deal.”

² 53 students responded to this question.

Chart 9: Extent to which students feel the program added something unique to their learning experience at Duke



Class of 2023 Senior Survey: Comparison between Bass Connections participants and non-participating students

The Class of 2023 included 428 students who had participated in one or more Bass Connections experiences during their undergraduate career — representing ~25% of the class. One hundred and fifty-two of these students (~36%) responded to the Duke senior survey — this response rate is comparable to the overall response rate of 34%. By comparing the responses of students who participated in Bass Connections with those of students who did not participate, we can learn more about how the experience of Bass Connections students differs from that of other students. However, we caution that these differences may not be a direct result of participation in Bass Connections and may be related to the inherent differences between these two student populations and/or the range of other activities that students engage in during their undergraduate student experience.

However, by comparing the responses for Bass Connections students and non-participating students from 2016 to 2023, we can identify persistent trends. Key differences between Bass Connections participants and other graduating seniors in 2023, and in prior years, include:

- **Satisfaction with aspects of the Duke experience:** When students were asked about their satisfaction with various aspects of their time at Duke, Bass Connections students responded similarly to other students on most items. The only notable and persistent difference between the two groups is that Bass Connections students were more likely to be satisfied with the opportunities to participate in research with faculty.
- **Activities:** Bass Connections participants were significantly more likely to report engaging in the following activities during their undergraduate career (asterisks indicate particularly large differences): academic clubs, honor societies, or professional associations; independent study;* “other” student organizations; publishing or presenting a paper off-campus; conducting research with a faculty member;* other research experiences;* participating in a service-learning course; doing service work; and participating in student publications.
- **Applied knowledge:** Bass Connections students were much more likely to indicate that they had the opportunity to apply their academic knowledge to have an impact on social issues of importance to them while at Duke.

- **Skill development:** Bass Connections students were more likely to indicate that during their time at Duke they improved their abilities to write clearly and effectively; understand the process of science and experimentation; understand the complexity of social problems; judge the merits of arguments based on their sources, methods and reasoning; and create original ideas and solutions.

Interestingly, from 2016 to 2020, graduating seniors who had participated in Bass Connections were not more likely to report that their time at Duke had improved their ability to function effectively as a member of a team (except for in 2017). But in the past two years, Bass Connections students have been significantly more likely than other students to agree with this statement. The lack of persistent differences between these two groups may be because students are often exposed to teamwork in other facets of the curriculum. This is evidenced by the fact that the average response to this item, for both populations, was relatively high (between "quite a bit" and "very much"). It will be interesting to see if the growing gap that emerged in the past two years persists in future years.

- **Resiliency:** Bass Connections students were more likely to report that since starting at Duke they are better at finding topics that they are passionate about; developing meaningful and supportive friendships with other students; developing relationships with faculty members and/or others who work at Duke; and identifying and developing career skills aligned with their interests.
- **Faculty relationships:** Bass Connections students reported knowing more faculty members well enough to request a professional recommendation and were also significantly more likely to say that they expected to stay in touch with faculty after graduation.
- **Post-graduation plans:** Bass Connections students were less likely to indicate that they plan to work full-time for pay in the fall following graduation and more likely to indicate that they plan to attend graduate or professional school. When asked in which sector they expected to be employed, Bass Connections students were more likely to report plans to work in the public or non-profit sector and less likely to report plans to work in the for-profit sector. Bass Connections students reported a slightly lower average starting salary, which likely correlates with the higher number of students moving into the public/non-profit sector. Bass Connections students were also more likely to indicate that they plan to do service or volunteer work (paid or unpaid) in the coming year.
- **Life goals:** When students were asked how important different aspects are to them in the future, Bass Connections students were more likely to report valuing working for social and political change; volunteering; participating in politics or community affairs; learning about other cultures and nations; getting to know people from diverse backgrounds; and contributing to science and innovation. Bass Connections students were less likely to place value on being successful in a business of their own and being well off financially.

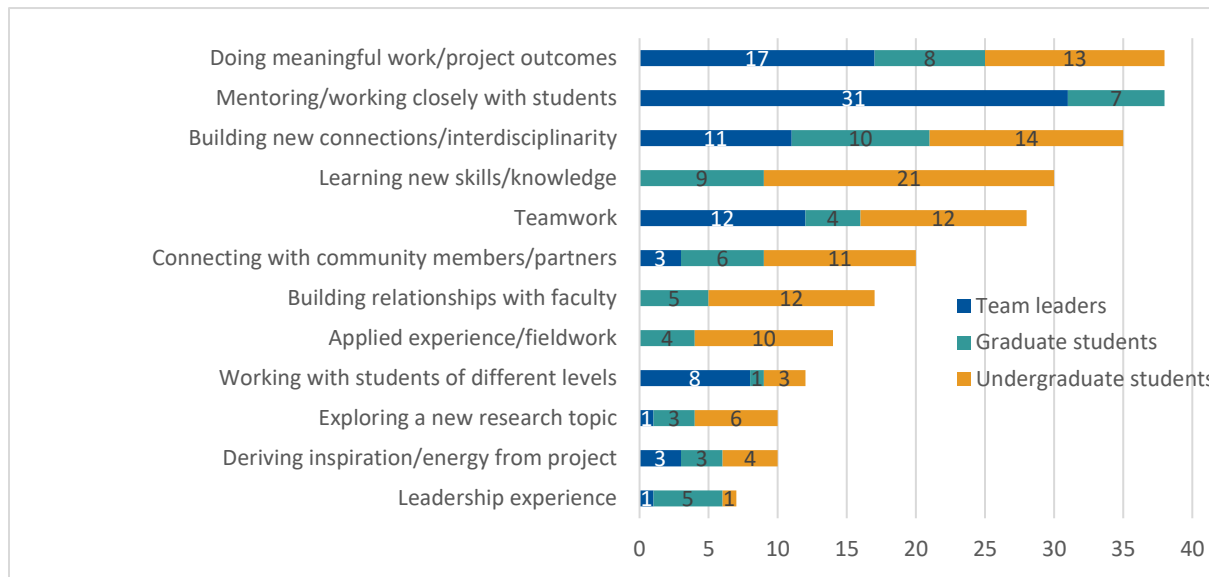
Many of the findings above make sense given that Bass Connections attracts students who are interested in conducting research related to societal challenges and the program gives those students the opportunity to develop their research skills under the mentorship of faculty.

Reflections on the most valuable aspect of Bass Connections

When respondents were asked to reflect in writing on the most valuable aspect of their Bass Connections experience, common themes emerged across all respondent groups including the opportunity to build new connections, do meaningful project work and develop new skills. Faculty and

graduate students were most likely to mention the opportunity to mentor students. The chart below shows themes coded from the 188 written responses received.³

Chart 10: Coded themes from written responses about the most valuable aspect of Bass Connections



A sampling of these comments is provided below to add further context. Although we have grouped these comments by topic, many comments span more than one topic. It is also important to caution that individual comments do not necessarily represent the experience of most participants.

Mentoring/working closely with students

“Seeing students gaining knowledge and then being able to contribute that back to the research in a meaningful way.” — Team leader

“The most meaningful aspect of the Bass Connections experience was creating connections with undergraduate students, providing mentorship to these students and seeing their buy-in to the project grow as they were given their own agency in steering the direction of the project.” — Graduate student

“Personal connections to students, especially undergraduates, whom I would not have known otherwise; and the opportunity to connect students to community partners so that they are better prepared to do community-based work in the future.” — Team leader

“I am very grateful for the chance to work closely with students on matters of moral and social importance. It is a privilege to work with them.” — Team leader

³ Written response numbers by group: Undergraduate students=79; Graduate students=48; Team leaders=61.

Doing meaningful work/project outcomes

“The most meaningful aspect of my Bass Connections experience was the fact that I felt like my work was actually making an impact on the community.” — Undergraduate student

“Bass Connections has enabled our team to build an infrastructure for undergraduate research that is a model for other institutions around the country that are engaged in similar work. With the support of Bass Connections, we have been able to leverage our body of work to support larger initiatives that will impact children and families across the state and region.” — Team leader

“Working on a project with a team that is seeking to make real-time changes to improve the quality of care for minority populations.” — Graduate student

“As medical students, we do not have many opportunities to interact with folks outside of the medical school. More importantly, engaging in non-clinical work or projects outside of the medical school is rather difficult, despite being important for understanding the greater implications of health care and health systems. This project allowed me to step out of the explicitly physician-based mindset to expand my network and conceptions of what health care means in the larger social context of the LGBTQ+ community.” — Graduate student

Building new connections/interdisciplinarity

“I loved forming relationships with other undergraduate students, grad students, and faculty members that I would otherwise have never met.” — Undergraduate student

“Meeting other students from different programs/backgrounds. They brought a really unique perspective to the things we had to do.” — Graduate student

“Getting to know a colleague who had a different background and expertise from me.” — Team leader

“I've been so pleased with the diversity and broad interest of students that Bass Connections brings in to our team, especially when I'm often seeing students in one department. Realizing work is multidisciplinary and having students at various points in their education journey is the most valuable.” — Team leader

“The most meaningful part of my Bass Connections experience was connecting with students and faculty I would have otherwise not known. The masters program I am in can be very insular — we have little to no contact with undergraduate students ... Likewise, it introduced me to interdisciplinary faculty whom I would have otherwise not gotten to know. This will be shaping some of the research and/or classes I join in the future at Duke. It deepened my sense of community and broadened my understanding of the research topic.” — Graduate student

“I collaborated weekly with students from Uganda which was a very valuable learning experience!” — Undergraduate student

Learning new skills/knowledge

"I felt like I was able to develop invaluable research and writing skills that I know I will carry with me through my professional career." — Undergraduate student

"Getting to know how statistics are used in other research areas and how statistics can be applied and inform public policy decisions." — Graduate student

"In my Bass team, I got to conduct my own research. It was a great way to learn how to collect my own data and analyze my own results as well as be able to learn how to best write my own research paper. It was a very formative experience and helped spark my love for research in neuroscience." — Undergraduate student

"I came into my Bass Connections team never having been on a research team, and with very little experience in data analysis and research. I will leave my Bass team with confidence in using data analysis tools, such as R Studio, comfortably." — Undergraduate student

Teamwork

"I enjoyed learning how to conduct research and data analysis as part of a team. I had never had the opportunity to do something like it before and we were researching an issue that I cared a lot about." — Undergraduate student

"I think it's being able to work with a team and the entire teamworking experience that makes it really memorable. Working with people towards a common goal, making friends along the way, and doing research is what made Bass memorable and insightful for me." — Undergraduate student

"I think working with a diverse group of people for a research project was the most meaningful. I was able to develop skills for working on a team and to understand how I work best as both a leader and a follower. It was helpful to also have perspectives from graduate students as well." — Undergraduate student

"Working with a strong cohesive team to generate data on an important topic." — Team leader

Connecting with community members/partners

"It is very meaningful when my interviewees would tell me how grateful they were that I interviewed them for this project because it will make their voices and concerns heard." — Undergraduate student

"Speaking to community members about their lived experiences." — Undergraduate student

"The relationships I formed over sessions with patients and their caregivers." — Undergraduate student

Building relationships with faculty

“I was able to build a relationship with a faculty member who has become an influential role in my life by providing me with resources and research in things that I am extremely interested in.” — Undergraduate student

“Participation in Bass Connections has been one of the highlights of my time at Duke. The most meaningful part of this experience has been the thoughtful mentorship from [team leader]. He cares deeply about our team — not just the project but also the students as individuals. I've learned a lot from him about being a good researcher, leader and mentor.” — Undergraduate student

“Working on a multi-year project was a very special experience for me and I enjoyed the opportunity to work so closely with faculty members.” — Undergraduate student

“Working with our project team leaders was the most meaningful experience. In addition to their wealth of knowledge and deep expertise, they were incredible mentors and sources of support.” — Graduate student

Applied experience/fieldwork

“I was able to engage with the field of environment, the themes of environmental justice, and the community of North Carolina in a wholly unique way. I have not come across an opportunity like this yet, either at Duke or anywhere else.” — Undergraduate student

“The flexible schedule and work-like environment which is different from classroom and assignment experience I usually have.” — Graduate student

“It's a lot more similar to real work experience than regular classes are, so it gave me a better understanding of knowing what I want to pursue.” — Undergraduate student

Working with students of different levels

“I really enjoyed the opportunity to work collaboratively with students at different stages in their academic careers including structuring the project so that graduate students were supervising and organizing undergraduate students.” — Team leader

“Witnessing how the three graduate/postdoc mentors in our team work together as a team to provide the undergraduate members a stimulating learning environment. Their growth with the mentees was made possible by the structure of Bass Connections, in which the mentors can assume significant responsibilities while receiving input and feedback from the faculty.” — Team leader

“I loved the vertical integration. Bass Connections was a huge time investment, but the experience and the scientific outcome were phenomenal.” — Team leader

Deriving inspiration/energy from project

“Leading the year-long course and integrating our collaborators was extremely fulfilling for me.” — Team leader

“Working with students and faculty in doing unique research is inspirational.” — Team leader

“Getting to take lead on research that is exactly what I want to do with my life. Discovering my love of lab work!” — Undergraduate student

Exploring a new research topic

“It was meaningful to get to do something completely different from any other experience at Duke. I often found it hard to describe what my team was doing, because it was so ‘out there’ and different and creative. It was cool to feel like we were doing something new and exploratory.” — Undergraduate student

Leadership experience

“Having the opportunity to grow as a leader and project manager. I’m glad I’ll have the opportunity to build on these skills even more next year with a new team of undergraduate students.” — Graduate student

“Experience developing a big applied research project and working with students to make it happen. Mentoring and collaborating with students (although very frustrating at times!) was super rewarding.” — Team leader

“Being able to lead a subteam of students, which dramatically expanded my leadership abilities.” — Undergraduate student

Reflections on the most challenging aspect of Bass Connections

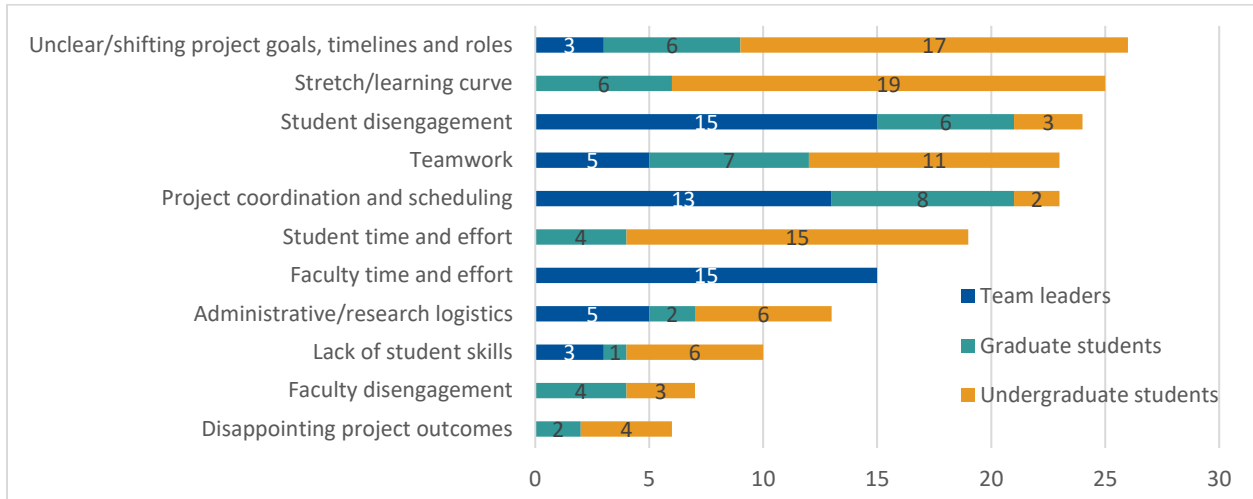
When respondents were asked to reflect in writing on the most challenging aspect of their Bass Connections experience, common themes included unclear or changing project goals and timelines; a lack of time or engagement for both team leaders and students; and challenges related to project coordination and teamwork.

Team leaders specifically remarked on the challenge of not receiving teaching credit for leading a project — which is the norm for most faculty given that Bass Connections sits outside of curricular structures and is a hybrid research education program. Despite the research benefits, each year, faculty remark on the amount of time that it takes to mentor students in the research process.

Interestingly, one of the most common “challenges” reported by students was feeling pushed out of their comfort zone while developing new skills — with a few exceptions, these comments were framed as a positive challenge. Chart 11 shows themes coded from the 189 written responses received.⁴

⁴ Written response numbers by group: Undergraduate students=79; Graduate students=48; Team leaders=62.

Chart 11: Coded themes from written responses about the most challenging aspect of the program



A sampling of these comments is provided below to add further context. Although we have grouped these comments by topic, many comments span more than one topic. It is also important to caution that individual comments do not necessarily represent the experience of most participants. Indeed, in a few instances in which we had quantitative survey data available, we have added those numbers to provide a sense of the degree to which individual comments align with the general sentiment of survey respondents.

Unclear/shifting project goals, timelines and roles

“We had a faculty team, and sometimes it was hard to know our individual roles. It took us a while to learn to rely on the project managers (graduate students) to organize the weekly goals and workflow. Once we did, everything went smoothly — the PMs were amazing.” — Team leader

“Having a full understanding of the long-term goals of the project was difficult. It felt like we were just doing the same thing but there was no overarching purpose to recording data. I wish we had been more involved in planning for the team and discussing team goals.” — Undergraduate student

“While the content and goals of the lab were super interesting and rewarding, some of the challenge came from the project having a lack of clear direction and organization at times. Many times, I couldn’t understand ‘why’ we were doing the things we were doing ... I really liked the project, but I wish the purpose/organization had been clearer. I want to note, however, that I don’t think future Bass Connections projects should be over-organized and then suffer from having their creativity and exploration stifled. But, there should be a balance.” — Undergraduate student

Stretch/learning curve

*“Learning how much more complicated it is to conduct a study with all the logistical hurdles than it is to dream up the ideal study in which there are no practical obstacles.”
— Graduate student*

*“My team leader gave us/me a lot of freedom to figure things out on our own, which taught me a lot, but at times felt like I was lost. Overall, it helped me become a better student and learn how to engage in academic material in a meaningful way.”
— Undergraduate student*

“It was sometimes challenging in the literature review stages of our work to trust that what I was doing was valuable. Sometimes it got overwhelming combing through all the lit, but I do think those challenges just made my Bass Connections experience more valuable.” — Undergraduate student

“I had to learn how to do data analysis using R almost on the fly, but I received a lot of support from the grad students.” — Undergraduate student

“Stepping outside my comfort zone and presenting/sharing my research and ideas with people who are far more experienced.” — Undergraduate student

Faculty disengagement

“This year was an incredibly challenging experience. Team leaders had extremely varied levels of commitment and participation. Students had to be constantly pushed and reminded to do even the most basic work to move the project forward. The Bass model really only works when the full team is committed (or at least most) — that was not the case this year and led to a lot of imbalances and a generally stressful and dissatisfying experience.” — Team leader

“Unclear faculty expectations. Unclear faculty management. Most of the onus of leading the course/participating in research was on our grad student whose first time it was also doing this research ... It felt like the blind leading the blind.” — Undergraduate student

Student disengagement

*“People in my group did not contribute equally, at all. It seemed like I put in the most effort for communicating, scheduling, and the whole, actual construction part of the project.”
— Undergraduate student*

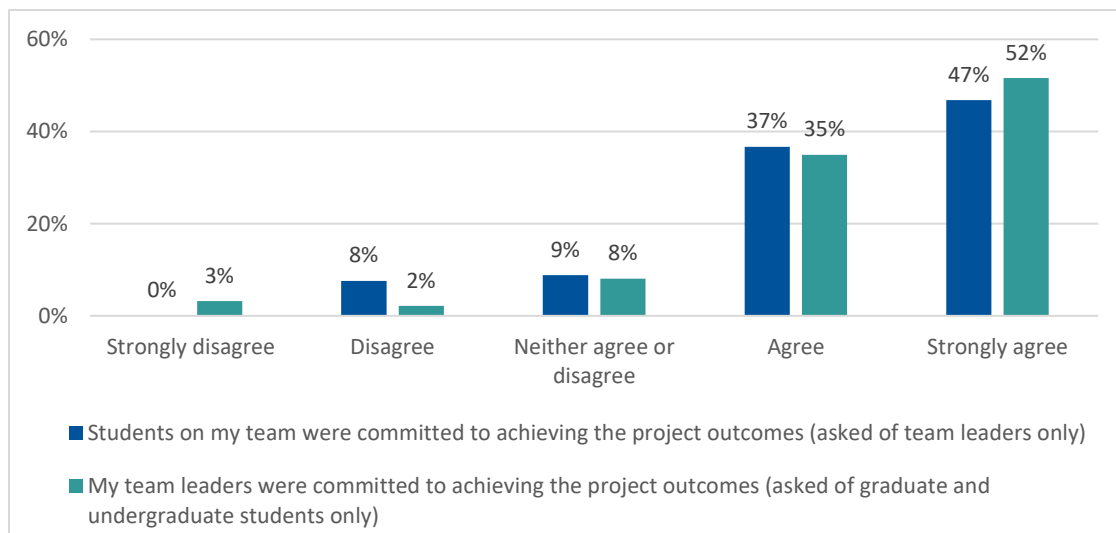
*“A decent share of our undergraduate students were not highly engaged in the work of the team and seemed to be doing the bare minimum to get credit. We tried of variety of strategies for engagement and increasing energy among the undergraduates but ultimately we were pretty disappointed in their low energy and lack of engagement.”
— Team leader*

“This is my second year as a team leader, and I still have the feeling that students put Bass Connections as last priority in terms of academics. With clear direction and expectations,

students do meet these expectations, but they often do the bare minimum and rarely go above and beyond these expectations.” — Graduate student

While written comments indicate that faculty and student engagement levels were a challenge for some teams, the quantitative survey data suggests that these experiences are not commonplace. As shown below, when students were asked about the commitment of their team leaders and team leaders were asked about the commitment of their students, most respondents agreed or strongly agreed that their counterparts were committed. Given the number of comments in which students indicated frustration with the commitment of their fellow student team members, it might be informative to add a question in future years that asks students to reflect on the commitment level of their fellow students.

Chart 13: Extent to which participants agree that students and team leaders were committed



Teamwork

“Collaboration with other students was very challenging. It was difficult to establish specific roles and responsibilities, while making sure that everyone was held accountable for them.” — Undergraduate student

“We didn’t have nearly enough structure or communication. There was constant tension with UGs about expectations and certainly too many cooks in the kitchen. The students don’t have the capacity to see the importance of investing time and effort into creating the infrastructure to ensure the program we developed can last (e.g., don’t want to talk about long-term visioning, communications and outreach, vision and mission statements).” — Team leader

“Collaborating with team members when we often had different ideas, but could only produce one interview guide which we all had to follow.” — Undergraduate student

“Our internal dynamics on this team never took off. We tried social events, team meetings, etc., but our full team work sessions and interactions between student and faculty were not great ... The students executed everything we asked them to do well. But the body

language, energy level, and participation were low and disappointing whenever we were together. It was a bit of a struggle.” — Team leader

Project coordination and scheduling

*“The time difference: I am not sure having Duke and DKU teams in the same project can work. Very often, we end up having separate sub-teams at the two locations.”
— Team leader*

“The difficulty in finding a common availability as faculty, grad students and undergrads all have different timeline and schedules.” — Graduate student

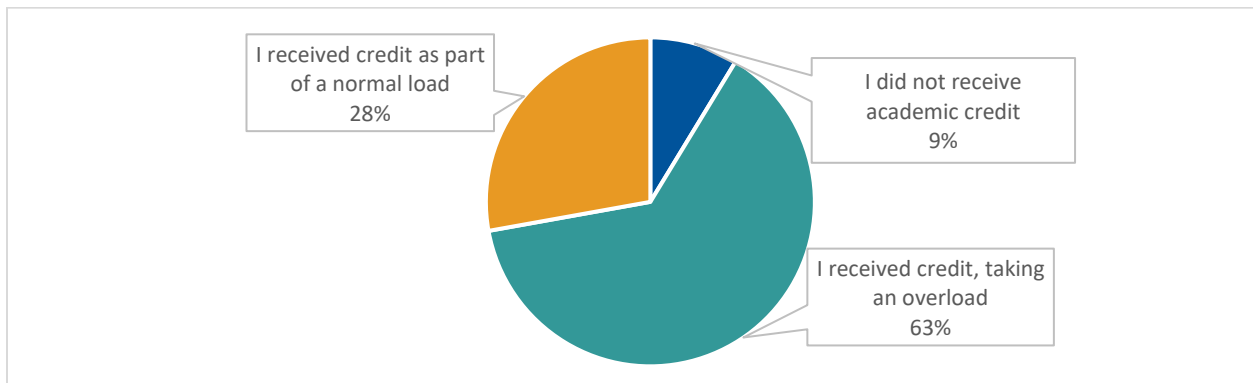
Student time and effort

“Students should not be taking Bass Connections as a 5th or 6th course if they are already taking 4 demanding courses. Bass gets considered “extracurricular” to students and gets put aside when they have exams or papers due in other classes.” — Team leader

“The most challenging part for me was attendance, especially this semester. For no one’s fault but my own, I failed to demonstrate the level of commitment I had promised my team.” — Undergraduate student

One possible reason why some students struggle to dedicate the necessary time to their teams is the large number of students who participate in the program as part of an “overload” (i.e., taking more than four courses in a semester). As shown below, 63% of undergraduate student respondents indicated that they overloaded. Given that many students are over-committed, Bass Connections might consider how to strengthen guidance to students about overloading, and to team leaders about how to discuss credit loads and options with applicants during the selection process.

Chart 12: Percent of undergraduate students who participated for credit and course load



Faculty time and effort

“The work is real, but it does not count as ‘teaching.’ For most people with grants, doing Bass is not a great idea as it takes time that could be used doing other things. Can the classes count as .5 of a course so that after a year, participants banked one extra course? Departments feel that counting these courses is an issue as it takes away resources.

*Hence, Bass will need to think about paying departments for the course they are losing.”
— Team leader*

*“There is never enough faculty time for Bass Connections projects. Even with exceptional graduate student managers, my experience is that running a successful project takes ten or more hours per week. Many faculty simply put in less time, or they put in the necessary time but then the project becomes a burden on the rest of their responsibilities.”
— Team leader*

*“The fundamental structural problem with Bass Connections is the lack of compensation for faculty. Our faculty leads were highly collegial and all contributed to the project in unique ways, but we are also incredibly busy, and without course relief or other compensation we simply did not devote the time or focus needed to establish clear goals and build the foundational knowledge our students needed to execute the project.”
— Team leader*

“Doing a complex project with no faculty effort support is hard. It is what I agreed to do, but it is very hard.” — Team leader

Administrative/research logistics

“There are a lot of administrative duties and hoops to jump through. I would have appreciated a little more help on that front from Bass staff.” — Team leader

“IRB, using Bass funds for research purposes (participant compensation), getting undergrads on the IRB. This could be improved by providing Bass teams with someone to help with the IRB process and more assistance with using Bass funds for teams that don't have a P Card or designated financial support person.” — Team leader

Lack of student skills

“The most challenging part was walking the line between time spent training students and making progress on the research. Students did not enter with the methodological skills necessary to be contributors immediately, so half the class was dedicated to training students vs. advancing the research.” — Team leader

“I did not feel prepared before joining my team and for the majority of my experience, I felt lost and left behind without much guidance from my team leader. I felt like there were expectations placed on me, like writing a paper or understanding all the research, that I was not made aware of until joining the team.” — Undergraduate student

While written comments indicate that student preparation was an issue for some, the quantitative survey data show that this is not a large-scale issue. When team leaders were asked the extent to which they agreed that “students were sufficiently prepared to engage in the work,” on a five-point scale, the average response was a 4.0. Similarly, when undergraduate students were asked to what extent they agreed that they “felt sufficiently prepared to engage in the project,” the average response was a 3.9. Both results correspond to “agree.”

Disappointing project outcomes

“A lot of the time it felt like we were slowly trudging along and didn't make a lot of progress, which made it really challenging to stay engaged.” — Undergraduate student

*“While the idea of our project made sense, our team lacked meaningful experience with quantitative methods. I do not feel like the results of our project are methodologically sound. Students seemed uninspired by the process by the end of the year.”
— Graduate student*

Conclusion

Most students and team leaders continue to report that Bass Connections provides a meaningful opportunity to conduct productive applied research that contributes to the development of new skills, relationships and passions. Increasingly, teams are deploying common best practices for team organization and project management. That said, the data suggests that there is variability in student and team leader experiences, with some teams struggling to set clear goals, timelines and roles and/or struggling to effectively engage all members of the team and develop a strong team culture.

Bass Connections should continue to support project teams in their efforts to plan and execute their research. The program should also explore strategies for reducing the time burden on team leaders and for setting clear expectations for students around effort and engagement.