AUDIT REPORT

Equity, Diversity, Inclusion and Belonging

The Physics Department
Simon Fraser University

September 2022

Contents

INTRODUCTION TO SFU'S PHYSICS DEPARTMENT'S EDIB AUDIT REPORT

How to Benefit from This Report:

This report highlights successes, opportunities, and the path forward in terms of Equity, Diversity, Inclusion, and Belonging (EDIB).

In this report, you will find strategic recommendations and best practices to support the Physics Department as it evolves through its EDIB maturity journey.

See your Progress: Veza takes a strengths-based approach to each audit. Your department excels in multiple areas - these initiatives and activities have gotten you to where you are today. This EDIB Audit report is a snapshot in time; hence, it may not capture new processes established after the initiation of the audit.

Review conclusion and recommendations: The conclusion and recommendations section is one of the keys to this report. It ties together some key strategic initiatives that the Physics Department can implement immediately. This report will offer various recommendations and opportunities to support the Physics Department's EDIB journey.

Start Implementing Changes: Essentially, we are breaking new ground by evolving the culture of EDIB within the Physics Department by consciously embedding equity, diversity, inclusion and belonging into how the organization operates. It is an exercise in change management. Our mandate is to have more EDIB champions in the world. EDIB Champions advocate for systemic change in their workplace and communities. We facilitate this mandate by strategically supporting EDIB champions in organizations like yours. Veza is here every step of the way as a supportive partner and guide to help your department progress along its EDIB journey.

Let's get started.

EXECUTIVE SUMMARY

In March 2022, Veza conducted two inclusion and demographic surveys, one for undergraduate and the other for graduate students, and facilitated 11 focus groups for undergraduate and graduate students in the Physics Department at Simon Fraser University (SFU).

- Anonymized personal links were distributed to two email lists (graduate students and undergraduate students, which included 77 and 180 students, respectively)
- Three focus groups were offered for graduate students, seven for undergraduate students (2 of which were reserved for PHYS 201 only), and one for both graduate and undergraduate students who identified as women or gender diverse.
- The survey period was from March 4, 2022, to March 28, 2022
- Weekly reminder emails were sent to the two email lists

DATA SUMMARY:

- 67 students participated in at least one focus group, and two students participated in two focus groups. (69 students total: 43 undergraduate students and 26 graduate students)
- 69 undergraduate students and 55 graduate students completed the surveys

The focus groups and surveys aimed to understand students' experiences in terms of inclusion in the Physics Department. Both the surveys and the focus groups provided an opportunity for students to highlight the department's strengths and opportunities to embed inclusivity in its environment further.

Below are Veza's key observations and recommendations for SFU's Physics Department based on student feedback in the focus groups and assessments.

KEY STRENGTHS:

- The Physics Department is committed to making an inclusive environment and supporting students
- Programs and initiatives, such as the "Adopt a Physicist" program, Colloquium, Starry Nights, coffee chats, etc., encourage student engagement in the department
- Professors and staff are generally friendly and approachable in one-on-one settings, as mentioned in the focus groups
- Overall, there is mutual respect among professors, TAs, staff, and students

KEY OPPORTUNITIES AND RECOMMENDATIONS:

- Develop partnerships and invest in raising awareness about the department and funding for scholarships for equity-deserving groups to increase the representation of equity-deserving groups across students, staff, and faculty.
- Provide more information on mental health support provided by the University to students and address stereotypes attached to studying Physics and the pressure that comes with it on the students. Students highlighted that studying Physics is associated with a high level of intelligence, and there is pressure to continuously perform with excellence with little room for mistakes which could lead to an expectation of perfectionism, inhibit learning and cause stress
- Provide training opportunities in partnership with the University's teaching and learning department on inclusive language, microaggressions, implicit bias, and anti-racism for faculty and TAs to support creating inclusive classrooms.
- Highlight the work of researchers from equity-deserving groups so that more students can see that people like themselves can succeed in physics.
- Continue to create more informal and inclusive events and spaces for students to connect, "break the ice," and mingle across groups.
- Provide students with more exposure to industry touchpoints through guest lectures, conferences and alumni talks to enhance awareness of practical applications of concepts and career options

GROUNDING TERMS

Below are some grounding terms used in this report, listed in alphabetical order. Please note that terminology is constantly changing, and the list below may be updated later.

1. 2SLGBTQIA+: Is an acronym for Two-Spirit, Lesbian, Gay, Bisexual, Transgender, Queer and/or Questioning, Intersex, Asexual, and the countless affirmative ways in which people choose to self-identify.
2. Belonging: An individual's sense of acceptance. When employees feel a sense of belonging, they feel empowered and can bring their whole selves to the workplace, meaning they can be authentic, vulnerable, creative, and engaged.
3. Decolonization: Decolonization is reversing the results of colonization and reclaiming Indigenous ways of being, bringing back and restoring Indigenous culture, sovereignty, spiritual practices, and knowledge.
4. Diversity: A range of human differences such as race, ethnicity, gender, gender identity, sexual orientation, age, social class, education, and religion.
5. Diversity of Thought: Diversity of Thought is shaped by our culture, background, experiences, personalities, the way we think, age, and education. All these traits that make us human bring a unique perspective to the workplace and the decision-making process.
6. Employee Resource Group (ERG): employee-led groups that create a safe space for dialogue. These groups are usually based on a shared identity or experience.
7. Equality: the state of being equal (e.g., treating people equally and giving them the same resources and benefits).
8. Equity: Fair treatment, access and opportunity for all people. (I.e., What are the barriers to getting a seat at the table?).
9. Equity-deserving communities: refers to individuals who have traditionally not had access to economic and social opportunities because of discrimination or other societal barriers. This definition considers gender, ethnicity, sexual orientation, age, disabilities, immigration background and low-income status that may qualify an individual as part of a previously excluded population.
10. Gender: Can be referred to as the individual's identity based on cultural and social differences.
11. Inclusion: The practice of creating a sense of belonging and feeling respected and valued. (I.e., Do I belong at the table?).
12. Intersectionality: This term, coined in 1989 by professor Kimberlé Crenshaw, refers to the multitude of diverse identities that intersect. For instance, an immigrant woman with a disability will need to be considered for all of the intersections they identify and live with (i.e., immigrant, woman, disability). By adopting an intersectional approach, we can see this person for their whole self. For more information on intersectionality, view this resource: https://www.law.columbia.edu/news/archive/kimberle-crenshaw-intersectionality-more-two-decades-later
13. Marketing Material: Social media posts, proposals, websites, conference content, and client interactions.
    Othering: Viewing, labelling or treating an individual or group as different (i.e., "us vs. them").

14. People with disabilities: People with long-term physical, mental, or sensory impairments which can hinder participation in society on an equal basis as others due to systems and structures that privilege non-disabled people and discriminate against people with disabilities.
15. Pronoun: A word used as a substitute for a noun. Gender-neutral pronouns include They/Them/Their (Use this when you are unaware of a person's pronouns).
16. Race: A social concept of identifying individuals based on their physical distinctions originating from oppression, conquest, and colonization. In comparison, ethnicity refers to shared cultural experiences, religious beliefs, customs, dialects, or origin.
17. Sex: A biological characteristic determined by specific sex chromosomes.

INTRODUCTION AND METHODOLOGY

Below is a summary of focus groups, the demographic and inclusion climate survey results, findings from the focus groups, and Veza's recommendations to support the SFU Physics Department to further create an inclusive culture and environment for graduate and undergraduate students.

- Surveys:
  - Veza conducted two surveys focused on inclusivity and demographics, one for graduates and another for undergraduate students.
  - Participants were given a personalized link to complete the survey between March 1 and 28, 2022.
  - 69 students completed the undergraduate survey, and 55 students completed the graduate survey.

- Focus Groups:
  - Veza offered 11 focus groups, 7 for undergraduate students, 3 for graduate students, and 1 for a mix of graduate and undergraduate students that identify as women or gender minorities. These were conducted from March 3 to March- 17, 2022. Please see Appendix A for the focus group schedule.
  - A total of 69 students participated in the focus groups: 67 students participated in at least one focus group, and two students participated in two focus groups.
  - Focus groups were 60 minutes long and addressed the following main questions:
    1. What are some strengths of the Physics Department as it relates to your experience and sense of inclusion?
    2. What can be improved?
    3. What would you suggest the Physics Department continue to do, stop, or start doing to foster an inclusive environment?

FOCUS GROUP INSIGHTS

Below are key insights from the focus groups with undergraduate and graduate students. These insights provide greater context for the recommendations highlighted in the following sections of this report. See Appendix A for further details and see the conclusion and recommendations sections for recommendations that we developed from them. Please note that for some of the points below, Veza has indicated whether graduate or undergraduate students raised the issue. If a specific group is not highlighted, both groups discussed the topic in their groups. Additionally, for some of the points, Veza has not indicated whether and how many undergraduate or graduate students highlighted the issue, as it may identify specific individuals.

- Theme 1: Inclusive culture:
    - Many participants highlighted that the SFU Physics Department has a strong culture of inclusiveness. This is due to the department's faculty, staff and students, who all work together to promote a diverse and inclusive learning environment.
    - There is a need for gender-inclusive bathrooms.
    - Undergraduate students highlighted that it is important to clarify the intended audience of each event, initiative, and program. For example, is the event open to both graduate and undergraduate students?
    - Students highlighted that subtle discrimination exists in the department, which is difficult to highlight or address, and is often ignored. Anti-racism and anti-oppression training and bystander training can help in giving people the tools to be able to address subtle discrimination.

- Theme 2: Academic schedule & activities:
    - The majority agreed that the current schedule of courses in the department needs to be revisited. Issues around the academic schedule range from the timing of lecture periods (not conducive to parents or individuals who may have outside jobs) and laboratory schedule, to events in the department such as Colloquium, coffee time, etc., which participants viewed as not being accessible for many students due to timing.

- Theme 3: Coursework:
    - Students noted that not everyone is comfortable asking questions, even during study groups, for fear of being judged.
    - Students remarked that laboratory sessions are not organized and do not often have clear instructions, leading them to write to the Teaching Assistants to seek clarity and to spend almost 3X the stipulated time. Please note that Veza does not have details about specific laboratory sessions.
    - There were also comments about updating the grading system for assignments to make them more holistic. Multiple students highlighted that the Philosophy and Chemistry department's approaches to labs and/or assignments were "ideal" references. Veza recommends consulting with a student committee to determine how to make them more holistic.

- Students reported that they felt pressure to demonstrate intelligence and excellence in ways that could be more discouraging than encouraging. They suggested that these and other stereotypical views of physics majors, in addition to the schedule, made the discipline less appealing to the general population and the majors themselves.

- Theme 4: Industry perspectives:
  - Students have continued to experience anxiety and uncertainty as they approach the end of their studies at the SFU Physics department, often due to their lack of understanding of the various career paths in Physics. Participants want more industry perspectives on the contents and the mode of delivery of course lectures in the department. Students recommended that the department includes industry perspectives in courses through guest lectures and aligning in-class assignments to industry-related projects.

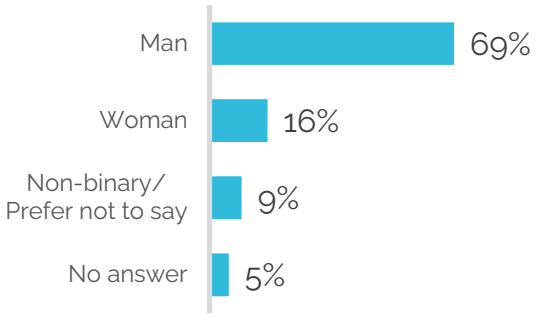
- Theme 5: Diverse representation:
  - Students highlighted the need for the department to make intentional efforts to increase the representation of equity-deserving groups to be a part of the department.
  - Many students felt the orientation sessions could be more inclusive to "break the ice" among new and current students.
  - Prevalence of exclusive “clubs” and “communities” (e.g., PSA) where people know each other makes remaining students feel "excluded."
  - Participants highlighted that fewer women and members of the equity-deserving groups such as the Indigenous peoples, racialized people and members of the LGBTQ2S + communities compared to men and members of dominant groups in North American society, among the faculty, staff and students in the department.

GRADUATE SURVEY

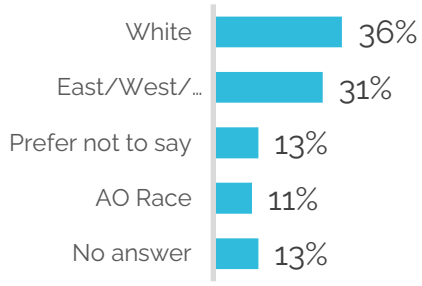
Demographic Results

Total base N=55
n= in charts is the number that answered that question

What is your gender identity? n=52
Select all that apply.

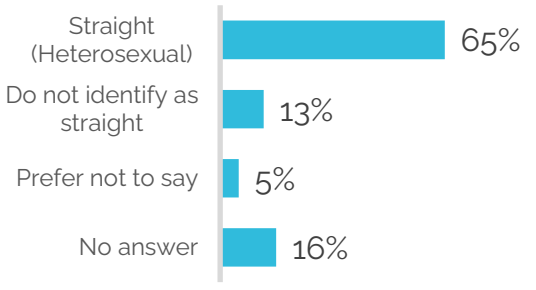


Which of the following population groups do you identify with? n=48
Select all that apply.



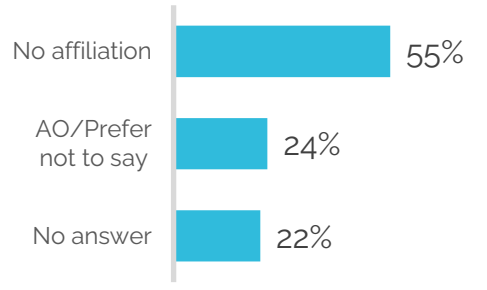
AO Race = Latin American, Black, Mixed, Indigenous person of Canada

Which best describes your sexual orientation? n=46
Select all that apply.

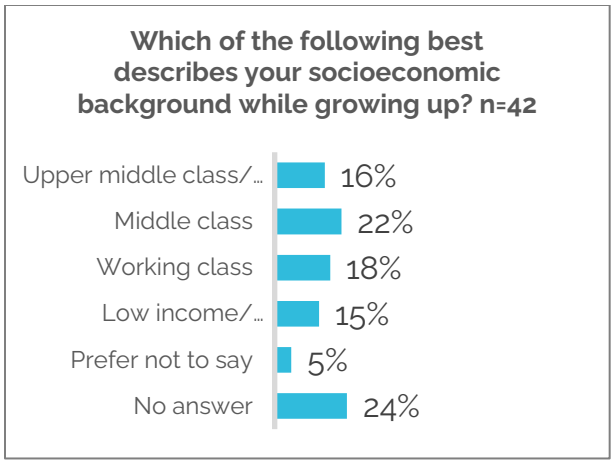


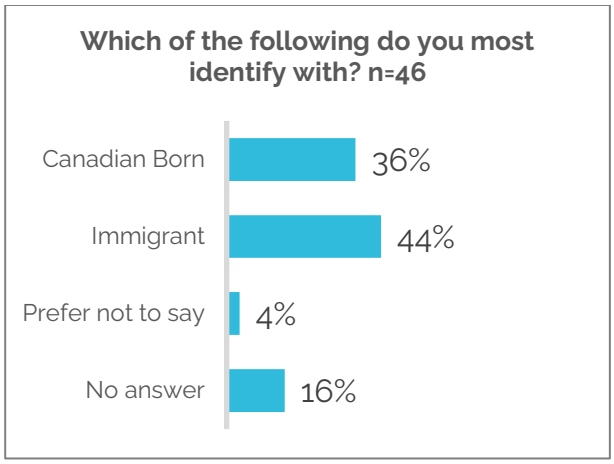
Do not identify as straight = Bisexual, Queer, Gay, Pansexual, Not listed

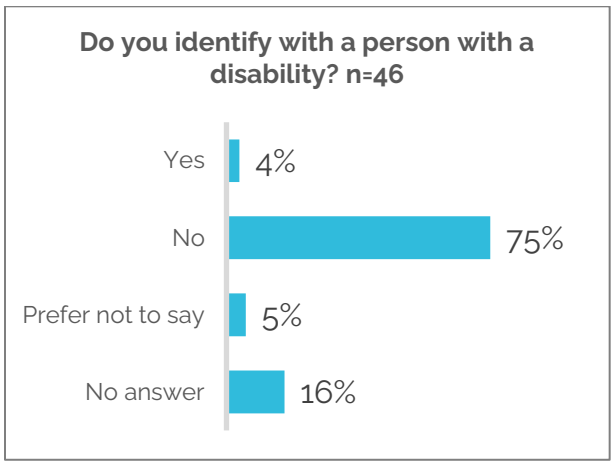
How would you describe your religious or spiritual affiliation? n=43
Select all that apply.

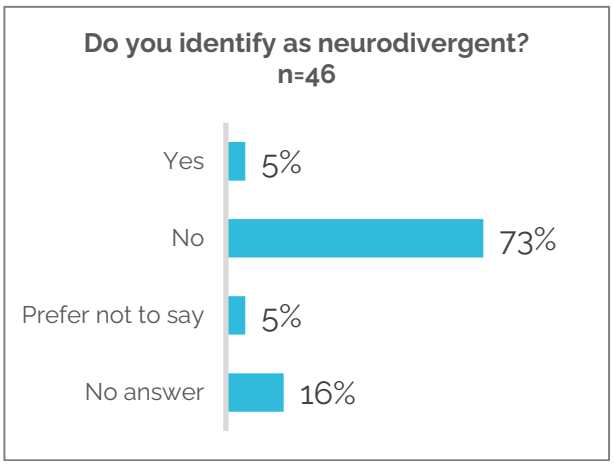


AO = Christian, Muslim, Hindu, Other









Key Insights from the overall Results (please see Appendix B for all the results)

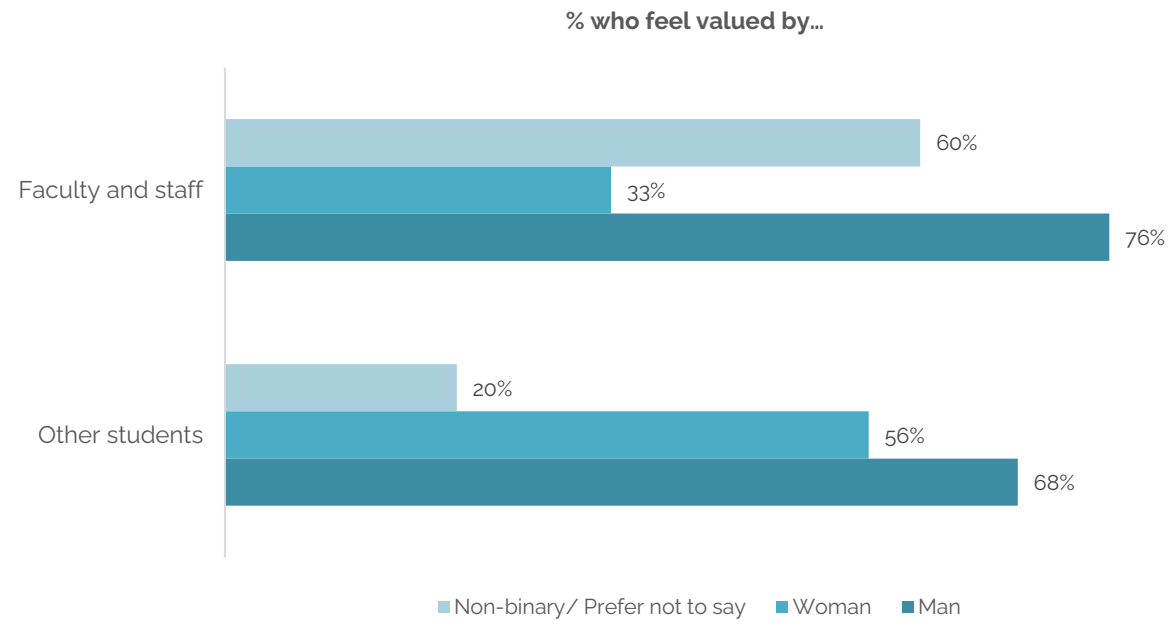
- 76 % of all graduate students indicated that they feel valued by other students in the Physics Department
- 87% of graduate students indicated that their research supervisor(s) support(s) their career development
- 37 % of graduate students indicated that they do not have the personal financial resources to focus on their degree
- 18% of graduate students indicated that their housing and living arrangements did not make it possible for them to study and work at home
- 15% of graduate students indicated that their campus workspace does not make it possible for them to study and work on campus12% of graduate students indicated that they would perform better in their degree if they had English language support
- 34% of graduate students have directly experienced instances of exclusion or bias in the Physics department
    - 24% rarely (1-2 times), 4% occasionally (3-5 times) and 5% often (5-10 times)

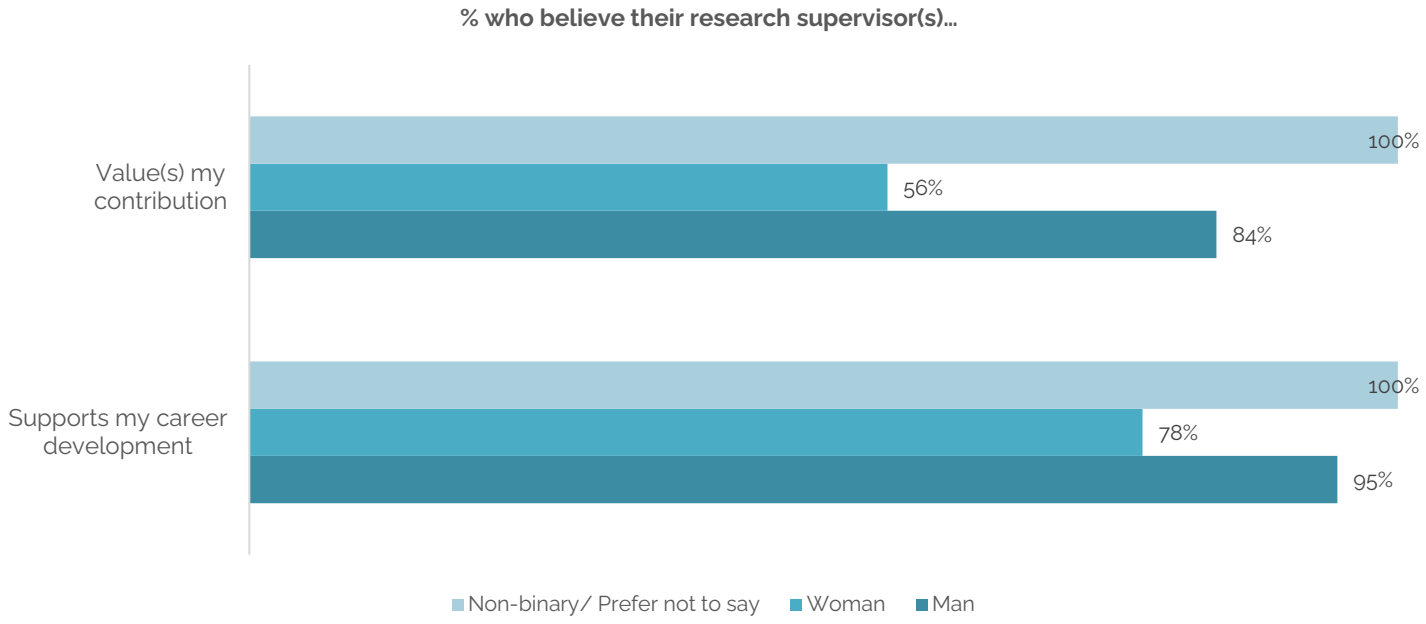
    - Of those who have directly experienced instances of exclusion or bias in the Physics department, the most cited factors are: race or ethnicity (33%), socioeconomic status (33%), gender or gender identity expression (22%) and national origin (17%)
- 24% of graduate students indicated that they had witnessed instances of exclusion or bias in the Physics department
    - 9% rarely (1-2 times), 13% occasionally (3-5 times) and 2% often (5-10 times)
    - Of those who have witnessed instances of exclusion or bias in the Physics department, the most cited factors are: race or ethnicity (46%), gender or gender identity expression (38%), national origin (38%), socioeconomic status (31%) and religious or spiritual views (15%)

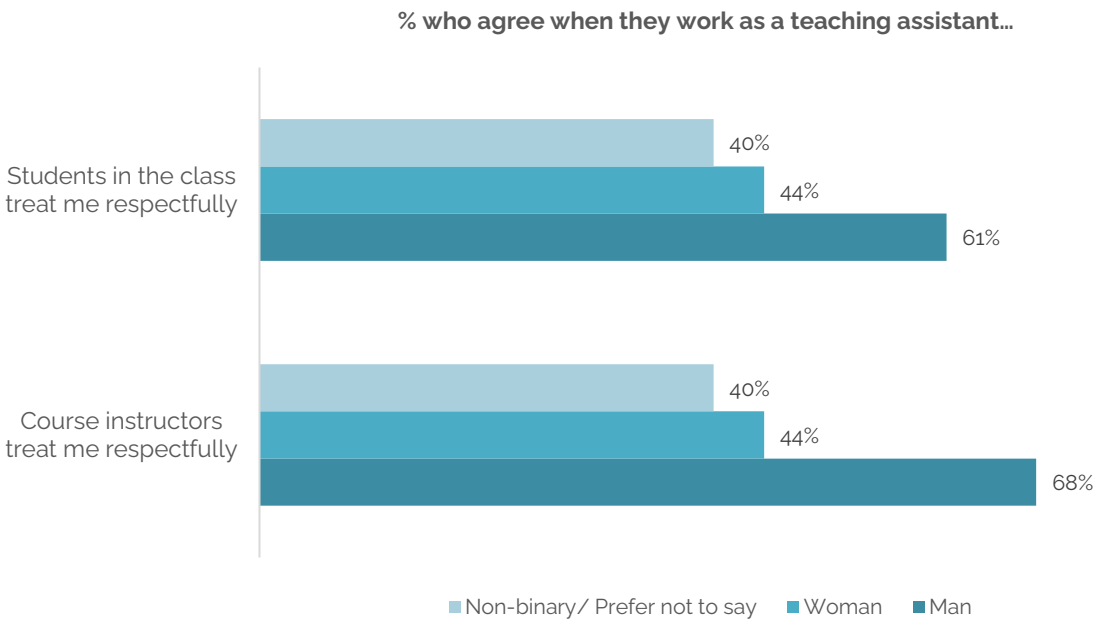
Demographic Analysis

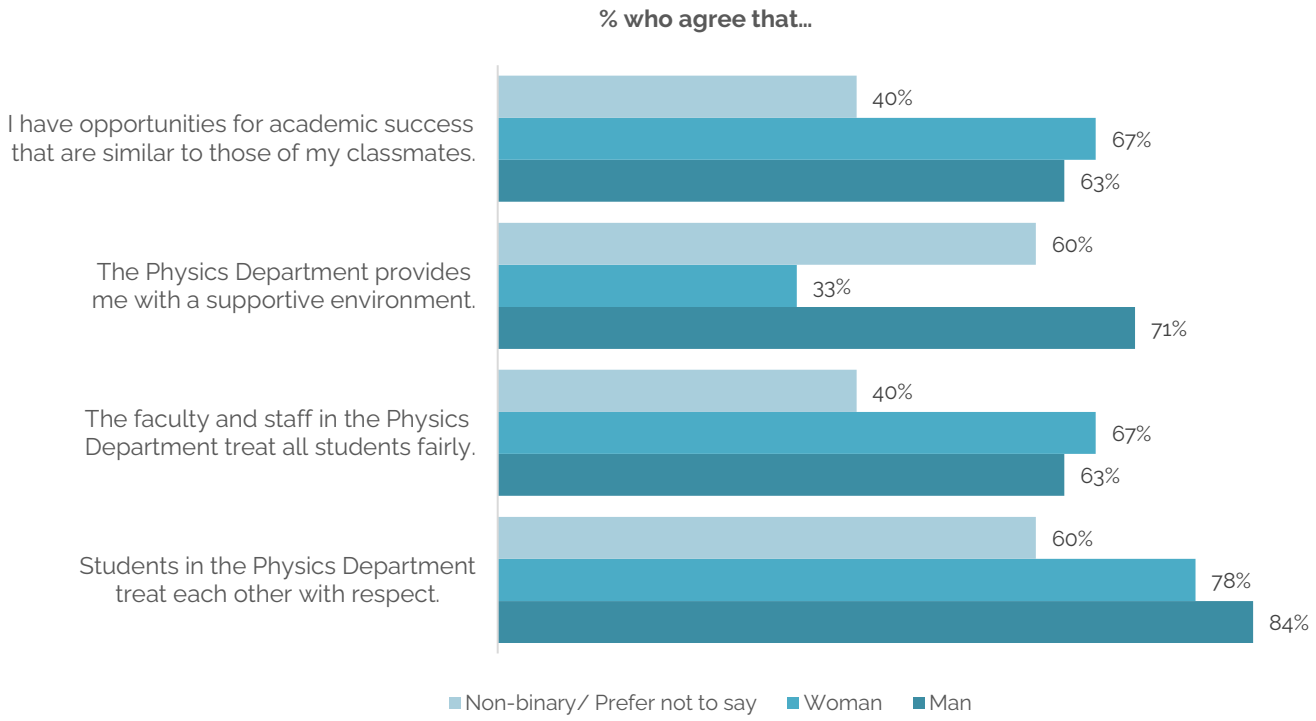
GENDER

- 74% of men, 44% of women and 20% of non-binary/prefer not to say, feel like they belong in the Physics Department
- 87% of men, 56% of women and 60% of non-binary/prefer not to say feel that students of their gender identity expression are respected in the Physics Department
- 24% of men, 44% of women and 40% of non-binary/prefer not to say reported that they have directly experienced instances of exclusion or bias in the Physics Department
    - All genders citing race or ethnicity and socioeconomic status
    - Women and non-binary/prefer not to say also citing gender or gender identity expression
- 24% of men, 22% of women and 40% of non-binary/prefer not to say reported that they have witnessed instances of exclusion or bias in the Physics Department
    - More men citing gender or gender identity expression and religious or spiritual views
    - More women and non-binary/prefer not to say citing national origin and socioeconomic status
- 84% of men, 67% of women and 100% of non-binary/prefer not to say feel that they can ask their supervisor(s) for help with their research when they need it
- 74% of men, 44% of women and 40% of non-binary/prefer not to say feel comfortable expressing their identity in the Physics Department


% who feel valued by...
Faculty and staff
60%
33%
76%
Other students
20%
56%
68%
Non-binary/ Prefer not to say
Woman
Man

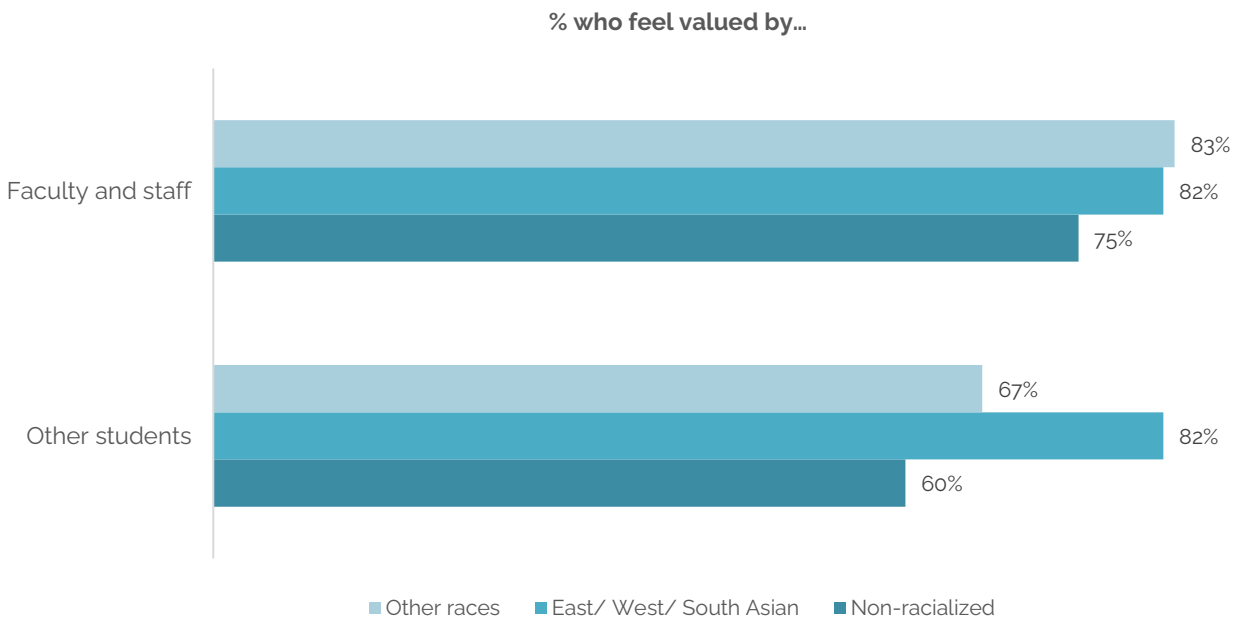

% who believe their research supervisor(s)...
Value(s) my contribution
100%
56%
84%
Supports my career development
100%
78%
95%
Non-binary/ Prefer not to say
Woman
Man

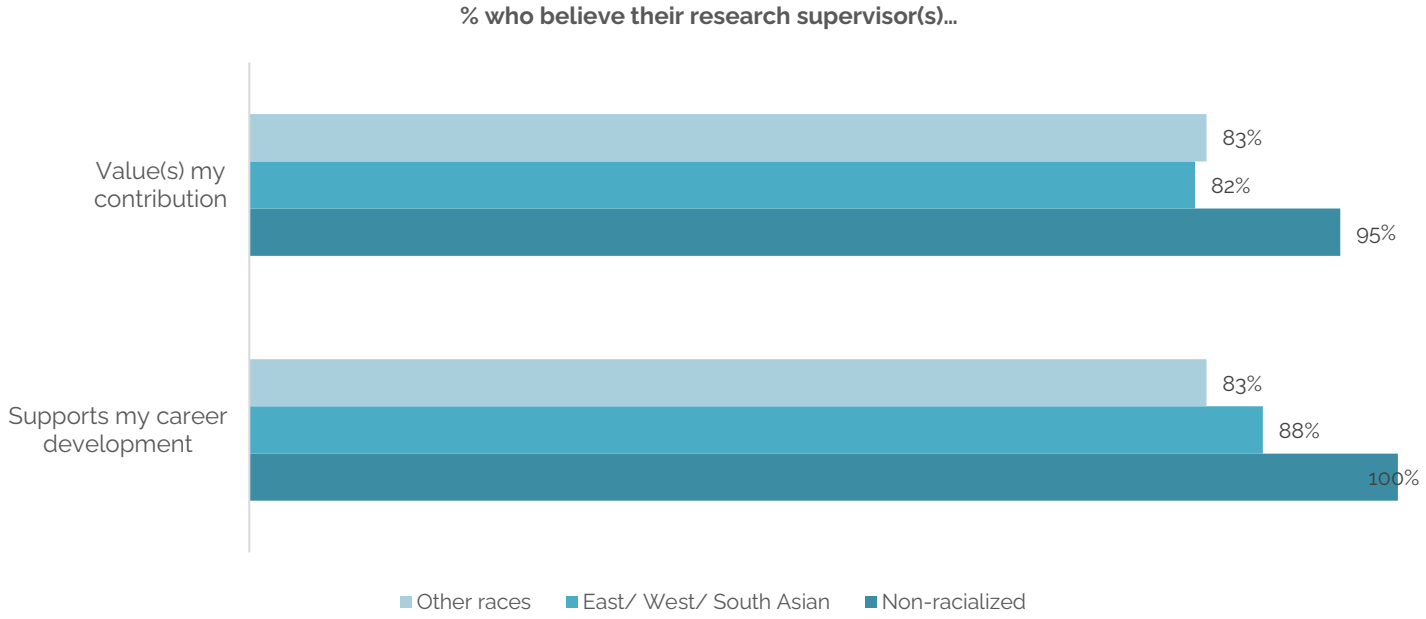

% who agree when they work as a teaching assistant...
Students in the class treat me respectfully
40%
44%
61%
Course instructors treat me respectfully
40%
44%
68%
Non-binary/ Prefer not to say
Woman
Man

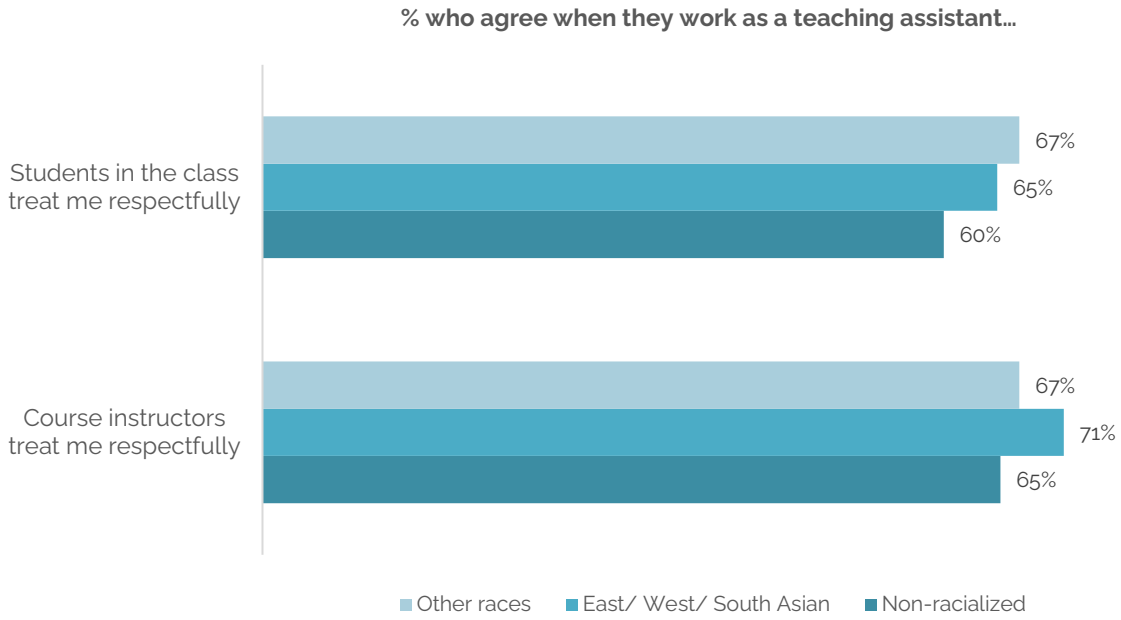

% who agree that...
I have opportunities for academic success that are similar to those of my classmates.
40%
67%
63%
The Physics Department provides me with a supportive environment.
60%
33%
71%
The faculty and staff in the Physics Department treat all students fairly.
40%
67%
63%
Students in the Physics Department treat each other with respect.
60%
78%
84%
Non-binary/ Prefer not to say
Woman
Man

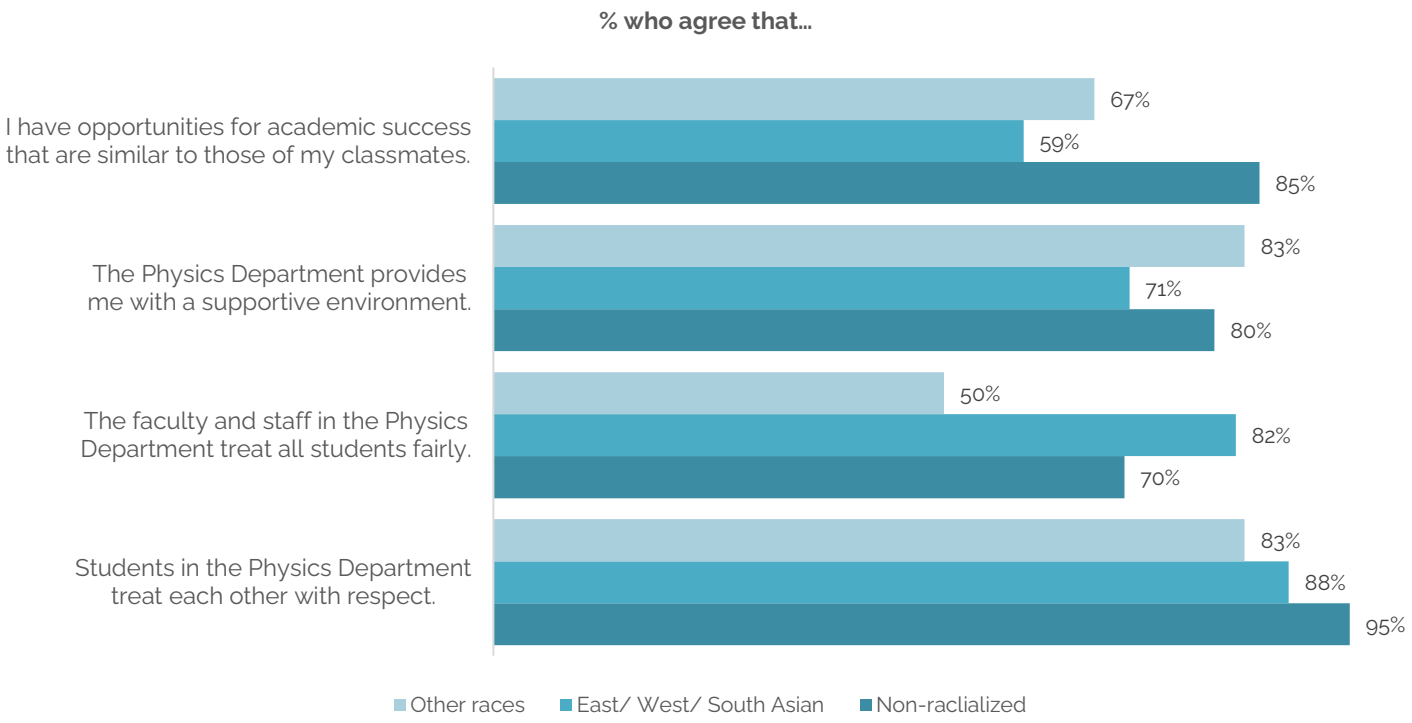
RACE

- 75% of non-racialized (i.e. white), 82% of East/West/South Asian and 67% of other race students feel like they belong in the Physics Department
- 90% of non-racialized, 88% of East/West/South Asian and 67% of other race students feel that students of their racial/ethnic group are respected in the Physics Department
- About 30% of all races reported that they have directly experienced instances of exclusion or bias in the Physics Department, with race or ethnicity, socioeconomic status and gender or gender identity expression being the most cited factors (in that order)
- 25% of non-racialized, 18% of racialized and 67% of other race students reported that they had witnessed instances of exclusion or bias in the Physics Department
    - More non-racialized citing gender or gender identity expression
    - More racialized and other race citing race or ethnicity and religious or spiritual views
- 85% of non-racialized, 88% of racialized and 100% of other race students feel that they can ask their supervisor(s) for help with their research when they need it
- 70% of non-racialized, 88% of racialized and 50% of other race students feel comfortable expressing their identity in the Physics Department



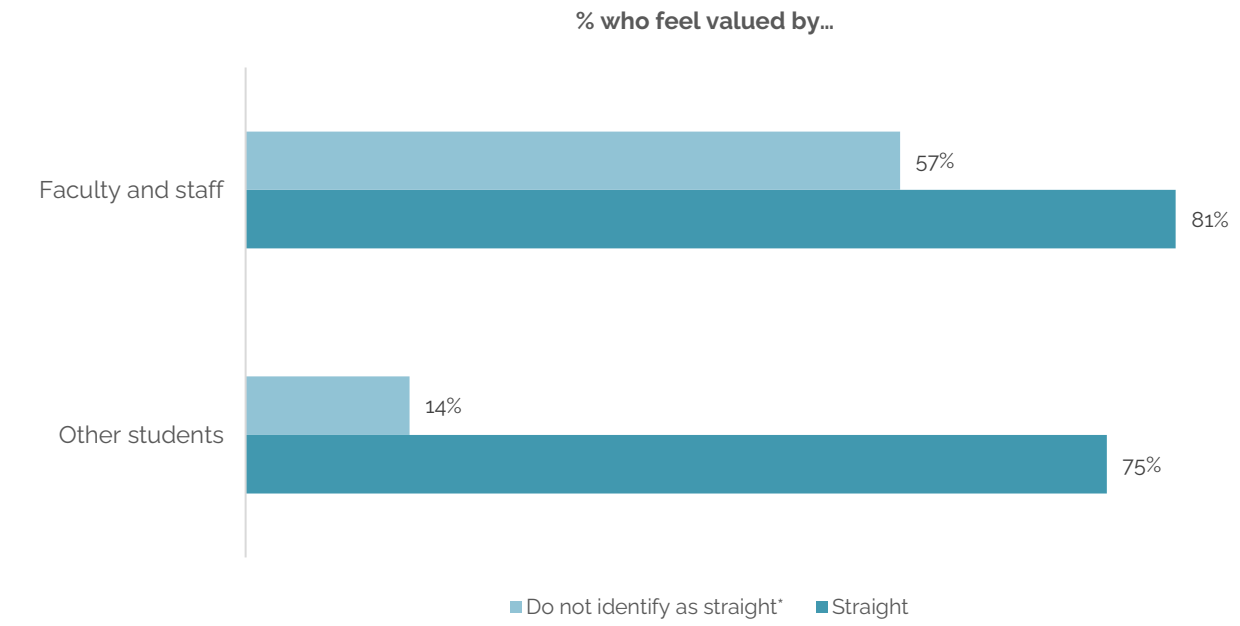

% who believe their research supervisor(s)...
Value(s) my contribution
83%
82%
95%
Supports my career development
83%
88%
100%
Other races
East/ West/ South Asian
Non-racialized

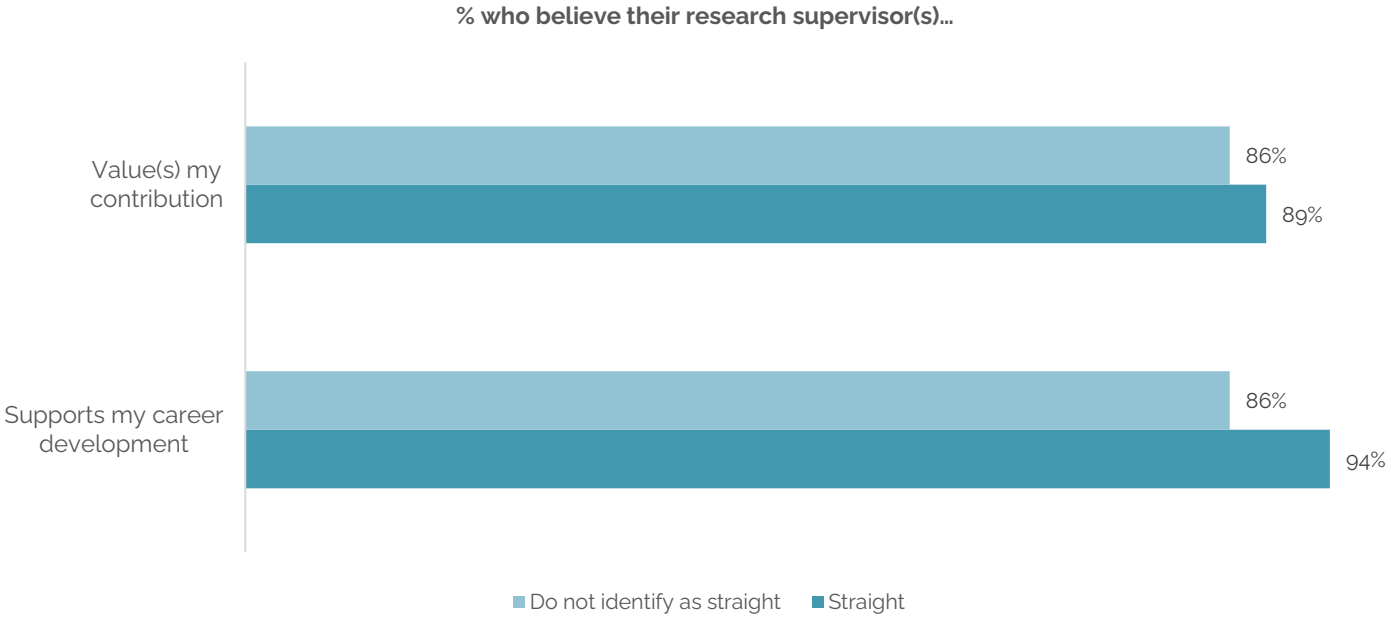

% who agree when they work as a teaching assistant...
Students in the class treat me respectfully
67%
65%
60%
Course instructors treat me respectfully
67%
71%
65%
Other races
East/ West/ South Asian
Non-racialized

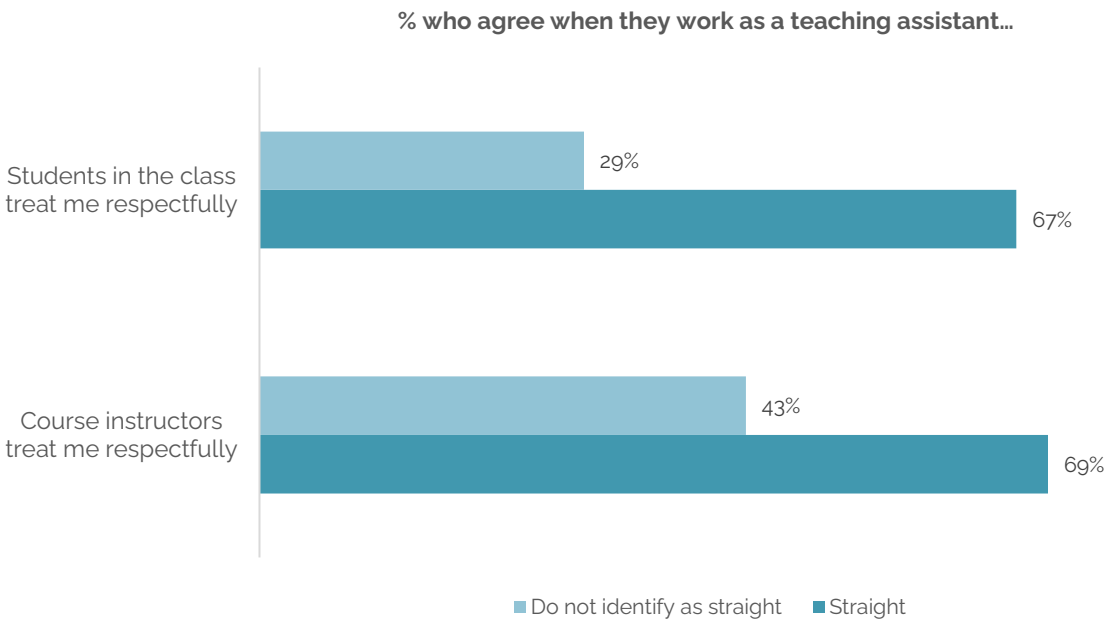


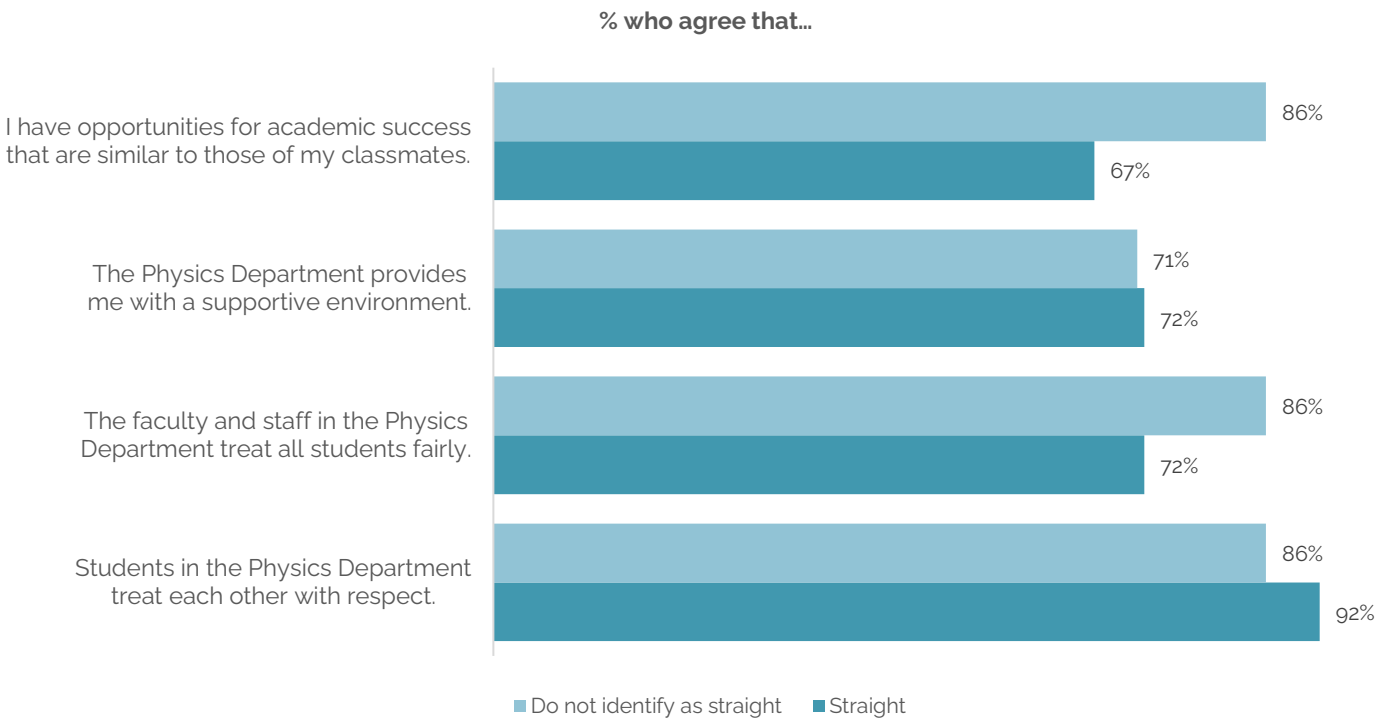
SEXUAL ORIENTATION

- 75% of those who identify as straight and 29% of those who do not identify as straight feel as though they belong in the Physics Department
- 94% of those who identify as straight and 71% of those who do not identify as straight feel that their sexual orientation is respected in the Physics Department
- 22% of those who identify as straight and 71% of those who do not identify as straight reported that they had experienced instances of exclusion or bias in the Physics Department
    - All sexual orientations citing race or ethnicity
    - More who do not identify as straight, citing gender or gender identity expression, national origin and socioeconomic status
- 19% of those who identify as straight and 57% of those who do not identify as straight reported that they had witnessed instances of exclusion or bias in the Physics Department
    - All sexual orientations citing race or ethnicity
    - More who do not identify as straight, citing gender or gender identity expression, national origin and socioeconomic status
- 86% of those who identify as straight and 100% of those who do not identify as straight feel that they can ask their supervisor(s) for help with their research when they need it
- 81% of those who identify as straight and 29% of those who do not identify as straight feel comfortable expressing their identity in the Physics Department


% who feel valued by...
Faculty and staff
57%
81%
Other students
14%
75%
Do not identify as straight*
Straight


% who believe their research supervisor(s)...
Value(s) my contribution
86%
89%
Supports my career development
86%
94%
Do not identify as straight
Straight


% who agree when they work as a teaching assistant...
Students in the class treat me respectfully
29%
67%
Course instructors treat me respectfully
43%
69%
Do not identify as straight
Straight

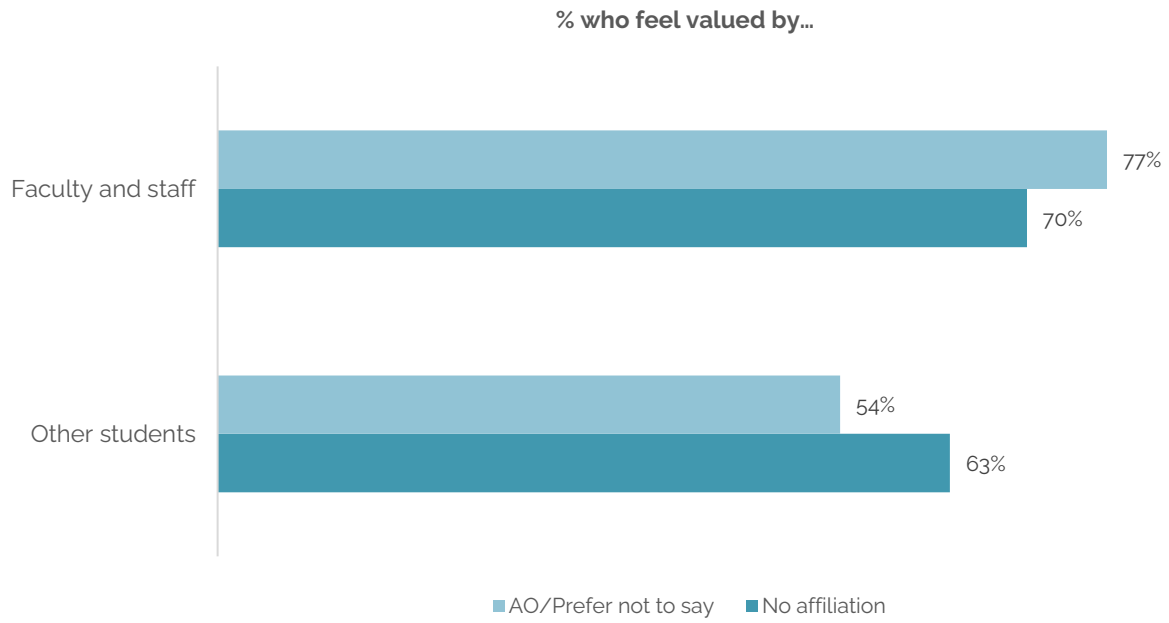

% who agree that...
I have opportunities for academic success that are similar to those of my classmates.
86%
67%
The Physics Department provides me with a supportive environment.
71%
72%
The faculty and staff in the Physics Department treat all students fairly.
86%
72%
Students in the Physics Department treat each other with respect.
86%
92%
Do not identify as straight
Straight

RELIGION

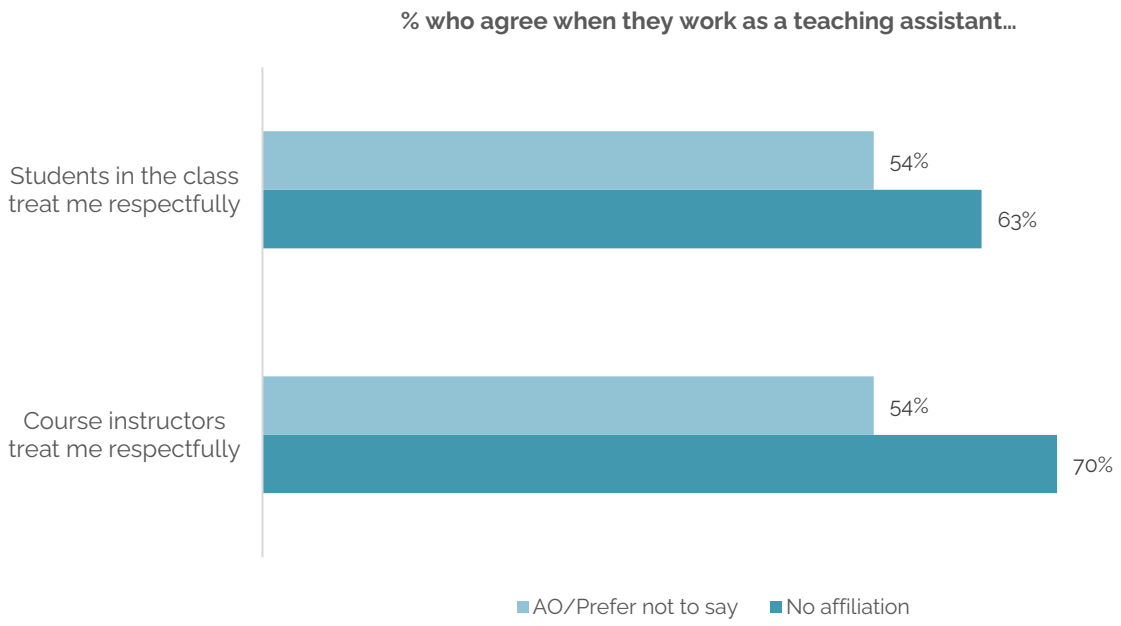
- 63% of those with no religious affiliation and 62% with AO/prefer not to say affiliations feel like they belong in the Physics Department
- 67% of those with no religious affiliation and 46% with AO/prefer not to say affiliations feel that students with their religious or spiritual views are respected in the Physics Department
- 30% of those with no religious affiliation and 46% with AO/prefer not to say affiliations reported that they had experienced instances of exclusion or bias in the Physics Department with race or ethnicity, socioeconomic status and gender or gender identity expression being the most cited factors (in that order)
- 27% of those with no religious affiliation and 31% with AO/prefer not to say affiliations reported that they had witnessed instances of exclusion or bias in the Physics Department, with gender and gender identity, race or ethnicity and socioeconomic status being the most cited factors
    - All religious affiliations citing race or ethnicity
    - More with no religious affiliation citing gender or gender identity expression
    - More with AO/prefer not to say affiliations citing religious or spiritual views and national origin

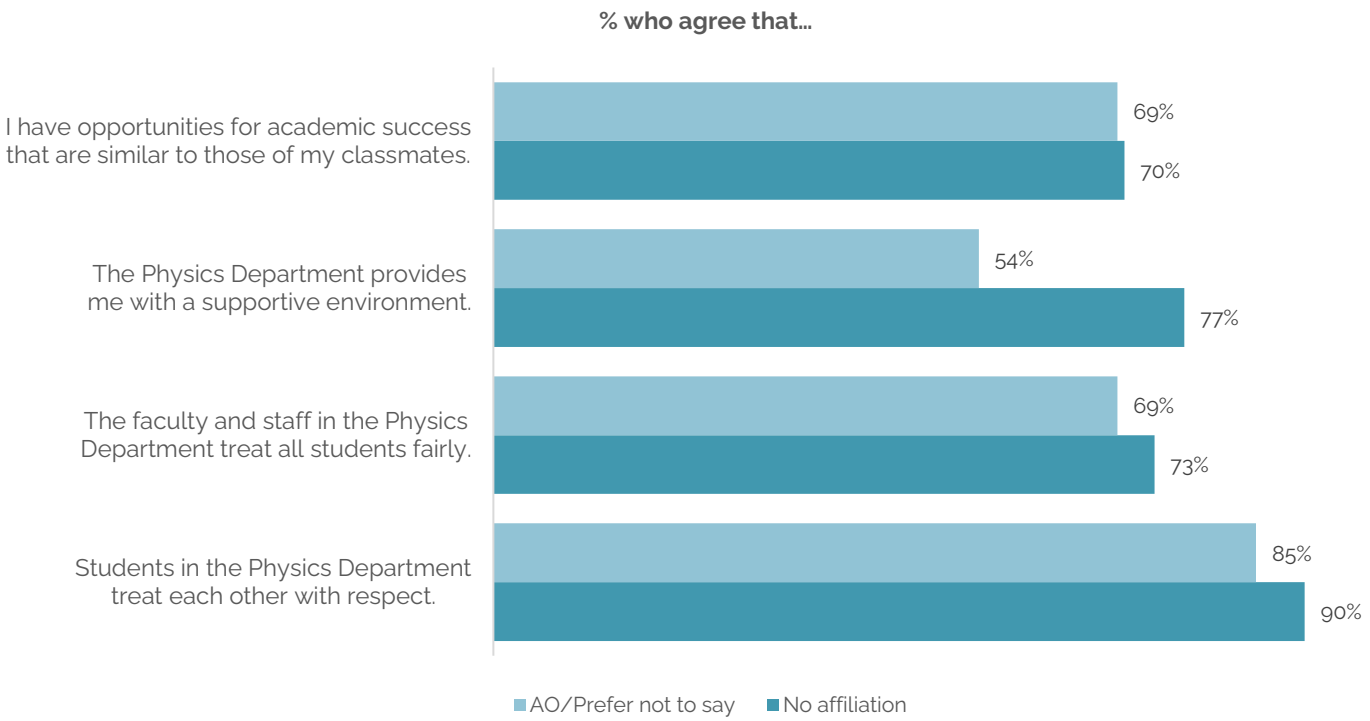
- 87% of those with no religious affiliation and 92% with AO/prefer not to say affiliations feel that they can ask their supervisor(s) for help with their research when they need it

- 70% of those with no religious affiliation and 62% with AO/prefer not to say affiliations feel comfortable expressing their identity in the Physics Department



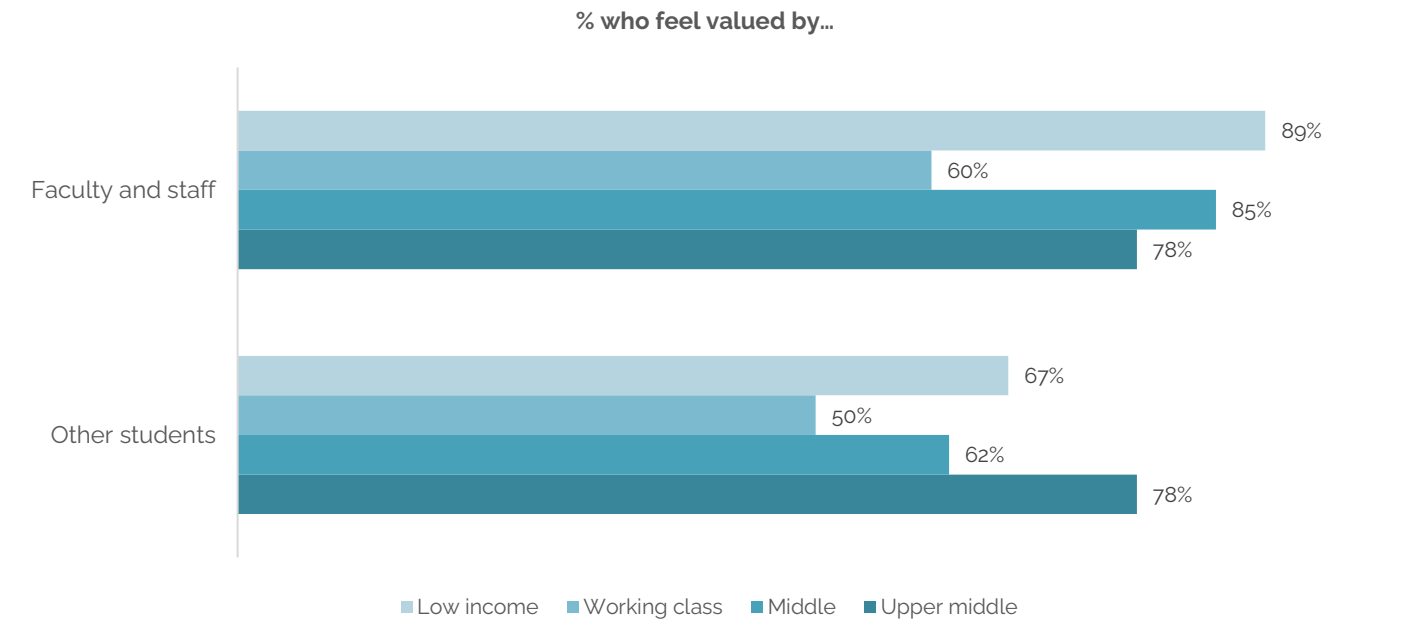

% who believe their research supervisor(s)...
Value(s) my contribution
85%
87%
Supports my career development
85%
93%
AO/Prefer not to say
No affiliation


% who agree when they work as a teaching assistant...
Students in the class treat me respectfully
54%
63%
Course instructors treat me respectfully
54%
70%
AO/Prefer not to say
No affiliation

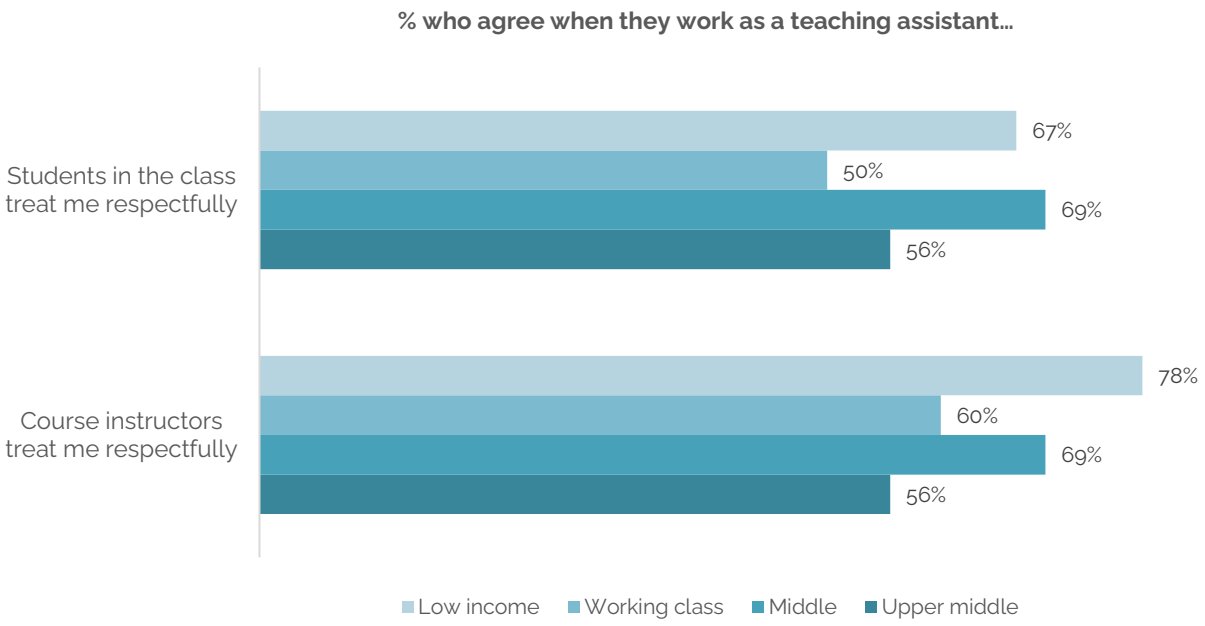


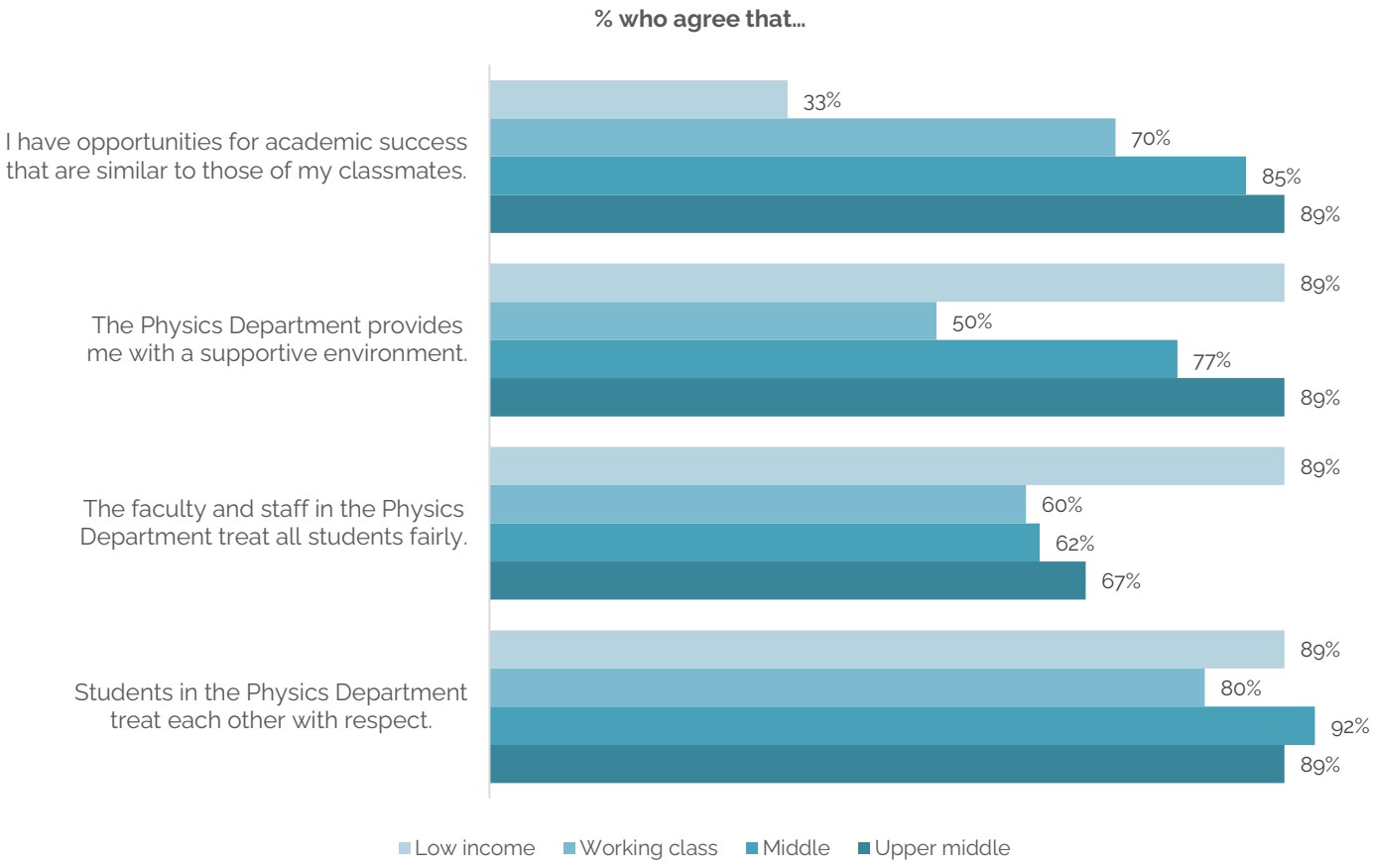
CLASS

- 77-78% of the upper-middle or middle class and 50-67% of the low-income or working-class feel like they belong in the Physics Department
- 85-89% of the upper-middle or middle class and 33-50% of the low-income or working-class feel that students of their socioeconomic class are respected in the Physics Department
- 11-23% of the upper-middle or middle class and 40-56% of the low-income or working-class reported that they had experienced instances of exclusion or bias in the Physics Department
    - More low-income and working-class citing race or ethnicity, national origin and socioeconomic status
- 11-31% of the upper-middle or middle class and 30-56% of the low-income or working-class reported that they had witnessed instances of exclusion or bias in the Physics Department
- More low-income and working-class citing gender or gender identity expression, race or ethnicity and national origin
- 78-92% of the upper-middle or middle class and 80-100% of the low-income or working-class feel that they can ask their supervisor(s) for help with their research when they need it
- 67-77% of the upper-middle or middle class and 50-89% of the low-income or working-class feel comfortable expressing their identity in the Physics Department


% who feel valued by...
Faculty and staff
89%
60%
85%
78%
Other students
67%
50%
62%
78%
Low income
Working class
Middle
Upper middle

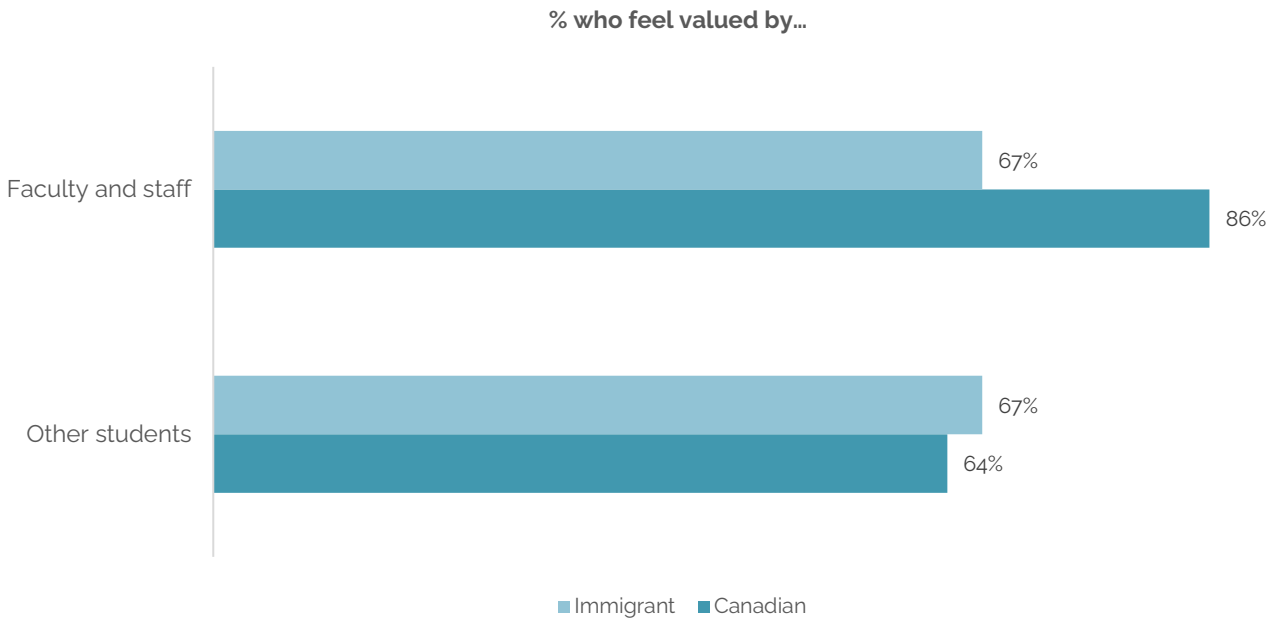

% who believe their research supervisor(s)...
Value(s) my contribution
89%
80%
92%
89%
Supports my career development
89%
90%
92%
100%
Low income
Working class
Middle
Upper middle

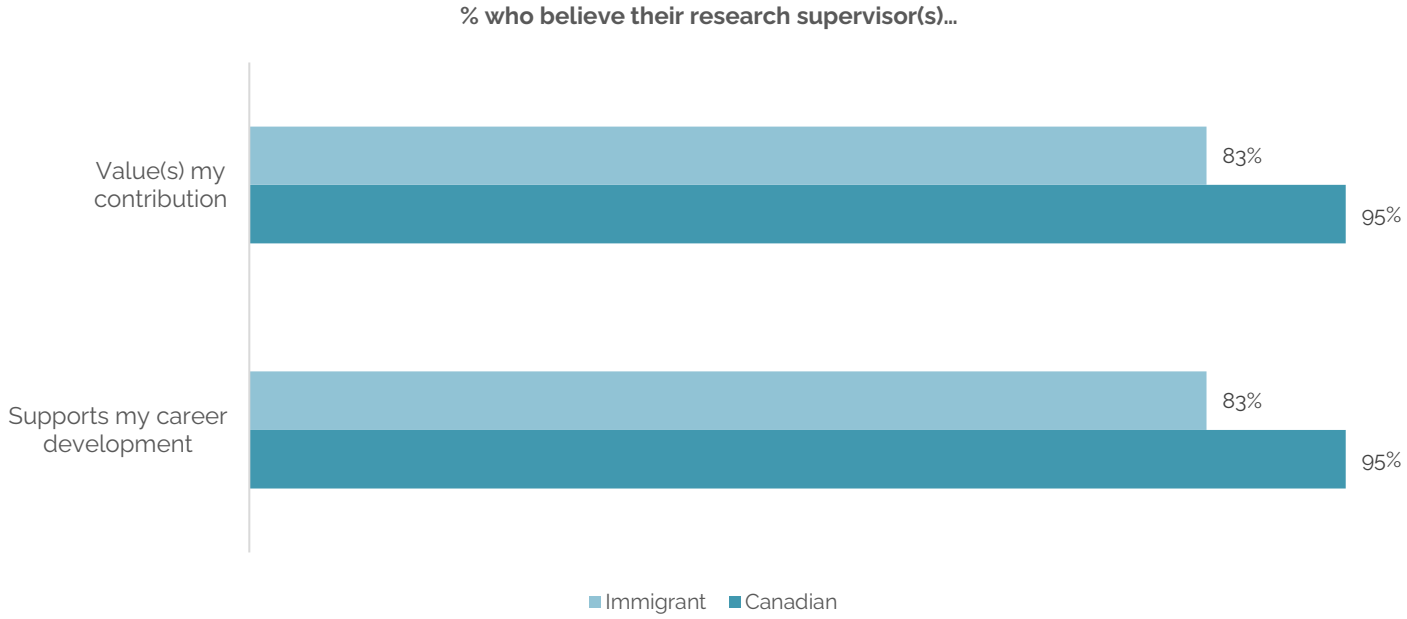

% who agree when they work as a teaching assistant...
Students in the class treat me respectfully
67%
50%
69%
56%
Course instructors treat me respectfully
78%
60%
69%
56%
Low income
Working class
Middle
Upper middle

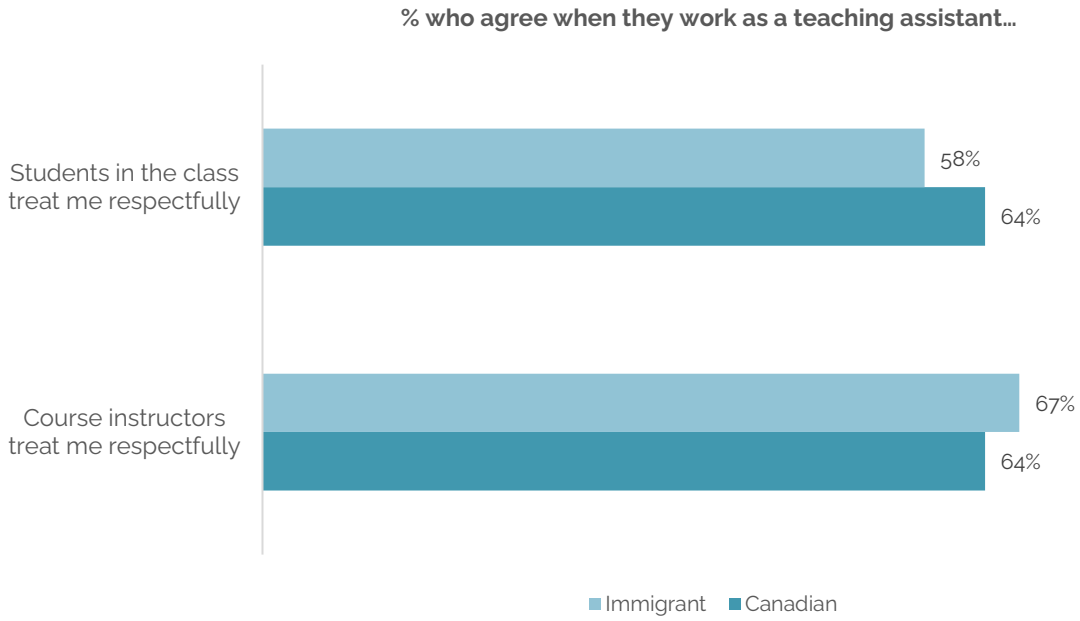

% who agree that...
I have opportunities for academic success that are similar to those of my classmates.
33%
70%
85%
89%
The Physics Department provides me with a supportive environment.
89%
50%
77%
89%
The faculty and staff in the Physics Department treat all students fairly.
89%
60%
62%
67%
Students in the Physics Department treat each other with respect.
89%
80%
92%
89%
Low income
Working class
Middle
Upper middle

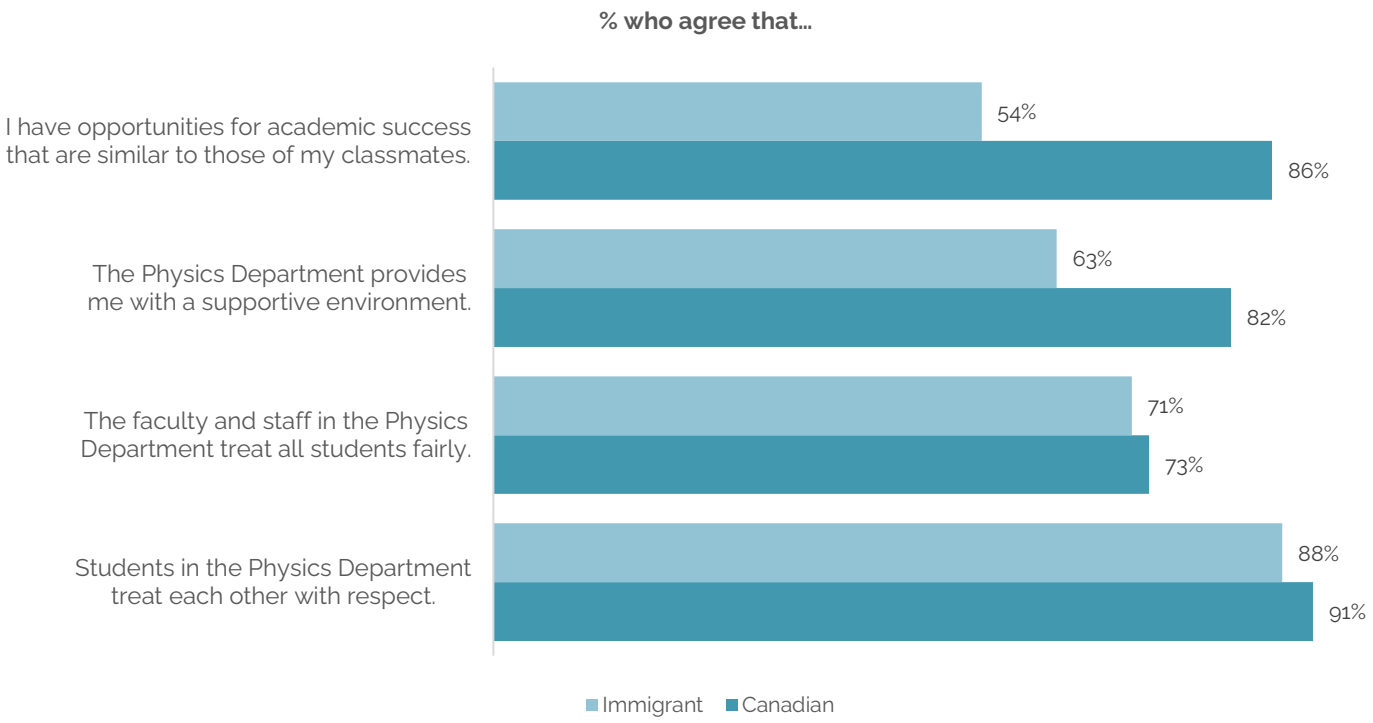
IMMIGRANT

- 82% of Canadian-born and 54% of immigrants feel like they belong in the Physics Department
- 86% of Canadian-born and 92% of immigrants feel that they can ask their supervisor(s) for help with their research when they need it
- One-third of Canadian-born and immigrants reported that they had experienced instances of exclusion or bias in the Physics Department
    - Both Canadian-born and immigrants citing gender or gender identity expression
    - More immigrants citing race or ethnicity, national origin, and socioeconomic status
- 91% of Canadian-born and 83% of immigrants reported that they had witnessed instances of exclusion or bias in the Physics Department, with gender and gender identity, race or ethnicity and national identity being the most cited factors
    - Both Canadian-born and immigrants citing gender or gender identity expression
    - More immigrants citing race or ethnicity, national origin, and socioeconomic status
- 64% of Canadian-born and 79% of immigrants feel comfortable expressing their identity in the Physics Department



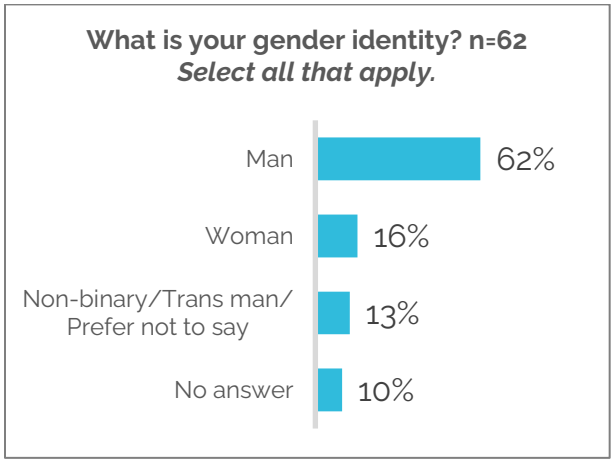

% who believe their research supervisor(s)...
Value(s) my contribution
83%
95%
Supports my career development
83%
95%
Immigrant
Canadian

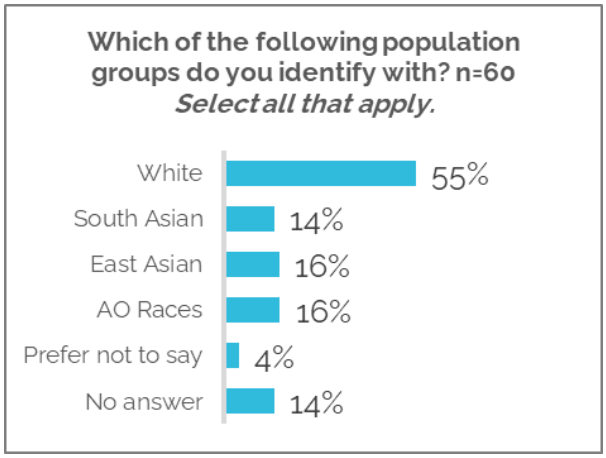

% who agree when they work as a teaching assistant...
Students in the class treat me respectfully
58%
64%
Course instructors treat me respectfully
67%
64%
Immigrant
Canadian


% who agree that...
I have opportunities for academic success that are similar to those of my classmates.
54%
86%
The Physics Department provides me with a supportive environment.
63%
82%
The faculty and staff in the Physics Department treat all students fairly.
71%
73%
Students in the Physics Department treat each other with respect.
88%
91%
Immigrant
Canadian

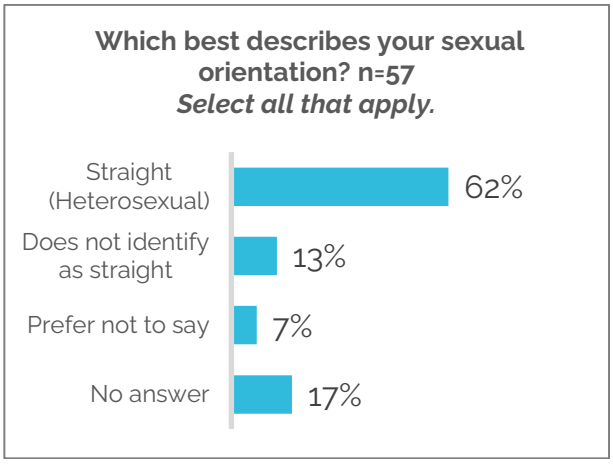
Demographic Results

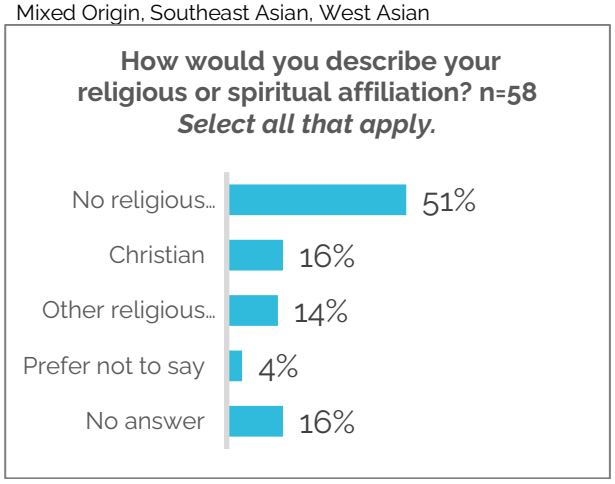
n=69 records
64 answered at least one question
n= in charts is the number that answered

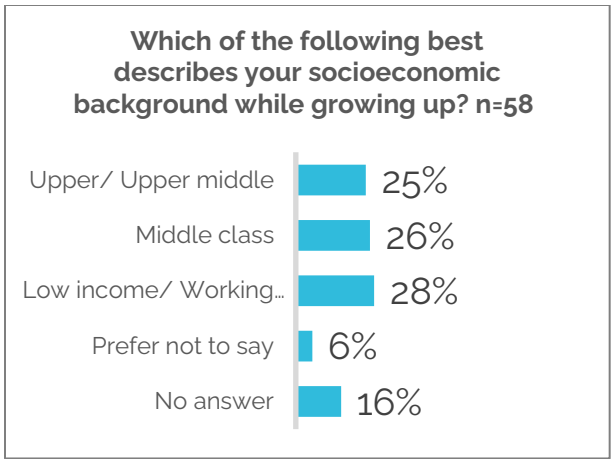


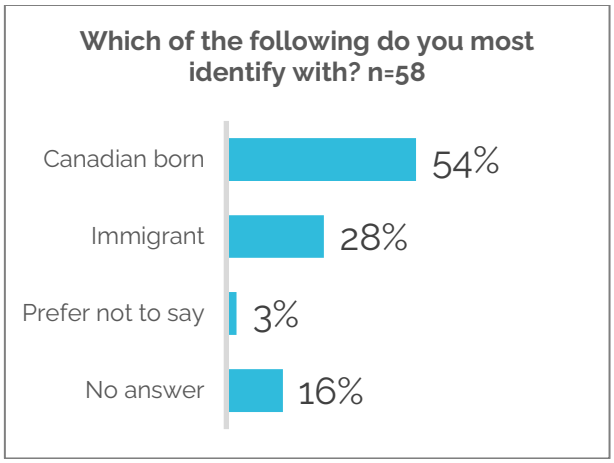


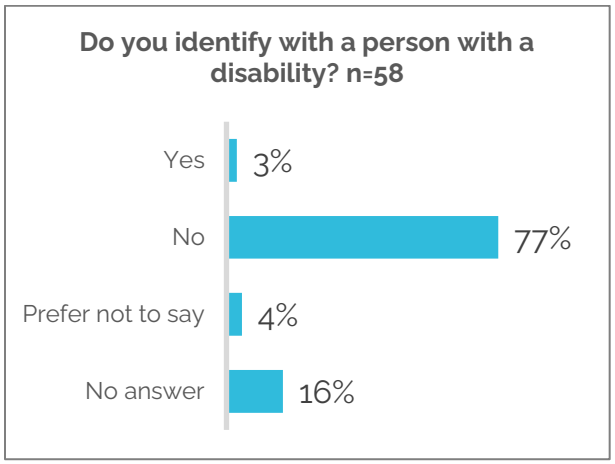
AO Races = Indigenous Persons, Latin American, Mixed Origin, Southeast Asian, West Asian

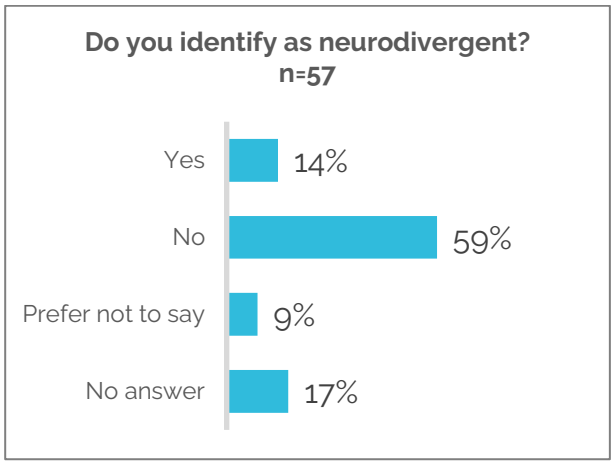












Key Insights from the Overall Results (Please see Appendix B for all of the results)

The average number of students that answered the questions was 61.

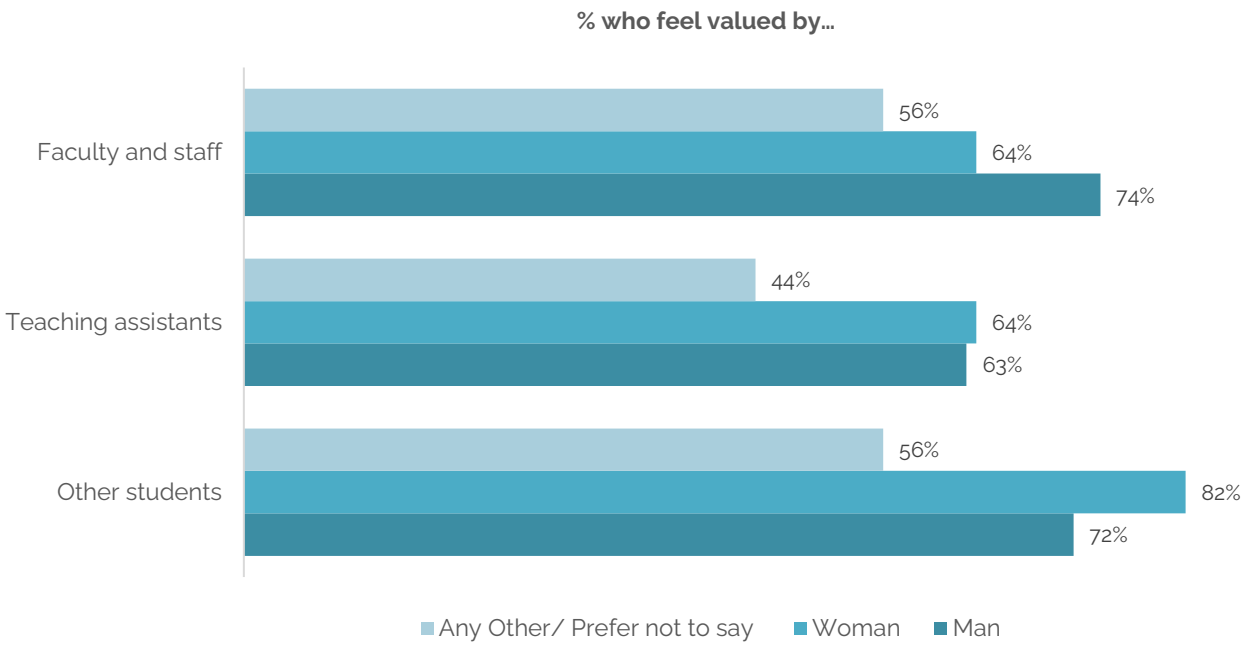
- 65% of undergraduate students indicated that instructors and TAs provide a welcoming environment for students
- 19% of undergraduate students indicated that they do not agree that instructors use a variety of instructional methods to accommodate different student approaches to learning
- 80% of undergraduate students indicated that they have access to stable internet and quiet, private space to do coursework and attend class
- 13% of students indicated that they do not have the funds to purchase materials that are required or recommended to complete coursework
- 18% of students indicated that they had experienced instances of exclusion or bias in the Physics department
    - 10% rarely (1-2 times), 4% occasionally (3-5 times) and 3% often (5-10 times)

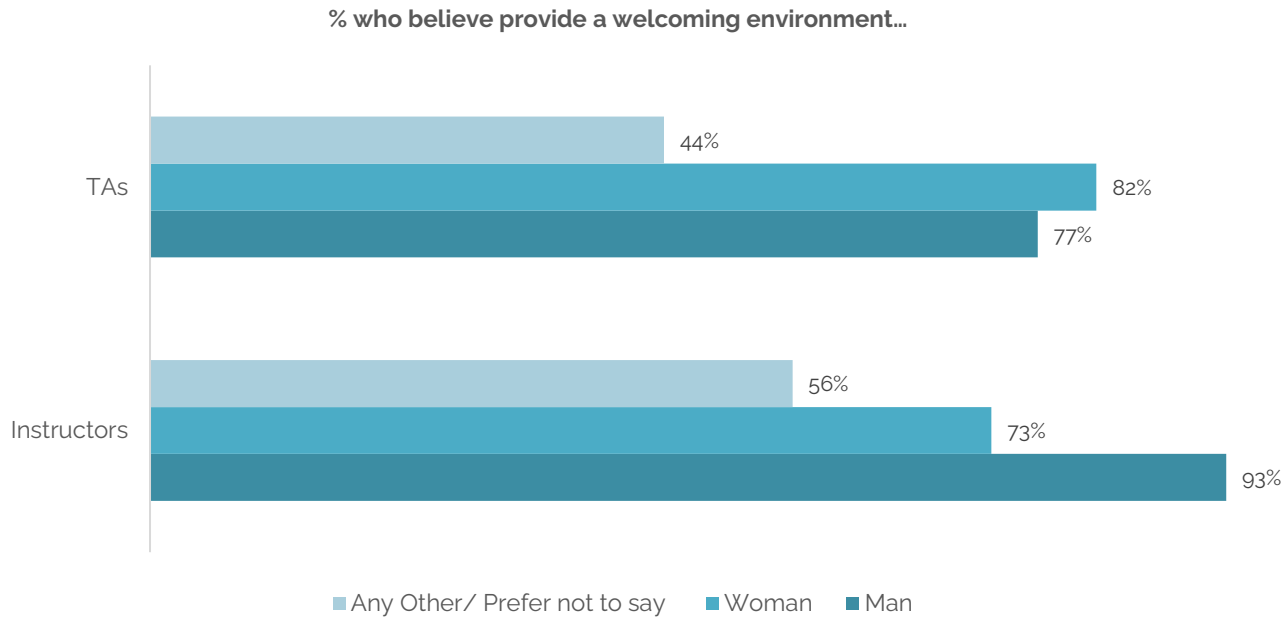
    - Of those who indicated they had experienced instances of exclusion in the Physics department, the most cited factors are: gender or gender identity expression (69%), race or ethnicity (38%), religious or spiritual views (31%) and national origin (31%)
- 22% of undergraduate students indicated that they had witnessed instances of exclusion or bias in the Physics department
    - 12% rarely (1-2 times), 7% occasionally (3-5 times) and 3% often (5-10 times)
    - Of those who indicated they had witnessed instances of exclusion in the Physics department, the most cited factors are: gender or gender identity expression (67%), race or ethnicity (40%), religious or spiritual views (40%), national origin (27%) and socioeconomic status (20%)

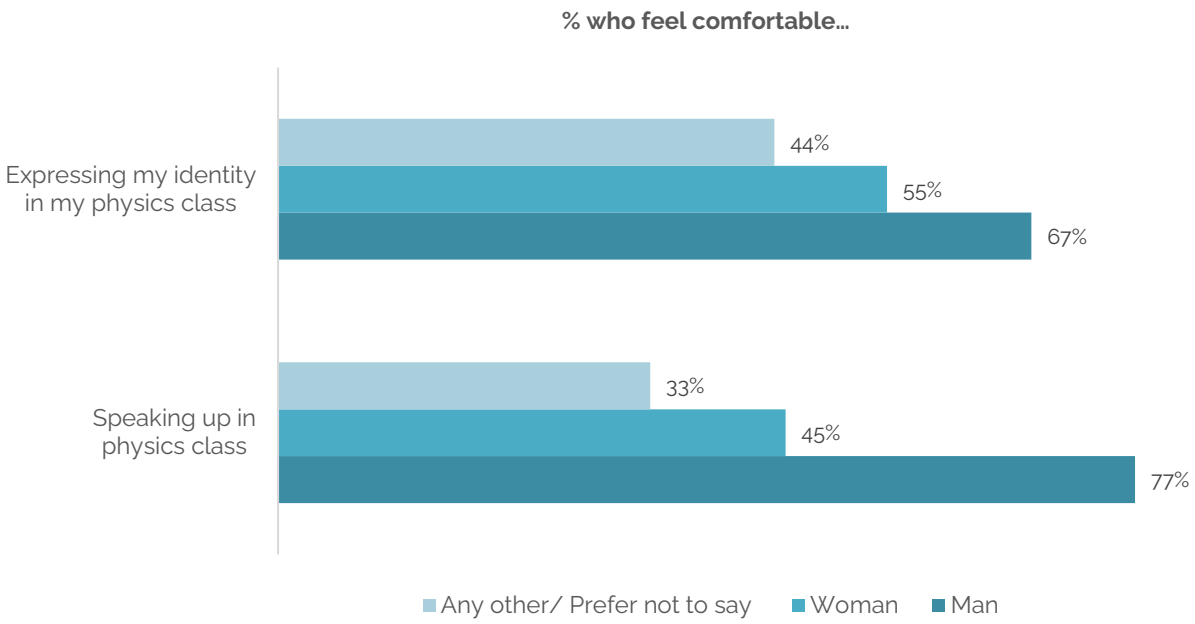
Key Insights from Demographic Analysis:

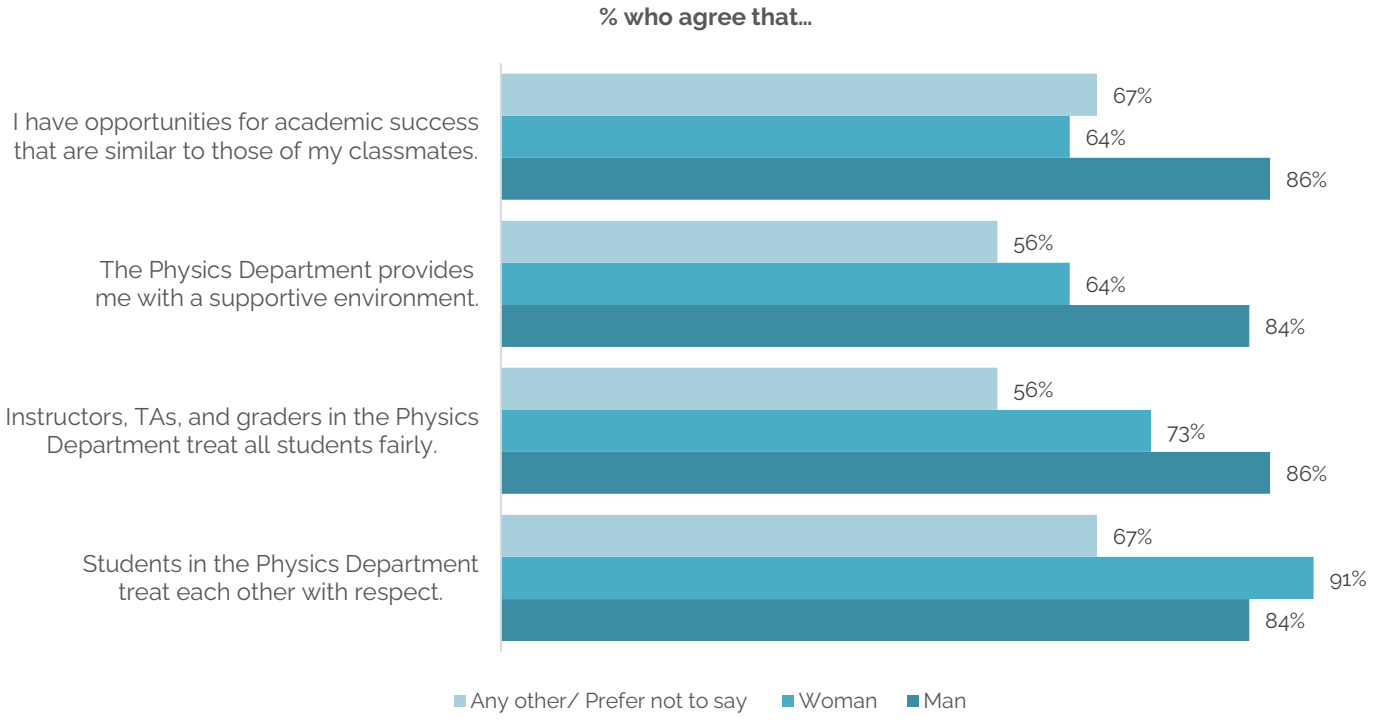
GENDER

- 84% of men, 55% of women, and 56% of other gender identities/prefer not to say they feel like they belong in the Physics department
- 95% of men, 83% of women, and 67% of other gender identities/prefer not to say feel like students of their gender identity expression is respected in the Physics Department
- 45% of women and 56% of any other gender identifiers/prefer not to say reported that they have directly experienced instances of exclusion or bias in the Physics Department, compared to just 9% of men
    - All genders citing national origin
    - More women and any other gender identifiers/prefer not to say cited gender or gender identity expression, race, or ethnicity, religious or spiritual views, sexual orientation and socioeconomic status
- 44% of other gender identities/prefer not to say reported that they have directly witnessed instances of exclusion or bias in the Physics Department, compared to 21% of men and 27% of women
    - All genders citing religious or spiritual views and national origin
    - More men cited gender or gender identity expression and race or ethnicity


% who feel valued by...
Faculty and staff
56%
64%
74%
Teaching assistants
44%
64%
63%
Other students
56%
82%
72%
Any Other/ Prefer not to say
Woman
Man

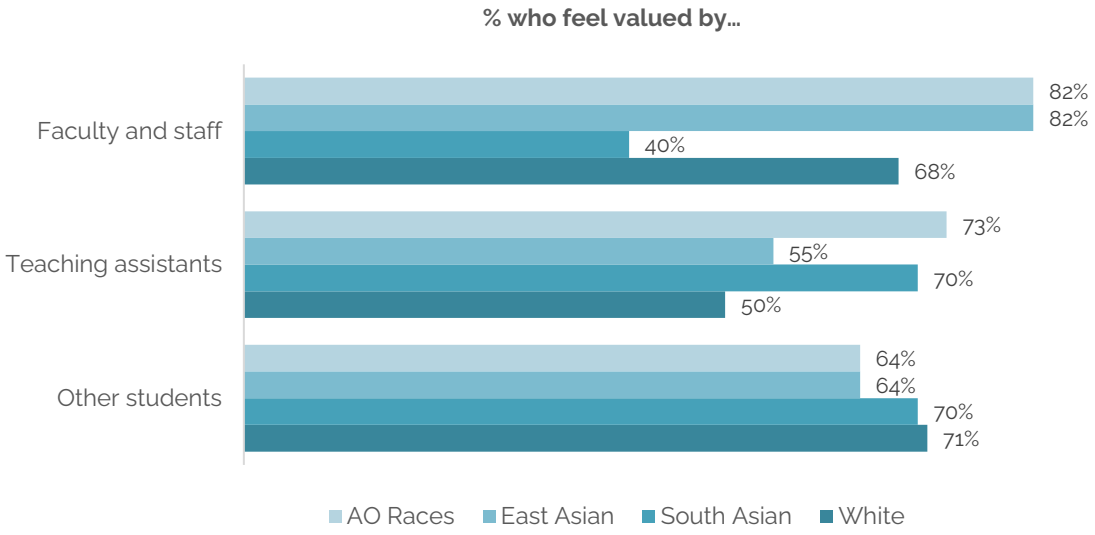

% who believe provide a welcoming environment...
TAs
44%
82%
77%
Instructors
56%
73%
93%
Any Other/ Prefer not to say
Woman
Man

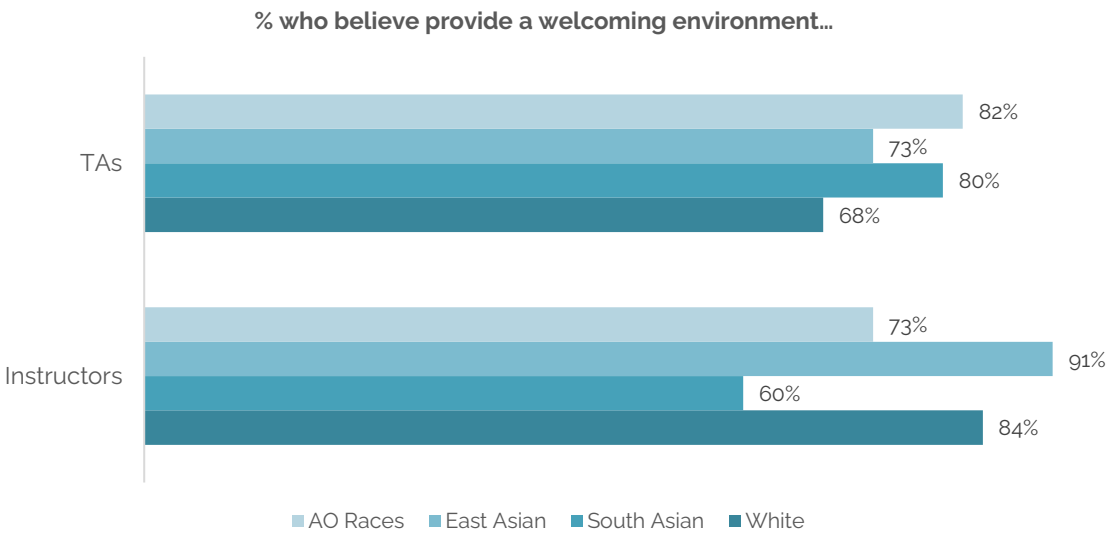

% who feel comfortable...
Expressing my identity in my physics class
44%
55%
67%
Speaking up in physics class
33%
45%
77%
Any other/ Prefer not to say
Woman
Man

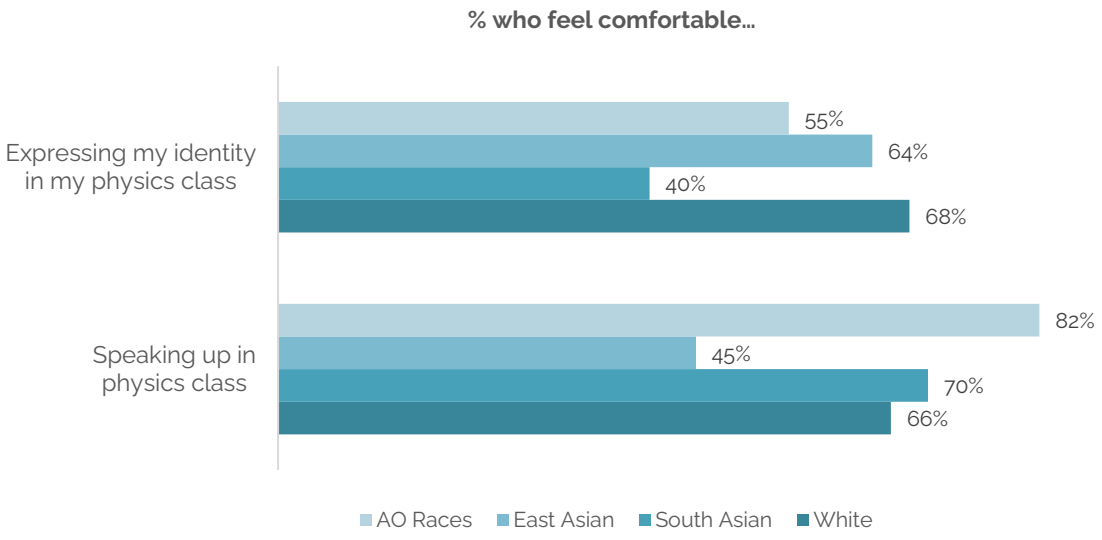

% who agree that...
I have opportunities for academic success that are similar to those of my classmates.
67%
64%
86%
The Physics Department provides me with a supportive environment.
56%
64%
84%
Instructors, TAs, and graders in the Physics Department treat all students fairly.
56%
73%
86%
Students in the Physics Department treat each other with respect.
67%
91%
84%
Any other/ Prefer not to say
Woman
Man

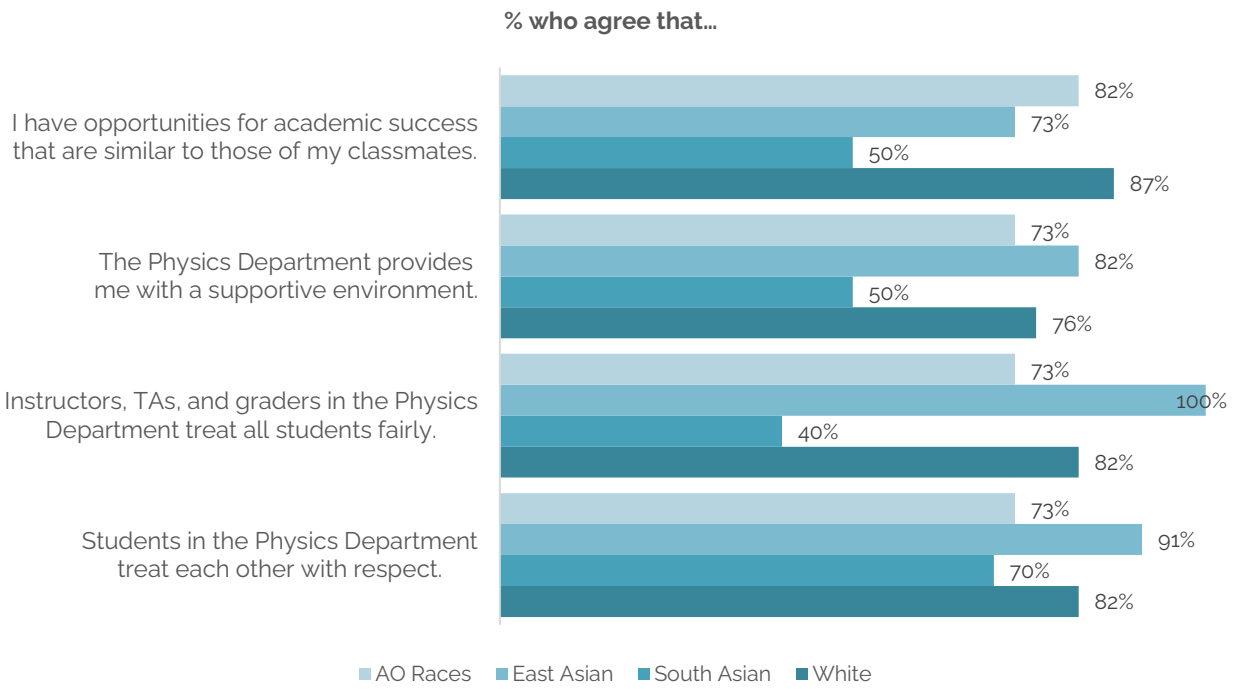
RACE

- 82% of white, 40% of South Asian, 73% of East Asian and 82% of AO races feel like they belong in the Physics Department
- 92% of white, 50% of South Asian, 91% of East Asian and 64% of AO races feel that students of their racial/ethnic group are respected in the Physics Department
- 24% of white, 40% of South Asian, 18% of East Asian and 18% of AO races reported they have directly experienced instances of exclusion or bias in the Physics Department
    - All races cited gender or gender identity expression
    - More South Asian and AO races cited race or ethnicity and national origin
- 26% of white, 30% of South Asian, 36% of East Asian and 18% of AO races reported they have directly witnessed instances of exclusion or bias in the Physics Department
    - More white cited gender or gender identity expression
    - More AO races cited race or ethnicity, religious or spiritual views, national origin and socioeconomic status



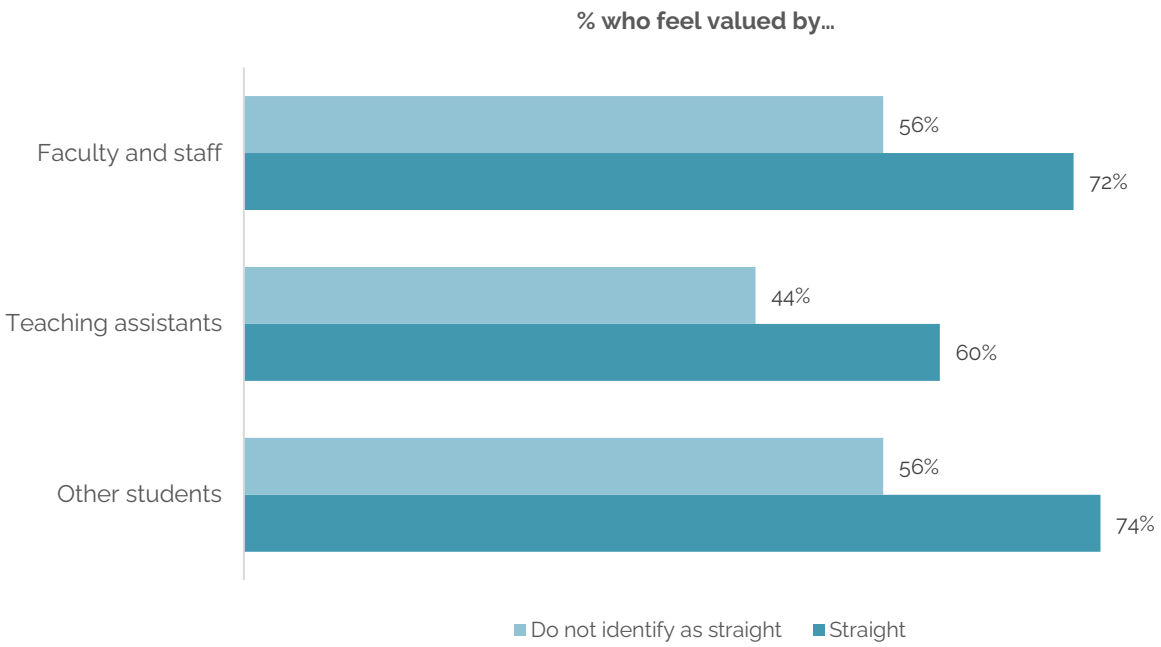

% who believe provide a welcoming environment…
TAs
Instructors
82%
73%
80%
68%
73%
91%
60%
84%
AO Races
East Asian
South Asian
White

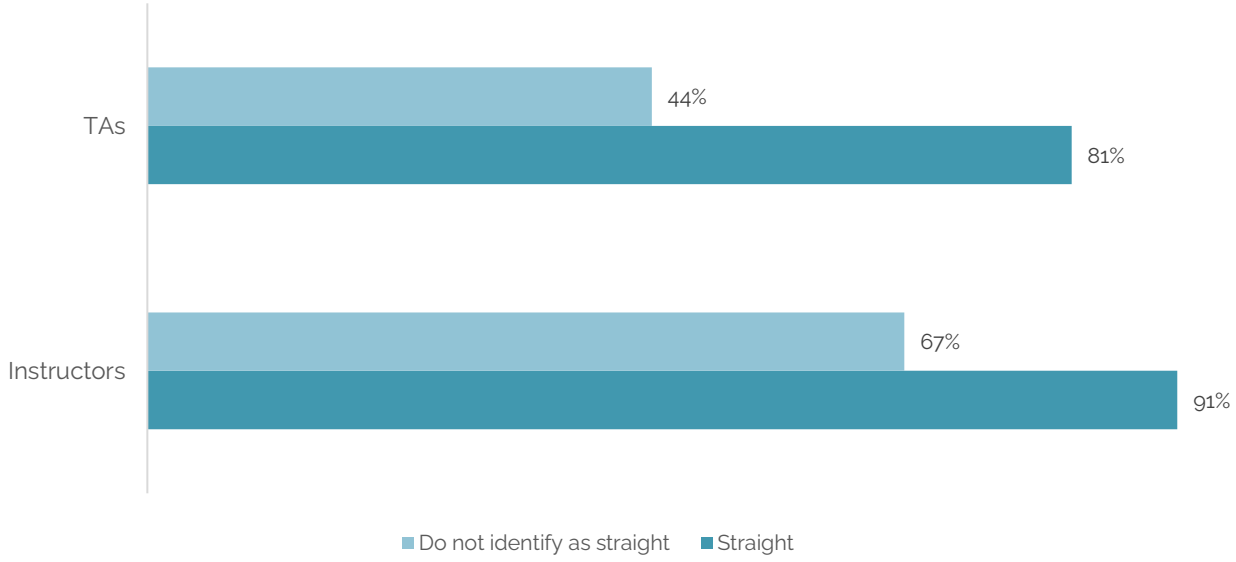

% who feel comfortable…
Expressing my identity in my physics class
Speaking up in physics class
55%
64%
40%
68%
82%
45%
70%
66%
AO Races
East Asian
South Asian
White

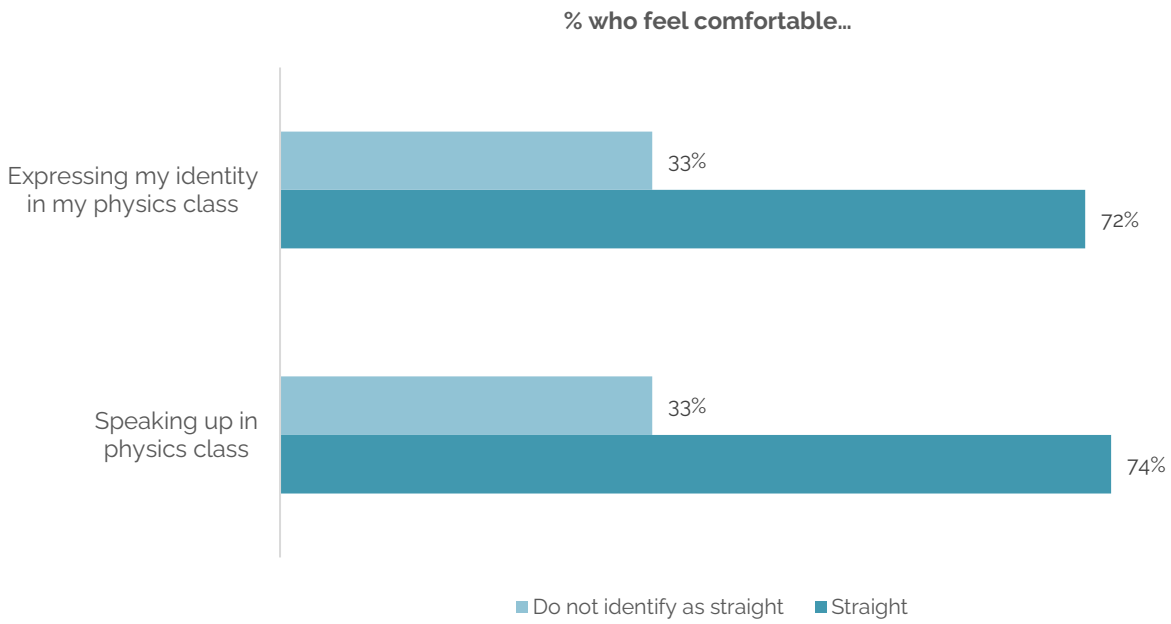


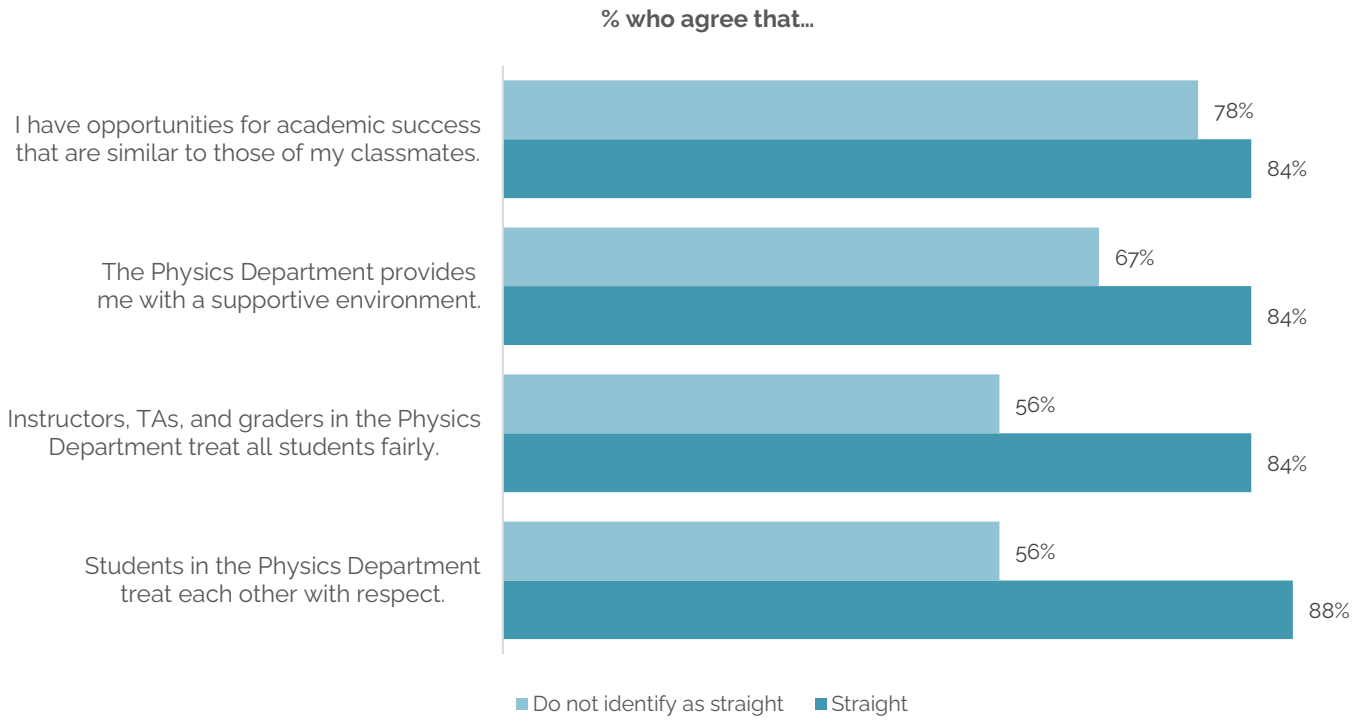
SEXUAL ORIENTATION

- 74% of those who identify as straight and 67% of those who do not identify as straight feel as if they belong in the Physics Department
- 95% of those who identify as straight and 78% of those who do not identify as straight feel that students of their sexual orientation are respected in the Physics Department
- 44% of those who do not identify as straight have experienced instances of exclusion or bias in the Physics Department, compared to 16% of those who identify as straight
    - All sexual orientations cited gender or gender identity expression and race or ethnicity
    - More who do not identify as straight cited sexual orientation, national origin and socioeconomic status
- The majority (56%) of those who do not identify as straight have witnessed instances of exclusion or bias in the Physics Department, compared to 19% of those who identify as straight
    - All sexual orientations cited gender or gender identity expression and religious or spiritual views
    - More who do not identify as straight cited race or ethnicity and national origin


% who feel valued by...
Faculty and staff
56%
72%
Teaching assistants
44%
60%
Other students
56%
74%
Do not identify as straight
Straight


% who believe provide a welcoming environment...
TAs
44%
81%
Instructors
67%
91%
Do not identify as straight
Straight

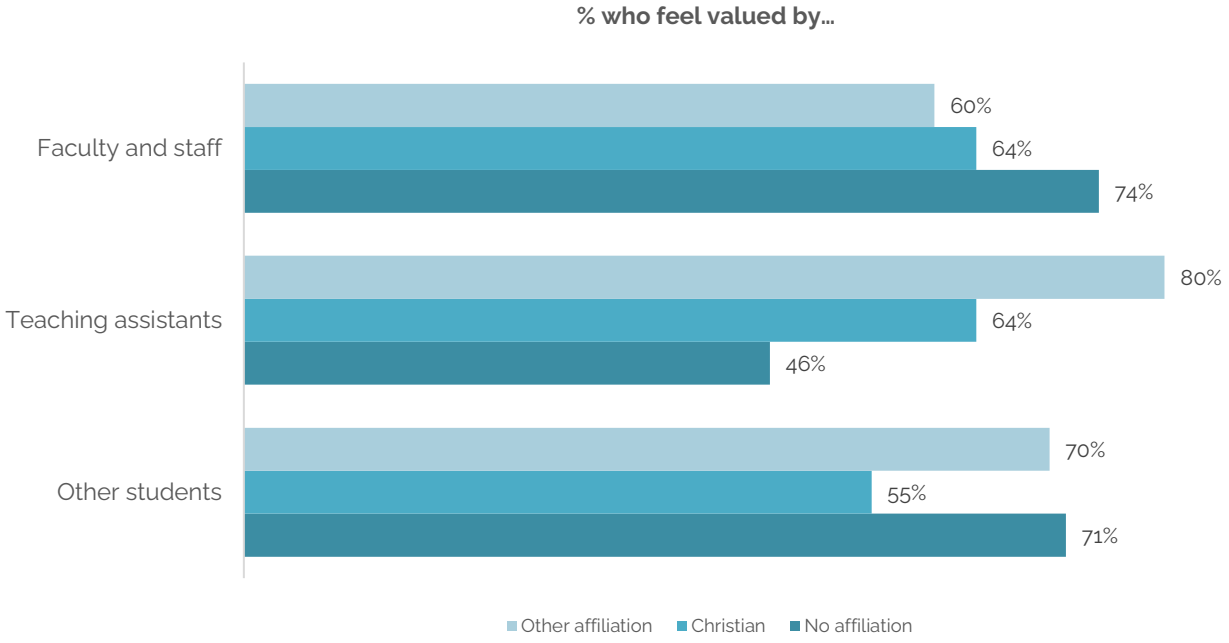


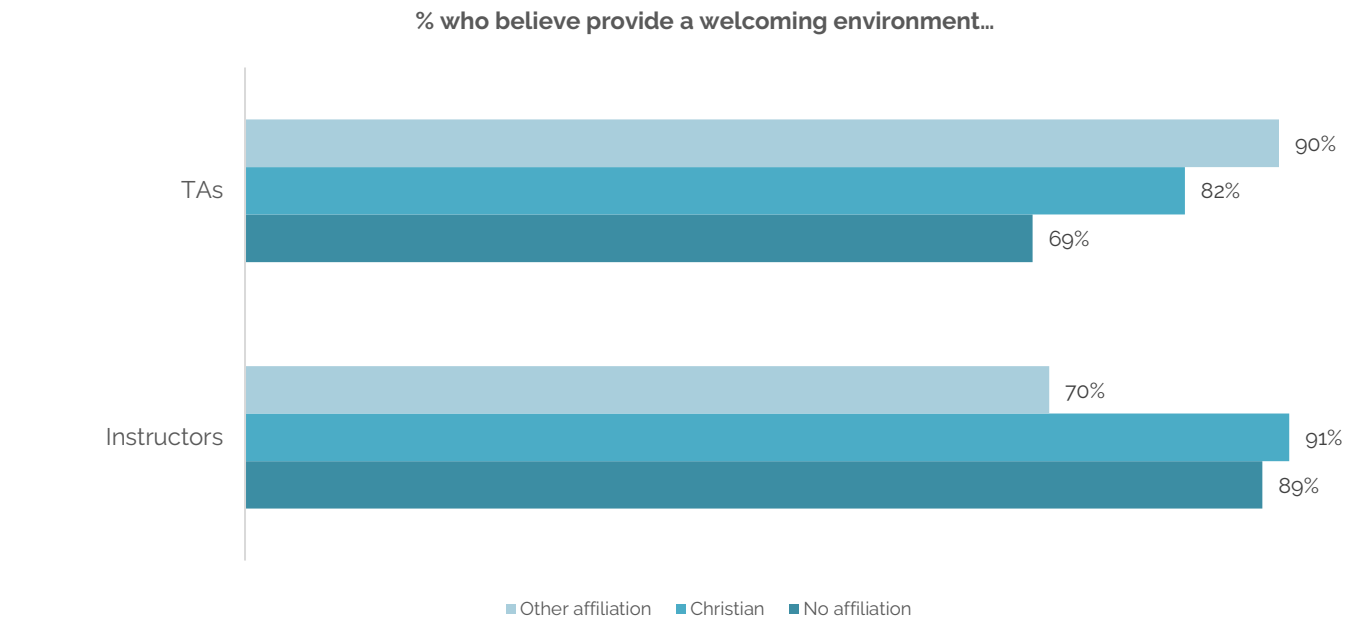


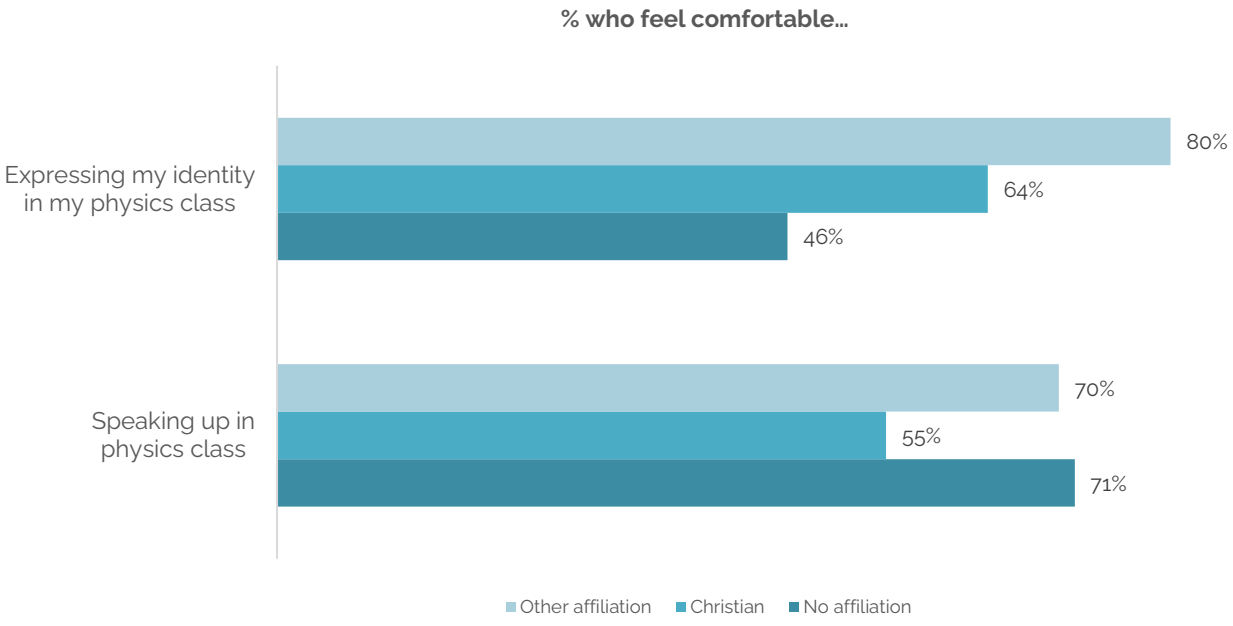
RELIGION

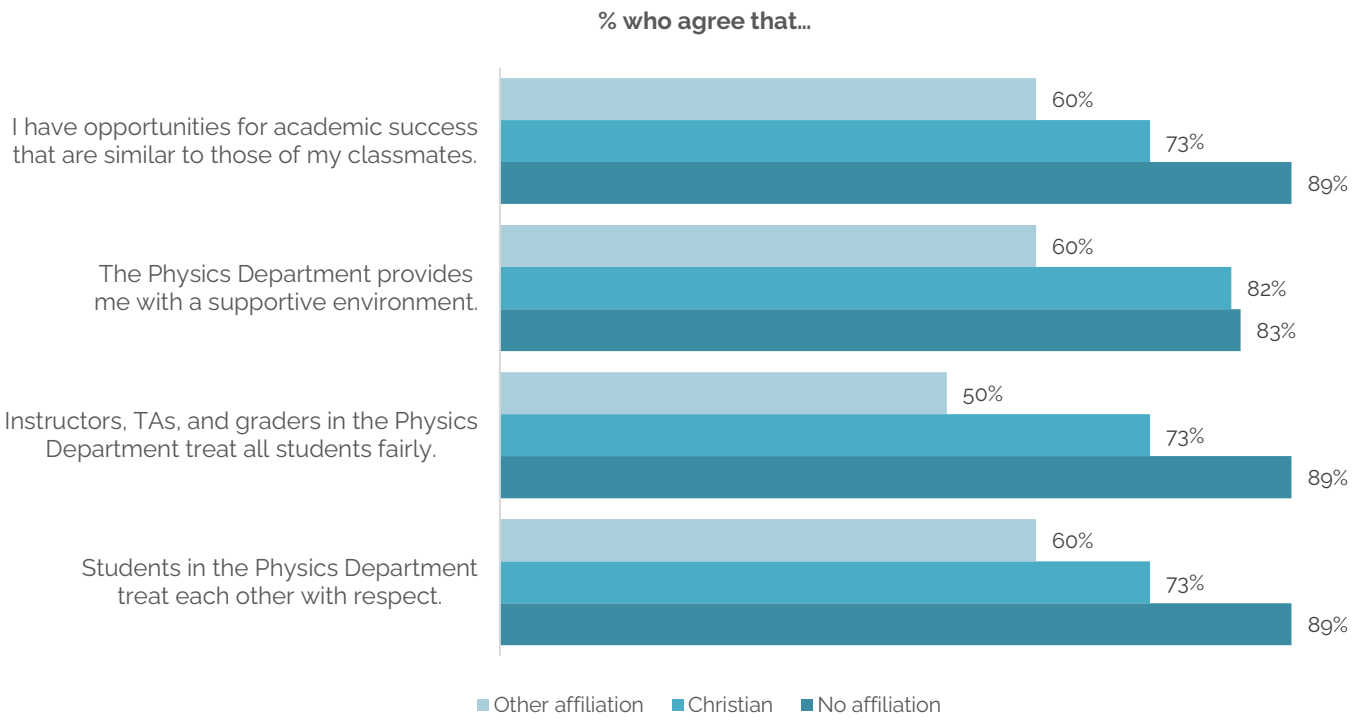
- 83% of those with no religious affiliation, 64% Christian and 40% of those with other religious affiliations feel like they belong in the physics department

- 91% of those with no religious affiliation, 27% Christian and 90% of those with other religious affiliations feel that students with their religious or spiritual views are respected in the Physics Department
- About one-third of those who are Christian or other religious affiliations have experienced instances of exclusion or bias in the Physics Department, compared to 11% with no religious affiliation
    - More Christian or other religious affiliations cited gender or gender identity expression, race or ethnicity, religious or spiritual views, national origin and socioeconomic status
- 29% of those who have no religious affiliation have witnessed instances of exclusion or bias in the Physics Department, compared to 18-20% of Christian or other religious affiliations
    - All or no religious affiliations cited religious or spiritual views
    - More with no religious affiliation cited gender or gender identity expression
    - More Christian or other religious affiliations cited race or ethnicity, national origin and socioeconomic status



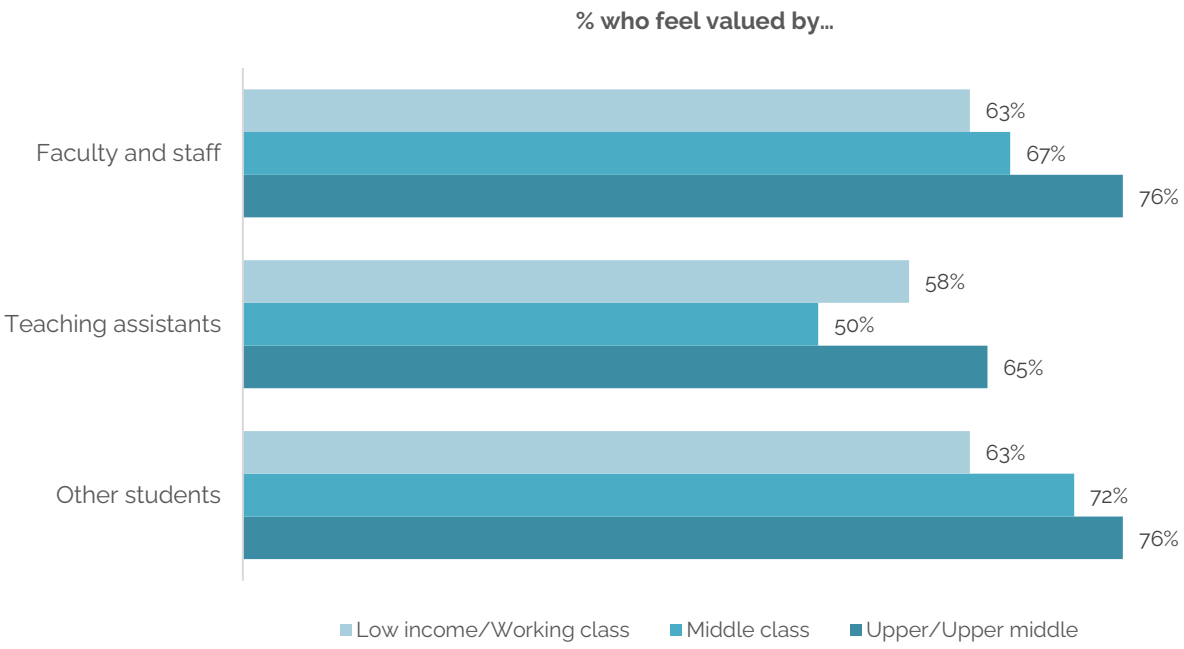

% who believe provide a welcoming environment…
TAs
90%
82%
69%
Instructors
70%
91%
89%
Other affiliation
Christian
No affiliation

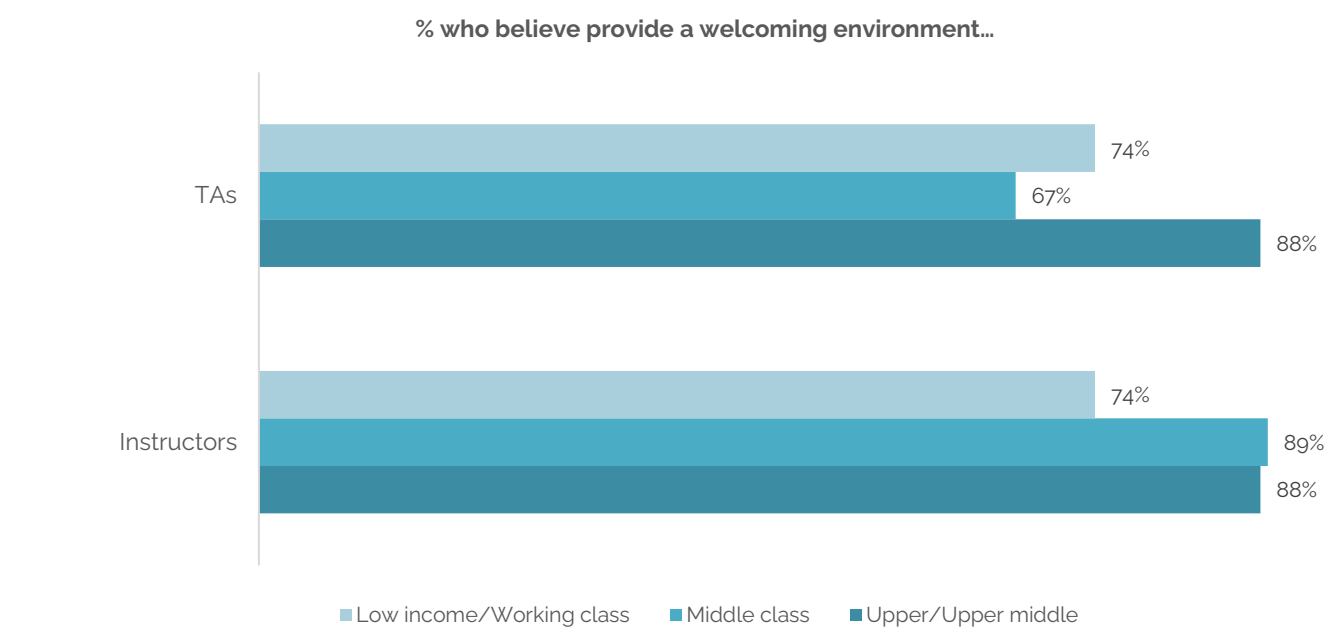

% who feel comfortable…
Expressing my identity in my physics class
80%
64%
46%
Speaking up in physics class
70%
55%
71%
Other affiliation
Christian
No affiliation

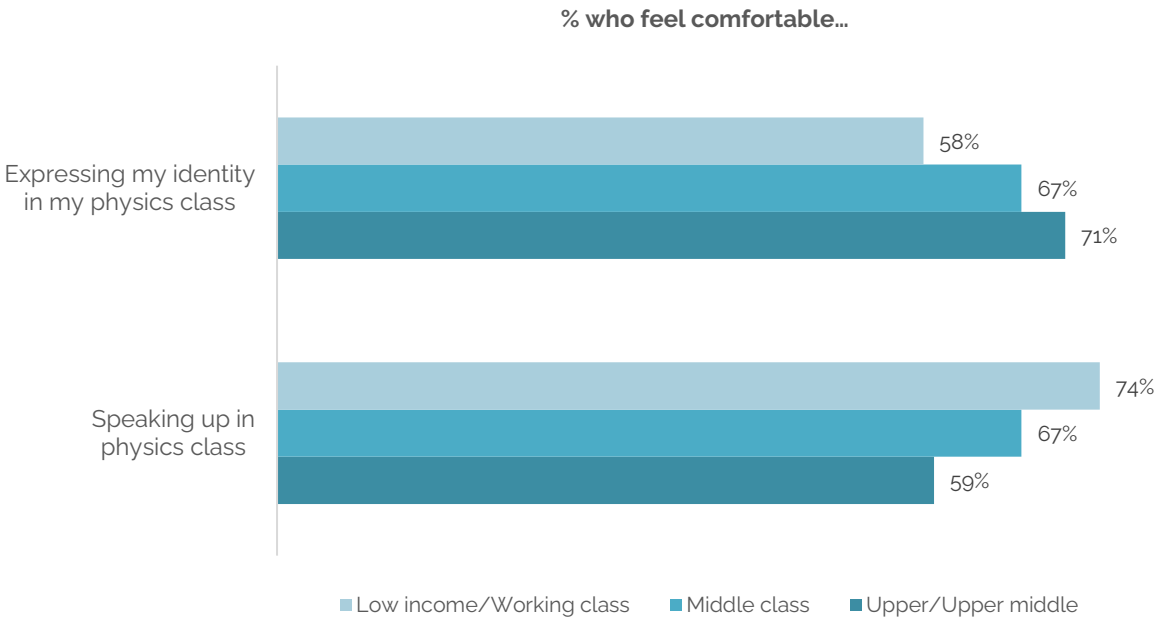

% who agree that...
I have opportunities for academic success that are similar to those of my classmates.
60%
73%
89%
The Physics Department provides me with a supportive environment.
60%
82%
83%
Instructors, TAs, and graders in the Physics Department treat all students fairly.
50%
73%
89%
Students in the Physics Department treat each other with respect.
60%
73%
89%
Other affiliation
Christian
No affiliation

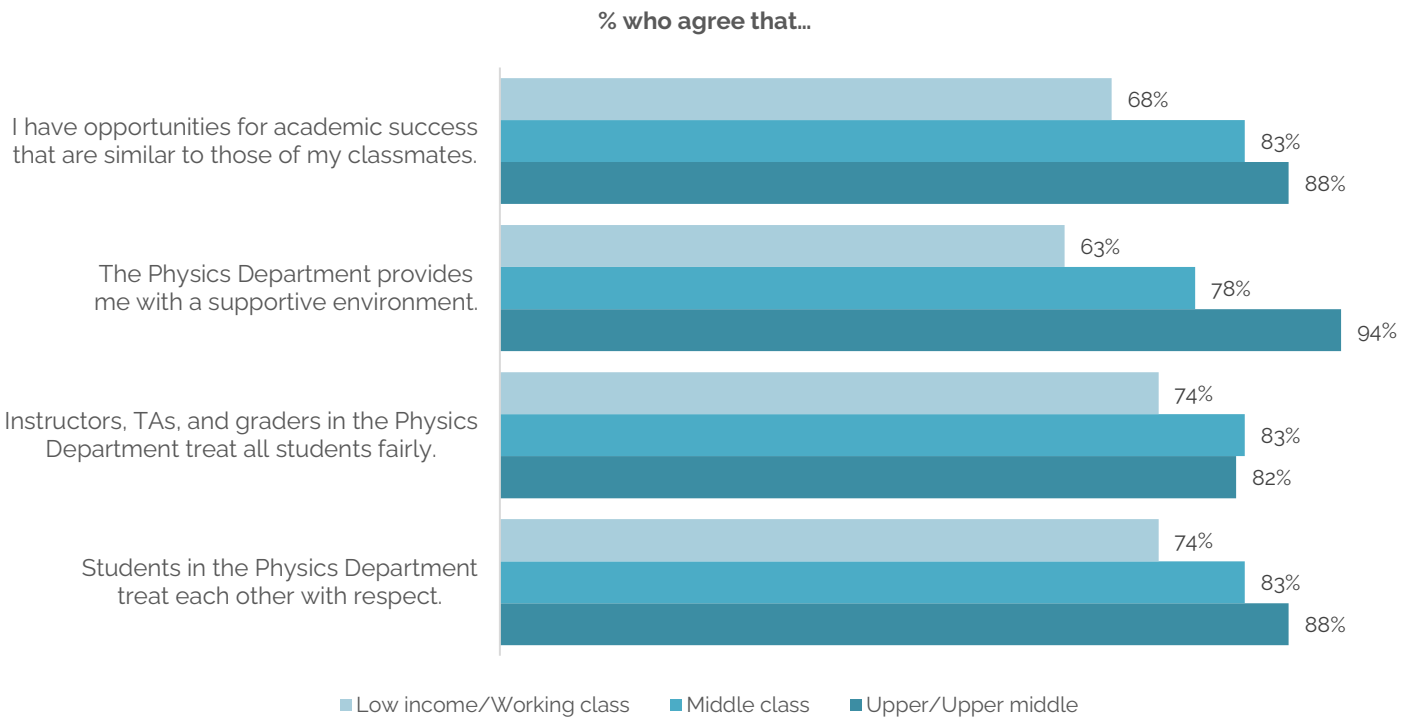
CLASS

- 76% of upper/upper-middle class, 67% of middle class and 68% of low-income/working class feel like they belong in the Physics Department
- 100% of upper/middle and middle class and 84% of low income/working class feel that students of their socioeconomic class are respected in the Physics Department
- About one-third of low-income/working class have experienced instances of exclusion or bias in the Physics Department, compared to 11-18% of upper/upper-middle class and middle class
    - All classes citing gender or gender identity expression, race, or ethnicity and religious or spiritual views
    - More low-income/working class citing national origin
- About one-third of low-income/working class have witnessed instances of exclusion or bias in the Physics Department, compared to 22-29% of upper/upper-middle class and middle class
    - More upper/upper-middle and middle classes cited gender or gender identity expression
    - More low-income/working class cited national origin



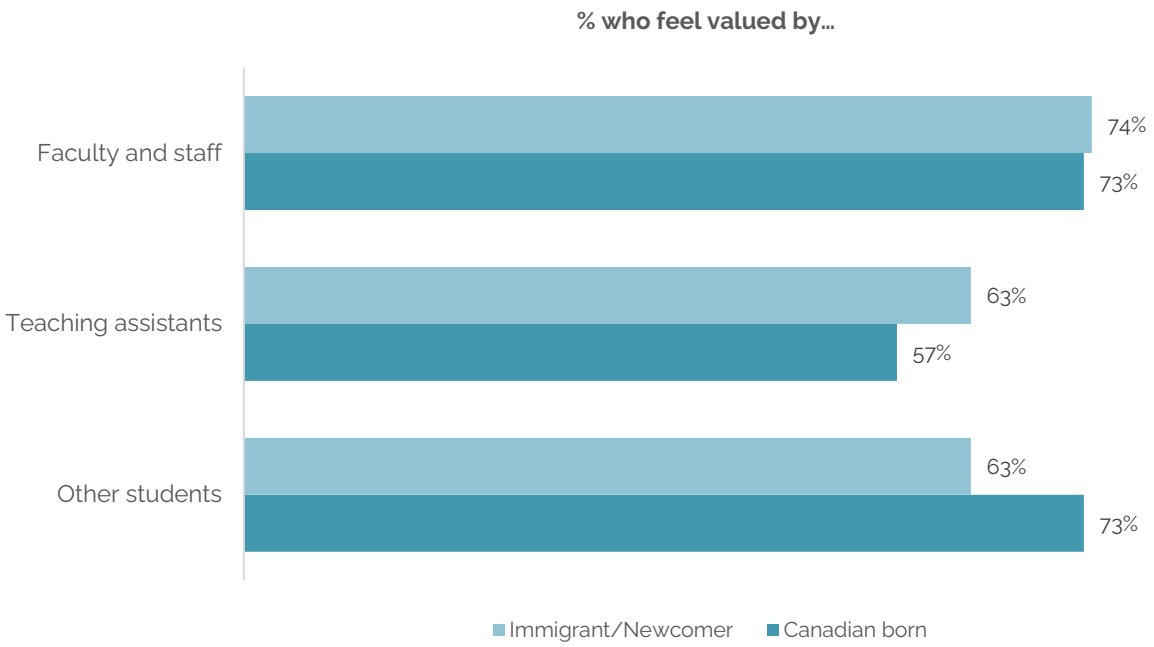

% who believe provide a welcoming environment...
TAs
74%
67%
88%
Instructors
74%
89%
88%
Low income/Working class
Middle class
Upper/Upper middle


% who feel comfortable...
Expressing my identity in my physics class
58%
67%
71%
Speaking up in physics class
74%
67%
59%
Low income/Working class
Middle class
Upper/Upper middle

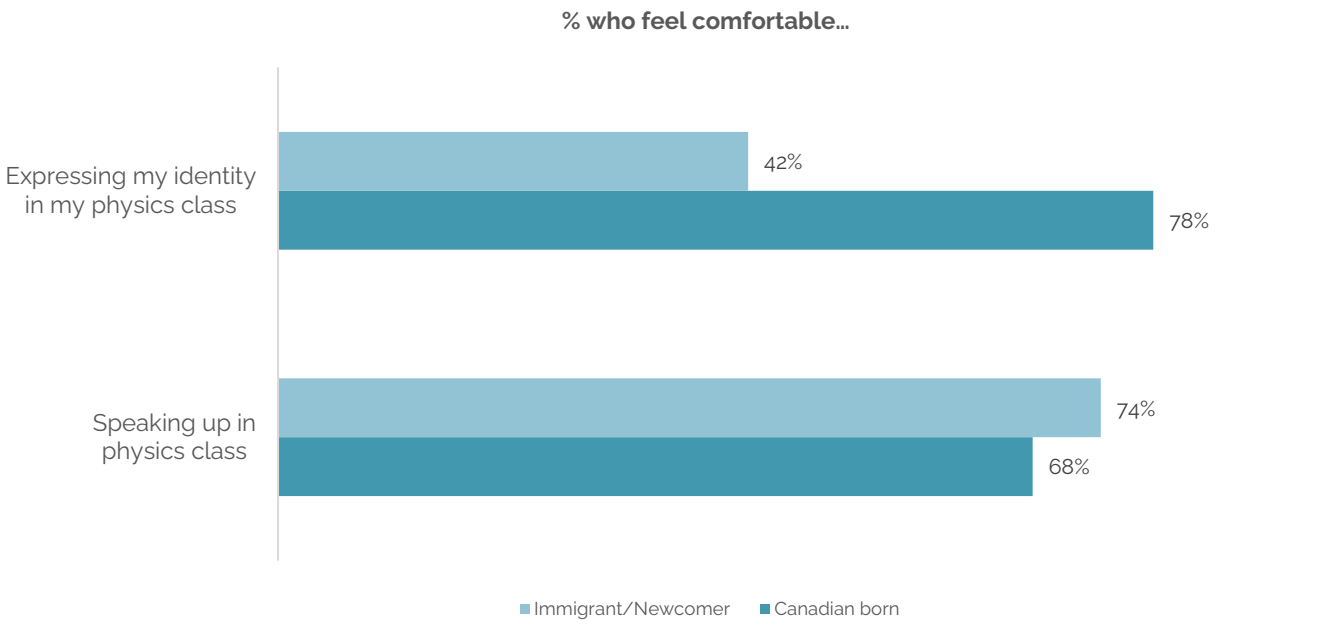


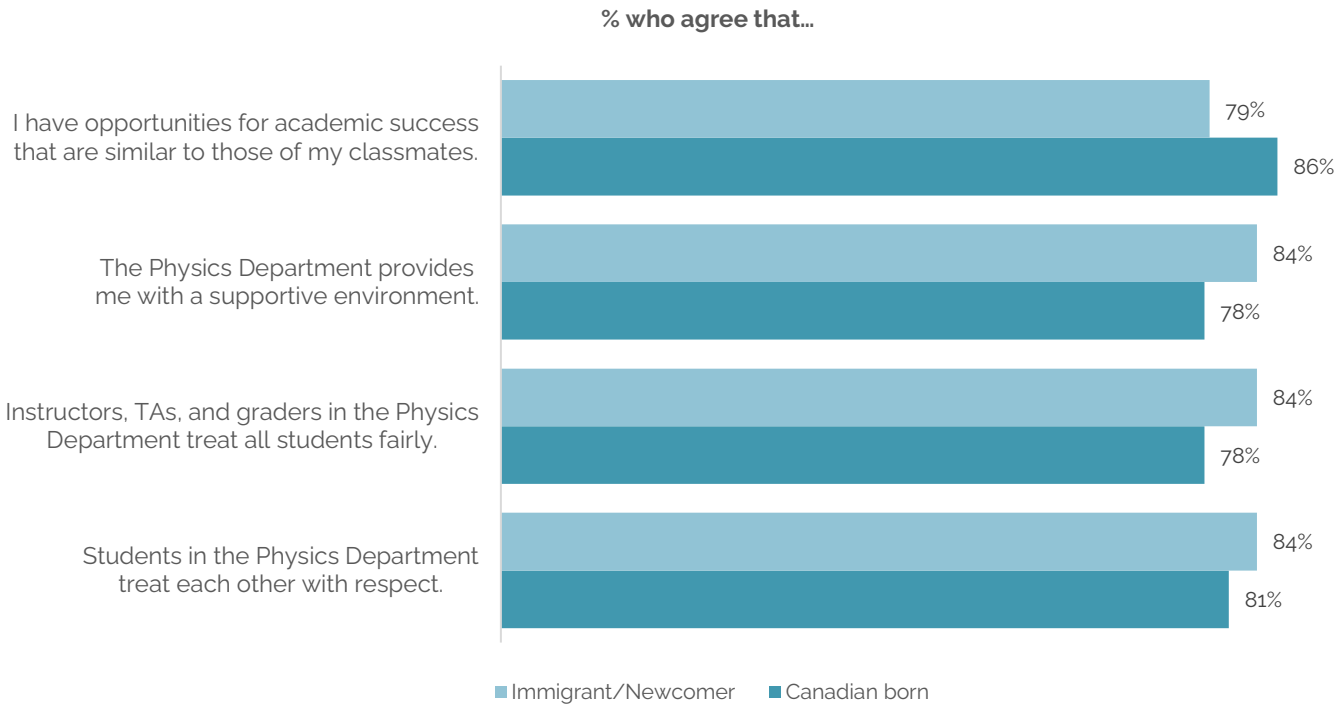
IMMIGRANT

- 78% of those Canadian-born and 68% of immigrants/newcomers feel like they belong in the Physics Department
- 22% of those Canadian-born have experienced instances of exclusion or bias in the Physics Department
    - More Canadian-born cited gender or gender identity expression
- 27% of those Canadian-born have witnessed instances of exclusion or bias in the Physics Department
    - More Canadian-born cited gender or gender identity expression


% who feel valued by...
Faculty and staff
74%
73%
Teaching assistants
63%
57%
Other students
63%
73%
Immigrant/Newcomer
Canadian born


% who believe provide a welcoming environment...
TAs
68%
76%
Instructors
84%
86%
Immigrant/Newcomer
Canadian born


% who feel comfortable...
Expressing my identity in my physics class
42%
78%
Speaking up in physics class
74%
68%
Immigrant/Newcomer
Canadian born


% who agree that...
I have opportunities for academic success that are similar to those of my classmates.
79%
86%
The Physics Department provides me with a supportive environment.
84%
78%
Instructors, TAs, and graders in the Physics Department treat all students fairly.
84%
78%
Students in the Physics Department treat each other with respect.
84%
81%
Immigrant/Newcomer
Canadian born

CONCLUSION AND RECOMMENDATIONS:

Below are Veza's recommendations for the SFU Department of Physics based on focus groups, assessments and Veza's expertise in EDI and higher education.

Application/Admission and Outreach/ Recruitment Process:

To increase the representation of equity-deserving groups, review the department's graduate admission processes and identify any factors that may prevent or disadvantage equity-deserving students.

- Recruitment efforts and materials for both undergraduate and graduate students should aim to address stereotypes around Physics being "tough" and make it more accessible to equity-deserving groups.
    - Share facts to support how welcoming the department is of students from diverse academic and demographic backgrounds on your website, recruitment materials and other recruitment efforts (e.g., when speaking with high school students)
    - Showcase the different career paths past students have taken and include their testimonials as well
    - Highlight subjects like “Astronomy” that gather a lot of attention, according to some focus group participants, and have led to many students signing up for Physics in the past
- Continue to focus on increasing the representation of equity-deserving communities among the various identities in the faculty, staff, and student population. Increasing representation of equity-deserving communities fosters a sense of inclusion and belonging.
- Conduct an audit to determine the challenges equity-deserving communities may face in graduate students' admissions and application process, and advocate for SFU admissions and recruitment to do the same.
- Include diversity of thought (i.e., people with different backgrounds, experiences, expertise and skills) and representation of equity-deserving communities in the admission (for graduate students) as well as recruitment and outreach process.
- The department can also decide to have an aspirational number to increase members of the equity-deserving groups in its admission of students and staff recruitment exercises.
- Evaluate how international students are recruited and supported in graduate programs, identify and address barriers

Academic Experience:

- To engage, include and accommodate more students, provide flexible scheduling of lectures/courses/programs/events (e.g., scheduling coffee chats at different times during the week and offering key courses in multiple semesters during the year). Flexible

schedules would also help those with children participate in the program and support faculty/instructors who need a work-life balance
- Many focus group participants also want the practice of asking students to pay to access assignments online to be discontinued, as it places an added financial burden on many.
- Encourage a healthy mix of people with different identities across study groups.
- Normalize asking questions by having "Ask Us Anything" type sessions hosted by TAs and/or faculty/study group representatives as opposed to just office hours to create an environment in which students feel comfortable asking questions without fear of judgment

Student Experience:

- Understand and create awareness about all the resources accessible to students (focus group participants mentioned the "Hub" and Discord channels), etc. and encourage open clubs and communities. Have designated students as per the Science Peer Mentorship Programs or others who are proactive in initiating contacting and including others to act as 'buddies' and make new and/or "excluded" students feel welcome.
- Offer training and workshops on microaggressions, unconscious bias, mental health, power and privilege, and inclusive language for faculty, teaching assistants, staff, and graduate and undergraduate students.
- Enhance communication regarding initiatives, programs, and events by clearly highlighting the target audience (e.g., undergraduate and/or graduate students) and using different methods (e.g., in-class announcements, posters, etc.) to reach more students. The buddy program will help to support attendance and engagement.
- Explore creating more inclusive physical spaces accessible to all students (e.g., gender-inclusive bathrooms and study/ lounge spaces where students can connect). If such spaces already exist, greater communication and clarity are needed for students to feel comfortable using them.
- Provide students with greater information on destigmatization and individualized mental health support and demystify the stereotypes attached to studying Physics. This will help reduce the pressure that comes with studying Physics. Organize more social events which will enable students (undergraduate & graduate) to meet and interact, e.g., games night, coffee chat, pancake, observatory/starry nights, and pizza parties.
- Engage alumni in mentorship for graduate and undergraduate students
- Further, engage the co-op office to elicit the interest of undergraduates and their job prospects as future physicists

Student Evaluation

- Streamline how laboratory sessions are conducted with a focus on improving the quality of instruction

- Revisit assessment grading systems for assignments to ensure they are consistent within the department (please see focus group notes for more context on challenges that students face)

Career Paths

- Introduce more industry perspectives to the curriculum and the delivery of courses in the department through guest lectures and seminars.
- Encourage attendance of industry conferences, especially for students in their final academic year.
- Introduce a mentoring program for students to prepare for the industry and different career choices - mentors can be industry experts and/or alumni.
- Work with Faculty Association on faculty recruitment, tenure and promotion policy to increase the representation of equity-deserving communities.
- As a best practice, provide adequate and effective training to Teaching Assistants to prepare them for future instructor and professor roles and provide them with opportunities to enhance facilitation and teaching skill

SHORT-TERM RECOMMENDATIONS (NEXT THREE MONTHS):

- Continue to create a forum for members of equity-deserving groups to share perspectives and feedback
- Host inclusive ice-breaker sessions in the Fall for incoming students led by equity-deserving groups
- Promotion campaign to engage first-year students in the field of physics. Target first-year classes as a way to further engage them in the field
- Identify motivated students who can host "ask me anything" sessions and social events (coffee breaks, Starry Nights, pizza parties, etc.) to bring different groups of students together.
- Create a calendar for guest lectures and industry talks to bring external subject-matter expertise, including more speakers from equity-deserving communities, and help students understand potential career paths
- Work with representatives of student clubs and committees to make events and meetings more inclusive and approachable.

LONG-TERM RECOMMENDATIONS:

- Revisit course schedule, structure of lab sessions and assignment grading systems to provide more flexibility and reduce pressure on students/avoid fatigue and burnout
- Set goals for increasing the representation of equity-deserving groups in the department
- Engage with Physics groups representing equity-deserving groups more formally, for example, the National Society of Black Physicists. Promote membership in these groups for undergrad, graduate and faculty

- Introduce regular workshops for EDIB (equity, diversity, inclusion, and belonging) topics relevant to the department and use classroom discussions to create wider sensitivity to microaggressions, biases, and discrimination
- Explore creating more inclusive physical spaces accessible to all students (e.g., gender-inclusive bathrooms)
- Provide greater information on mental health support available to students at SFU and work with SFU services to create workshops specifically for physics students once a semester
- Implement suggested steps during the outreach and recruiting process to demystify the stereotypes attached to studying Physics
- Highlight research funding opportunities for a students'
- Create/identify mentorship programs for members of the equity-deserving groups at the graduate, teaching assistants and faculty levels
- Share and regularly update a list of internal resources (including Discord channels) and industry events that students can access.

APPENDIX A: FOCUS GROUP SCHEDULE AND INSIGHTS

Focus Group Schedule:

Undergraduate sessions:

- Thursday, March 3, 9:30 AM PST (50 min x2 PHYS 201 only)
- Wednesday, March 9, 12:30 PM PST (60 min)
- Thursday, March 10, 9:30 AM PST (60 min)
- Thursday, March 10, 12:30 PM PST (60 min)
- Monday, March 14, 2:30 PM PST (60 min)
- Thursday, March 17, 11:00 AM PST (60 min)

Graduate sessions:

- Tuesday, March 8, 1:30 PM PST (60 min)
- Thursday, March 10, 11 AM PST (60 min)
- Thursday, March 17, 12:30 PM PST (60 min)

Joint undergraduate/graduate session:

- Thursday, March 17, 9:30 AM PST (60 min)

FOCUS GROUP DISCUSSIONS - DETAILED INSIGHTS

From the focus groups conducted with different groups of undergraduate and graduate students of the Physics department, the following themes were featured. Please note that the points below apply to undergraduate and undergraduate students unless stated otherwise.

1. **Inclusive Culture**

Both undergraduate and graduate students agreed that the Physics Department of Simon Fraser University provides a friendly and conducive environment for learning. While some of the participants attributed this to the small numerical size of the department, others pointed out that the faculty and staff are amiable, welcoming, and committed people who are always willing to help students. According to the participants, this makes the students feel a great sense of inclusion in the department. This is a strength of the department which the students want the department to build upon. Participants suggested that the department creates more time for events or avenues for students to meet. Many participants highlighted that the present (i.e., crowded, and inflexible) schedule of lectures and laboratory activities does not give students the time to participate in social activities that can help foster inclusion. According to them, social activities in the department have been significantly impacted by the COVID-19 pandemic, which has had a negative effect on the growth of inclusion in the department. For instance, in-person activities are just gradually coming back to the school after more than two years of the pandemic, which

prevented physical gatherings. Students also highlighted that subtle discrimination against equity-deserving students occurs in the department by other students, faculty, and TAs.

Therefore, to create more inclusion, **participants** recommended that:

a. The department should continue organizing some of the social events before the pandemic, enabling students (undergraduate & graduate) to meet and interact, such as games night, coffee chat, pancake, observatory/starry nights and pizza parties. They highlighted that these should be offered at different times and days of the week to increase participation in these events. The participants also recommended that the department consider planning new programs that can help foster inclusiveness and ensure that students have memorable experiences in the department, such as more social events. The role of the Student Association was identified as being pivotal to promoting an inclusive academic environment. Thus, it was recommended that the department support the student association to develop initiatives to strengthen interactions and build connections among students. Some students still feel shy and may not know how to communicate well, join other students for events, or ask for assistance. Also, outspoken students can be encouraged to initiate conversations and build connections, especially with new students.
b. There should be clearer communication of events, information, and activities to students through consistent information dissemination channels. Some participants highlighted that they were not receiving information about the school's activities, which sometimes made them feel excluded.
c. The opportunities for the students and the faculty to interact and get the students to be heard should continue.
d. That there should be provision for gender-neutral bathrooms.
e. There should be a survey among the undergraduate and graduate students to determine a suitable time when most students can participate in the coffee time and feel included.

2. Academic Schedule, Activities and Coursework

This is a major theme of the focus groups. Virtually all the participants commented on this issue. The participants expressed their displeasure with the current schedule, including lectures, activities in the laboratories, and social events. Undergraduate and graduate students highlighted that the department's course scheduling engagements and social events are so crowded/overlapping that it puts pressure on students and does not promote inclusion. They viewed that the lack of flexibility in the lecture timetable and the lack of clear guidance and information on the laboratory activities often prevent students from participating in departmental activities, thereby negatively affecting their sense of inclusion. Another issue the participants mentioned was the stereotype built around the study of Physics as a challenging field, which often strains students' mental health. Participants highlighted that there are some core courses that students would like to be

able to enroll in during both Summer and Fall sessions, which are present but are only taught once a year. This, according to them, makes it difficult for some students to choose courses of interest and graduate on time. For instance, some raised the issue of summer physics courses not being offered. Participants also felt the need for the department to introduce many industry perspectives to the study of Physics, making them understand the job prospects and opportunities for a physicist. Some students highlighted that they could not find jobs to support their studies. Another concern that the students raised was the issue of online assignments and the marking scheme some Professors use. Participants expressed their displeasure over the department's idea of asking students to pay about CAD 90 to access assignments online, which would be marked using online software. According to the participants, this singular action portrays the department as highly insensitive to their financial plight. Some students discussed challenges based on their English language levels and how that impacts their class participation.

The participants, therefore, recommended the following:

a. The lecture notes and study materials should be recorded and made accessible to students who prefer such for a more extended period such as the semester.
b. That assignments should be given from the textbooks instead of online platforms they have to pay for, and the grading system for assignments should be revised.
c. The lecture schedule is adjusted to allow students to register for different physics courses, e.g., enrolling for physics courses during the summer and having more 200-level Astronomy courses.
d. The laboratories need to be more structured and organized, connecting more to the regular coursework (they referred to the Chemistry department's approach).
e. The Teaching Assistants should be more interactive during their sessions.
f. Provide greater information on EAL courses and resources that students can access

3. Diverse Representation

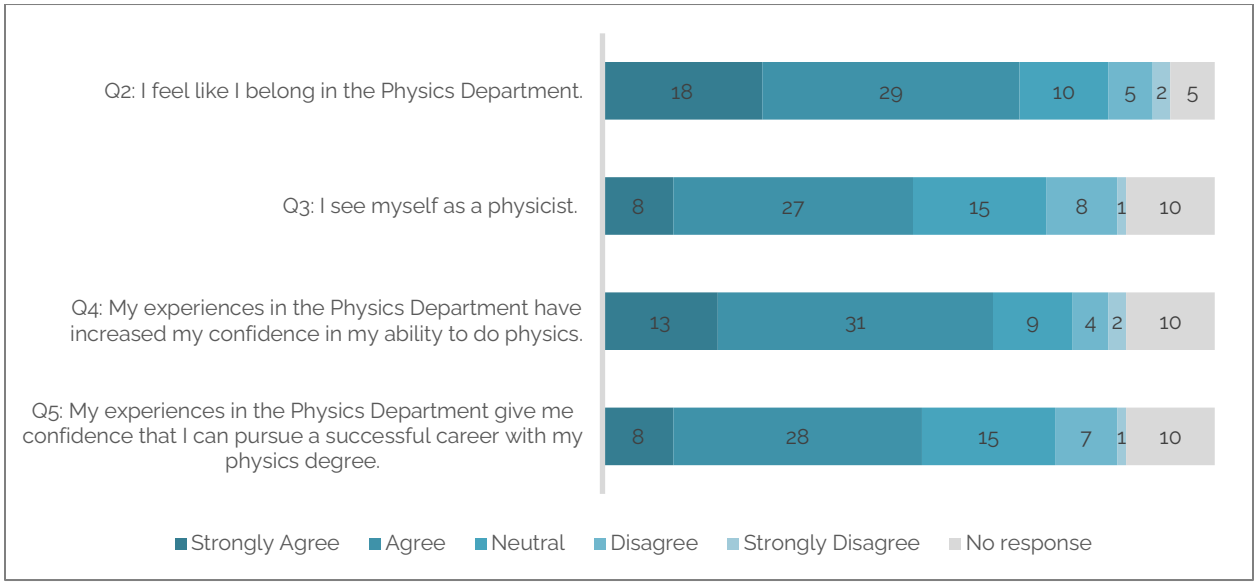
Some participants posited that the student population does not reflect enough diversity, citing the low numbers of female students and the near absence of indigenous students and IBPOC students. Also, some students highlighted that some faculty and students make inappropriate jokes toward students that identify as women. The participants therefore recommended:

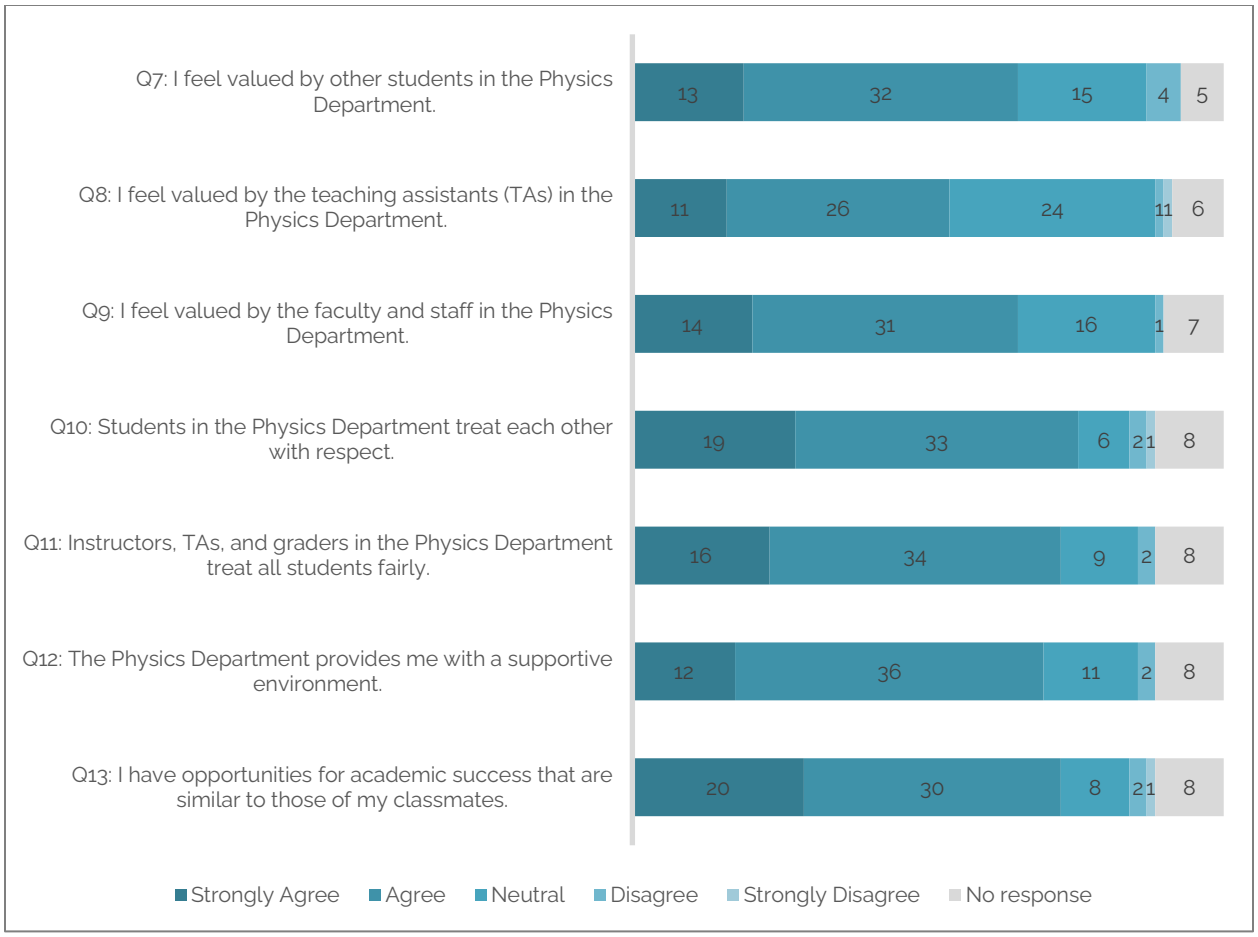
a. That the department should work to increase the admissions of members from equity-deserving groups.
b. The department should provide more training and awareness to its faculty, staff and students on diversity, inclusion, and inclusive language. The department should work with the student associations to organize activities that will encourage students to learn and understand other people's cultures—especially Indigenous communities

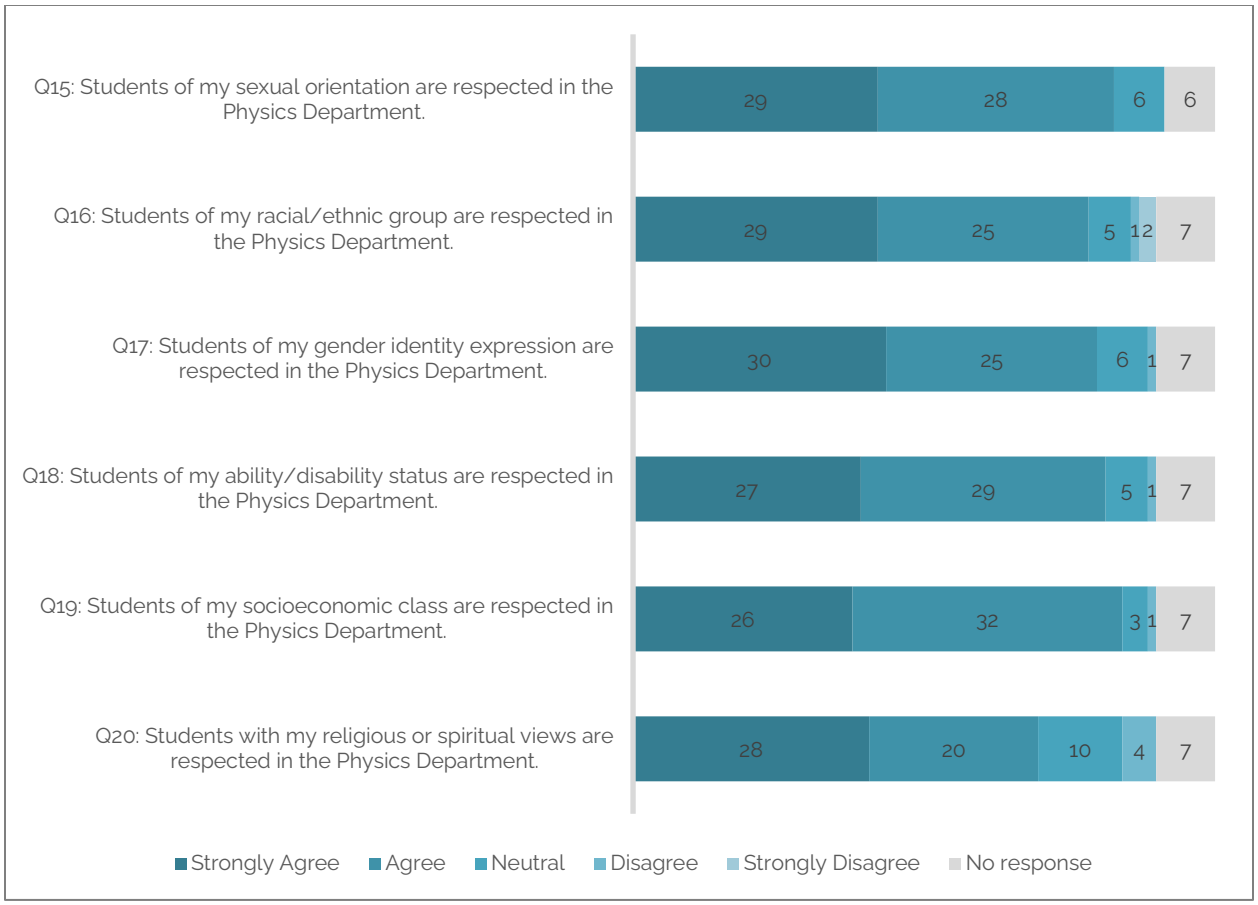
c. The department should work with the University health unit to provide students with more personalized mental health services. A few students identified the possibility of providing more mental health support by having a specific mental health expert in the department (e.g., a liaison from Health and Counseling aware of the pressure that Physics students face) instead of relying on the general health facilities of the school.

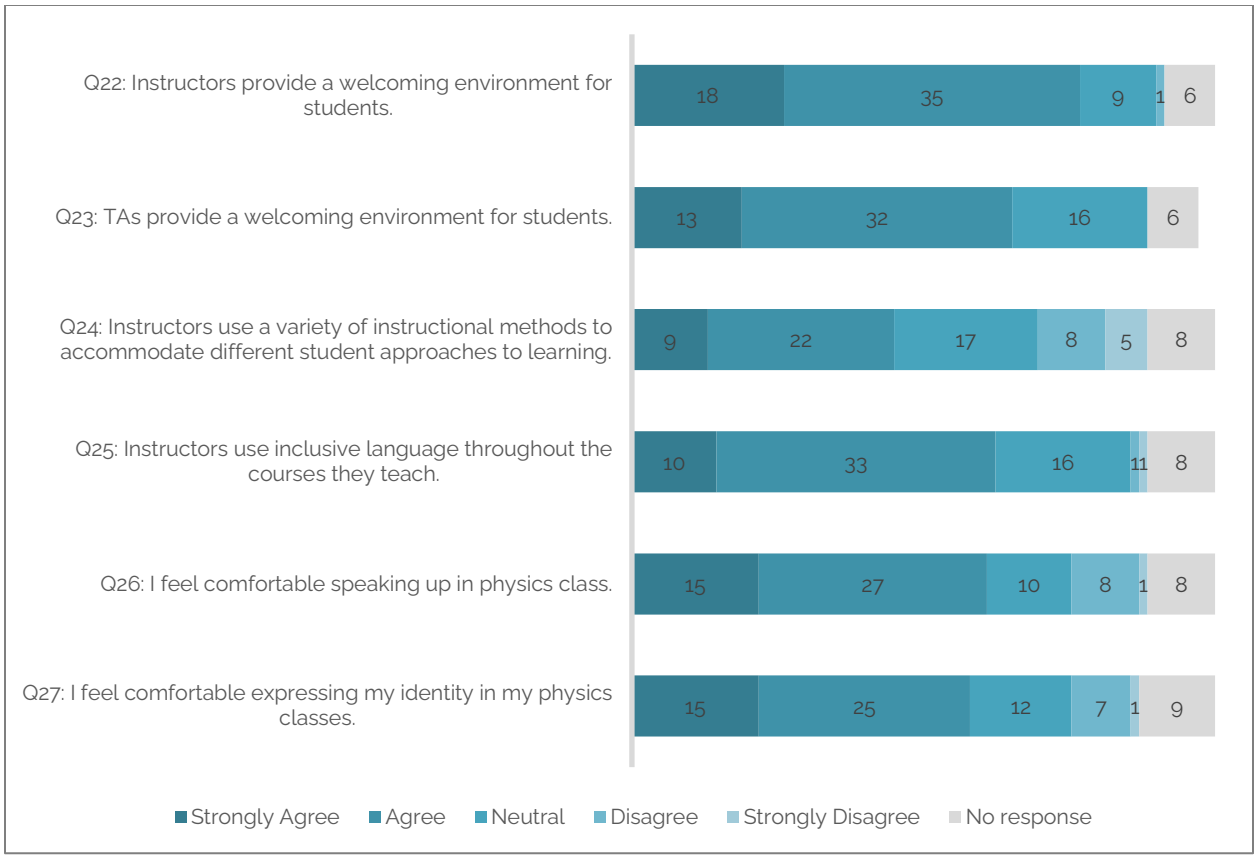
APPENDIX B: OVERALL SURVEY RESULTS

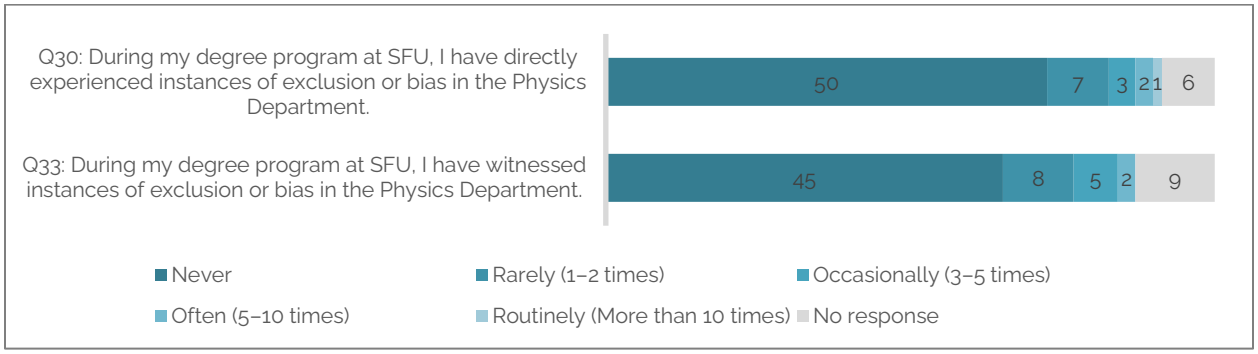
Undergraduate response counts
Total n=69

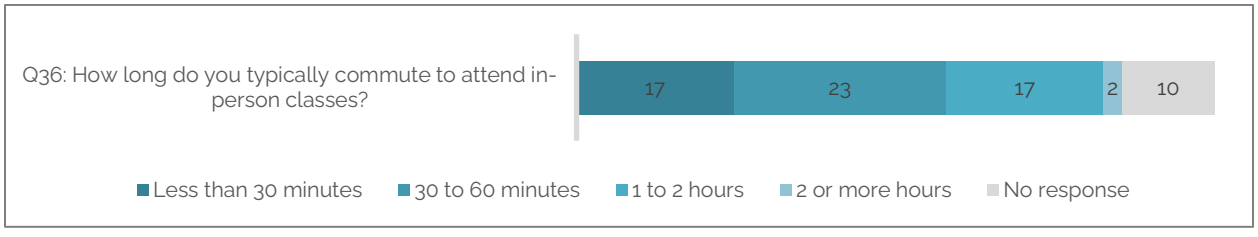


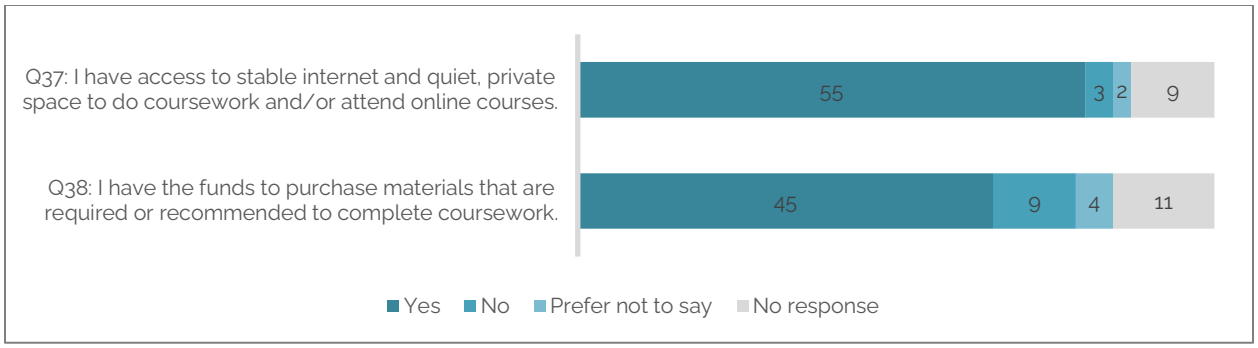

Q7: I feel valued by other students in the Physics Department.
13
32
15
4
5
Q8: I feel valued by the teaching assistants (TAs) in the Physics Department.
11
26
24
1
1
6
Q9: I feel valued by the faculty and staff in the Physics Department.
14
31
16
1
7
Q10: Students in the Physics Department treat each other with respect.
19
33
6
2
1
8
Q11: Instructors, TAs, and graders in the Physics Department treat all students fairly.
16
34
9
2
8
Q12: The Physics Department provides me with a supportive environment.
12
36
11
2
8
Q13: I have opportunities for academic success that are similar to those of my classmates.
20
30
8
2
1
8
Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree
No response

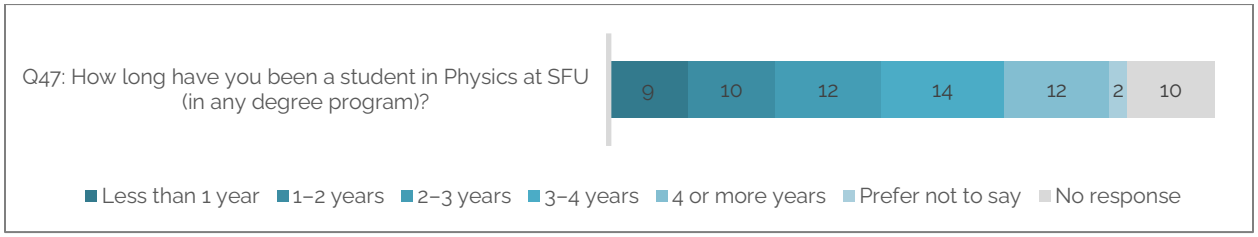

Q15: Students of my sexual orientation are respected in the Physics Department.
29
28
6
6
Q16: Students of my racial/ethnic group are respected in the Physics Department.
29
25
5
12
7
Q17: Students of my gender identity expression are respected in the Physics Department.
30
25
6
1
7
Q18: Students of my ability/disability status are respected in the Physics Department.
27
29
5
1
7
Q19: Students of my socioeconomic class are respected in the Physics Department.
26
32
3
1
7
Q20: Students with my religious or spiritual views are respected in the Physics Department.
28
20
10
4
7
Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree
No response


Q22: Instructors provide a welcoming environment for students.
18
35
9
1
6
Q23: TAs provide a welcoming environment for students.
13
32
16
6
Q24: Instructors use a variety of instructional methods to accommodate different student approaches to learning.
9
22
17
8
5
8
Q25: Instructors use inclusive language throughout the courses they teach.
10
33
16
1
1
8
Q26: I feel comfortable speaking up in physics class.
15
27
10
8
1
8
Q27: I feel comfortable expressing my identity in my physics classes.
15
25
12
7
1
9
Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree
No response

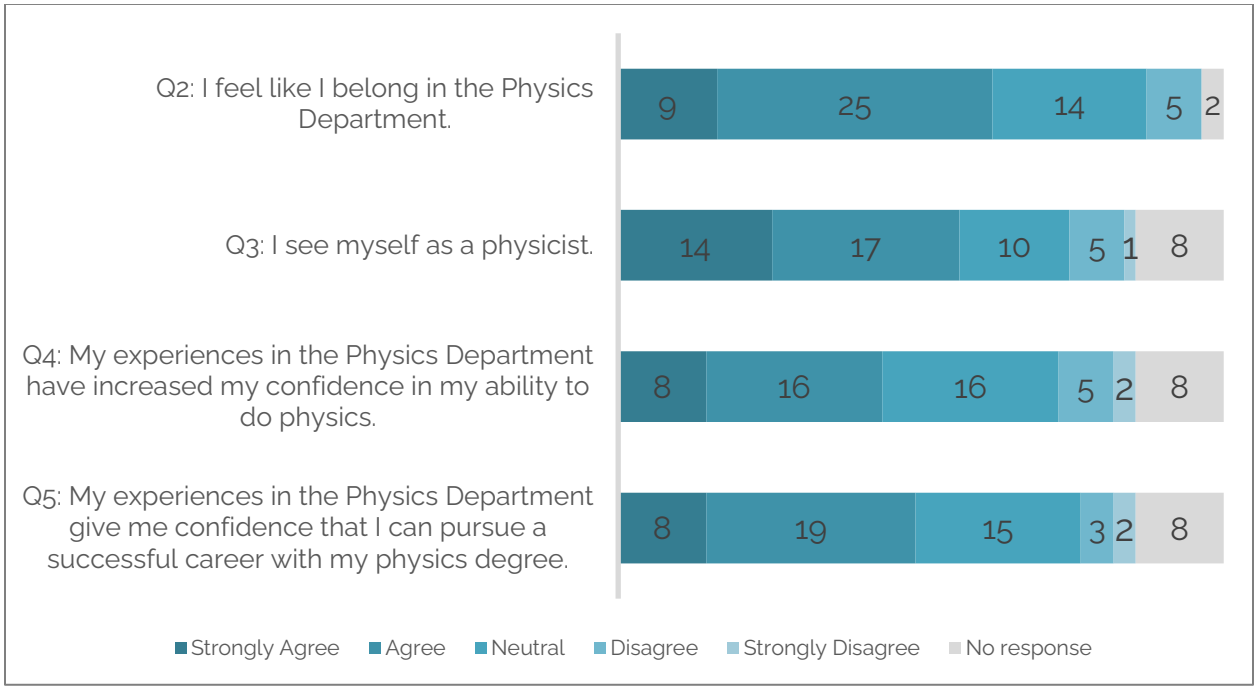

Q30: During my degree program at SFU, I have directly experienced instances of exclusion or bias in the Physics Department.
50
7
3
2
1
6
Q33: During my degree program at SFU, I have witnessed instances of exclusion or bias in the Physics Department.
45
8
5
2
9
Never
Rarely (1–2 times)
Occasionally (3–5 times)
Often (5–10 times)
Routinely (More than 10 times)
No response

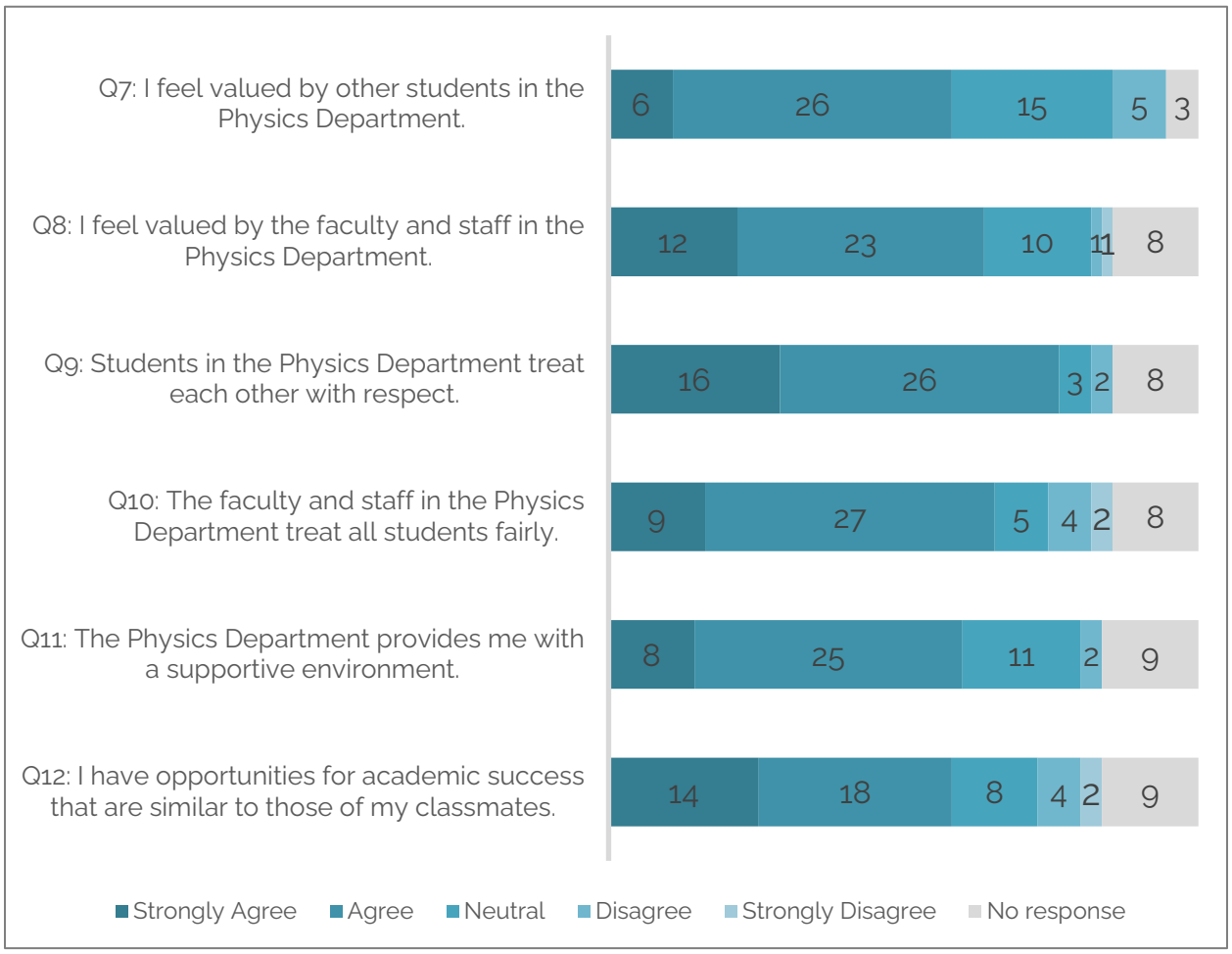

Q36: How long do you typically commute to attend in-person classes?
17
23
17
2
10
Less than 30 minutes
30 to 60 minutes
1 to 2 hours
2 or more hours
No response

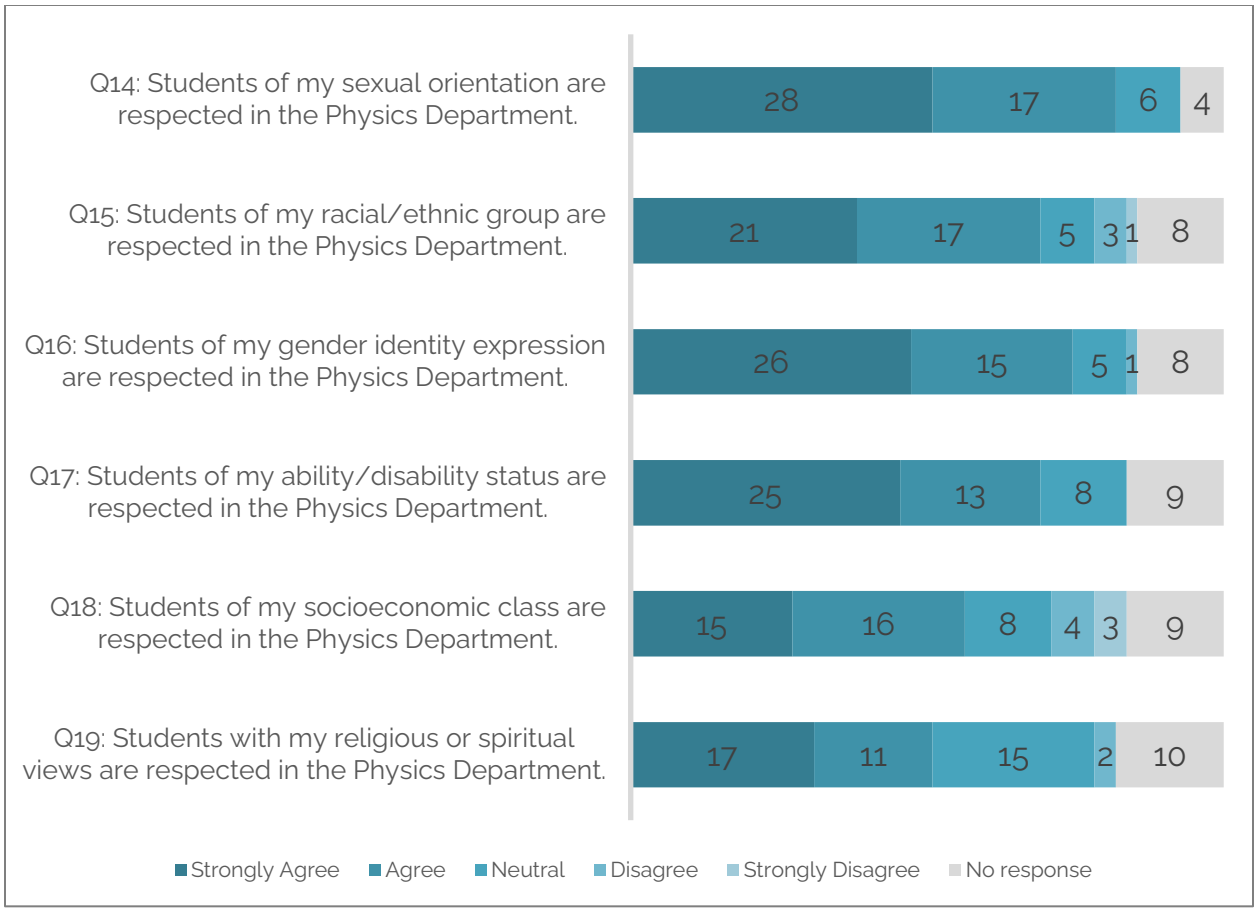


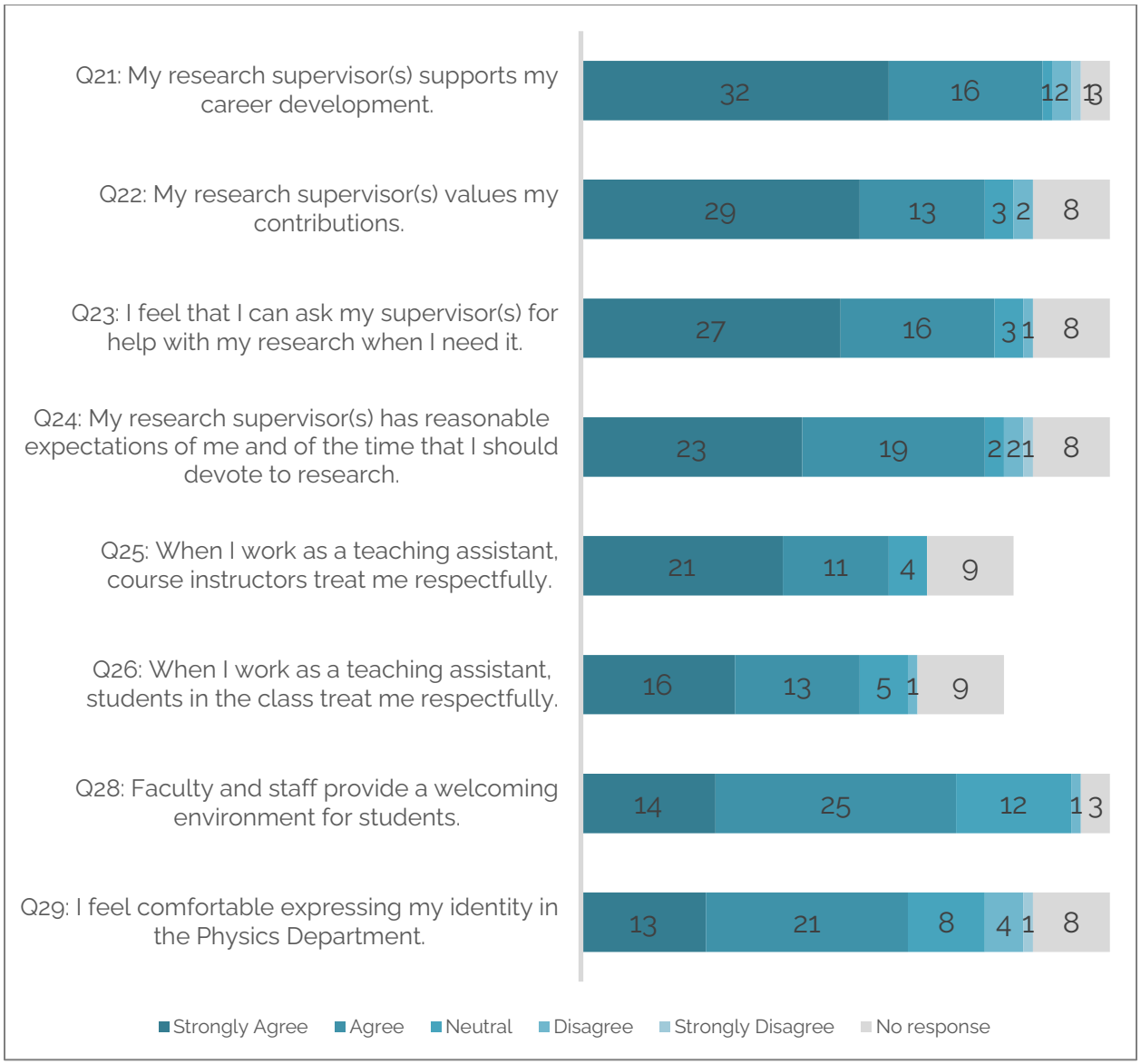


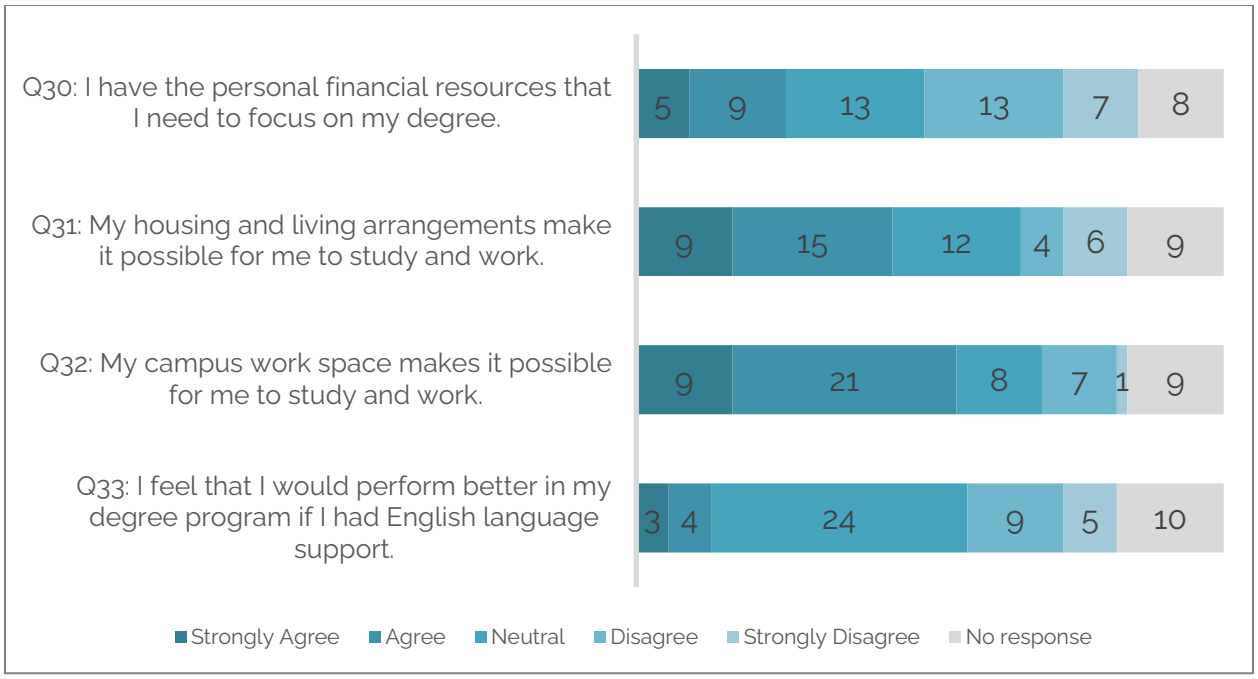
Graduate response counts
Total n=55

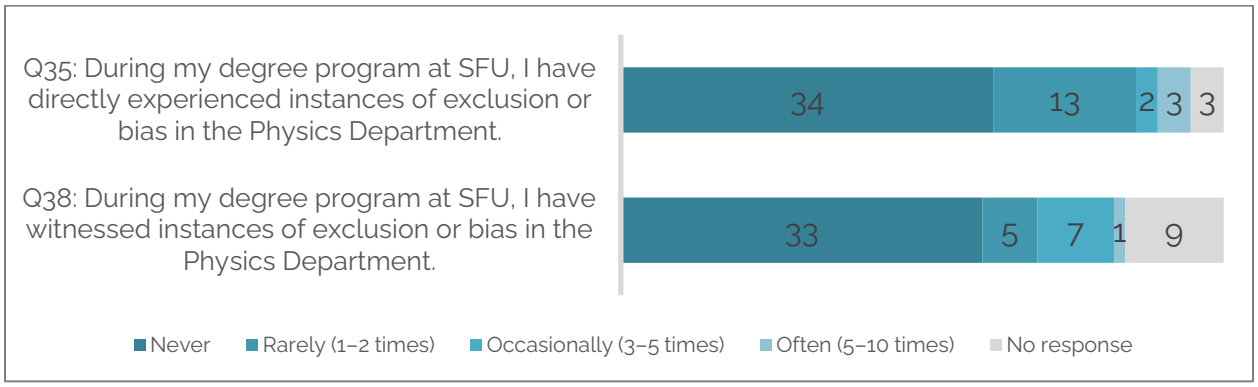



Q7: I feel valued by other students in the Physics Department.
6
26
15
5
3
Q8: I feel valued by the faculty and staff in the Physics Department.
12
23
10
1
1
8
Q9: Students in the Physics Department treat each other with respect.
16
26
3
2
8
Q10: The faculty and staff in the Physics Department treat all students fairly.
9
27
5
4
2
8
Q11: The Physics Department provides me with a supportive environment.
8
25
11
2
9
Q12: I have opportunities for academic success that are similar to those of my classmates.
14
18
8
4
2
9
Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree
No response


Q14: Students of my sexual orientation are respected in the Physics Department.
28
17
6
4
Q15: Students of my racial/ethnic group are respected in the Physics Department.
21
17
5
3
1
8
Q16: Students of my gender identity expression are respected in the Physics Department.
26
15
5
1
8
Q17: Students of my ability/disability status are respected in the Physics Department.
25
13
8
9
Q18: Students of my socioeconomic class are respected in the Physics Department.
15
16
8
4
3
9
Q19: Students with my religious or spiritual views are respected in the Physics Department.
17
11
15
2
10
Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree
No response


Q21: My research supervisor(s) supports my career development.
32
16
12
1
3
Q22: My research supervisor(s) values my contributions.
29
13
3
2
8
Q23: I feel that I can ask my supervisor(s) for help with my research when I need it.
27
16
3
1
8
Q24: My research supervisor(s) has reasonable expectations of me and of the time that I should devote to research.
23
19
2
2
1
8
Q25: When I work as a teaching assistant, course instructors treat me respectfully.
21
11
4
9
Q26: When I work as a teaching assistant, students in the class treat me respectfully.
16
13
5
1
9
Q28: Faculty and staff provide a welcoming environment for students.
14
25
12
1
3
Q29: I feel comfortable expressing my identity in the Physics Department.
13
21
8
4
1
8
Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree
No response


Q30: I have the personal financial resources that I need to focus on my degree.
5
9
13
13
7
8
Q31: My housing and living arrangements make it possible for me to study and work.
9
15
12
4
6
9
Q32: My campus work space makes it possible for me to study and work.
9
21
8
7
1
9
Q33: I feel that I would perform better in my degree program if I had English language support.
3
4
24
9
5
10
Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree
No response


Q35: During my degree program at SFU, I have directly experienced instances of exclusion or bias in the Physics Department.
34
13
2
3
3
Q38: During my degree program at SFU, I have witnessed instances of exclusion or bias in the Physics Department.
33
5
7
1
9
Never
Rarely (1–2 times)
Occasionally (3–5 times)
Often (5–10 times)
No response

APPENDIX C: EXTERNAL STATISTICS

- Graduate education (i.e., a university degree, certificate, or diploma above a bachelor's degree) was also higher among gay (15.9%) and bisexual (19.1%E) men, compared with heterosexual men (10.1%) and heterosexual women (10.7%). Source: StatsCan (Survey period: 2015-2018)

  Canadian Graduate and Professional Student Survey - 2019

	2019
Number of students invited to participate	179 427
Responses received (partially or totally completed)	63 077
Response rate	35,2%
Survey Open Date	2019-01-09
Survey Close Date	2019-05-08
Number of days open for data collection	119

Gender

	[GENDER]		[UNIV_GENDER]	
	Student response		University Data	
Response	%	N	%	N
1. Male	38,0	19939	39,8	24329
2. Female	59,0	30982	59,9	36567
3. Another gender identity	0,8	420	0,0	30
0. Prefer not to respond	2,3	1205	0,2	143
Total respondents	**100**	**52546**	**100**	**61069**
Missing data	**16,7**	**10 531**	**3,2**	**2 008**
Total		**63077**		**63 077**

Citizenship

What is your present citizenship status?

Response	%	N
1. Canadian Citizen	66,8	35010
2. Canadian Permanent Resident	6,3	3295
3. Citizen of another country with a student visa or other nonimmigrant visa	26,9	14110
Total respondents	**100**	**52415**
Missing data	**16,9**	**10662**
Total		**63077**

Orientation

Which of the following best describes your sexual orientation?

Response	%	N
1. Straight (heterosexual)	83,3	43550
2. Bisexual	3,7	1922
3. Gay	2,2	1162
4. Lesbien	0,9	480
5. Queer	1,6	833
6. Questioning or unsure	0,7	361
7. Another sexual orientation (please specify)	0,6	331
0. I prefer not to respond	7,0	3 652
Total respondents	**100**	**52291**
Missing data	**17,1**	**10786**
Total		**63077**

Race

Please indicate whether you consider yourself to be a member of one or more of the following visible minority groups: (Choose all that apply)

Response	%	N
1. Black (e.g. African, African American, African Canadian, Caribbean) [gBlack]	6,6	3506
2. East Asian (e.g. Chinese, Japanese, Korean, Polynesian) [gEastAsia]	10,2	5420
3. South Asian (e.g. Indian, Pakistani, Sri Lankan, Bangladeshi) [gSouthAsia]	10,9	5758
4. Southeast Asian (e.g. Burmese, Cambodian, Filipino, Laotian, Malaysian, Thai, Vietnamese) [gSouthEastAsia]	2,0	1075
5. West Asian (e.g. Arabian, Armenian, Iranian, Israeli, Lebanese, Palestinian, Syrian, Turkish) [gWestAsia]	7,3	3837
6. Latin American (e.g. Mexican, indigenous Central and South American) [gLatinAm]	4,4	2347
7. None [NONE]	55,2	29186
Total respondents	**---**	**52914**
Missing data	**16,1**	**10163**
Total		**63077**

Indigenous Peoples

40. Do you self-identify with, or have ancestry as an Aboriginal person (status or non-status Indian, Métis or Inuit)? [ABORIGINAL_2]

Response	%	N
1. Yes, First Nations	2,0	1028
2. Yes, Métis	1,3	646
3. Yes, Inuit/Inuk	0,1	50
4. Yes, Other	0,7	362
5. No	96,0	49745
Total respondents	**100**	**51829**
Missing data	**17,8**	**11248**
Total		**63077**

People with Disabilities

Do you self-identify with any disability or impairment?

Response	%	N
1. Yes	6,2	3230
2. No	89,9	47009
3. I prefer not to respond	3,9	2058
Total respondents	**100**	**52297**
Missing data	**17,1**	**10780**
Total		**63077**

People who identify as neurodivergent

Please specify which one(s) (select all that apply)

Response	%	N
1. Sensory (vision or hearing) [Disabl_Sense]	10,9	351
2. Mobility [Disabl_Mobil]	9,9	319
3. Learning (e.g. ADHD, Dyslexia) [Disabl_Learn]	32,2	1040
4. Mental health (e.g. Depression, Bipolar) [Disabl_Mental]	46,2	1495
5. Autism spectrum (e.g. Autism, Asperger's) [Disabl_Autism]	5,0	161
6. Chronic (e.g. Crohn's, Colitis, Multiple Sclerosis) [Disabl_Chronic]	17,2	555
7. A disability or impairment not listed above, please specify [Disabl_Else]	10,9	354
8. Prefer not to respond [Disabl_NotRespond]	4,5	146
Total respondents	**---**	**3230**
Missing data	**0,0**	**0**
Total		**3230**