

I. Overview of Survey

Introduction

The goal of the online Diversity Equity and Inclusion Survey was to gather information from students, faculty, and staff about DEI issues as part of a departmental climate self-assessment. The results will be used to increase DEI efforts within the department and developed as a permanent component of the departmental mission and strategic plan.

The Survey

The DEI Inclusion Survey was modified from a template survey provided by UC Berkeley’s Division of Equity and Inclusion in their [Strategic Planning for Equity, Inclusion, and Diversity Toolkit](#). A list of survey questions can also be found on [UCR’s Office of Diversity, Equity and Inclusion](#) website but this was not available at the time we drafted ours. All respondents were initially asked questions across three core categories: 1) Vision, Leadership and Messaging, 2) Overall Departmental Climate, and 3) Curriculum, Teaching and Research. Based on which group a person best identified with, they were asked a second separate set of questions that assessed their perception of how diversity, equity and inclusion were viewed in i) recruitment, ii)

Category	PLBL Undergrad	CNAS Undergrad	PLBL Grad	CNAS Grad	BPS Faculty	UCR CNAS (percentage)
white	4	760	24	319	20	46.18
asian	8	2620	4	82	7	8.92
hispanic	18	2507	13	126	5	5.10
black	-	174	1	12	-	-
multi-racial	3	400	7	62	-	0.96
international	-	93	7	278	-	36.31
Native Hawaiian/ Pacific Islander	-	7	-	-	-	-
American Indian	-	3	-	-	-	-
unknown	2	72	4	36	2	2.55
total	35	6636	60	917	34	
Female	16	3741	34	385	13	26.4
Nonbinary	-	-	1	6	-	-
Unknown	2	-	-	-	-	-

retention, iii) research, iv) success of individuals, and v) capacity to work with individuals from diverse groups.

The DEI Inclusion Survey was emailed to the department on March 10, 2021 and respondents were given until April 2, 2021 to respond. Follow up emails were sent to the BPS postdoc and graduate student listservs to encourage more responses from these groups with an extended deadline of April 13, 2021.

For context, Table 1 lists the demographic distribution of each group surveyed. The faculty are represented by a majority of those who identify as white and male (Table 1), but the student body is more diverse. The undergraduate population is represented by a majority of hispanic and asian individuals of which a majority identify as female, while the graduate students are majority white-non hispanic and female.

Analysis of Survey

All respondents were asked to self-identify to one of five groups that best fit their position within the department (e.g. Faculty, Non-Faculty Academic, Graduate Student, Undergraduate Student, and Staff; Table 2). Therefore, for the three core categories, we report responses across these different groups.

Table 2. List of the different personnel groups used to differentiate survey respondents and their response rate.

Group	Description	Responses/ Total Possible
Faculty	Professor series, extension specialist, adjunct	18/41
Non-Faculty Academic	Post-doctoral Researcher, Specialist series, Project Scientist series, Professional Researcher series, Academic Coordinator, Research Associate, Visiting Scholar	8/82
Graduate Student	Masters or PhD student working with BPS faculty either in the Plant Biology Program or in another UCR graduate program (e.g. EEOB, GGB).	13/59
Undergraduate Student	Undergraduate student in the Plant Biology Major	1/44
Staff	Administrative Support, Laboratory support (SRA, Lab Assistant, Junior Specialist), Field workers and other Laborers, volunteers	3/25

Overall, the response rate across all groups varied and was limited for some of the larger groups within our department (Table. 2). For example, less than half of the faculty completed the survey and eight non-senate academic personnel responded (40% vs 8% of total possible). Because participation was low, the following analysis reflects the main trends and concerns but

is not intended to show statistical significance or represent the views of the entire department.

Additionally, we present group summarized responses only for the faculty, non-faculty academic, and graduate student groups, as we did not have sufficient responses to generalize for undergraduate students (n=1) and staff (n=3) groups.

Key Take-Aways from the Survey

We have an opportunity to explicitly better express and operationalize our values of inclusiveness, equity and diversity on our web site and in our programs.

Experiences of exclusion versus inclusion differs among groups, representing an opportunity for improvements aimed at supporting those groups (e.g. graduate students) who may more frequently feel isolation, exclusion or harassment.

Student respondents largely felt that there could be greater emphasis on DEI in our curriculum, development of culturally relevant, accessible, and inclusive teaching practices, as well as reward for public and community engagement.

There is opportunity for improvements in hiring diverse faculty, mentoring and retaining them, and for incentivizing faculty DEI activities.

Similarly, there is opportunity to improve practices to support the success of graduate students from marginalized groups (as well as improve recruiting more diverse graduate students) and to improve training for graduate students working with diverse student populations.

Most concerning, a majority of graduate students and a non-zero number of faculty felt that the Department does not provide a clear protocol for reporting (and responding to) issues of insensitivity, exclusion, disrespect and harassment.

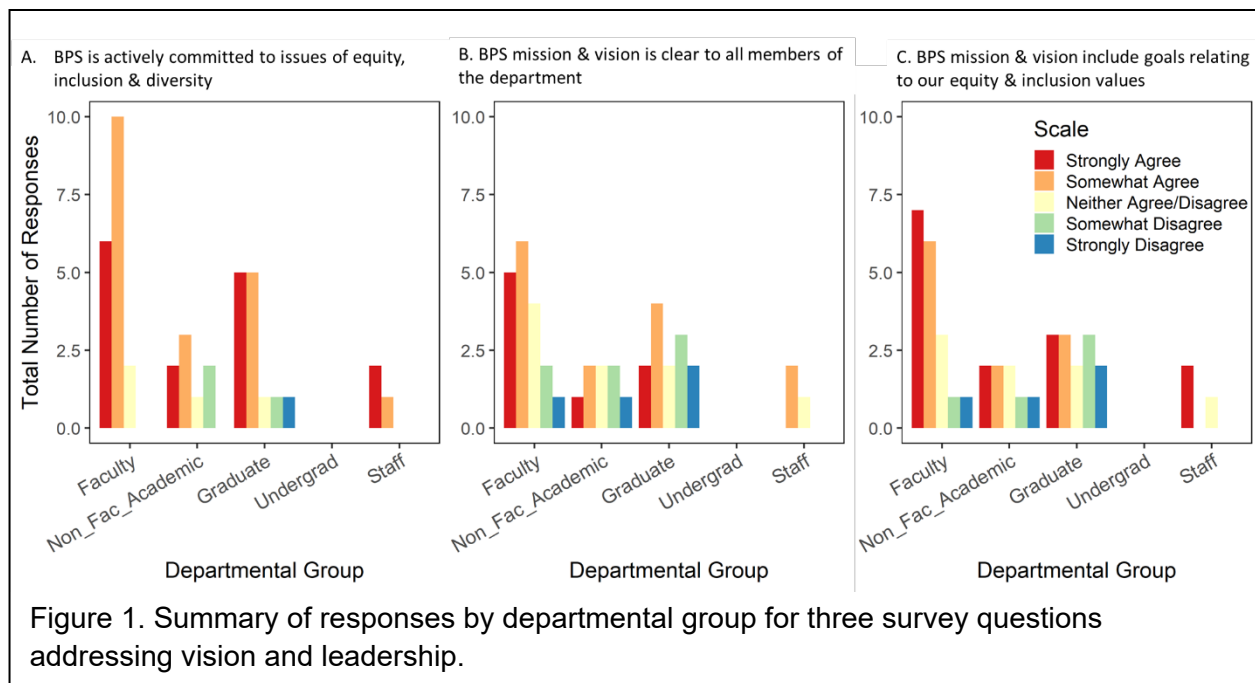
II. Summary of questions asked of all departmental members

Vision and Leadership Findings

The majority of respondents agreed that the department is committed to addressing DEI issues at some level (Fig 1A), yet 11 (out of 42) respondents did not feel the Department's overall mission and vision were clear whereas 22 individuals did (Fig 1B). There were differences among groups within the department. More of the faculty respondents than other groups agreed that the Department's overall mission and vision is clear and that it included goals related to DEI issues, while, for example, both the graduate student and non-faculty academic respondents were about evenly split on agree versus disagree for the overall mission (Fig. 1B) and if DEI goals were included in this mission (Fig. 1C). This indicates the potential to focus on non-faculty, students, and staff in clarifying the overall department mission and vision and formally include our approach to DEI issues.

There was less agreement that departmental leaders set the tone for an inclusive environment, with a plurality (30%) of "neutral" (neither agree nor disagree) responses across

groups (Fig S1). Again, faculty tended to agree that leadership were successfully setting the tone while graduate students were more split, with 55% vs 13% of faculty and graduate student respondents, respectively. This question included CNAS administrators and university DEI advisors among “departmental” leadership, so it is possible that this neutral-tending response may reflect different perceptions of those different actors and their roles and responsibilities in setting the tone for an inclusive environment. There was also mixed agreement (55% agreed, 23% disagreed, 21% neutral across groups) that the departments outward-facing as well as internal communications reflect our DEI values, suggesting that there is an opportunity to explicitly express and operationalize those values on our web site and in our programs.



Departmental Climate Findings

Most respondents in all groups agreed that there is a culture of respect, collegiality, and dialogue among all groups in the department. Responses were similarly positive to questions about the inclusivity of research, teaching, service (65% agreed) and speaker events (73%).

For other questions regarding climate, responses were more divided for all groups, and proportionally more positive for faculty than for graduate students. This is shown for the questions about whether all feel comfortable and welcome (Fig 2A), and whether the department provides opportunities for members from marginalized and underrepresented groups to connect with each other (Fig.2B). Similar patterns were seen for questions regarding whether the department provides a comfortable environment for discussing topics related to diversity, and whether the department actively promotes an antiracist environment (Fig S2).

Notably, while more faculty agreed than disagreed that there are clear protocols for reporting issues of disrespect or harassment, more graduate students disagreed than agreed (Fig 2C). Furthermore, there were not a lot of opinions expressed (most responses were

neutral) regarding the timely resolutions of these issues (Fig. 2d), perhaps indicating a lack of direct experience on the part of many respondents in either reporting or resolving these issues.

In summary, while the number of respondents is small, and there were many positive responses to many questions regarding climate, any negative responses represent an opportunity to improve because experiences of exclusion may only be felt by a subset of the departmental community. An example of this can be seen in the graduate students' perspective that there is a lack of opportunities to connect with other students of similar backgrounds (8 of 11 respondents).

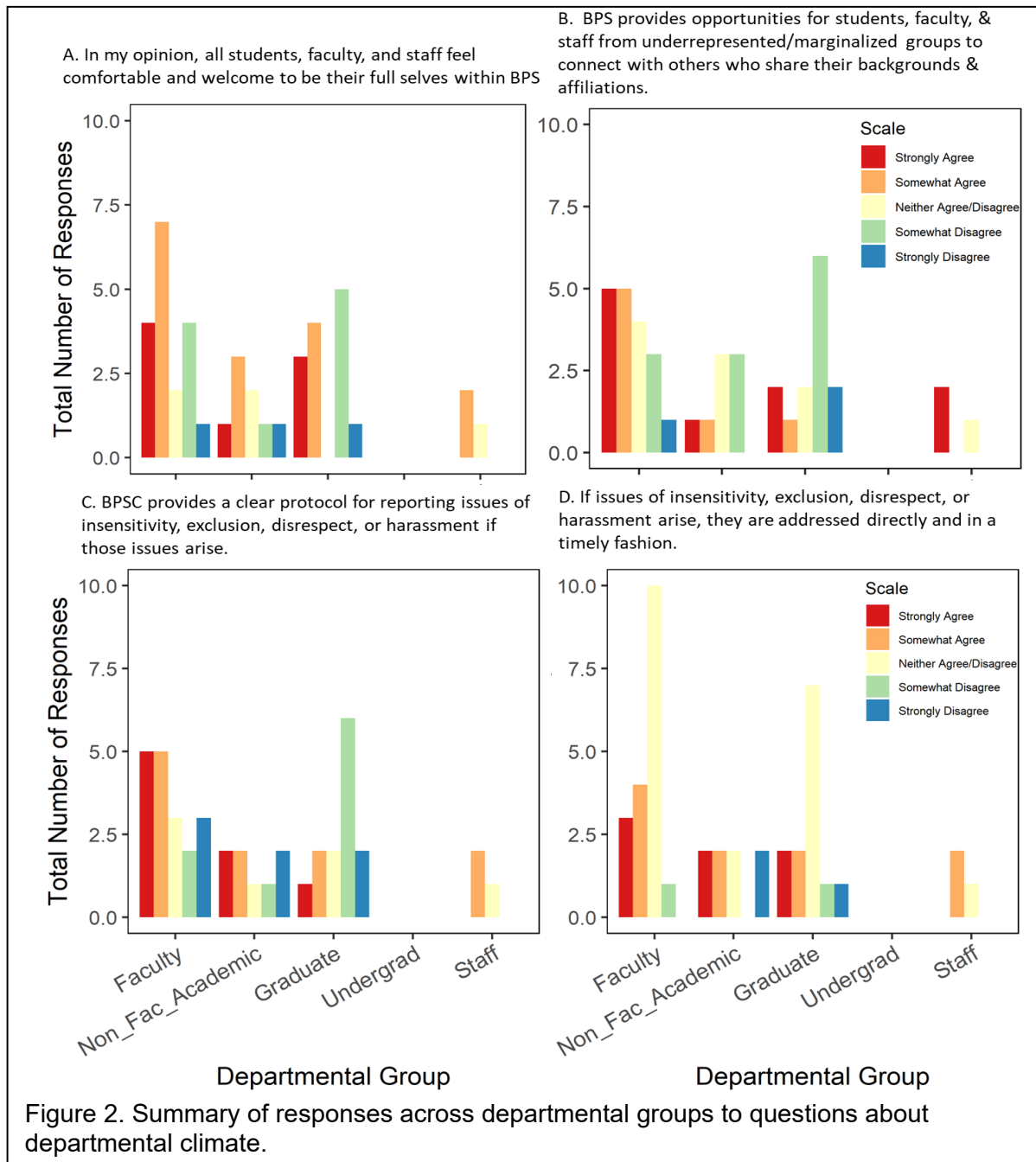


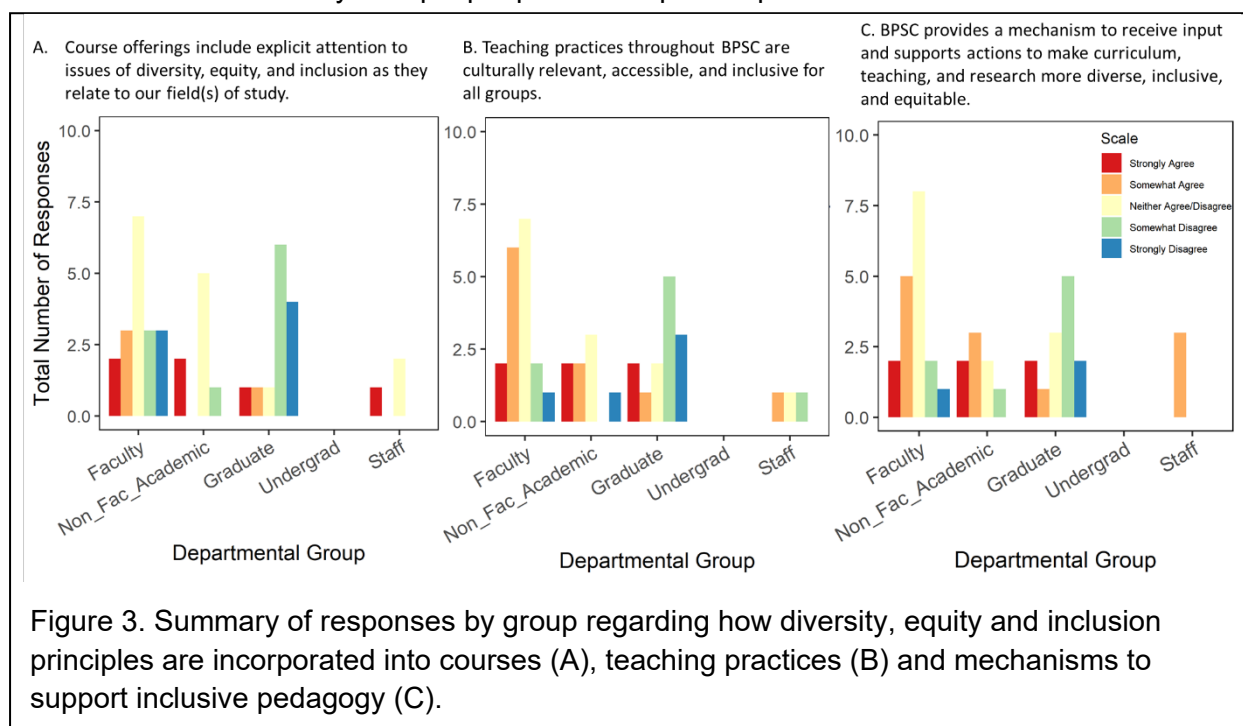
Figure 2. Summary of responses across departmental groups to questions about departmental climate.

Curriculum & Research Findings

In response to questions regarding the prioritization of diversity, equity, and inclusion in the classroom, the majority of faculty respondents somewhat agree or responded neutrally (neither agree nor disagree) and the majority of students somewhat disagree. The faculty and graduate students answered these questions in the highest proportions. As with the survey as a whole, the undergraduate student perspective, which is critical for a complete understanding of this area, is underrepresented. Additionally, many non-faculty academic personnel interact with students and their curricula. Their perspective in this area is also valued and unfortunately underrepresented in our survey responses.

From the data collected, we can see a disconnect between graduate students and faculty perceptions about current DEI in course offerings, curriculum, and teaching (Fig 3). The majority of faculty were neutral to course offerings and teaching practices being attentive to DEI issues (Fig 3A). Graduate students disagreed that BPS course offering or teaching practices are attentive to DEI issues (Fig 3B). Overall, very few of the respondents from any category answered “strongly agree” to any questions in this section. The majority of faculty somewhat agree or feel neutral (neither agree nor disagree) and the majority of graduate students somewhat disagree that BPSC provides a mechanism to receive input and supports actions to improve the DEI of curriculum, teaching, and research (Fig 3C).

Points brought up in the open responses also echoed a desire to change and improve curriculum. One commenter spoke about the desire to learn botany through a less Eurocentric lens. They noted that our current curriculum is also lacking connection to current issues related to our field, such as immigrant labor in agriculture (Fig S3). Lack of attention to DEI issues in curriculum was echoed by multiple people in the open responses.

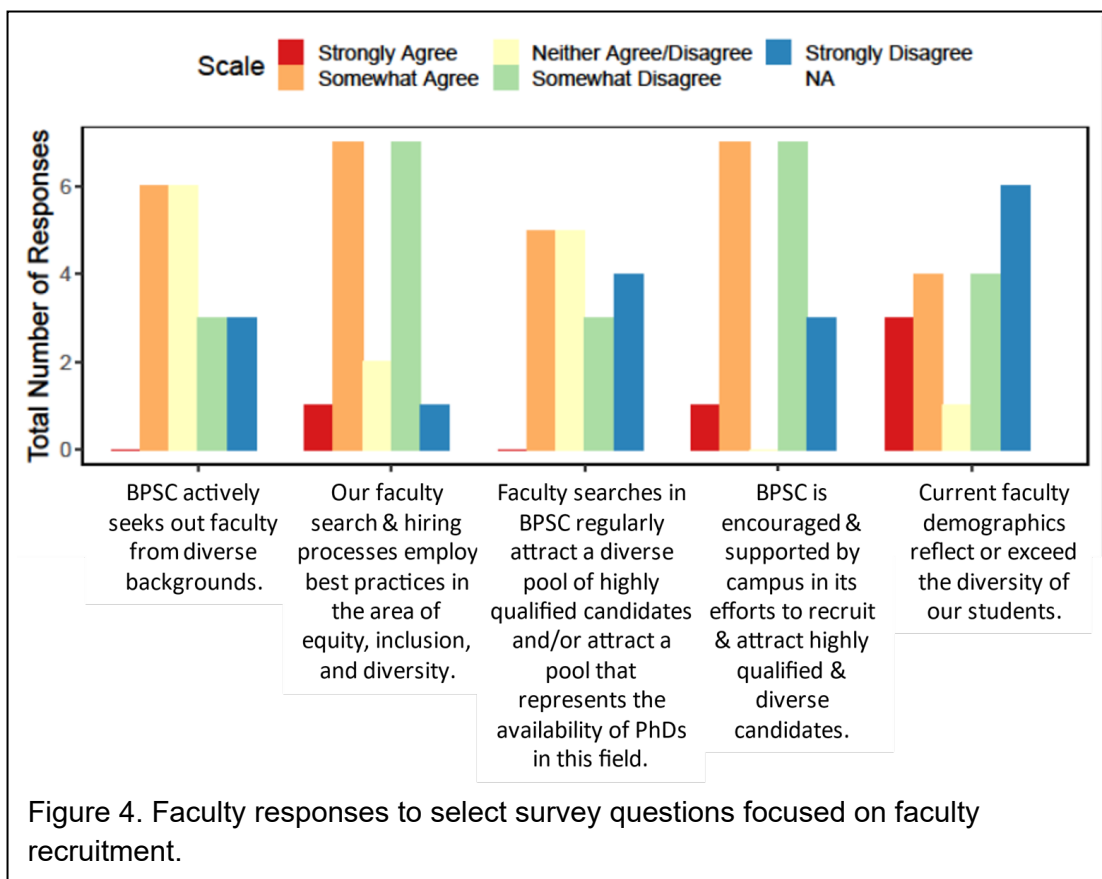


Another important issue brought up in the open responses is the need for intentional inclusion of differently abled individuals in our curriculum. One commenter spoke of the physical challenge some undergraduate courses pose; classroom and field trip locations that require long or tiresome walks that might be a barrier to entry for some students.

II. Summary of questions by departmental groups

Faculty

This section discusses responses by faculty to questions that were only included on the faculty survey.



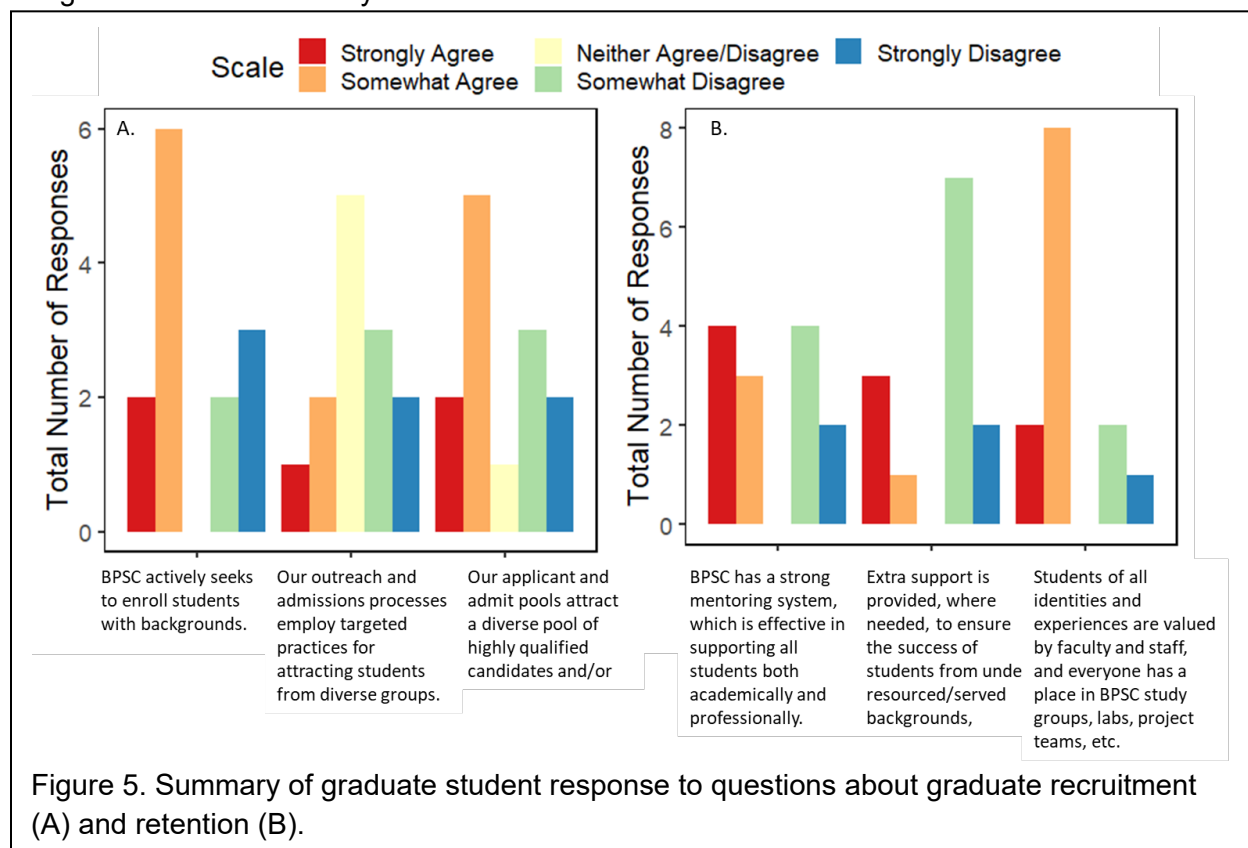
Recruitment. Faculty are evenly split (agree/disagree) that we seek out diversity in our new hires (column 1, first group of bars; Fig 4 above), but the remaining columns indicate faculty share contrasting beliefs that our searches employ the best practices, successfully attract diversity, have support from upper administration, and that we mirror our student diversity. This suggests faculty feel that the department is trying but not succeeding at recruiting a diverse faculty. Current faculty demographics do not reflect the diversity of the students (Table 1) but almost a third of the faculty respondents believe that they do.

Retention (mentoring, welcoming). Overall, more faculty feel there is a lack of mentoring for junior faculty but that the department provides a welcoming environment to pursue their career.

Capacity (comfortable, encouraged, rewarded). More faculty feel the department as a whole is not comfortable and knowledgeable about working with diverse groups, and that there is not encouragement or adequate rewards to enable DEI activities.

Graduate students

This section discusses responses by graduate students to questions that were only included on the graduate student survey.



Recruitment. Among graduate students, the majority feel the department actively seeks out and succeeds in admitting diverse individuals, but it does not employ enough targeted practices to engage all groups (Fig. 5a).

Retention. The majority of graduate students also feel the department is welcoming, values all identities, and has a strong mentoring system; however, more support is needed to ensure the success of marginalized groups. Because of the near bimodal structure of the data (near equal agree and disagree) for many of these perceptions, there may be underrepresented groups that feel lack of support. Given the majority of graduate students identify as white, a lack of awareness or experience with challenges experienced specifically by minority groups may lead to a false sense that all identities are supported in the department adequately. The low sample size makes it difficult to infer further (Fig 5b).

Capacity. Among graduate students, there is a lack of consensus in how comfortable graduate students feel about working with diverse student populations themselves. Equal numbers agree and disagree, suggesting an opportunity for training.

Non-Faculty Academics

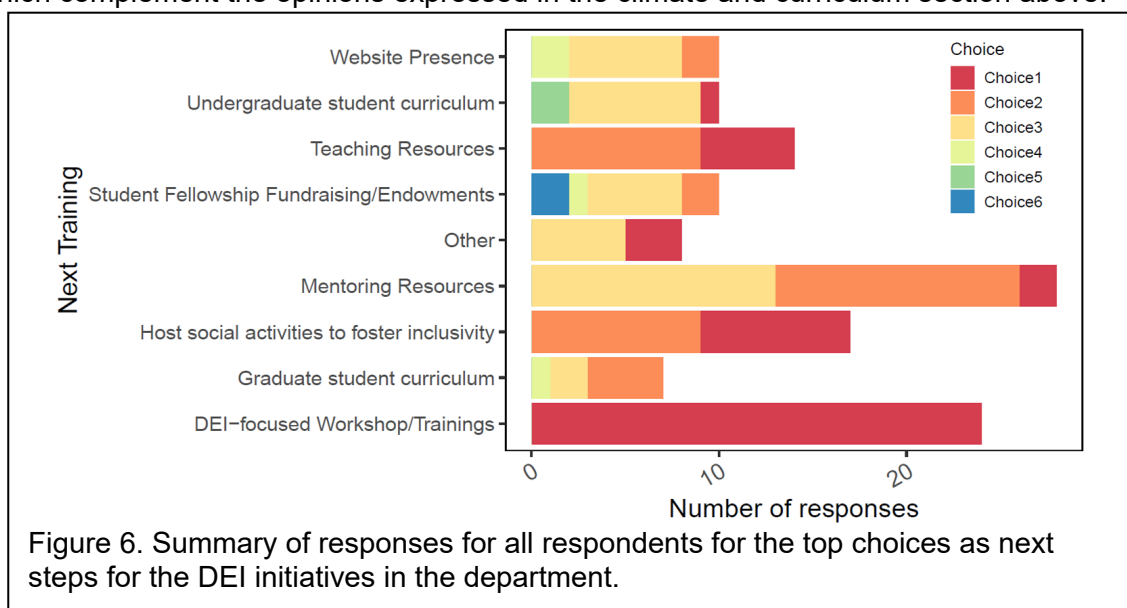
This group itself represents a broad scope of academic appointments with very different responsibilities. In general, the feeling is that recruitment of researchers/non-faculty academics is not biased by identity. However, they do not feel positively about current resources for mentorship and extra support for the success of researchers from diverse backgrounds (Fig S4). Notably, there was a neutral response to questions about individuals of all backgrounds being valued and welcomed in the department. The low sample size for this group paired with the diverse scope of appointments within this group make it difficult to infer dynamics; however, there is room for improvement in building infrastructure for the enhanced capacity to service the professional development and welcoming all members within this group.

Across Groups

We asked respondents whether they were comfortable and knowledgeable about working with a diverse student population. Faculty more generally indicated that they did not agree with this statement, while graduate students had mixed responses with a similar number feeling comfortable and uncomfortable. The few non-faculty academics responses indicated that most felt comfortable working with the diverse student population. While there were some individuals that felt comfortable working with the diverse student population a fair number did not suggesting a training opportunity for the departmental community.

III. Next Steps

We asked all respondents to identify their top three choices for priorities for the DEI Committee (Fig 6). The overwhelming top choice was a focus on DEI workshops and trainings; however, the option that received the most overall votes was an increase in mentoring resources. The other top selections were hosting social activities to foster inclusion and teaching resources which complement the opinions expressed in the climate and curriculum section above.



IV. Recommendations

Based on the key take aways from the departmental DEI climate survey, the Committee makes the following recommendations:

- The departmental DEI committee should become a permanent standing committee with representatives from the different departmental groups (e.g. Faculty, Non-Faculty Academics, Graduate Students, Staff, and Undergraduates) and with a budget to support committee activities. Some suggested activities within the scope of the committee:
 - The committee should maintain a web page that is prominent on the department's web site (as the ad hoc committee initiated)
 - The committee should identify one departmental seminar speaker per year dedicated to DEI-related topics (ranging from inclusive teaching practices, to mentoring underrepresented groups in STEM, to talks that feature underrepresented voices in botany and plant sciences).
 - The committee should continue to publish the DEI Dispatch Newsletter.
 - Recommend and facilitate centralized actions the department can take to foster inclusivity and success by all groups in the department. For example, another CNAS Departments (Entomology) has established an endowment to support undergraduate research ([advancing inclusivity scholarship](#)).
 - The committee should administer a departmental climate survey to track progress of departmental climate
- Appoint a departmental Equity Advisor who can serve as liaison across departmental committees and can be a point person for policy issues and inquiries. This individual should also be a member of the departmental DEI committee.
- Create a departmental Strategic Academic Plan for DEI. This would be a more-in depth plan that would be compiled by the departmental DEI committee and Equity Advisor to review departmental climate and create short, mid, and long-term goals to foster a welcoming and inclusive department that recruits, supports and empowers all of its members.
- Provide training opportunities for faculty, graduate students, and others interested in teaching to explore, develop, and modify curriculum that is founded on inclusive teaching practices. Some suggestions are diversifying syllabi, effectively facilitating classroom discussion, and diversifying classroom assessments. This could be done in partnership with the Graduate and Undergraduate Educational Advisory Committees.
 - There are a tremendous number of materials being compiled on diversifying syllabi for the [environmental sciences](#) and [geosciences](#), often at university libraries ([for example here is a comprehensive compilation](#)). There is also the [College Science Project](#) and UMich's '[Coloring Science](#)' project. [Trowelblazers](#) is

a website covering women in geology and paleosciences. Dr. Liboiron has compiled additional references relevant to botany in this [blog](#).

- UCR's graduate division provides extensive resources for graduate students and post-doctoral researchers via the [Teaching Assistant Development Program](#).
- Sponsor regular departmental trainings to educate and contribute to the professional development of its members. Some examples of trainings are Implicit Bias, Bystander Training, Inclusive Working Climates, Field Safety, Conflict Resolution, and How to Write a Diversity Statement. Some of these trainings are offered by [UCR's Office of Diversity, Equity and Inclusion](#) and others could be facilitated by other organizations.
- Clarify, post, and disseminate reporting protocols for issues not limited to insensitivity, exclusion, bullying, harassment to all departmental groups. Importantly clarify departmental and university protocols and any disciplinary actions that may arise when violating these policies, as well as important concepts such as mandatory reporting. Some resources that should be visible and communicated regularly are the UCR Help website (<https://help.ucr.edu/>) and UCR [CAPS RedFolder](#).
- Identify and implement strategies to abide by the UC academic faculty policy to execute flexibility when weighing achievements across multiple evaluation areas and to explicitly recognize faculty achievements that promote equal opportunity and diversity. Implementing this existing policy ([The Call](#)) will be key to retention and future recruitment of faculty from diverse backgrounds.
- Work with the Graduate Admissions Committee and Graduate Educational Advisory Committee to identify strategies to support the success of potential and current graduate students such as a guide to successfully applying to our graduate program, career panels, and preparing job materials.

Supplementary Survey Figures

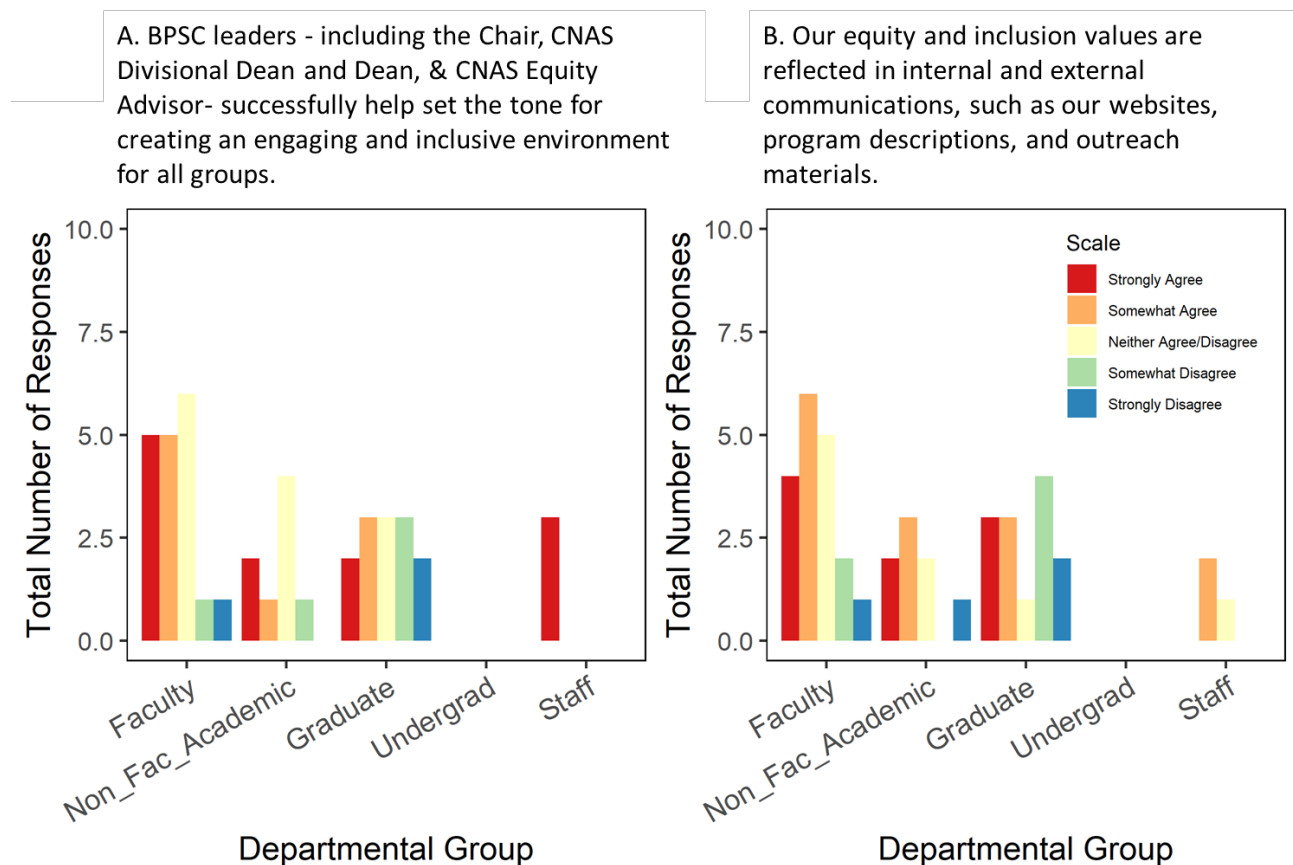


Figure S1. Summary of responses by group regarding Leadership (A) and visibility of Equity and Inclusion values (B)

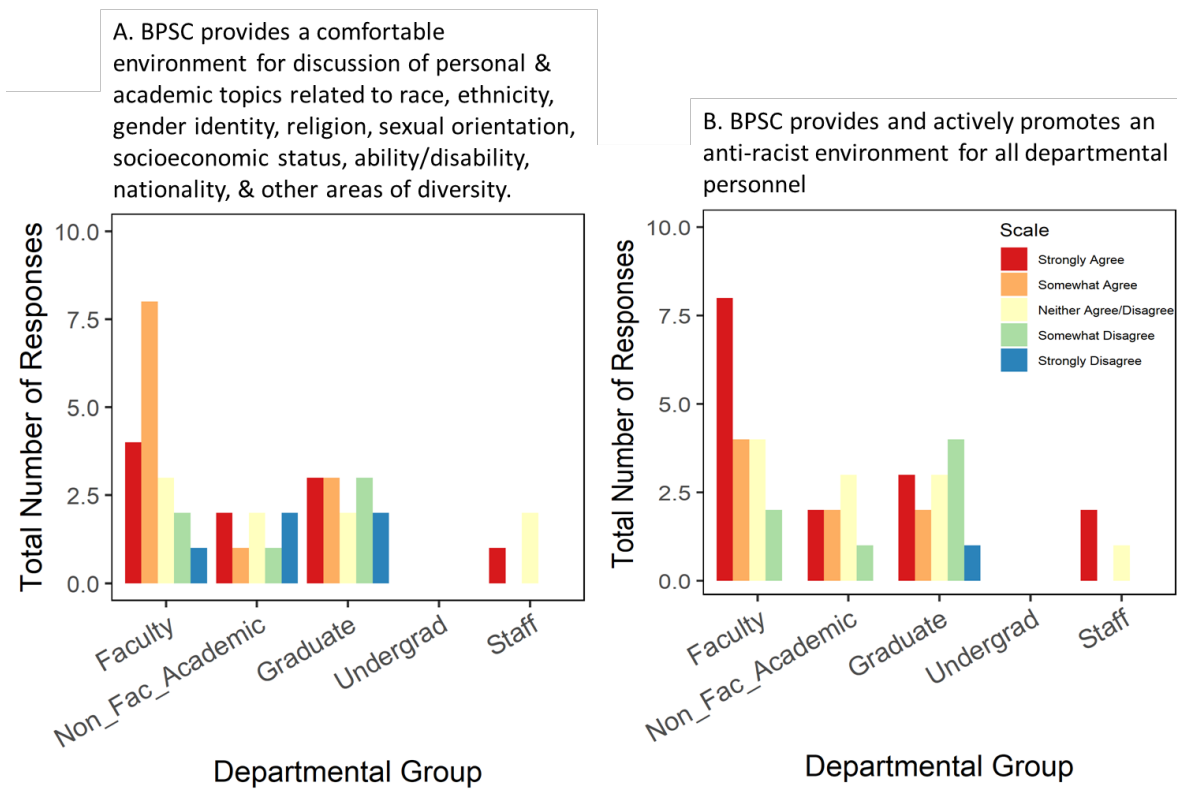


Figure S2. Summary of responses by group regarding departmental support of creating a comfortable environment for all members (A) and an anti-racist environment (B).

BPSC’s curriculum includes elements related to public and/or community engagement that highlight the needs of our diverse regional and state community.

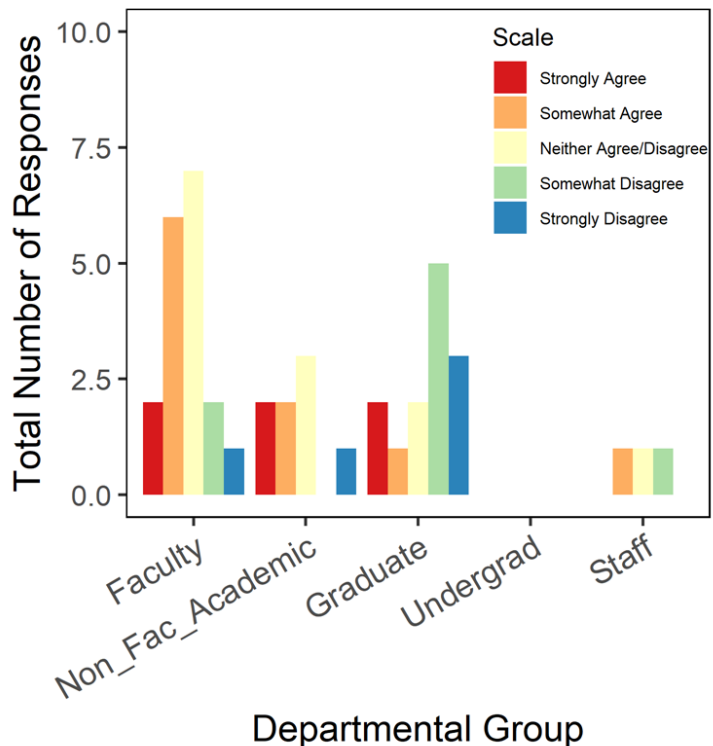


Figure S3. Summary of responses by group regarding perceptions of how well the BPS curriculum highlights the diverse needs of the region and state.

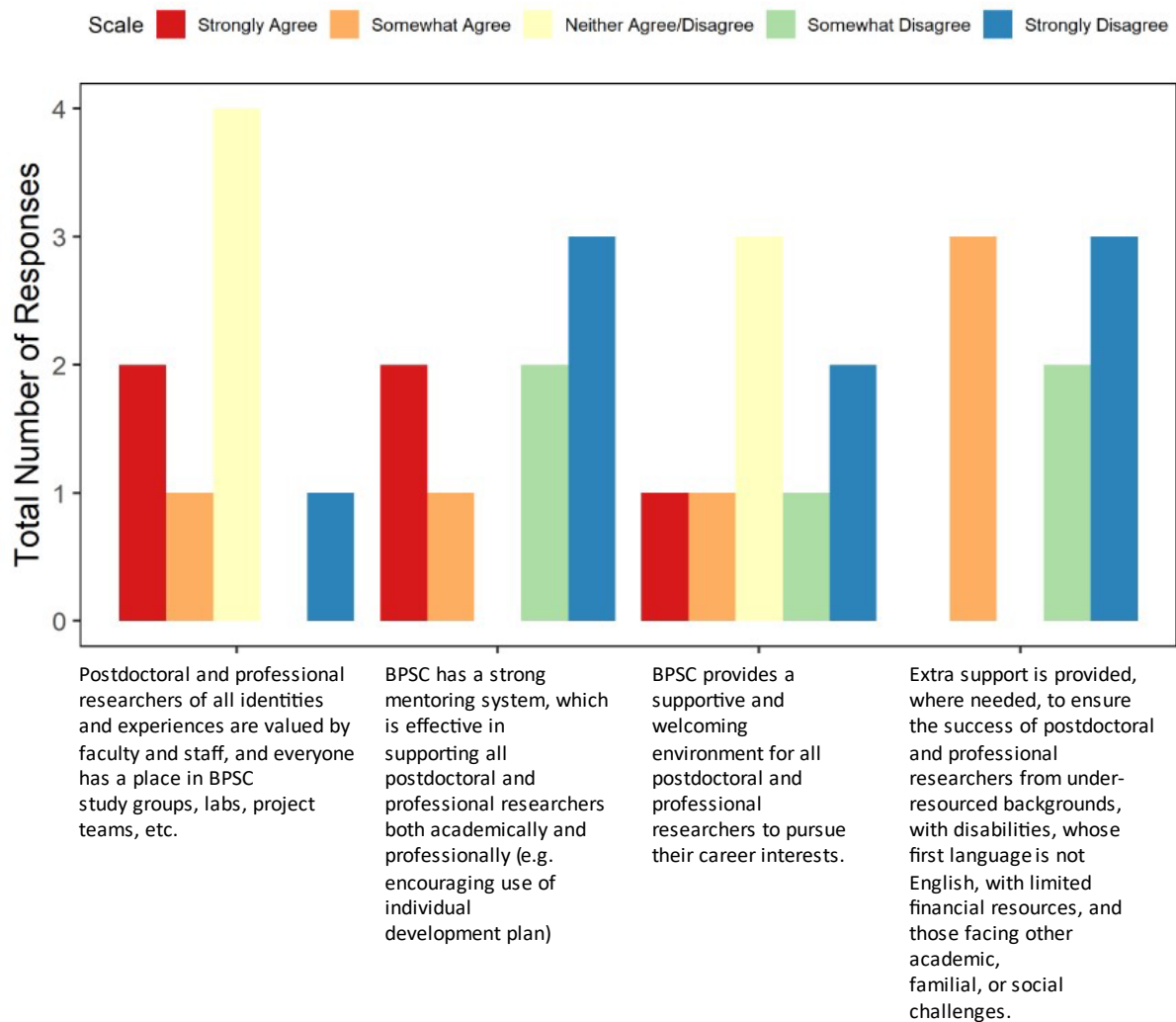


Figure S4. Summary of response by Non-Faculty Academics for questions pertaining to retention