

Report of DEI Survey Analysis

Department of Entomology

Diversity, Equity and Inclusion
Working Group

Department of Entomology
February 2022

Table of Contents

Introduction.....	3
The Survey.....	4
Data Analysis – Overview	7
The Data Analyst	7
The Data.....	7
General data analysis	7
Multiple choice questions	7
Write-in questions	7
Recommendations.....	8
Results.....	9
Overall Participation	9
Departmental Diversity Statement.....	10
Level of Agreement	10
Reason for Disagreement on Statement (or other comments).....	11
Integrated Analysis and Potential Solutions	12
A specific versus a general statement	12
The use of Diversity as a means of productivity.....	13
Recognize Slavery and First Nations land	13
Wish for actionable/active wording.....	13
Clarifying the ideal versus the reality of the Department	14
Update on the Departmental Diversity Statement.....	14
Positive and Negative Practices in the Department and Units.....	15
Overview	15
Positive Practices	16
Frequencies and general summaries of replies.....	16
Analysis of responses based on frequencies and text evaluations	24
Community Building	24
Acknowledgement of the person.....	24
Proactive Inclusive Environment.....	25
Collaborative Environment.....	25
Negative Practices.....	25
Frequencies and general summaries of replies.....	25
Comparison of answers to questions 3 and 7 (Unit vs. Department).....	29

Overall analysis of negative responses based on frequencies and text evaluations	33
Exclusive culture.....	33
Lack of Cultural Sensitivity	33
Lack of Community	34
Poor communication	34
Work-life balance.....	35
Combined Evaluation.....	35
Community	Error! Bookmark not defined.
Culture.....	36
Communication and Coordination	36
Analysis of Positive and Negative Practices based on Identity	38
Overall Identities.....	38
Analysis of Interactions between Identity and Responses	39
Nestedness - NODF	39
Specialization – H2’	40
Network Analyses.....	41
Positive Practices	41
Negative Practices.....	44
Combined Evaluation.....	48
Recommendations.....	49
Annex 1 – Summary of Recommended Actions.....	51

Introduction

The Entomology Department Diversity, Equity, and Inclusion (DEI) Working Group was formed in July 2020 and tasked to 1) set goals for diversity, equity, and inclusion within the Department, and 2) make concrete recommendations for specific plans to implement these goals. To inform this work, a Department-wide DEI survey was conducted in January 2021. The survey goals were to identify strengths and weaknesses in the culture of inclusion and anti-racism, and actions taken in the Department of Entomology and its Units. The survey was distributed to current and past members (maximum five years since they left the Department) and was structured to provide flexibility for members to voice their opinions and volunteer information regarding the identities that shape their answers. Here, we inform the Department of Entomology on the analyses, results and take-homes obtained, identifying Departmental strengths and weaknesses, and eliciting actionable ideas for cultivating a more welcoming and supportive environment for all identities (race, religion, gender, politics, socio-economic status, etc.) within our Department.

The working group considered different models for the survey, including the Comprehensive Campus Climate Assessment for Equity, Diversity, and Inclusion at The University of Maryland, led by the Office of Diversity and Inclusion. This campus-wide survey, published in December 2018, provided a model designed to “assess individual perception of hate and bias a part of the campus experience” (p. 14, Hubbard 2018; <https://diversity.umd.edu/uploads/files/UMD-Climate-Study-Report-FINAL.pdf>) and to analyze individual perceptions to institutional responses. After piloting a model using a similar instrument, predominantly with Likert-scale responses, the working group determined that it was more important to solicit replies to open-ended questions than to generate statistical results.

This report starts with a general introduction of the survey content, followed by a general summary of the data analysis. We then present the results of the analysis in three main sections, which also reflect three aspects captured by the survey: i) the Departmental Diversity Statement, ii) Positive and Negative actions identified in the Unit and the Department, and iii) Effect of identity on answers given in ii). We finalize this report with a series of recommendations for maintaining and improving actions to make our Department and Units more welcoming and supportive.

The Survey

The Survey we used is presented below, marking where the new Blocks were set in Qualtrics.

1) Please select the answer that best matches your relationship to the Entomology Department.

- I am a current member of, or affiliated with, the Department of Entomology
- I was a member of, or affiliated with, the Department of Entomology in the last 5 years
- I am not affiliated with the Department of Entomology, or my affiliation was more than 5 years ago.

[BEGIN NEW BLOCK]

The following questions seek to understand your views in terms of feelings of belonging and inclusion at the level of Units/labs. When answering the following questions, consider the following:

- Is there a sense of belonging?
- Do you feel comfortable being your authentic self in your interactions?
- Are your accomplishments, contributions, opinions, concerns valued?
- Is there a commitment to creating a welcoming and supportive environment?
- Is there a commitment to providing opportunities for professional and career development?
- Is your work evaluated fairly?

2) Identify one or more practices in your Unit/lab(s) that makes/made you feel included, valued, supported, and welcome.

3) Identify one or more practices you experienced in your Unit/lab(s) that makes/made you feel excluded or unwelcome.

4) Should you wish to provide and feel comfortable doing so, please describe one or more aspect(s) of your personal identity that were foremost in your mind as you responded to the Units/labs questions. For example: your gender, racial identity, ethnicity, age, position, religion, political leaning, nationality, or anything else you find pertinent.

[BEGIN NEW BLOCK]

The following questions seek to understand your views in terms of feelings of belonging and inclusion at the Departmental level. When answering the following questions, consider the following:

- Is there a sense of belonging?
- Do you feel comfortable being your authentic self in your interactions?
- Are your accomplishments, contributions, opinions, concerns valued?
- Is there a commitment to creating a welcoming and supportive environment?
- Is there a commitment to providing opportunities for professional and career development?
- Is your work evaluated fairly?

5) Identify one or more practices within the Department that makes/made you feel included, valued, supported, and welcome.

6) Among the practices that make/made you feel included, valued, supported, and welcome, are there any that you feel are especially effective in fostering an accessible, welcoming, and inclusive community?

7) Identify one or more practices within the Department that makes/made you feel excluded or unwelcome?

8) Are there specific changes that could be implemented to make the Department more accessible, welcoming, inclusive, and effective in building a supportive Departmental community?

9) Should you wish to provide and feel comfortable doing so, please describe one or more aspect(s) of your personal identity that were foremost in your mind as you responded to the Department questions. For example: your gender, racial identity, ethnicity, age, position, religion, political leaning, nationality, or anything else you find pertinent.

[BEGIN NEW BLOCK]

10) Please read the Department of Entomology's Diversity Statement that is currently published on the website, as follows:

“The Department of Entomology at the University of Maryland aims to cultivate a diverse and inclusive environment for all the members of our Department. The Department is dedicated to the study of entomology and a diversity of subdisciplines, including ecology, aquatic biology, molecular and developmental biology, genetics, biological control of insects and weeds, systematics, evolutionary biology, integrated pest management, toxicology, and insect pathology. We recognize that a diverse group of people working together strengthens all our efforts, including our research, teaching, and extension. As a core value, we welcome into our Department and strive to provide an inclusive environment for all individuals, regardless of age, gender, gender identity or expression, race, cultural background, religion, physical ability, sexual orientation or socio-economic status.

The Department of Entomology strives to foster diversity in membership, leadership, committees, staff, outreach, public engagement, recruitment, and all other areas of activity. At the same time, as we engage in these efforts, we acknowledge the serious underrepresentation of many minority groups in entomology. As a Department we recognize our role in rectifying this disparity and continue to work toward improving ourselves and our Department.”

This statement includes my identity and/or views.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree Nor Disagree
- ☐ Agree
- ☐ Strongly Agree
- ☐ Do Not Know
- ☐ Not Applicable

11) If you disagree, please share your point of view.

Data Analysis – Overview

The Data Analyst

The data was analyzed by a person external to the DEI Working Group, and with experience in statistics and (non-social sciences) survey analytics. This person was designated the owner of the survey in Qualtrics, and is the only person with access to the aggregated dataset of responses. The Data Analyst and a team of three people from the DEI committee (referred to as the “Oversight Group”) met and communicated regularly on results, data mining, analyses to perform, data interpretation, and reporting.

The Data

The survey was hosted on Qualtrics, in an account external to members of the DEI working group, which prevented members of the DEI committee from accessing the raw information. All answers were recorded anonymously, and no automatic information was collected on the identities (names, login info) of the respondents. The survey consisted primarily of write-in responses with several multiple-choice questions. Because no question asked respondents to disclose their identity, unless they do so in their response to an open-ended prompt, respondents were not identifiable individually.

General data analysis

Multiple choice questions

These data were analyzed using general summaries such as counts and measuring proportions of answers for each category.

Write-in questions

This is the vast majority of the analyzed survey answers, and required the use of text analyses to identify word choice frequencies, and identify and categorize topics. To perform word frequency analyses, we used word counts and word clouds. For this, we cleaned the data using the *tm* text mining package in R software. This package allows such operations as removing numbers, special characters, punctuations and stop words. After this cleaning step, we performed stemming - reducing the word to its root form - using the *SnowballC* R package. The resulting word lists for each survey question was then converted to frequency matrices for the identification of the most prevalent words and concepts. We used word clouds to visualize the word composition of each question, based on the frequency matrices, using the R *wordcloud* package.

After generating the word frequencies and word clouds, the Data Analyst observed that this data analysis approach in some cases did not provide sufficient insight because it excluded information present in the full response. For this reason, for all questions for which the Data Analyst identified such a situation (see below), the Data Analyst shared redacted (removing information that would disclose the identity of the respondent) text responses with the analysis Oversight Group, with whom they jointly performed a general analysis of the responses. This ensured that the Data Analyst would not bias the analyses with personal perceptions. Specifically, the Data Analyst reviewed responses prior to sharing them, and redacted or removed any references to specific events or identifying-information which may disclose the identity of the respondent. If this information was relevant to the response, the analyst summarized what

was redacted retaining the original wording as much as possible. These specific responses were then shared with the Oversight Group in a disaggregated manner, meaning that the Oversight Group received all responses only from a single question, not all responses given by each individual respondent. This prevented tracing the identity of the respondent through their complete series of responses. Then, the Data Analyst and each member of the Oversight Group read the responses and made a list of suggested response categories or bins to use for further quantitative analysis (see below). This allowed summaries of general observations and feelings captured in the responses. Finally, each member listed key “take-aways” or themes of the answers, which were then compared and validated with each other until a consensus was reached on the meaning of the entries/results and the best way to communicate them. This ensured that different perceptions were reflected in the final results. Importantly, all answers read by the Oversight Group remained confidential, and no members of this committee were or are allowed to share this with external parties. Once the write-in answers were treated and categories built, the Data Analyst performed frequency analyses to identify any potential trends in the answers.

To identify potential trends in specific responses in relation to respondent’s identities, we finally perform a network analysis connecting identity categories and either raw word counts or answer categories (as defined above). This was done using the R package *bipartite*.

Recommendations

Based on the data collected and the trends identified we set a list of recommendations that can serve our Department and Units to become more welcoming and supportive.

Results

Overall Participation

A total of 71 participants took the survey and submitted answers. Of these, 59 were Department members at the time of the Survey, and 12 had been members within the 5 years prior to the start of the Survey. The overall and per-question response rate (Figure 1) were relatively similar across these two categories, indicating that status of the respondent as a current or former member of the Department did not affect their completion of the Survey. Likewise, the response rate across these two groups was similar.

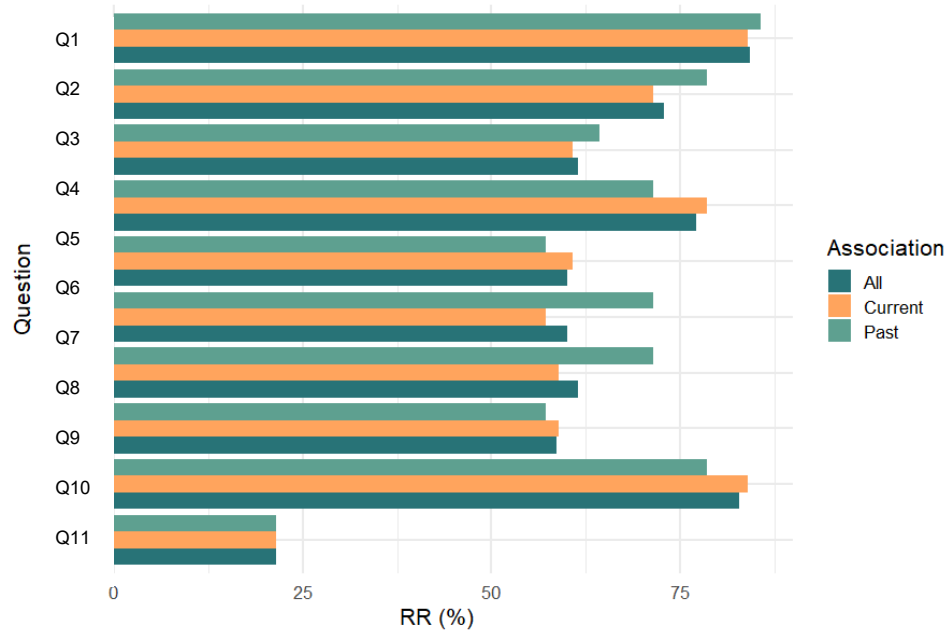


Figure 1 – Response Rate per type of Departmental Association (current v. past member) for each of the questions in the survey.

Departmental Diversity Statement

Questions 10 and 11 in our Survey asked participants to evaluate the current (at the time) Departmental Diversity Statement. This statement is presented on the Departmental website, and the DEI Working Group sought input on edits to better reflect the will of the whole Department.

In this section, the participants were first asked to rate their level of agreement with the current statement (Question 10), and then they were asked to provide reasons to their disagreement in Question 11.

Level of Agreement

75.8% of respondents agreed or strongly agreed with the statement, and 12% disagreed or strongly disagreed. All the respondents who disagreed or strongly disagreed were current members of the Department as of January 2021 (Figure 2).

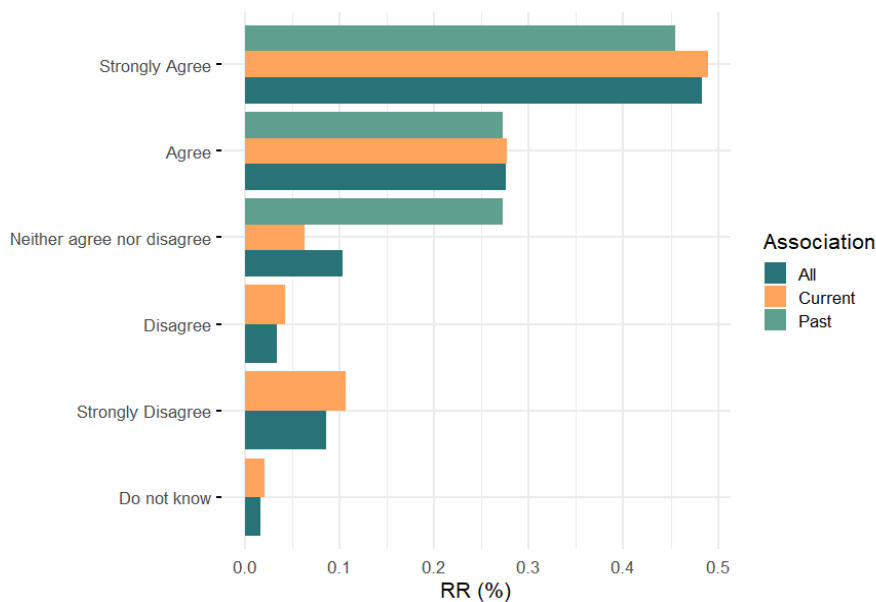


Figure 2 – Response Rate per level of agreement with the statement, overall, and by Departmental Association (current v. past members).

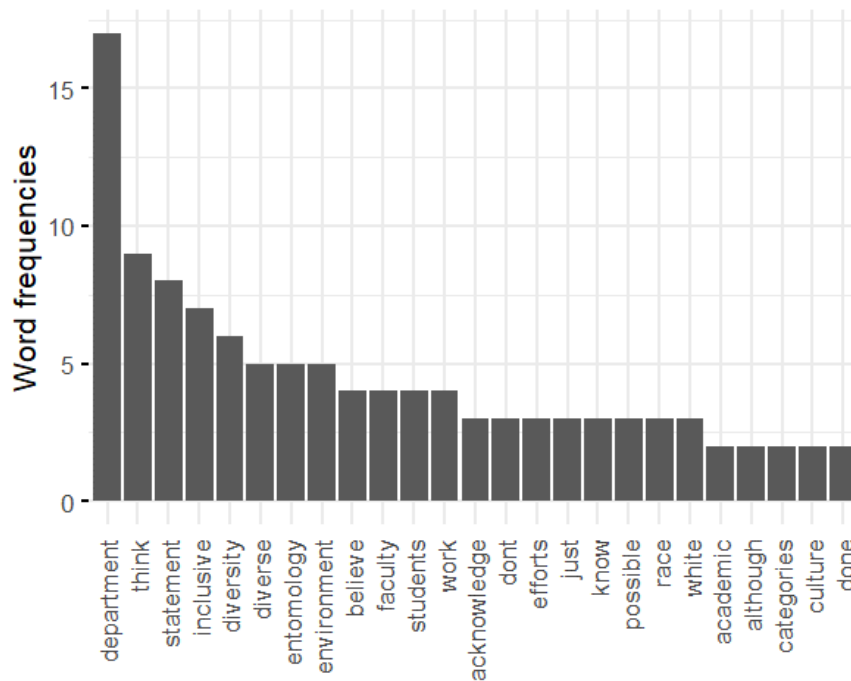


Figure 3 – Frequency of the 25 most-used word stems observed in the responses to Question 11.



Figure 4 – Word cloud of all word stems found in responses to Question 11 and which had at least a frequency of 3.

Reason for Disagreement on Statement (or other comments)

When asked to give insights into the statement and their levels of disagreement, 14 people entered a response. The average of these entries was 58 words (min: 8, max: 179), which indicates thoughtful

answers. The word count (Figure 3) and word cloud (Figure 4) analyses provided insufficient information for the analysis of this question, and for that reason we decided to use the alternative text analysis (see The Survey). Given these answers, we identified several general topics and messages that respondents presented: eight people mentioned the current lack of actionable items in the statement; two people provided answers that did not relate to the prompt, two people elaborated on their agreement with the statement, and seven people suggested edits or described concerns about the statement.

Regarding specific Diversity actions proposed by the respondents in this section, we observed that people mentioned in equal numbers (*i.e.*, one person) that they would like to see diversity training and support for diversity based upon science/data, encourage the use of preferred pronouns, celebrate non-Christian holidays as a Department, promote outreach, increasing the value of teaching and extension in the Department, consideration of being inclusive towards people outside the Department or non-scientists that are also members of the Department, and a willingness for the Department to take an active role in supporting worker's rights, student's rights, and involvement in campus/local activist causes. Among those people who did not respond to the statement, there was concern about the fact that political diversity as a category did not appear in the statement, although it did in the survey. Among the respondents who agreed in full with the statement, there were considerations of political bias missing from the statement, and the will to also see actions, not just words.

People who offered suggestions did so both for adding or editing content. Three replied that the statement lacked considerations of nationality, language, non-Christian religions, and culture. Two people wrote that the statement is missing considerations of political bias. Additionally, one person shared a very detailed list of categories missing from the statement (physical and learning ability/disability), and presented a list of actions that could be taken by the Department. Three people said the statement felt disconnected from the reality of the Department and was an “ideal”, and three more thought the statement was not sufficiently inclusive for identities facing bias. One person shared following observations and editorial suggestions: that listing categories of bias suggests discrimination is ongoing; recommended avoidance of the term “race” for humans; felt the statement was too long and suggested shortening by editing academic discipline diversity sentence; asked for a land acknowledgement in relation to slavery and the dispossession of Native American land; and identified a need to acknowledge history of racism and a position of resistance against it.

Integrated Analysis and Potential Solutions

Below, we propose general topics that were raised by these results, and recommendations for ways to solve them.

A specific versus a general statement

We observed several mentions of terms/identities that were specifically included or excluded in the statement. Respondents had contrasting recommendations here:

i) removal of all specific identities, making the statement more general. A recommendation in this context is to drop the use of “race”. Here, there were some specific wording recommendations, such as “...As a core value, we welcome into our Department and strive to provide an inclusive environment for all individuals, and respect and make space for all identities.”

ii) increasing specificity of the statement. For instance, there was a lack of specific representation of some groups, such as international people, language, physical and learning disability, different political and philosophical views, different religions/no religion. Here, the idea of intersectionality was completely excluded, and some respondents felt that this was also needed.

Recommendation

Create a short and a long-statement. The short statement could be the primary statement, while the longer one would act as a “mission statement”, where more detail is given. This way, the short statement can respond to the requirement of all respondents on group i), while the long statement would be able to articulate the specificities asked for by group ii).

The use of Diversity as a means of productivity

In this aspect, we also observed contradictory thoughts on the idea of diversity as a means of productivity or diversity in a biological sense. We think this could be a response to the following part of the current statement: “We recognize that a diverse group of people working together strengthens all our efforts, including our research, teaching, and extension....” Suggestions here included the need to promote a welcoming environment as a moral imperative rather than a way to improve “productivity”. Others mentioned the need to cite research that demonstrates that diverse groups are “better” (more productive, more resilient, etc.).

Recommendation

These two types of responses are mostly contradictory, and the recommendation would be to remove the relation to productivity. This would need to be accepted only after the Departmental approval of a new statement.

Recognize Slavery and First Nations land

Respondents mentioned the need to recognize the foundations of UMD on physical (e.g. occupation of First Nations’ lands, College Park campus is on plantation land) and financial (land grant mission) resources available only through the usurpation of First Nations’ lands and the exploitation of enslaved people.

Recommendation

Integrate a land acknowledgment and the acknowledgement of slavery as foundations to the very existence of the University of Maryland and consequently our Department.

Wish for actionable/active wording

Respondents requested a focus on actions or action items rather than on general statements, because the general statements may be devoid of meaning without specific proposed actions. On this respect, expressed the need to address questions of power in academia, as well as the need to recognize and be mindful of past errors while actively striving for improvement or reparations.

Recommendation

The new statement should contain more active wording, acknowledging wrong-doing but aiming for actionable steps moving forward.

Clarifying the ideal versus the reality of the Department

Input from the respondents indicated that it is important to have a statement that is honest on the (not necessarily pretty) reality of UMD and the Department, and the ideals we strive for (with actions).

Recommendation

Acknowledge the reality of UMD and Department (see points above), and make clear that the statement indicates objectives with specific actions.

Update on the Departmental Diversity Statement

At the date of publication of this report, the Department of Entomology Diversity Statement published on the website reflects the DEI Working Group's effort to address these criticisms and suggestions through a year-long process with multiple cycles of revision and public review.

In summary, the consideration of all the comments received led to the creation of a short statement (currently published on the Department's website) and a long statement which includes detailed information, actions, and accountability measures. As requested through the iterative community-input process, the DEI Working Group will be requesting feedback on the text from the UMD Office of Diversity and Inclusion, in order to gain an insight from members of our campus whose appointment is to assist with such needs. Because these two statements are not "final", the Working Group considers that they will need continuous and regular revisions, and for that reason the Working Group will be requesting feedback and comments on it on a yearly basis.

Positive and Negative Practices in the Department and Units

Here we present our analysis and evaluation of open-ended survey responses in our Department climate survey. For context, these questions refer to those where participants were asked about positive and negative practices in their Units/labs (questions 2 and 3), in the Department (questions 4 and 7), and to identify positive Department practices to keep (question 6) and negative Department practices to change (question 8).

Table 1 – Summary of Question number and general topic it referred to.

Question 2	Unit Positive Practices
Question 3	Unit Negative Practices
Question 4	Department Positive Practices
Question 6	Department Positive Practices to Keep
Question 7	Department Negative Practices
Question 8	Department Negative Practices to Change

Our results include word frequency, word rank, and current vs. past member text analysis, but not word associations, sentiment scores, or emotion classification. Along with these analyses, we also performed a direct analysis of major themes present in the responses. To do this, the Data Analyst removed identifying information from the responses (e.g. names, pronouns, specific incidents that might identify the respondent, and edited text to standardize verb tense). These anonymous responses were then analyzed jointly between the Data Analyst and the members of the Oversight Group. Responses were coded into topics/categories, in order to attempt quantitative analysis, and key takeaways were also extracted from the text entries. In combination, these approaches provide quantitative as well as qualitative analysis of text entries.

Here, we first present a general overview of our observations. Next, we present the results and analysis of all answers to positive questions, all answers to negative questions, and finally a general combined analysis of all questions. In each case, we provide specific actions that were suggested in the responses, or that the committee identified to address some of the points raised in the survey.

Overview

Table 2 - Comparison of total, past, and current member responses gathered for the three positive and three negative open-ended questions.

	Positive Questions				Negative Questions			
Referred to...	Question number	Total	Current	Past	Question number	Total	Current	Past
Unit	2	58	46	12	3	35	26	9
Department	4	54	44	10	7	23	17	6
Department	6	38	31	7	8	34	24	10

Overall, we received responses from both current and past members and generally recorded more positive answers than negative ones. It was evident that people have/d very different experiences during their time in UMD Entomology. Some members reported strongly positive experiences, and some very negative,

and at times the survey seemed to assess two different Departments. A major takeaway from these survey responses is that the UMD Entomology experience is not monolithic, although the positive and negative responses often agreed on common themes (such as a desire for belonging and community in the workplace for example). Survey respondents provided many useful, concrete suggestions, and we provide additional recommendations, included in the summary of major themes and takeaways below.

Positive Practices

Frequencies and general summaries of replies

Here, we first provide a general summary of the frequencies seen in each of the three positive questions asked. Words were analyzed by “stemming” or reducing the word to its root form. Then, the frequencies of these stemmed words were counted and summarized. In an attempt to report quantitatively on open-ended responses, we first coded the content of the text into general categories, and tallied responses for each category to find frequencies. Individual responses could generate counts for more than one category. For instance, if the text in a survey response described strong feelings of belonging to a Unit and enjoying excellent communication with their colleagues, then each of these categories would receive one point. The categories that these practices were placed in were the following: “acknowledgement, belonging, and hospitality”, “communication and interactions”, “social gatherings and celebrations”, “professional gatherings and celebrations”, “appreciation and gratitude”, “explicit inclusion effort”, “collaborative environment”, and “healthy work-life balance”.

Question 2 - Identify one or more practices in Units/labs that makes/made you feel included, valued, supported, and welcome.

We received responses from 46 current and 12 past members (Table 2). The mean answer length was 23 words (min: 2, max.: 130).

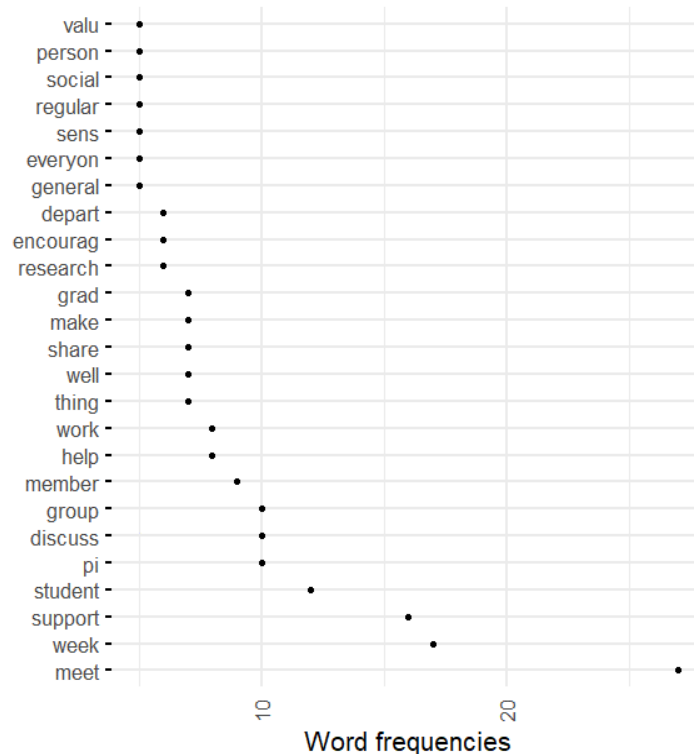


Figure 5 - Frequency of words identified through the stemming analysis of responses to question 2.



Figure 6 - Word cloud based on word stem frequencies observed in the text analysis. Size of the word is positively correlated with the frequency in the replies.

The word-frequency analysis identified the word stem “meet”, “week”, and “support” as the most commonly used (Figures 5 and 6). The most common words in this question about positive Unit/lab practices are associated with interactions.

Some words, such as “discuss”, “meet”, “week”, “support”, have similar frequencies among current and past members. Others such as “student”, “PI”, “encourage”, and “depart” (remember these are word stems), show up at different frequencies between current and past members (Figure 7).

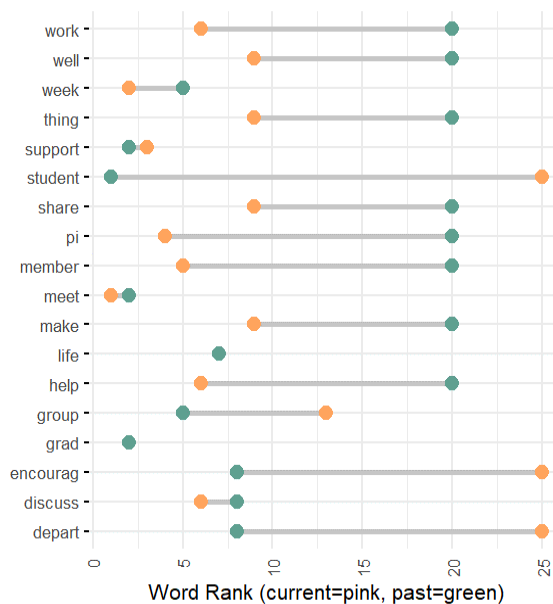


Figure 7 - Word rank, (1 - most commonly used, to 25 - least commonly used), is assigned sequentially in order of word frequency. Orange: current members; Green: past members.

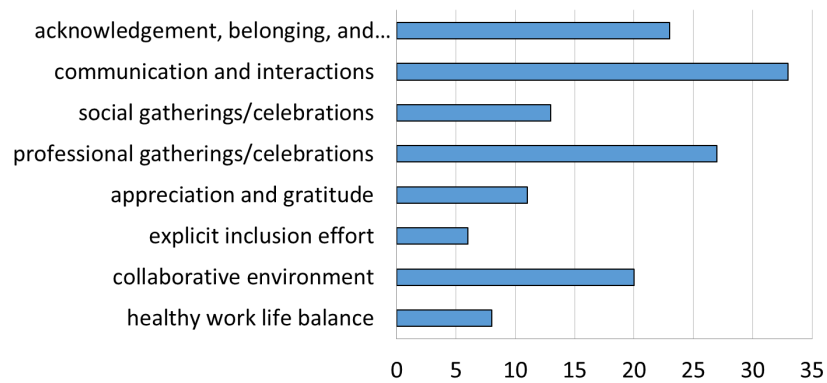


Figure 8 - Frequency of response topics identified in answers to question 2.

The top three positive Unit/lab practices identified by respondents include 1) positive communication and interactions with their Unit colleagues, 2) professional gatherings and celebrations, and 3) acknowledgement/recognition, feelings of belonging, and acts of hospitality (Figure 8).

Question 4 - Identify one or more practices in the Department that makes/made you feel included, valued, supported, and welcome.

We received responses from 44 current and 10 past members (Table 2). The mean answer length was 24 words (min: 2, max: 110).

The most common words identified in this question about positive Department practices are the stemmed words for student, people, support, meet, welcome, and everyone (Figures 9 and 10).

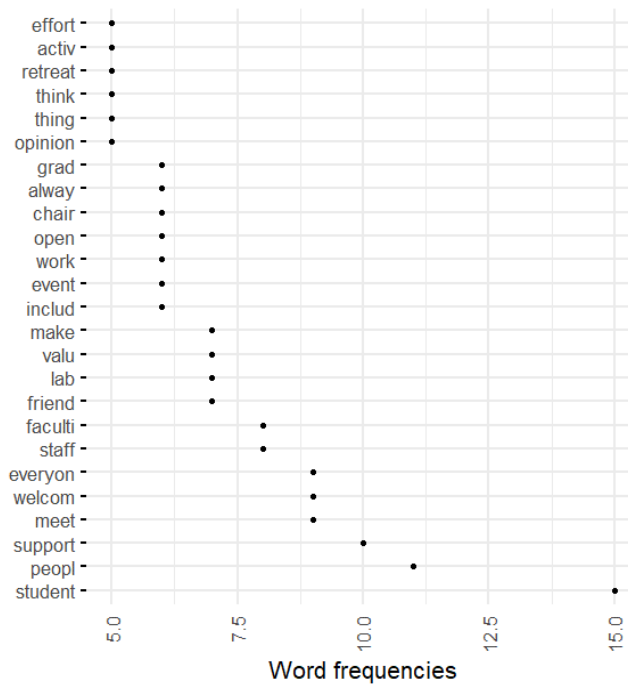


Figure 9 - Frequency of words identified through the stemming analysis of responses to question 7.



Figure 10- Word cloud based on word stem frequencies observed in the text analysis. Size of the word is positively correlated with the frequency in the replies.

Some words, such as “support”, “meet”, “everyone”, and “faculty” are similarly common among current and past members. Others such as “grad”, “retreat”, “social”, “lunch”, and “practice” show up at different frequencies between current and past members (Figure 11). We recognize that word association for words with nearly synonymous meanings, like or meeting/ gathering/ event or grad/ student, can muddy this analysis, but we think we addressed this and captured the essence of responses in this regard in our direct text analysis which will be presented later in the report.

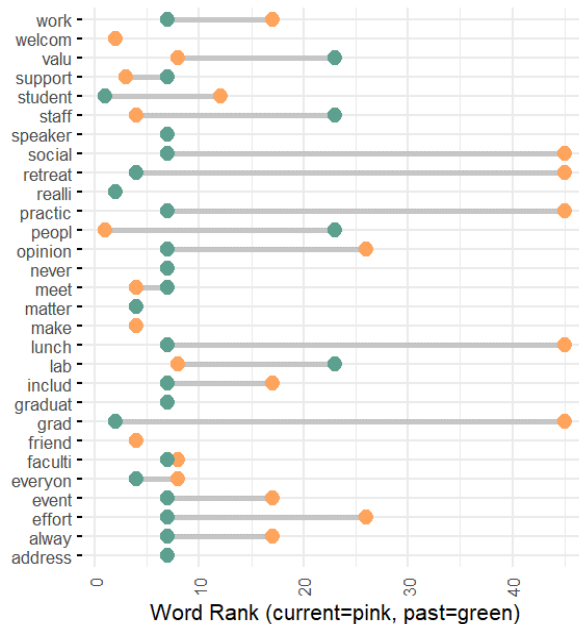


Figure 11 - Word rank, (1 - most commonly used, to 25 - least commonly used), is assigned sequentially in order of word frequency. Orange: current members; Green: past members.

The top three positive Department practices identified by respondents include 1) acknowledgement/recognition, feelings of belonging, and acts of hospitality, 2) social gatherings and celebrations, and 3) professional gatherings and celebrations (Figure 12).

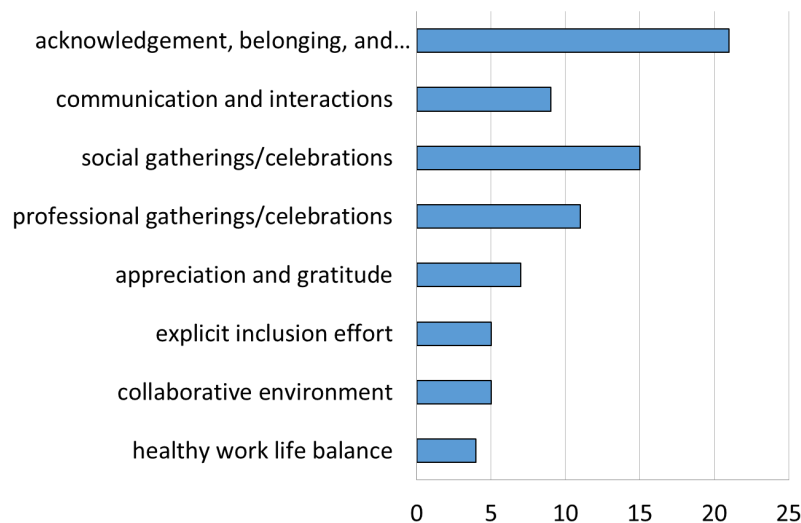


Figure 12 - Quantitative text analysis of all responses to question 4 coded by topic - frequency of response topic code identified in answers.

Comparison of answers to questions 2 and 4 (Unit vs. Department)

There were 58 total responses for Unit positive practices and 54 responses for Department positive practices; there is very little difference in response length either identified by the mean or maximum response length. Some of the practices captured in our text analysis codes were cited more often at the Unit level than at the Department level. In order of greatest to least difference, counts for 1) “communications and interactions”, 2) “collaborative environment”, and 3) “professional gatherings and celebrations” were substantially greater within Units than in the Department. The remainder of categories had very similar counts between Units and the Department, with the Unit having a slightly higher count in all categories except for “social gatherings and celebrations” (Figure 13). Note that positive practices for Units and the Department align well, so there is strong support for taking action to foster these aspects.

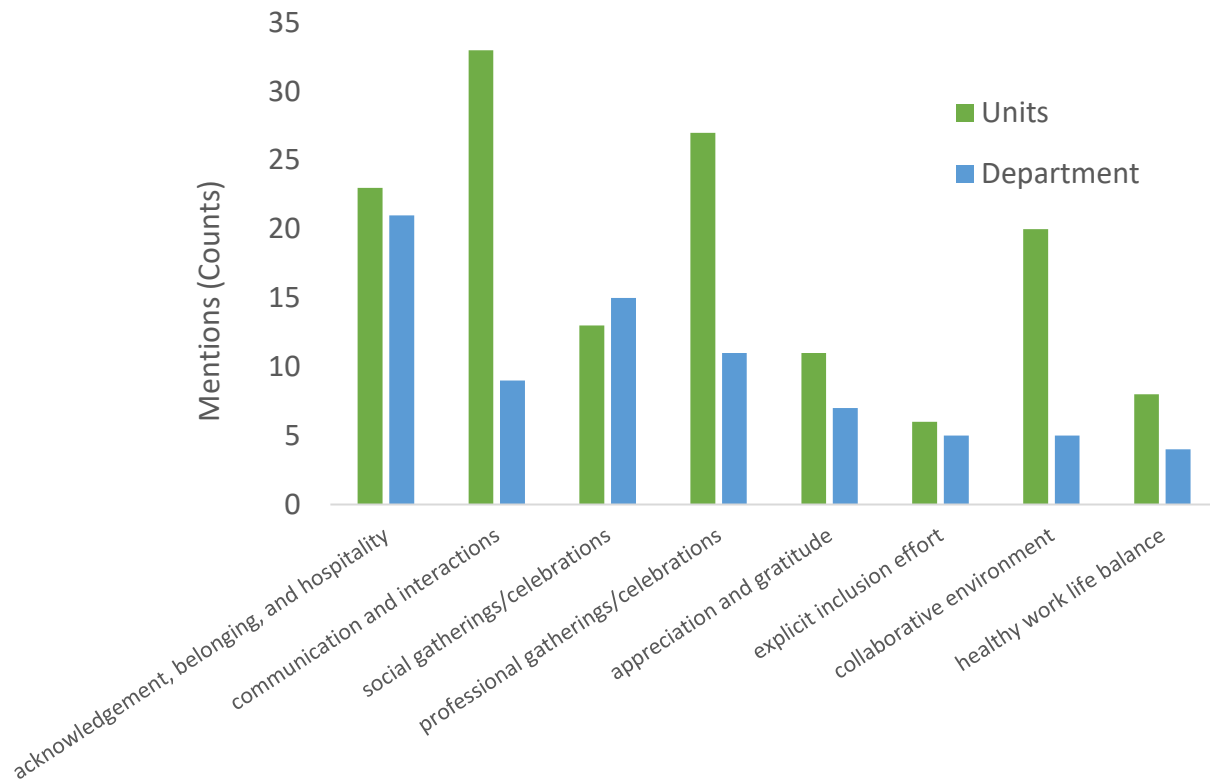


Figure 13- Frequency of the categories of different practices identified in the responses given to the questions about positive practices experienced at different levels (Unit vs. Department).

Question 6 - Among the practices that make/made you feel included, valued, supported, and welcome, are there any that you feel are especially effective in fostering an accessible, welcoming, and inclusive community?

We received responses from 31 current and 7 past members. The mean answer length was of 18 words (min: 0, max: 58).

The most common words in question 5 are those associated with social events and the importance of faculty at those events, and in making a positive effort to develop a collaborative welcoming environment (Figures 14 and 15). Some words were used more frequently by past members: “social”, “events”, “other” (as in social activities and events, and other was associated with positive experiences connecting or lending support to coworkers). Other words were used at similar frequencies among current and former members, including “faculty”, “support”, and “activ-“ (as in activities) (Figure 16).

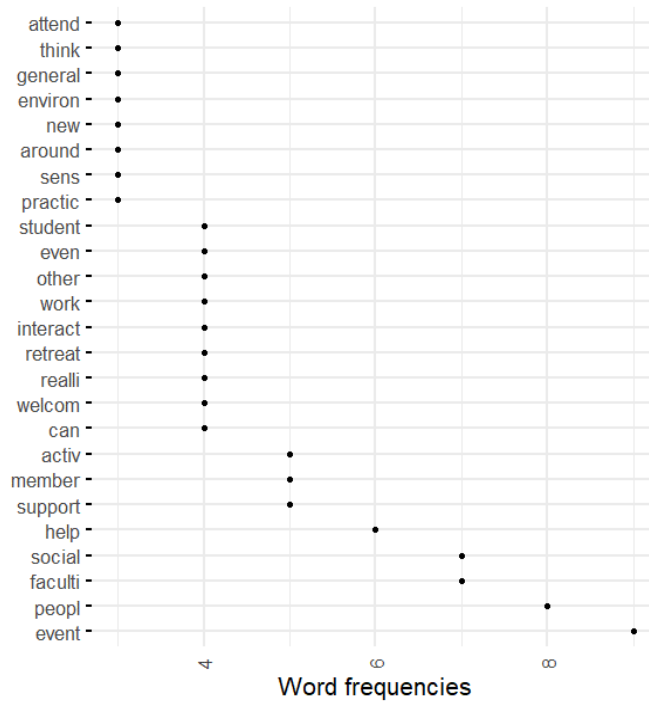


Figure 14 - Frequency of words identified through the stemming analysis of responses to question 6.



Figure 15 - Word cloud based on word stem frequencies observed in the text analysis. Size of the word is positively correlated with the frequency in the replies.

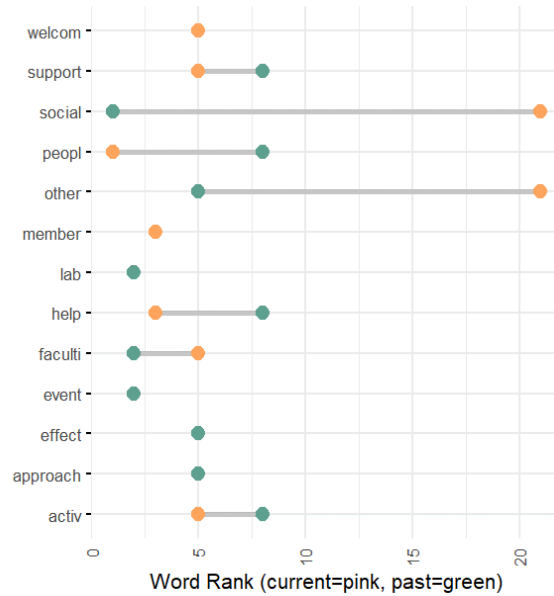


Figure 16 - Word rank, (1 - most commonly used, to 25 - least commonly used), is assigned sequentially in order of word frequency. Orange: current members; Green: past members.

The top three positive practices that make people feel the most included, valued, supported, and welcome are 1) “social gatherings and celebrations” (31%), 2) “communication and interactions” (23%), and 3) “acknowledgement, belonging, and hospitality” (16%; Figure 17).

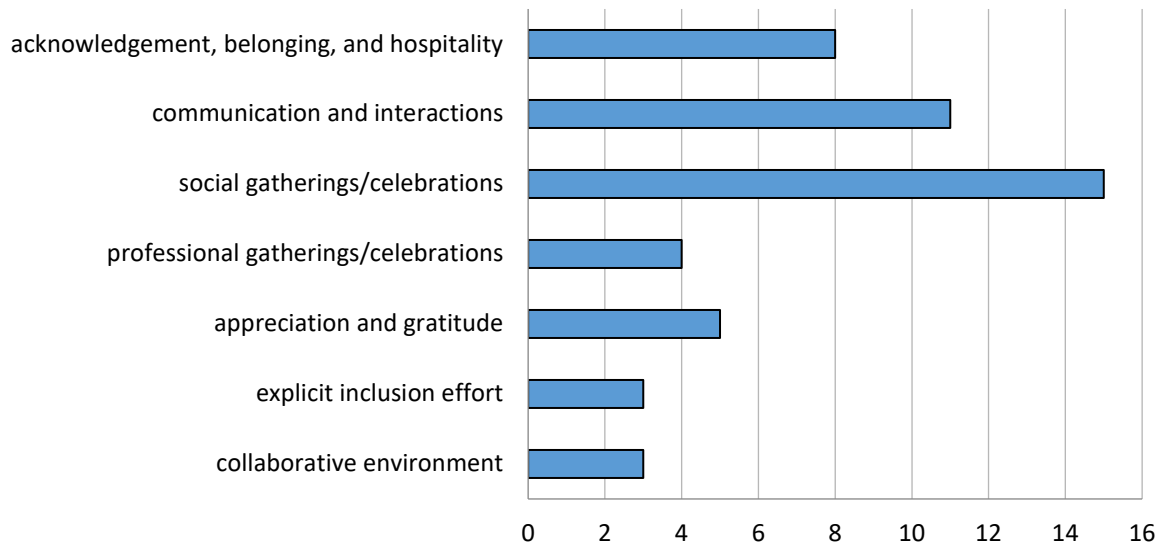


Figure 17 - Quantitative text analysis of all responses to question 6. Frequency of response topic code identified in answers.

Analysis of responses based on frequencies and text evaluations

Here, we create general topics that represent our perception of the main messages gathered considering all the answers given to the three questions. Core messages were very similar across questions. Here, opinions about Department and Units were treated together, and specifics are noted if the observations refer only to one or the other.

Community Building

One of the trends observed was that the respondents appreciated community-building activities and actions, involving professional and more “social” aspects of the Department and labs.

The respondents appreciated the presence of social gatherings and celebrations/gratefulness for personal contributions (e.g., birthdays). Many respondents indicated that they saw lunches/gatherings as labs/Units, informal gatherings, and zoom social hours as valued contributions to the community in their Units. At the level of the Department, they also indicated that the presence of organizations through which community could be built (e.g., ESO) and several Department-wide activities (e.g., Oktoberfest, Holiday Party, Trivia, ESO coffee hour, Maryland Day) are “traditions” that were appreciated and contributed to making the Department a welcoming and connected community.

Several respondents also mentioned their appreciation of several actions that sought to build community from a professional perspective. For example, several respondents mentioned how celebrations of their professional accomplishments within their Units and the Department were encouraging and made them feel connected with the groups. Several respondents also mentioned how having a colloquium and the possibility of lunch (with the graduate students) was valued and allowed to create a sense of community. There were some mixed feelings about the Departmental retreat. The agenda for the day was appreciated but the logistics of an off-campus and weekend retreat make it less inclusive than it could be.

Possible Actions

- Continue with celebrations of successes
- Continue social/community activities (parties, colloquium, ESO)
- Possibility of expanding this into other non-graduate student levels
- It was mentioned in the past that having a space for gatherings would be good.
- Some type of “Gratitude Corner” maybe on a bulletin board or on the website/social media where people can drop notes of gratitude or acknowledgement for little things... or a weekly or monthly message highlighting appreciation of someone?

Acknowledgement of the person

Respondents highlighted the importance of being recognized as people, and being in a generally friendly environment, where people are actively trying to get to know them as individuals. At the Departmental level, several respondents mentioned the importance of making a point to remember names and making sure that the new members appeared quickly on the website and were added to the mailing lists. The administrative staff was particularly celebrated for this. Members felt the leadership cared about them as individuals, which is also reflected in the leadership’s support of ESO and students’ opinions, the lack of fear to share opinions, and the representation of all levels for policy-making. Also at this level, it was often mentioned that there is an overall friendliness across positions or “levels” of people.

At the Unit levels, several actions were mentioned, which all tended toward recognition of the importance of the person: group pictures, it being OK to acknowledge that people have good/bad days, an interest in the general well-being. This was also reflected in people recognizing and appreciating the ability within Units to have a “team spirit”, where people help each other during hard times and when extra help is needed, and where time off is granted if needed, and folks will help cover responsibilities during that time off.

Possible Actions

- Continue open communication
- Continue quick onboarding
- Making sure that representation is present for policy-making.
- Take action to create a team spirit.

Proactive Inclusive Environment

Actions that are already occurring to make the environment inclusive and welcoming were recognized. For instance, the use/sharing of pronouns (especially at faculty level), the presence of gender-neutral restrooms, appropriate language in relation to disability, the development of a DEI working group, open acknowledgement and support of social movements, and open-mindedness. We can definitely still become more inclusive, but the *effort and intent* were acknowledged. There were some contradicting messages in terms of support to new parents, as well as the valuing of minorities.

Possible Actions

- Continue with these positive actions
- Train Department members to acquire cultural sensitivity in their professional and inter-personal interactions.
- Increase equity-minded approaches into the everyday structures of the Department.
- Improve communication in the case of new parents

Collaborative Environment

Some respondents noted the communal environment, collaborations and helping each other are common, from a professional point of view. For instance, at the Unit level, it was mentioned the idea of a “team mentality”, and the encouragement of feedback and input to help others. At the level of the Department, the ease of access to and training on different equipment was appreciated, and the willingness of people to assist each other, including text editing help and practice presentations.

Possible Actions

- Announcements of when people are training on some technique to open that training more broadly.
- A running list of people willing to help with certain aspects with contact info
- Promoting the formation of groups with shared interests?
- Establish collaborative projects/works

Negative Practices

Frequencies and general summaries of replies

Here, we first provide a general summary of the frequencies seen in each of the three negative questions asked. When placing the full given answers in categories, we used the following categories: “unwelcoming, unkind behavior”, “bias, harassment, and microaggressions (improper speech and behavior)”, “needs ignored, or treated unfairly”, “classism”, “community or team mentality absent”, “exclusive culture”, “competitive environment”, “unhealthy work-life expectations”.

Question 3 - Identify one or more practices you experienced in Units/labs that makes/made you feel excluded or unwelcome.

We received responses from 26 current and 9 past members. The mean length answer was of 50 words (min: 2, max: 843).

Note that for Question 3, one answer was imported from Question 2 because it was determined to primarily pertain to a negative experience in a Unit or lab. This is not included in the number of responses reported above as we do not know if the person was a current or past member.

The analysis identifies the words “advisor”, “student”, and “meet” as the most commonly used (Figures 18 and 19). When analyzed per group (current vs. past) the frequencies vary (Figure 20), with most current members using a variety of words, while most past members using some specific word roots at particularly low frequency (i.e., “unwelcom”, “posit”, “exclud”).

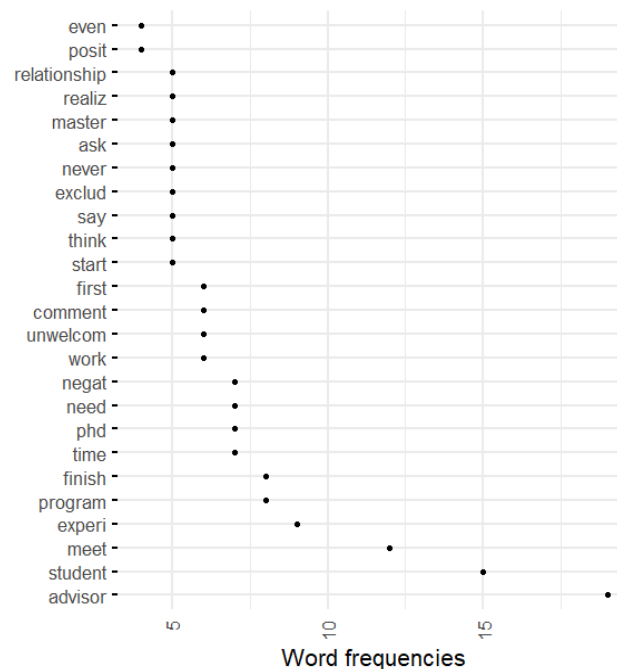


Figure 18 - Frequency of words identified through the stemming analysis of responses to question 3.

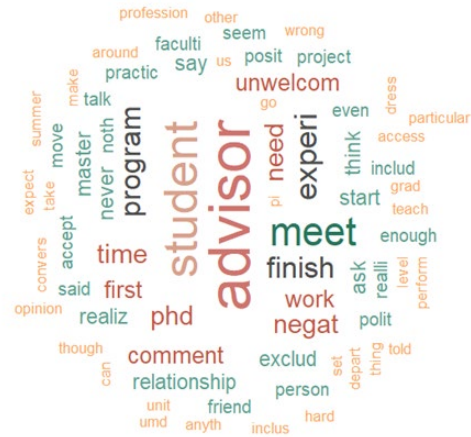


Figure 19 - Word cloud based on word stem frequencies observed in the text analysis in all responses to question 3. Size of the word is positively correlated with the frequency in the replies.

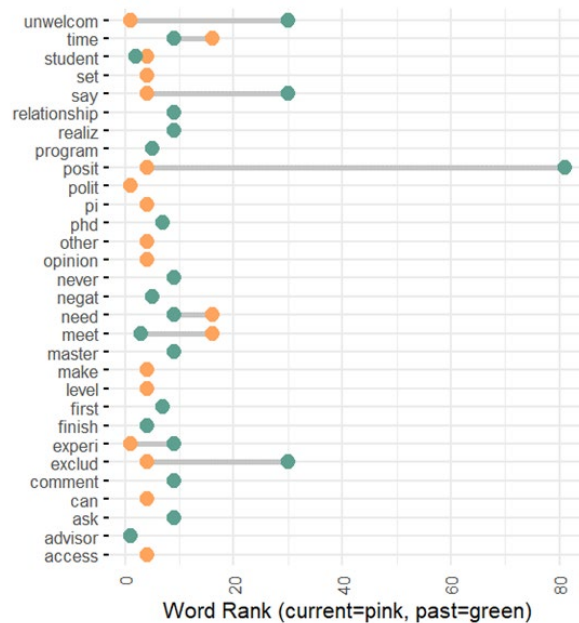


Figure 20 - Word rank, (1 - most commonly used, to 25 - least commonly used), is assigned sequentially in order of word frequency. Orange: current members; Green: past members.

The top three negative practices at the Unit/lab level were identified as 1) “needs ignored or treated unfairly”, 2) “exclusive culture” (includes nationality, identity, religion, and ideology/viewpoint) and 3) “bias, harassment and microaggressions” (including improper or inappropriate speech or behavior) (Figure 21).

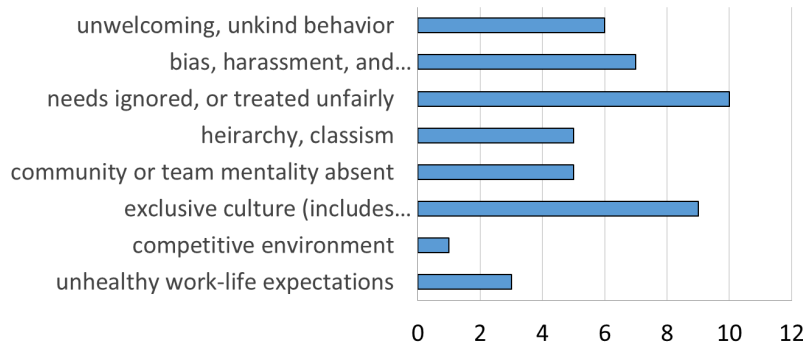


Figure 21 - Quantitative text analysis of all responses to question 3. Frequency of response topic code identified in answers.

Question 7 - Identify one or more practices in the Department that makes/made you feel excluded or unwelcome

We received responses from 17 current and 6 past members. The mean length answer was of 38 words (min: 2, max: 116).

Note that for Question 7, two responses were imported from Question 4, and three responses were imported from Question 6, because the answers were determined to fit here instead of where originally provided. We felt we would otherwise be missing these negative experiences clearly pertaining to the Department entered into other questions. This is not included in the number of responses reported above as we do not know if the person was a current or past member.

The general analysis identifies the word roots “student”, “faculti”, and “lab” as the most commonly used (Figures 22 and 23). When analyzed per group (current vs. past) the frequencies vary, with past members using at low frequency the word root “faculti” and current members using at low frequency the word root “supervisor” (Figure 24). Note that these two could be considered to refer to the same thing. The word “faculty” was used more by current members, which could have something to do with the number of past members who are faculty vs the number of past members who are everything else (Figure 25). Faculty members refer to themselves as faculty, whereas other members may refer to them as faculty, supervisor, or advisor, etc. and there are, for obvious reasons, more past members who are students and research staff.

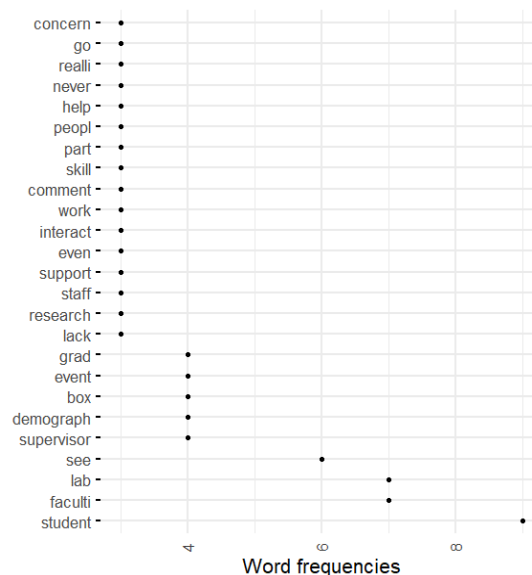


Figure 22 - Frequency of the top-25 words identified through the stemming analysis of responses to question 7.



Figure 23 - Word cloud based on word stem frequencies observed in the text analysis in all responses to question 7, for all words with a frequency of 3 or more. Size of the word is positively correlated with the frequency in the replies.

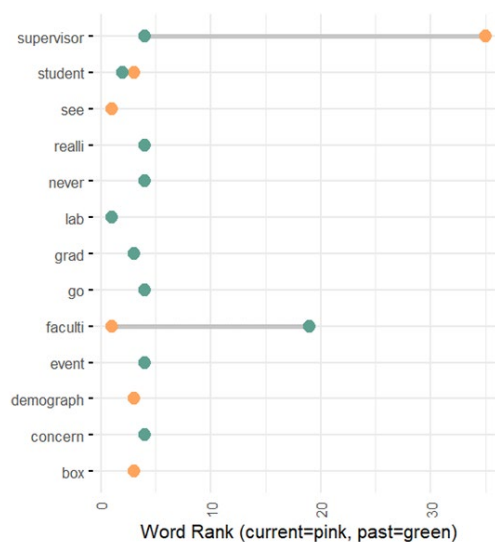


Figure 24 - Word rank (1 - most commonly used, to 25 - least commonly used) of 10 top words, assigned sequentially in order of word frequency. Orange: current members; Green: past members.

The top three negative practices at the Department level were identified as 1) “community or team mentality absent”, 2) “needs ignored or treated unfairly” and 3) a tie between the categories of a) “bias, harassment and microaggressions” (including improper or inappropriate speech or behavior), and b) exclusive culture (includes nationality, identity, religion, and ideology/viewpoint; Figure 24).

Comparison of answers to questions 3 and 7 (Unit vs. Department)

When categorized, practices that made people feel excluded or unwelcome seem to sometimes be shared across the different levels (Units vs. Department), while other times they are not. In particular, bias, harassment and microaggressions, and needs being ignored and/or treated unfairly seem to be present relatively equally across levels. The lack of community and team mentality was particularly present at the Department level, while the presence of exclusive cultures (including hierarchy and classism) and unwelcoming environments seem to be more frequent in Units than at the Department level (Figure 26).

Many negative experiences happen mostly/only at the Unit level, but the lack of community is particularly present at the Departmental level.

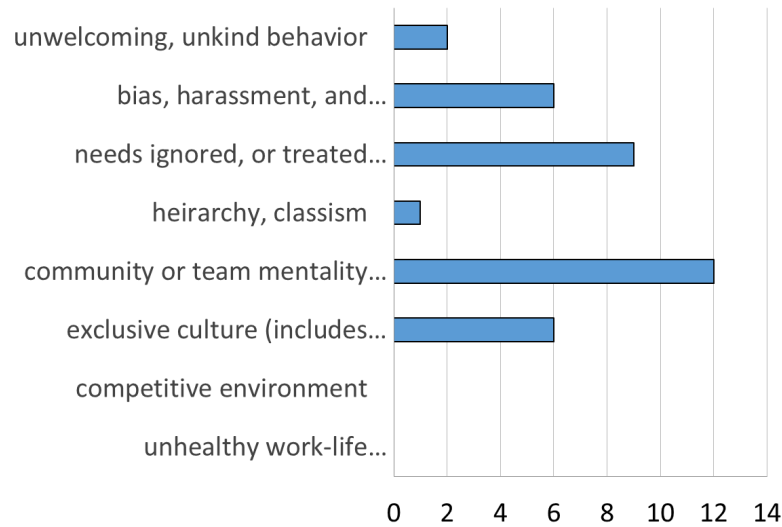


Figure 25 - Quantitative text analysis of all responses to question 7. Frequency of response topic code identified in answers.

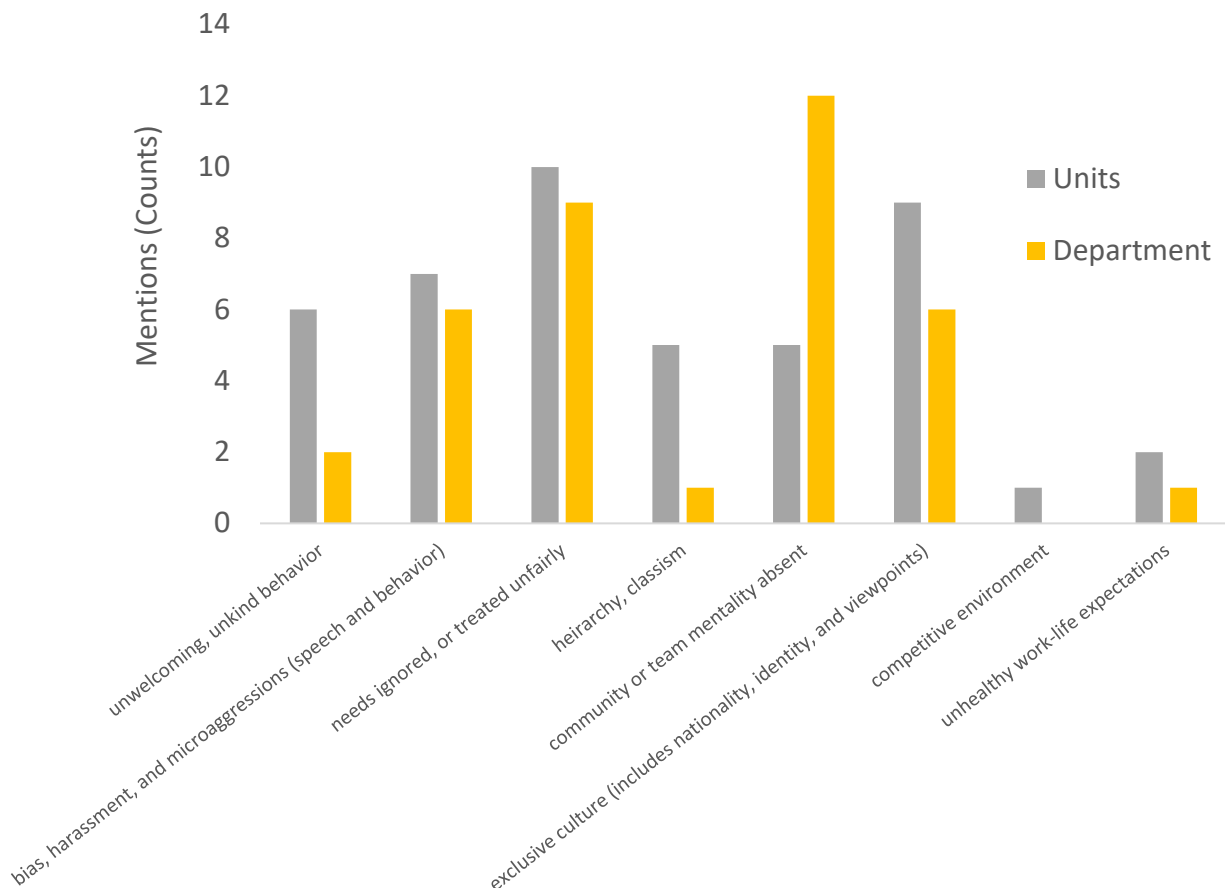


Figure 26 - Frequency of the categories of different practices identified in the responses given to the questions about negative practices experienced at different levels (Unit vs. Department).

Question 8 - Are there specific changes that could be implemented to make the Department more accessible, welcoming, inclusive, and effective in building a supportive Departmental community?

We received responses from 24 current and 10 past members. The mean length answer was of 46 words (min: 2, max: 200).

The general analysis identifies the word roots “student” and “think”, “grad”, “faculti” and “lab” as the most commonly used (Figure 27 and 28). When analyzed per group (current vs. past) the frequencies vary (Figure 29), with past members using the word roots “staff”, “help”, “divers” (as in diversity) and “can” at low relative frequency, and current members using the word root “member” and maybe “lab” at low relative frequency. Again, because the prompt requests suggestions, the words “student”, “grad”, “faculty” and “staff” appear often. The contextual analysis showed that this is due to respondents referencing specific positions when making targeted observations or proposing actions.

Also, because respondents were prompted for suggestions, they included a high frequency of the words “can”, “help”, and “think” before listing the details of their recommendations. The use of the words “staff” and “diversity” seemed to be associated with members interested in staff having DEI- type training, and in hiring a more diverse Department staff.

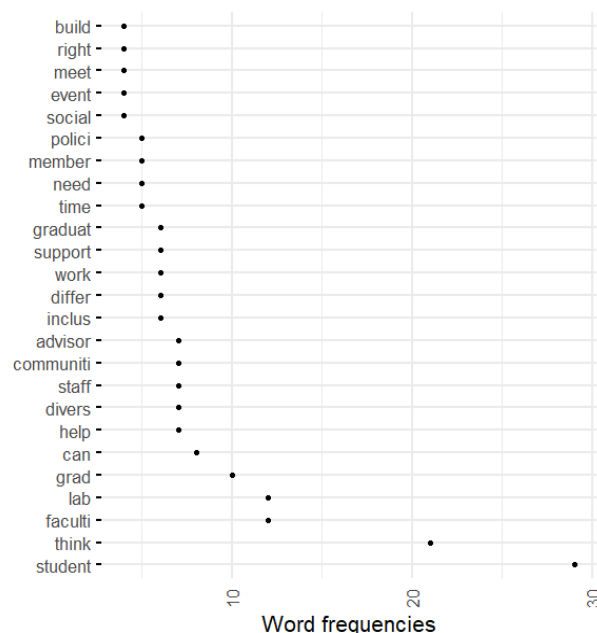


Figure 27 - Frequency of words identified through the stemming analysis of responses to question 8.



Figure 28 - Word cloud based on word stem frequencies observed in the text analysis in all responses to question 8. Size of the word is positively correlated with the frequency in the replies.

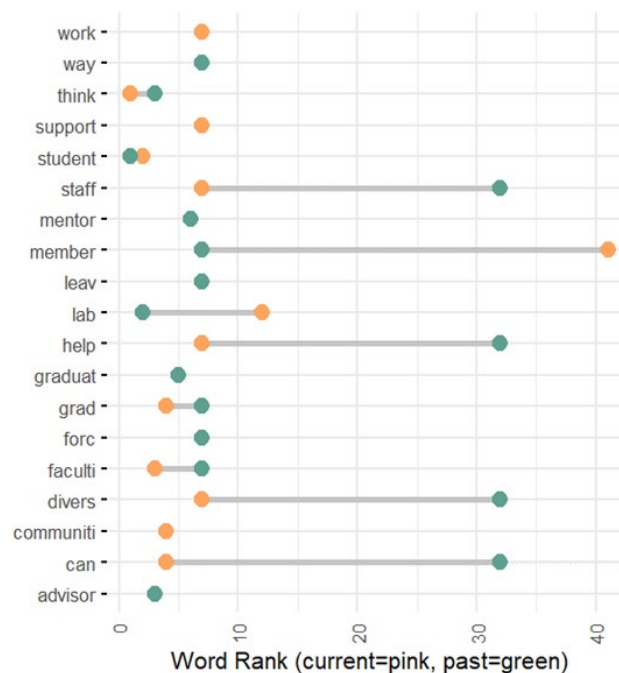


Figure 29 - Word rank, (1 - most commonly used, to 25 - least commonly used), is assigned sequentially in order of word frequency. Orange: current members; Green: past members.

When categorized, changes associated with the need to increase community building through social events/gatherings (28%), and the need for mentorship/DEI trainings (16%) were the most commonly identified (Figure 30). Other categories represent non-negligible proportions (e.g., larger than 10% of the responses), and these include defining clear community expectations, listing to members, and more diverse hiring.

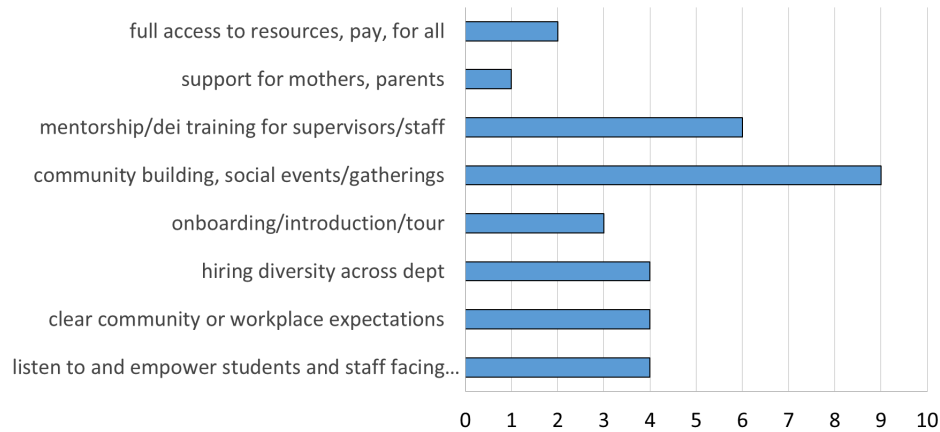


Figure 30 - Quantitative text analysis of all responses to question 8. Frequency of response topic code identified in answers.

Overall analysis of negative responses based on frequencies and text evaluations

Here, we present our perception of the main messages gathered from the answers given to the three questions. Opinions about the Department and Units were treated together, and specifics are noted if the observations refer only to one or the other.

Exclusive culture

One of the top themes raised in these questions both at the level of the Units and the Department was the presence of an “exclusive” culture, that defines who is “in.” This was reflected in several answers implying classism - e.g., “academically groomed” people being more valued than people not matching classic academic molds or expectations - and hierarchies - e.g., looking down on working classes or those without a PhD.

There were also reports of sexism (several entries), and racism (some entries), and protection of people in power at the expense of students’ well-being/success. Likewise, the exclusive culture defines the types of events that are held, with some of them being religion-based (e.g., Holiday party). It was also mentioned that politics should not be brought into the professional world. Further, being non-American can be alienating, making people feel excluded from discussions and lost in the administration. Finally, a competitive and combative culture was mentioned as making people feel excluded and alienated.

Possible Actions

- Promote diversity/mentoring training. Possibility to add outside diversity/mentor trainings to the retreat and/or a dedicated colloquium date.
- Structures that create equal opportunities. Develop policies that create and enforce this.
- Hosting retreat not on weekends.
- Hosting events that not based on religious holidays. It would be interesting to create events at random dates (Spring Fling or Oktoberfest-style).
- Promote the use of pronouns.

Lack of Cultural Sensitivity

Several responses suggested that there is a lack of cultural sensitivity and a need for diversity training, especially among faculty and the administrative body. Related to the idea of “exclusive culture”, it was

mentioned some times that people from cultures considered “different” were not taken into account when this could be used as a potential administrative or academic barrier (e.g. names consistently misspelled in forms, lack of guidance on the way the structures work, unwillingness to help). This gives the impression of “DEI lip-service”, with no clear actions taken when the needs appear. A need for increasing diversity in all areas of the Department was noted. Although not noted specifically in relation to cultural topics, there were some mentions of microaggressions both at the Unit and Departmental levels, referring to the sexism, classism, and racism mentioned above.

Possible Actions

- Promote diverse recruitment/hiring in all sections (Faculty, Students, Staff) of the Department.
- Promote diversity/mentoring training.
- Promote equal opportunities for all, independently of culture. This could be done through policies that create and enforce this.
- Promote the use of pronouns.

Lack of Community

Another topic that arose in several answers was the feeling of lack of community (although the presence of community was highlighted as one of the most positive points in the Department). Although this could be partially due to COVID isolation, the responses seem to reflect a long-lasting rather than novel feeling on this. This was felt by several people both at the Unit and Departmental levels, which suggests that access to the community is limited to some people only. In particular, there were several mentions of undergraduates and staff (both administrative and research) feeling disconnected from the Department, and from many of the activities offered/targeting faculty or grad students (in particular ENTM students are included and students from other programs but advised in ENTM are excluded (BISI, MEES, BEES, etc.). The lack of community was also brought up in several entries by people feeling ignored by others, either directly (e.g., no acknowledgement of one’s presence), or more indirectly (e.g., concerns are not listened to). The lack of community makes people feel unwelcome or unappreciated.

Possible Actions

- Organize casual gatherings.
- Provide spaces for casual gatherings. For instance, a room with a couch, a board and coffee machine, to sit and meet casually (or not).
- Establish an introduction of all members to the Department. This can be done at the beginning of each Fall semester for the first seminar of the semester.
- Increase interactions between labs.
- Integrate a post-doc representative in ESO or another (new?) Departmental organization.
- Include non-ENTM students to activities and resources.
- Establish and promote the creation of category-based groups (e.g., undergraduates, people interested in systematics), which could promote connections among labs and groups.

Poor communication

There were some responses indicating a lack of communication either within the Units or in the Department. Although this was often referring to PIs not communicating regularly with their Units, there was also some indication of poor communication at the Department level. In the latter, it was reported multiple times that the Department did not always listen to concerns raised by members.

Possible Actions

- Listen to concerns.
- Create a space to voice concerns. Perhaps establish a structure (e.g., a position, ODI services, tiers).
- Provide clear guidance for reporting issues. Create and distribute a simple guide for reporting, which includes what should be reported where and how. This can include a summary of UMD/ENTM resources, and could be placed in very visible spaces and/or distributed.

Work-life balance

Some responses indicated issues of work-life balance, either indicating that people are expected to be working without being paid, working at specific hours/during specific amounts of time, or that the workload is non-transparent (for faculty). We could have benefitted from more specific descriptions for this category, and thus cannot speak to many specific incidents.

Possible Actions

- Provide transparent workload, and clear working guidelines and expectations. Promote the adoption of written agreements within Units and the Department.

Combined Evaluation

We present a summary of our evaluation of the main messages and trends found in all replies to the six questions (both positive and negative). We could place all replies under three general topics, and we present actions that can be taken to build on these discoveries.

Community

One of the common topics in survey responses is the desire for a sense of community. Many respondents appreciated the hospitality, frequent meetings, and social activities available in their Units and with the Department, as well as felt welcomed and had a sense of belonging to their Units or the Department as a whole. This contrasts with the negative answers, where people felt ignored (mostly at the Unit level), and just not connected with their own group or to the whole Department. The latter was also presented as reduced interactions between Units. This may be an indication that not everybody has access to broader communities in the Department and may greatly benefit from actions that promote community building across Units.

Possible Actions

- Continue hosting and promoting the organization of social/casual gatherings in the Unit and Department level - with options that are not on weekends or associated with religious celebrations.
- Continue the public celebration of successes. An addition/option for this can be the creation of a “Gratitude Board” either physical or virtual for people to publicly recognize other members of the Department.
- Continue timely onboarding of new members at the Unit and Department level AND introduce all members to everybody (e.g., use the first Colloquium of the Fall to introduce all members to the whole Department).
- Continue supporting ESO. Many students found ESO crucial to their sense of belonging and felt isolated and alone during times ESO was holding less frequent events.

- Unit heads/supervisors/mentors. Provide leadership in integrating new members into Units, and building a collaborative team mentality where members' social and professional needs are met, and people feel a sense of belonging.
- Provide a space to hold social activities and gatherings (e.g., a “lounge” room in the Department).
- Promote the creation/organization of subgroups within the Department, so those members can connect with each other. This is particularly so for staff, and undergraduate students, but can also include interest groups (methods, models, scientific illustration, etc.).
- Promote actions that lead to inter-Unit collaborations and mixing. Having a community board for people to make requests and offer assistance. Possibly in the 3rd floor breakroom or other central location. Promote rotations for students and academic collaborations. Promote the shared use of offices by members of different Units (e.g., graduate office, post-doc office, etc.).

Culture

The positive responses acknowledged the many ways that the Department and Units are inclusive of the many aspects of member identities. At the same time, it was highlighted in the negative questions that the Department (and maybe Units) has an “exclusive culture”, where there are some identities considered to be “insiders” while others are “outliers”, and thus not logically (under this exclusive culture) expected to belong. This was also reflected in several answers mentioning a lack of cultural sensitivity. A very worrisome trend here was the multiple reporting of sexism/racism/classism, which are not necessarily concerned with many of the inclusiveness actions mentioned in the positive answers.

Possible Actions

- Continue the promotion of pronoun use (especially by Faculty).
- Continue the development of all activities mentioned in the positive answers.
- Continue publicly showing gratitude and appreciation for housekeepers, maintenance workers, and showing respect and hospitality to other occupants of the building.
- Strengthen diverse hiring/recruitment for all types of positions.
- Require diversity and mentoring training for all members by services external to the Department. Ideas are doing this at the retreat or at one of the Colloquium dates.
- Create safe spaces and transparent paths for reporting and intervention when needed (esp. for reported cases of “isms”). An option can be creating a guide to place in public spaces. Take action on the issue of protecting people in positions of power at the detriment of lower-ranked members.
- To address classism, create structures for equal opportunities to success. This needs to be through policies. A possibility could be having funds available if belonging to a specific identity.
- Increase representation in the leadership and decision-making.
- Increase publicly-accessible broader impacts activities in underserved communities, including locally (both in-person and virtually).
- Provide direct and explicit financial support to actions leading to making our environment inclusive, instead of leaning on volunteers (e.g., running surveys such as this one, hosting trainings from external professionals).

Communication and Coordination

There were indications that people appreciated emails to celebrate accomplishments and learn about events, but it was also mentioned that many events and information of some events were not publicly shared, and thus were accessible only to “insiders”. This is also related to the mention of little interaction

between Units, which was something also affecting the sense of lack of community at the level of the whole Department. There were also mixed messages about groups within the Department being listened to and taken into account for decision-making.

Possible Actions

- Maintain and increase communication between ESO and leadership
- Promote the formation of staff groups, and their direct communication to leadership
- Provide clear paths to information on accessing certain services - website, posted in common spaces, shared within Units
- Public and clear guidance for reporting concerns
- Create a space to voice concerns, or connect people to such spaces if they exist already
- Establishment of clear and transparent communication in terms of workload and expectations
- Require mentoring trainings for all members by services external to the Department.
- Provide clarity about what is acceptable and not in communications within the Department and Units, with clear articulation of a vision and expectations.
- Promote the sharing of knowledge and training resources across Units. Create lists of skills for all people, ways to know when people are going to be trained on certain skills.

Analysis of Positive and Negative Practices based on Identity

In this section, we present results of the analysis of the open-ended positive and negative questions, integrating the information provided by respondents about the aspects of their identity that they considered when answering the questions for Units and the Department (question 5 for Unit, question 9 for Department).

We asked respondents to describe the aspects of their identity that came to mind when answering the set of questions regarding experiences in Units/labs, and again after answering the set of questions regarding experiences with the Department as a whole. To do this, the analyst evaluated the descriptions provided, and categorized them into general identity categories. These categories were then used as a covariable to look at the association between the words in the responses and self-reported identity.

43 people self-reported the aspects of their identities they were considering while answering the Unit questions. These 43 respondents had identity descriptions that were human-coded into 12 general categories. Not surprisingly, the sum of the descriptions that were grouped into the 12 categories was 72, indicating several people described an association with more than one identity category in their answers.

41 people self-reported the aspects of their identities they were considering while answering the Departmental questions. These descriptions were also coded into 12 categories, however, one of the categories was different than the category groups for Unit questions. The sum of the descriptions that were grouped into all categories was 54.

The identity categories were: “Age”, “Class, Socio-economic Status or Education”, “Gender”, “Gender_F”, “Geographical Location”, “Mental Illness”, “Nationality”, “Parenthood”, “Position”, “Political Affiliation”, “Race and/or Ethnicity”, “Sexual Orientation”, “Spirituality”.

Overall Identities

While the count of some identity categories is similar across the Department and the Units (e.g., Gender, Age, Position), others have a higher count in questions associated with the Units compared to questions associated with the Department (e.g., Nationality, Class, Spirituality, Sexual Orientation, Political Affiliation; Figure 31).

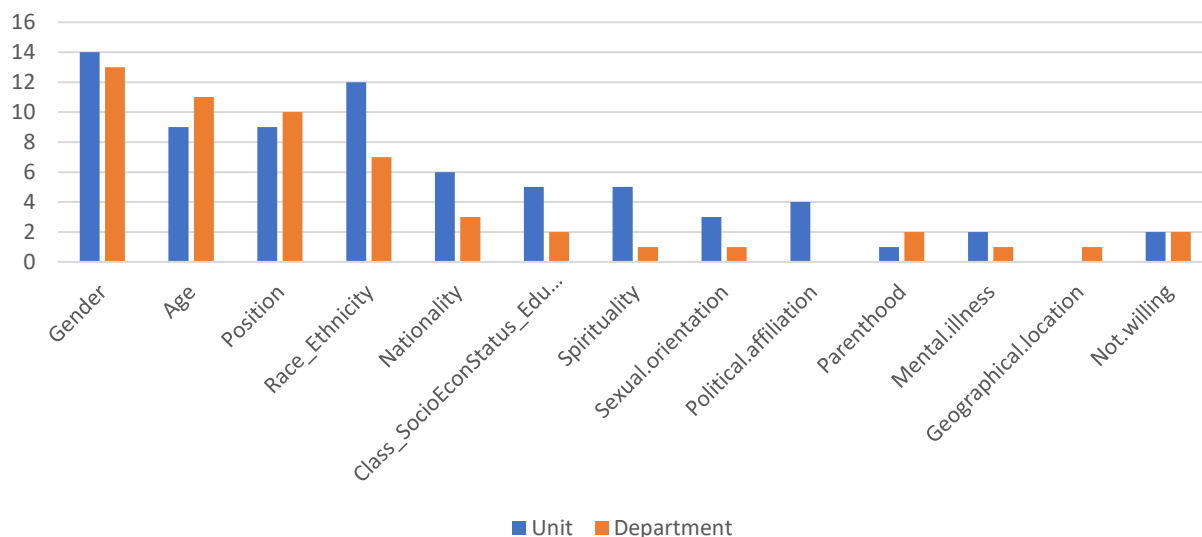


Figure 31.- Human-coded categories of self-described identity associated with open-ended questions, for Units (blue) and the Department (orange).

Analysis of Interactions between Identity and Responses

To evaluate potential data structure between the self-reported identities and the words and ideas provided in responses to the negative and positive questions, we used two metrics commonly used in network analysis: nestedness (NODF) and specialization (H2'). The metrics were calculated using two datasets. On the one hand, we calculated the raw word-counts (occurrences) of identities based on *verbatim* responses, and analyzed them in the context of a network using identity categories as grouping factors. On the other hand, because word counts do not account for context or phrasing, we collapsed the response message into human-coded answer categories that would account for the general topic(s) presented in the answer.

As an example of how the two approaches differ, the following hypothetical answer “I appreciate social activities within my Unit, and I feel supported and valued by my peers” would provide one count for each of the following words in the raw count system: “appreciate”, “social”, “activities”, “Unit”, “feel” “supported”, “valued” “peers”. In the second approach, this answer would provide one count to each of the following answer categories “social gatherings/celebrations”, “appreciation and gratitude”.

Nestedness - NODF

This metric indicates how the different types of word choices are shared or not across identity categories. The metric ranges from 0-100. Higher values indicate that the word choices of “rare” categories are just a subset of those used by the more “frequent” identity categories. In our scenario, the categories correspond to identity categories, and high NODF values would indicate that minority identity groups are mentioning words that are not different from those mentioned by majority identity categories, so experiences described are pretty similar among groups. A low value would mean that certain experiences (represented by word choices) are limited to one or a few groups, and not shared by the community as a whole.

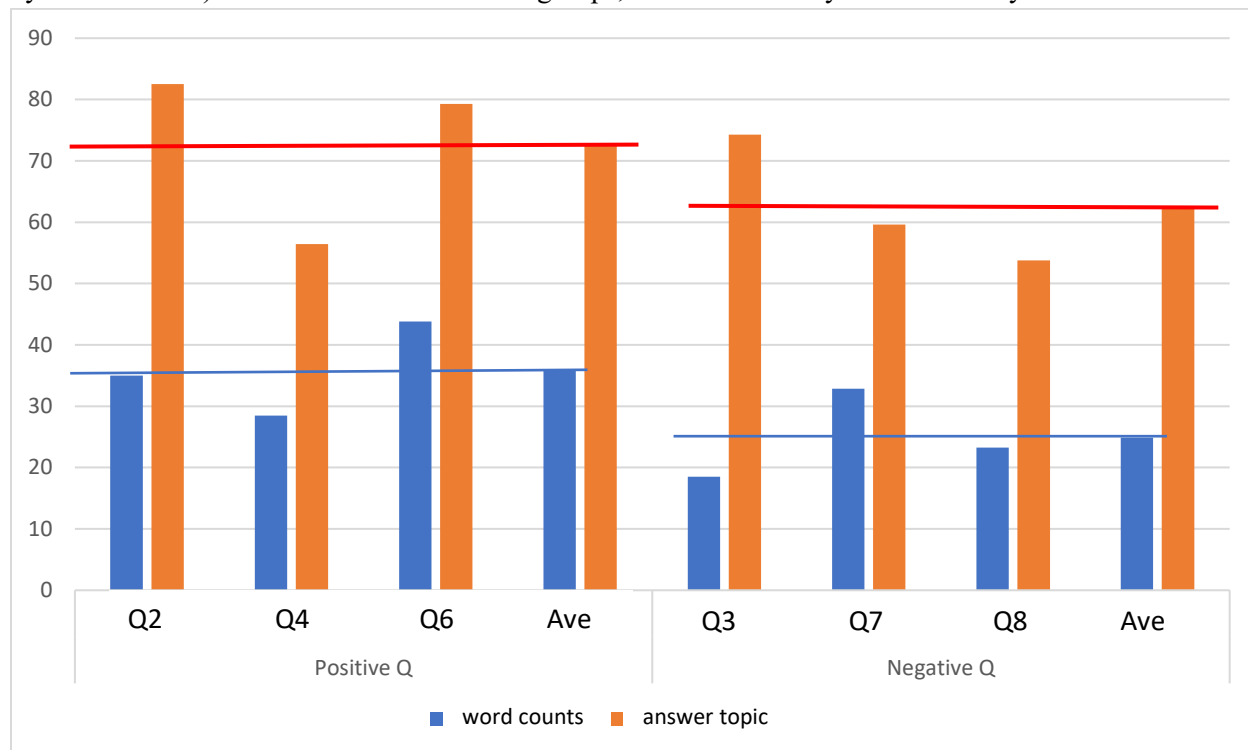


Figure 32. NODF (nestedness) values for each question. Questions are organized into positive questions (Q2, Q4, Q6) and negative questions (Q3, Q7, Q8). For each question, blue bars show the nestedness values when the analysis includes raw word counts generated from *verbatim* responses. Orange bars represent NODF values for each question when, rather than raw word counts, the analysis uses answer categories coded by the survey committee. Horizontal lines represent the mean NODF score (raw and categorized, respectively) for both positive and negative questions.

The nestedness analysis (Figure 32) suggests that answers given to positive questions have higher levels of nestedness than those given to negative questions (about 10 points difference), and this is not affected by whether the analysis is done with raw counts or with the assigned categories given in the answers. This suggests that in their answers, respondents seem to use word choices (blue bars) and answer categories (orange bars) that are more unique to their identities when referring to negative experiences than to positive ones.

Specialization – H2'

This metric is used to evaluate how “specialized” the network of interactions between categories of identity and word choice is in the answer given. In the context of our survey, this measures whether the word choices of each identity category is unique (“specialized”), taking into consideration all the other word choices of all other identity categories in the pool. We ran this analysis for both the raw word count and the answer categories. This metric ranges 0-1, with 1 indicating a network that is completely specialized, and 0 one that is completely generalist. If our results indicate no effect of identity on the word choices or answer categories, we would expect to obtain low values.

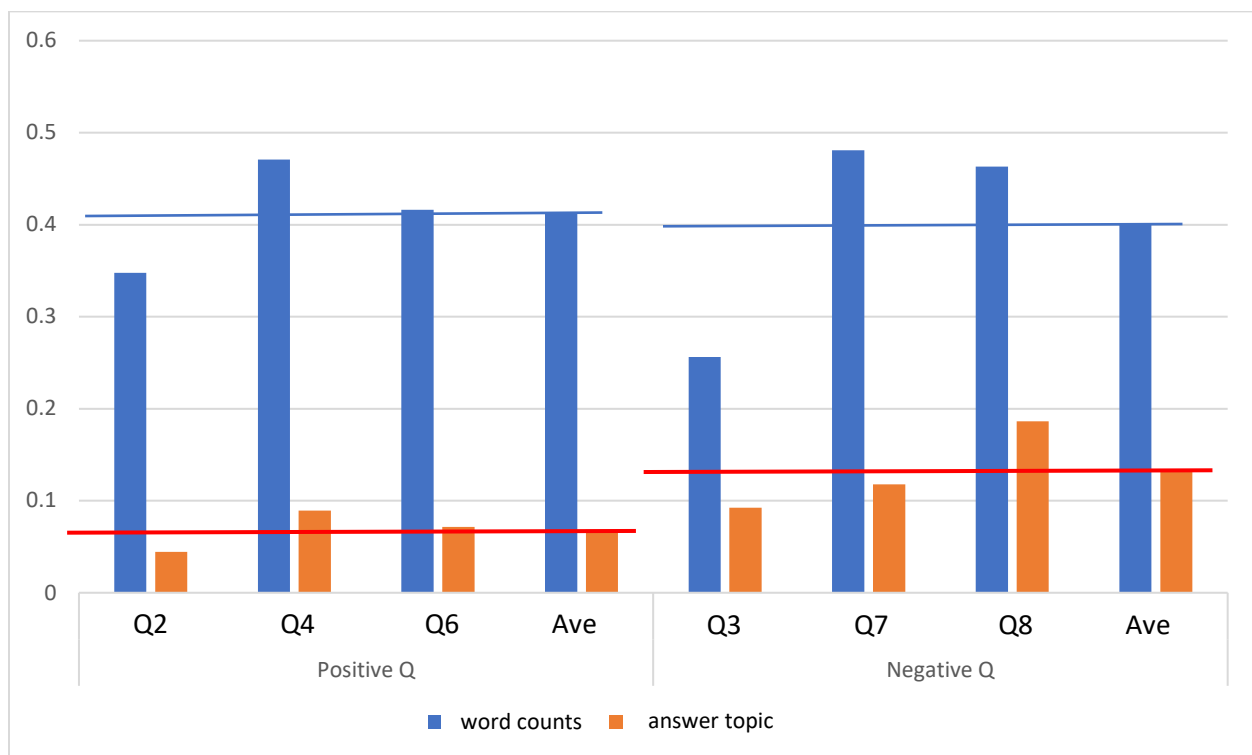


Figure 33. H2' (network specialization) values for each question. Questions are organized into positive questions (Q2, Q4, Q6) and negative questions (Q3, Q7, Q8). For each question, blue bars show the specialization values for the analysis including raw word counts generated from *verbatim* responses. Orange bars represent the specialization values for each question when, rather than raw word counts, the analysis includes answer categories, meant to convey the context of the whole response. Horizontal lines represent the mean H2' score (raw and categorized, respectively) for both positive and negative questions.

The results of the H2' analysis provide contrasting results. While when analyzing the data using the word choices only we cannot identify large variations among the answers given by different identities (a difference of 0.1 points), a stronger difference appeared when comparing categories of answers and identities (a difference of about 0.6 points) (Figure 33). In particular for the latter, the average values

seem to be higher in the negative than in the positive questions, suggesting higher specialization (higher differentiation of answers based on identity) in the negative questions.

Network Analyses

Positive Practices

Question 2 - Unit Positive Practices

We performed a network analysis on the positive questions regarding the respondent's Unit, where we plot and measure connections between the respondents' self-described identities and the response they gave to the "positive" questions. This analysis allows us to visually identify the presence of clustering in the answers and identities, as well as evaluate the specific word choices or answer category involved in that clustering. As for the network metrics, we ran the analysis using the raw word counts (Figure 34) and the answer categories that include the context and perceived intention of the response (Figure 35).

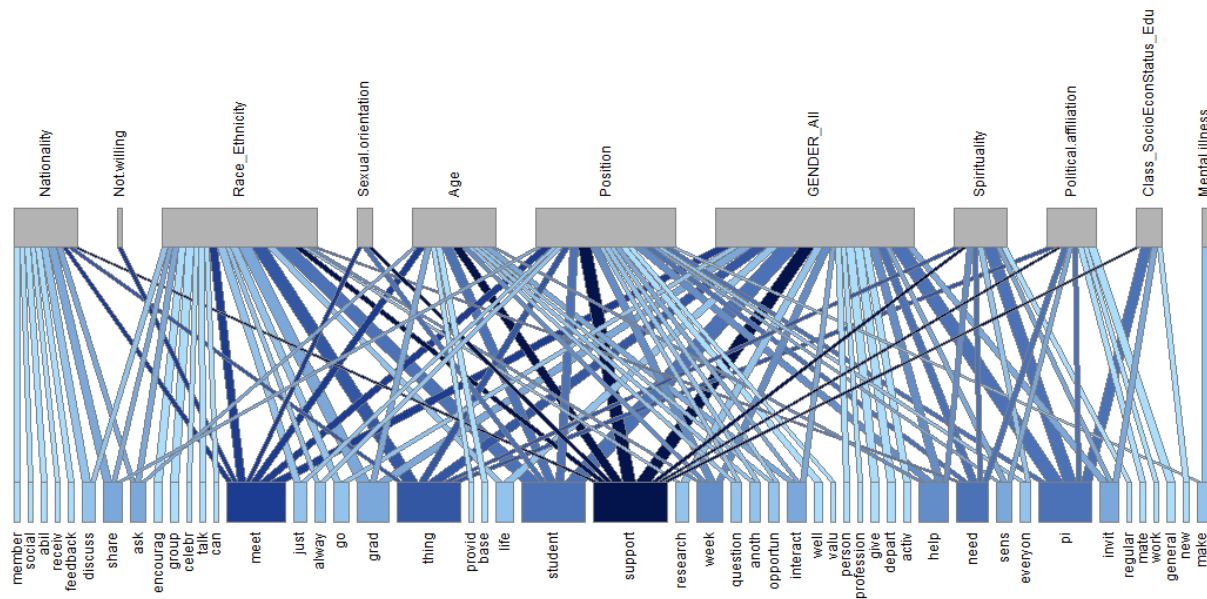


Figure 34. Network analysis of word choice (bottom) and identity categories (top) given in answers to questions on positive practices in Units. The width of the boxes indicates the number of responses in that category (top) or times that word was used (bottom). The width of connecting lines indicates the weight of the interaction and the depth of color shows the most important interactions and most commonly used response words for each category overall.

The evaluation of the word-identity network seems to indicate that "Support", and "meet" are very commonly mentioned. Feedback and encouragement appear to be specifically mentioned by respondents giving their Nationality and Race/Ethnicity as descriptors of their identity (Figure 34).

All categories of positive actions identified in the answers are recognized by all identities. In particular, actions associated with Communication, Professional Gatherings, Collaborations, and Hospitality are very clearly recognized as positive across identities (Figure 35).

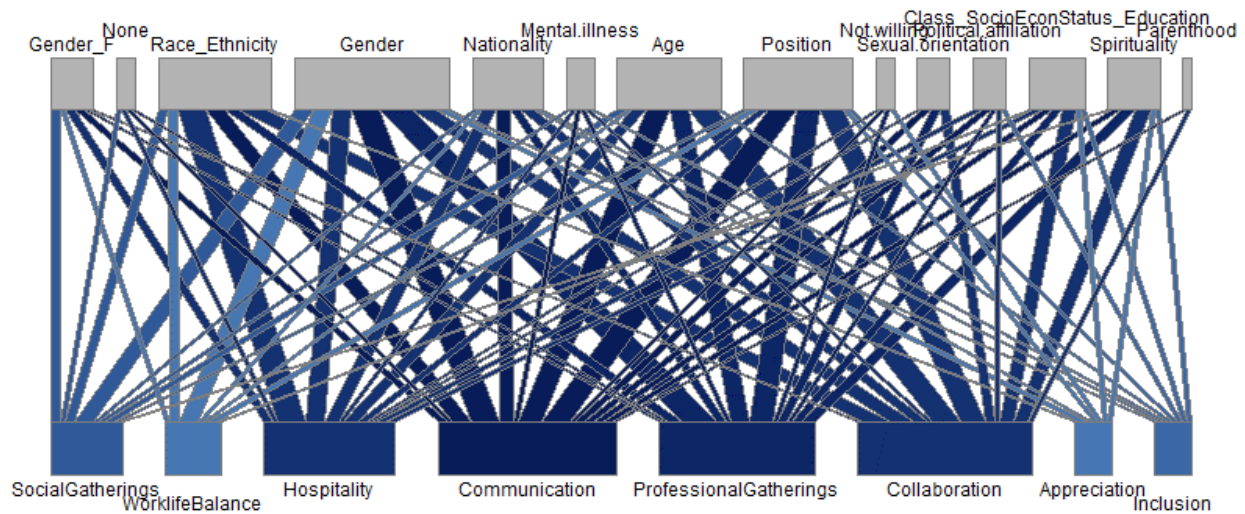
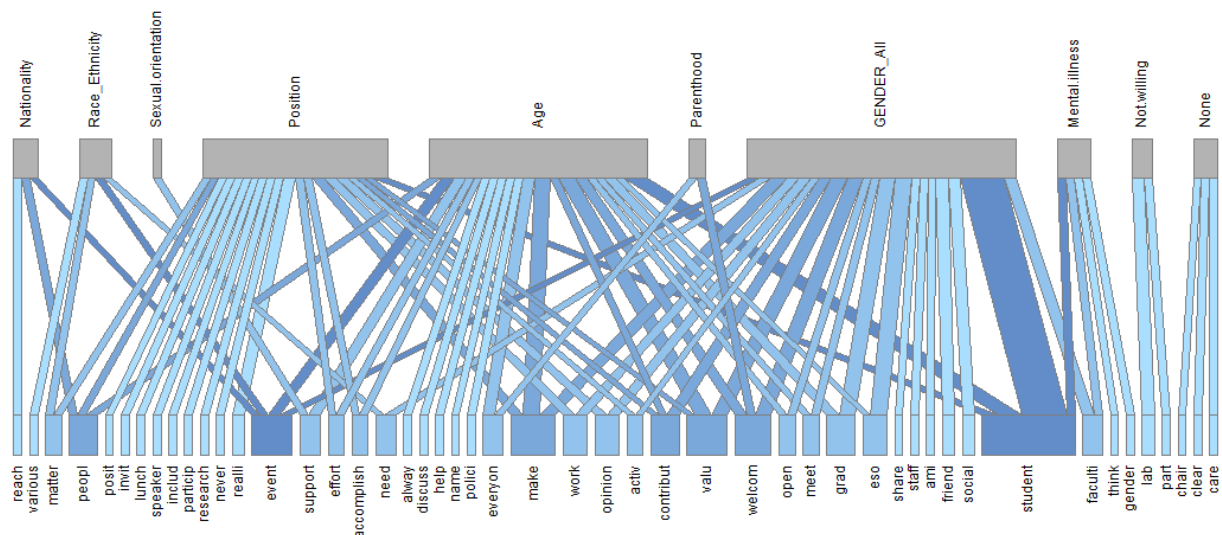


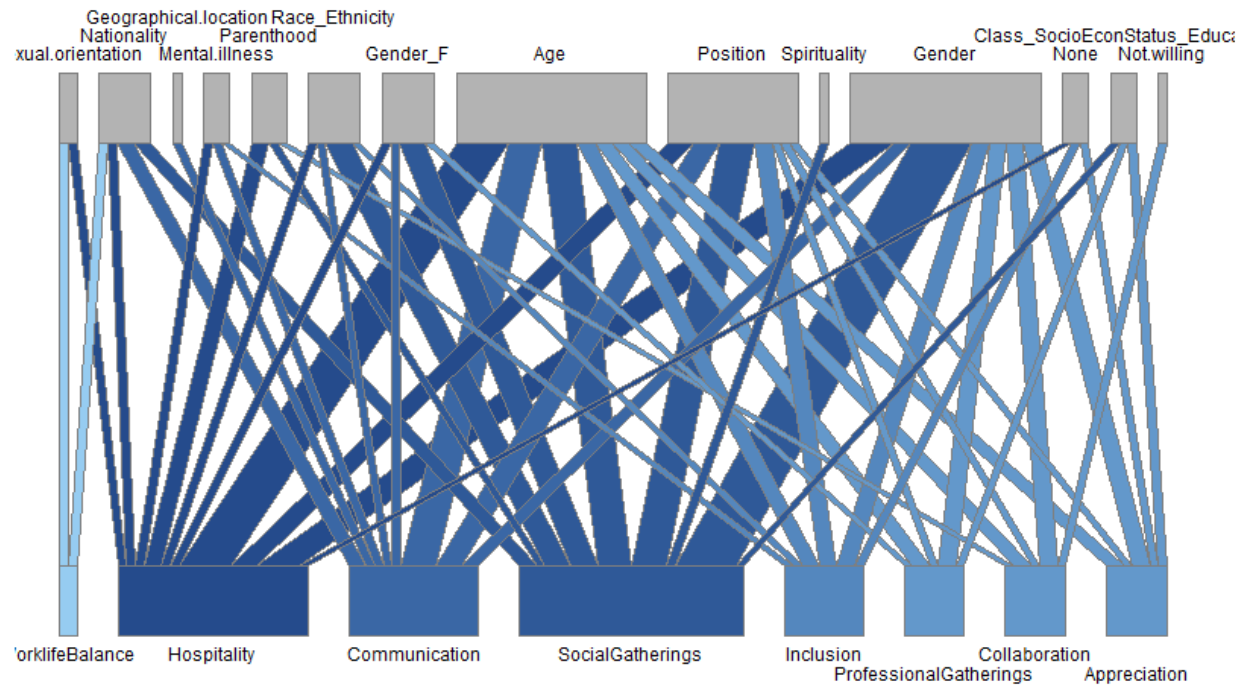
Figure 35. Network analysis of answer categories (bottom) and identity categories (top) given in answers to positive practices in Units. The width of the boxes indicates the number of responses in that category (top) or times that word was used (bottom). The width of connecting lines indicates the weight of the interaction and the depth of color shows the most important interactions and most commonly used response words for each category overall.

Question 7 - Department Positive Practices

The word choices observed in the Department positive practices are shared across several identities (Figure 36). However, the identity category “Position” is associated to many unique words that recognize Inclusion and participation as positive practices.

Several categories of answers given for the Departmental positive practices are shared across all identities. Answers recognizing Work-life balance appeared to be only given by respondents that identify through their Sexual Orientation and Nationality (Figure 37).





Question 8 - Department Positive Practices to Keep

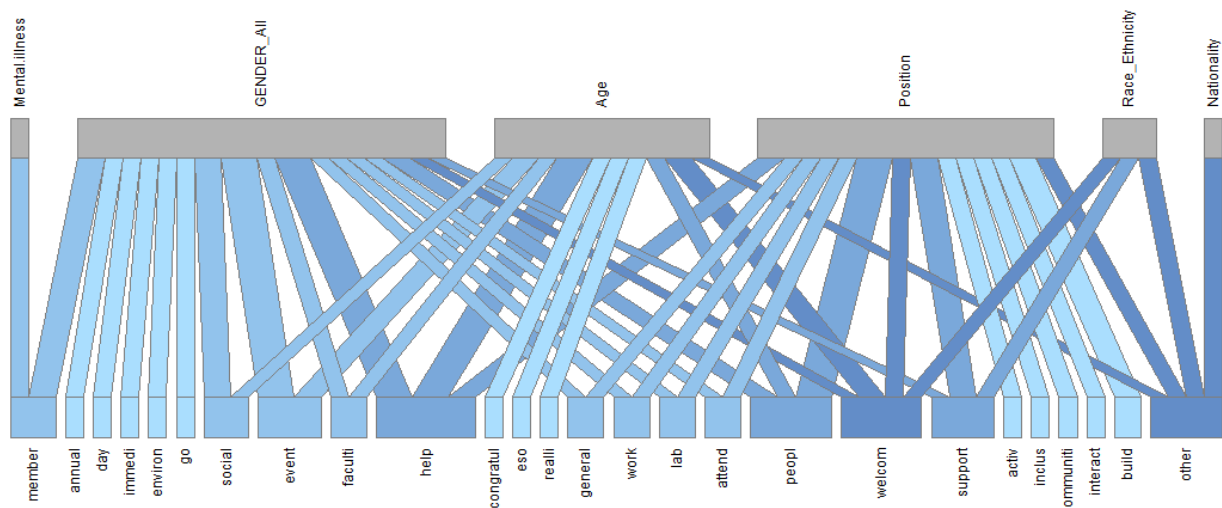


Figure 38. Network analysis of word choice (bottom) and identity categories (top) given in answers to positive practices to keep at the level of the Department. The width of the boxes indicates the number of responses in that category (top) or times that word was used (bottom). The width of connecting lines indicates the weight of the interaction and the depth of color shows the most important interactions and most commonly used response words for each category overall.

Overall, words indicating actions leading to feelings of welcoming and helping each other are recognized by many identities as important to keep at the level of the Department (Figure 38). Being included into activities and interacting are specific responses given by respondents identifying through their “Position”.

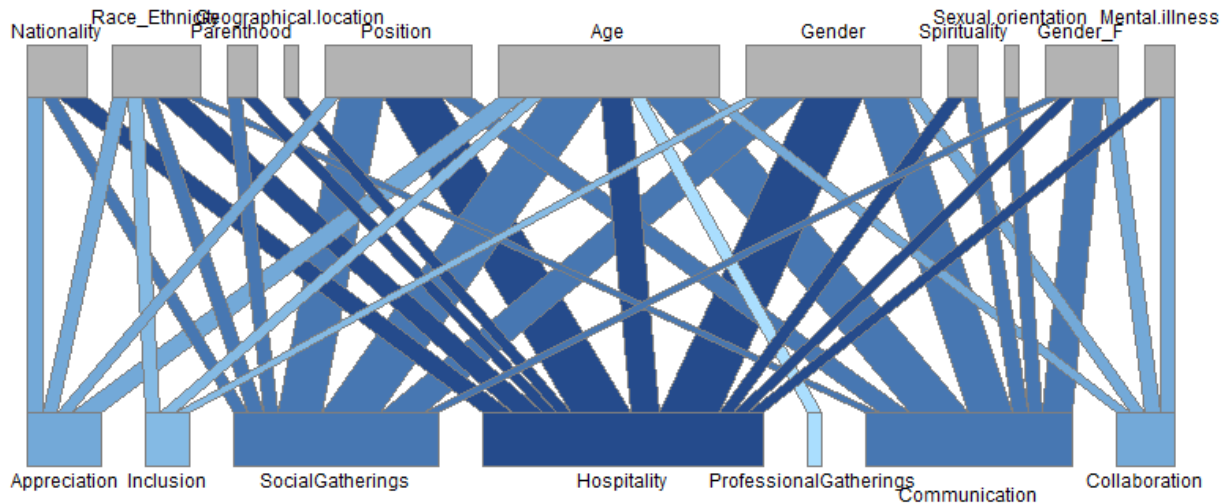


Figure 39. Network analysis of answer categories (bottom) and identity categories (top) given in answers to positive practices to keep in the Department. The width of the boxes indicate the number of responses in that category (top) or times that word was used (bottom). The width of connecting lines indicates the weight of the interaction and the depth of color shows the most important interactions and most commonly used response words for each category overall.

Actions giving a feeling of Hospitality are identified by respondents of all identity categories as important to keep. Actions recognizing Professional Gatherings were only recognized by respondents identified with their Age group. Feelings of Appreciation were only given by respondents identified through their Nationality, Race/Ethnicity, Position, and Age. Inclusive actions were recognized by respondents identifying themselves through their Race/Ethnicity, Age, and Gender. Collaborations were recognized as important to keep by respondents identifying themselves through their Age group, Gender, Gender (F), and Mental Illness (Figure 39).

Negative Practices

Question 5 - Unit Negative Practices

We also performed a network analysis of answers given to the questions regarding negative practices in the respondent’s Unit. Here, we visualized and evaluated connections between the respondents’ categories of identity and the responses they gave. This analysis allows us to visually identify the presence of clustering in the answers and identities, as well as evaluate the specific word choices or answer category involved in that clustering. As for the network metrics, we ran the analysis using the raw word counts (Figure 40) and the answer categories that include the context and perceived intention of the response (Figure 41).

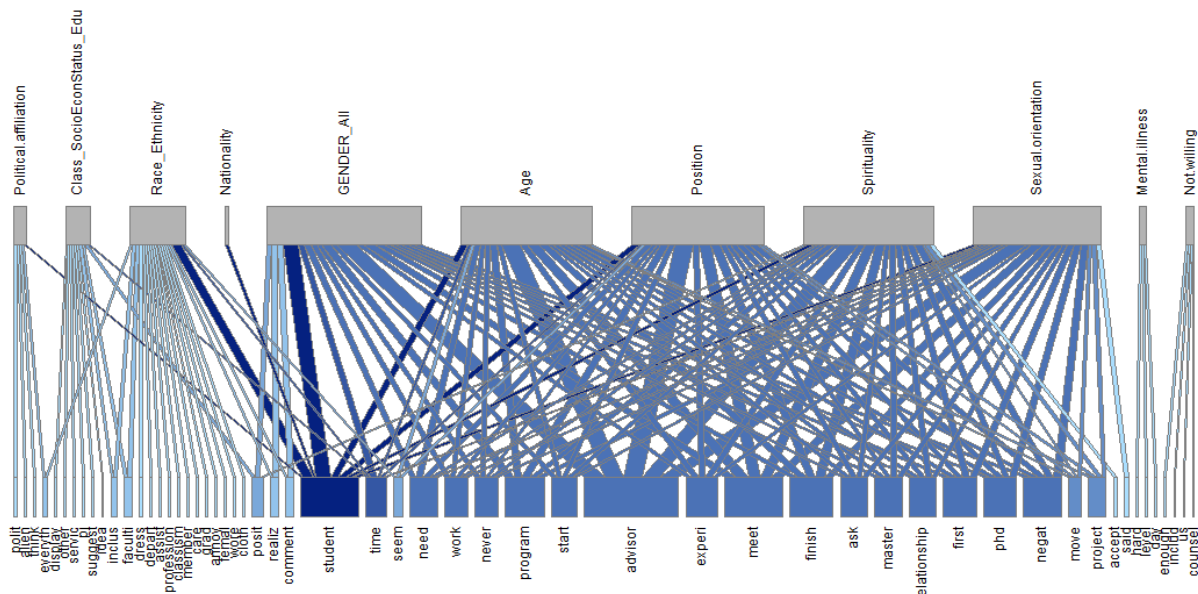


Figure 40. Network analysis of word choice (bottom) and identity categories (top) given in answers to negative practices identified in Units. The width of the boxes indicates the number of responses in that category (top) or times that word was used (bottom). The width of connecting lines indicates the weight of the interaction and the depth of color shows the most important interactions and most commonly used response words for each category overall.

The network obtained for Unit practices recognized as negative by the respondents (Figure 36) appears “blockier” than that obtained for the positive practices (Figure 34). In this network, several identity categories (Class, Race/Ethnicity, Political Affiliation, Gender (F), Mental Illness) are associated with different sets of words. These words indicate feelings of alienation, classism, (lack of?) professionalism, dress code, and hardships.

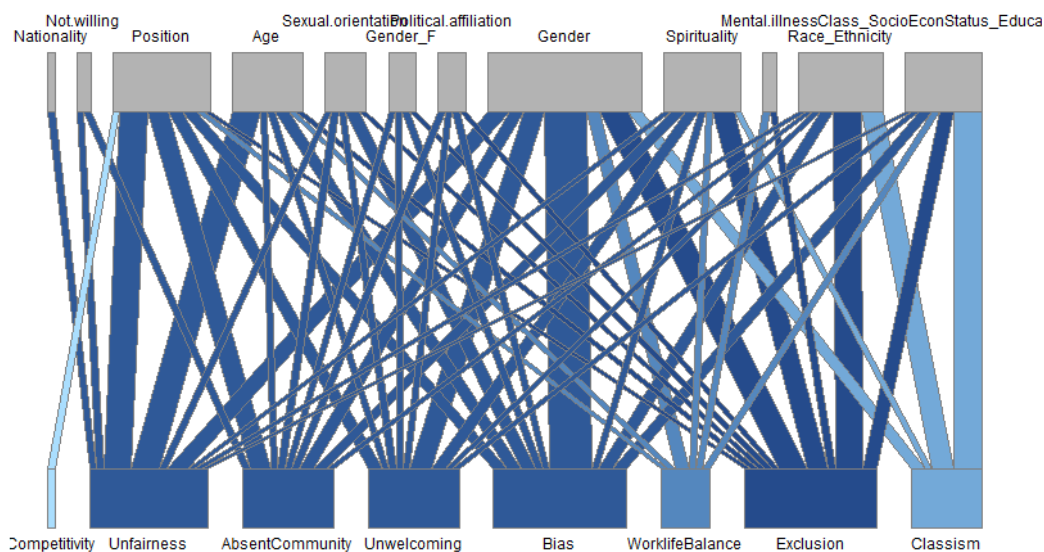


Figure 41. Network analysis of answer categories (bottom) and identity categories (top) given in answers to negative practices in Units. The width of the boxes indicate the number of responses in that category (top) or times that word was used (bottom). The width of connecting lines indicates the weight of the interaction and the depth of color shows the most important interactions and most commonly used response words for each category overall.

As for the analysis of word counts (Figure 40), the answer categories seem to also be more structured for the negative Unit practices (Figure 41) than for the positive ones. Although different answer categories are shared across identity categories (e.g., Unfairness, Lack of Community, Unwelcoming environments, Bias, Exclusion), responses referring to practices of Classism are restricted to respondents who described themselves using the following identities: Gender, Mental Illness, Race/Ethnicity, and Socio-Economic/Education Status. Similarly, Competitiveness is only mentioned by respondents who identify themselves through their Position (Figure 41).

Question 9 - Department Negative Practices

Several of the words present in answers given to Department negative practices are shared across categories, and many are restricted to specific identities (Figure 42). It is of note that words suggesting “American Culture” are restricted to respondents identifying through their Nationality. Respondents not willing to describe their identities identify demographics and “boxes” in the Department, perhaps suggesting a lack of interactions between different members (Figure 42).

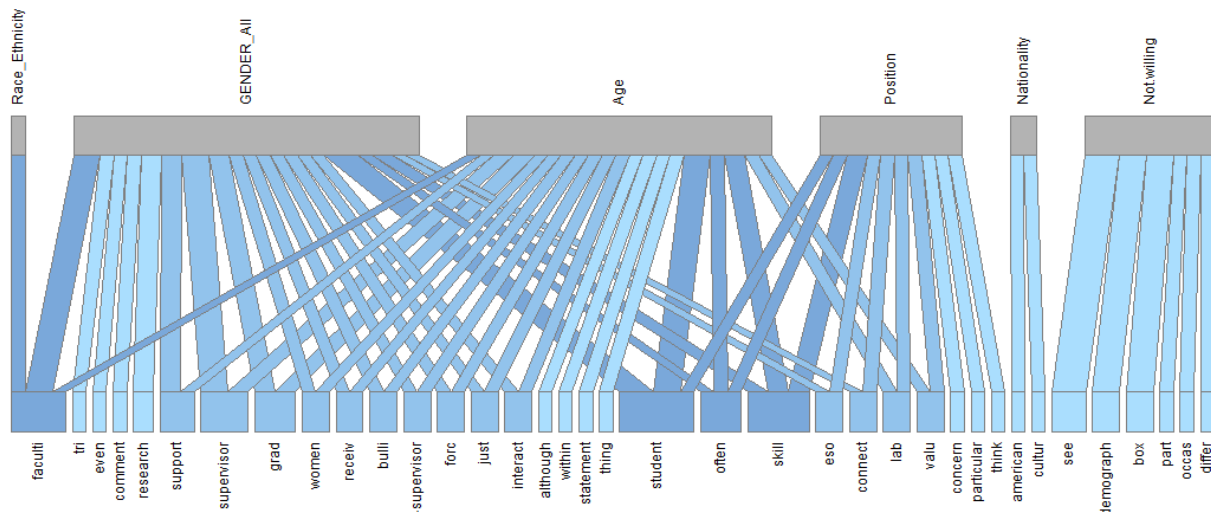


Figure 42. Network analysis of word choice (bottom) and identity categories (top) given in answers to negative practices identified in the Department. The width of the boxes indicates the number of responses in that category (top) or times that word was used (bottom). The width of connecting lines indicates the weight of the interaction and the depth of color shows the most important interactions and most commonly used response words for each category overall.

All identities but Class, Sexual Orientation and Nationality recognize actions associated with Bias as negative at the Departmental level. Feelings of being unwelcome were only mentioned by respondents identifying with their Gender. Classism was only mentioned by respondents identifying through their Gender, Gender (F) and Age. A sense of Exclusion was mentioned only by respondents identifying through their Age, Sexual Orientation and Nationality, and those not willing to identify (Figure 43).

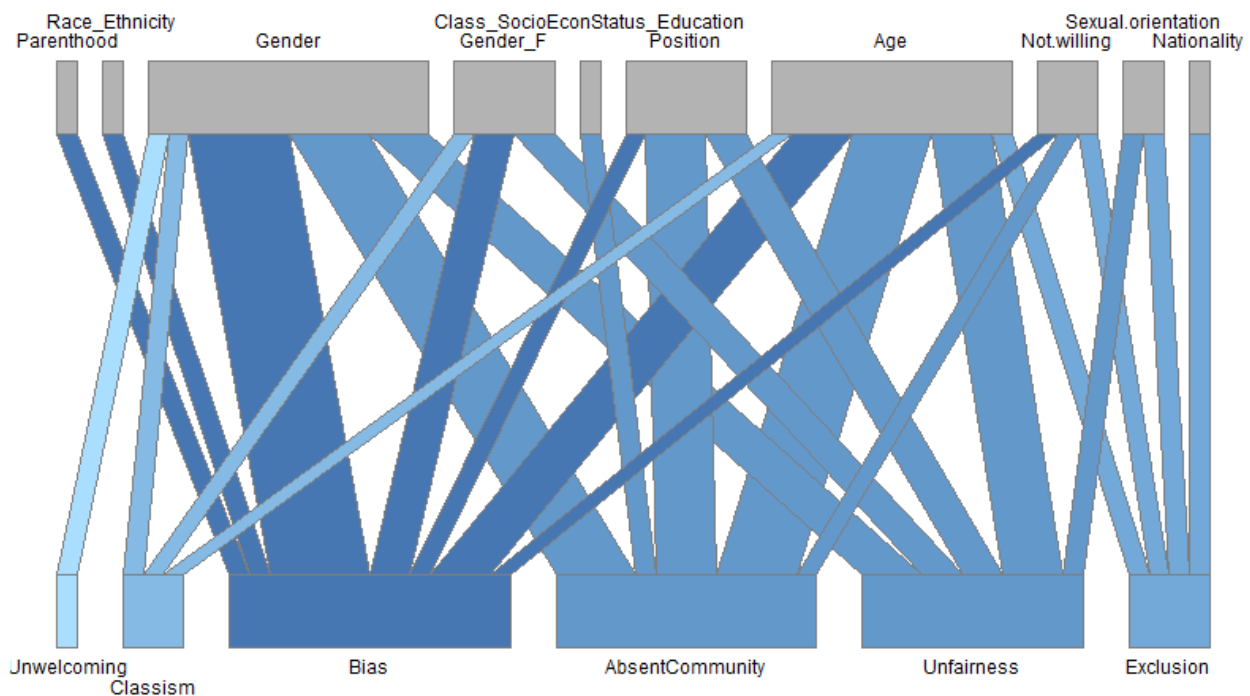


Figure 43. Network analysis of answer categories (bottom) and identity categories (top) given in answers to negative practices identified in the Department. The width of the boxes indicates the number of responses in that category (top) or times that word was used (bottom). The width of connecting lines indicates the weight of the interaction and the depth of color shows the most important interactions and most commonly used response words for each category overall.

Question 10 – Department Negative Practices to Change

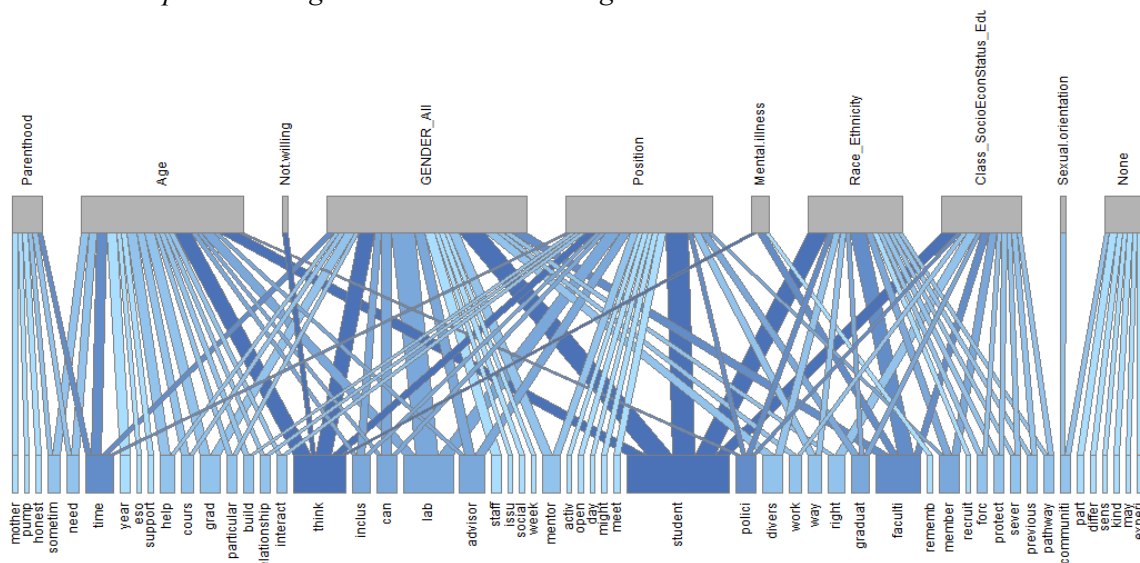


Figure 44. Network analysis of word choice (bottom) and identity categories (top) given in answers to negative practices to change in the Department. The width of the boxes indicates the number of responses in that category (top) or times that word was used (bottom). The width of connecting lines indicates the weight of the interaction and the depth of color shows the most important interactions and most commonly used response words for each category overall.

Among the mentioned practices to change are services to parents, or words strictly associated with parenthood. Word frequency in responses given by respondents identifying with their Gender (F) suggest a specific need of responses to sexist behavior (Figure 44).

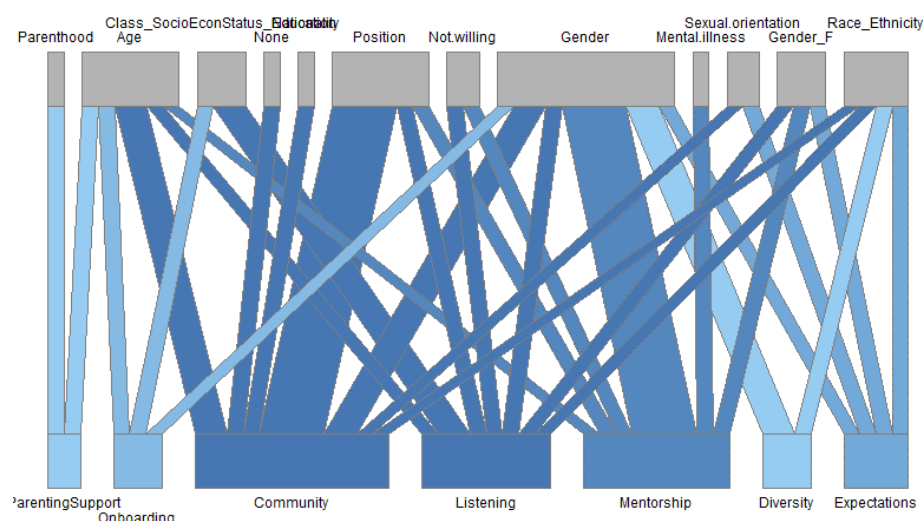


Figure 45. Network analysis of answer categories (bottom) and identity categories (top) given in answers to negative practices to change in the Department. The width of the boxes indicates the number of responses in that category (top) or times that word was used (bottom). The width of connecting lines indicates the weight of the interaction and the depth of color shows the most important interactions and most commonly used response words for each category overall.

The vast majority of identities recognize the need of improving Community, Listening, and Mentorship as important to change at the Departmental level (Figure 45). Actions geared towards Support of Parents were specific to respondents identifying through their Parenthood status and Age. Onboarding needs were only mentioned by respondents identifying through their Age, Class/Socio-Economic Status and Gender. Actions geared towards increasing Diversity were identified specifically by respondents who identified through their Gender and Race/Ethnicity.

Combined Evaluation

We present a summary of our evaluation of the main messages and trends found in this section of the analyses. We also propose possible actions that could help promote positive actions and redress negative ones.

Our results indicate that experiences seem to vary more in answers associated with negative than positive questions, suggesting that although most members of the Department share appreciation for many positive actions, specific groups experience negative actions that are different from the remainder of the groups. These actions are thus specific to given identities, and point to a need for action.

A general evaluation of the positive actions identified for Units and the Department and those that are important to continue indicate that meetings and group support are central at the level of the Units, and that receiving feedback and encouragement are strongly recognized by members identifying through their Nationality and Race/Ethnicity. At the Departmental level, the continuation of actions that create welcoming and hospitable environments is widely identified as central. In particular, actions leading to integration into the Department seem to be particularly appreciated by respondents identifying through their Position.

A general overview of the negative practices indicates that many groups feel alienated and excluded within Units. Further, specific identity groups (Class, Race/Ethnicity, Political Affiliation, Gender (F), Mental Illness) experience a sense of classism that makes them feel excluded and their needs not

recognized. At the level of the Department, it is evident that certain groups feel often overlooked when considering the routines, policies, practices and events of the Department. Also at this level, a sense of bias is also strongly present across identities, while the prevalence of classism, exclusion and feeling unwelcome seem to be restricted to respondents identifying through their Gender, Age, Sexual Orientation and Nationality. It is important to note that Gender (F) identified the needs for actions against sexist events in the Department.

Actions that were recognized by many identities as important to change at the level of the Department indicate a need of increasing a sense of community, listening and mentorship. Increasing diversity, onboarding practices and support for parents were identified as important actions to change, specifically by respondents identifying through their Race/Ethnicity, Gender, Class/Socio-Economic Status, Age, and Parenthood.

We observed that respondents with certain identities indicated more often certain practices. For example, members of our community that self-identified as parents called for more support for parents, those that identified as female highlighted sexist behavior, and those from groups historically-marginalized highlighted a need for diversity. However, when asked which practices to keep and which to change, some themes arose that can support members of our community regardless of identity. Namely, efforts that foster a sense of belonging and community, improved and intentional mentorship, inclusive social and professional events, clear communication and policies, demonstrating gratitude and appreciation, and striving to increase diversity and equity can benefit all members of our community, including those from historically-marginalized groups.

Recommendations

Although all practices identified in the previous section will foster a generally inclusive climate in our Department, based on these results some would be particularly important for addressing problems that affect an underrepresented (and likely excluded) section of our members.

- Establish clear communication structures that allow explicit goal setting and evaluation of progress, and that would provide regular feedback on progress. Related to this, establishing strong mentorship programs when they are still lacking would be central. This should be done for all sections of our Department.
- Recognize and acknowledge successes and accomplishments.
- Establish structures that successfully promote diverse hiring and recruitment. This should be done for all sections of the Department.
- Create a sense of community, where members know each other and are quickly integrated to the Departmental population.
- Take a hard stand on first acknowledging and then addressing events of several “isms”, such as classism, racism, and sexism. Establish a structure that ensures that people involved in these events are confident that their reports will be taken seriously and know that actions have been taken. In the case of classism, the creation of support structures that promote recognition and success of all, independently of background or network. This can be accomplished through transparent evaluation methods and equal access to support systems.
- Training on macro- and microaggressions for all Departmental members.

Recommended Actions

- Establish clear communication structures that allow explicit goal setting and evaluation of progress, and that would provide regular feedback on progress. Related to this, establishing strong mentorship programs when they are still lacking would be central. This should be done for all sections of our Department.
- Recognize and acknowledge successes and accomplishments.
- Establish structures that successfully promote diverse hiring and recruitment. This should be done for all sections of the Department.
- Create a sense of community, where members know each other and are quickly integrated to the Departmental population.
- Take a hard stand on first acknowledging and then addressing events of several “isms”, such as classism, racism, and sexism. Establish a structure that ensures that people involved in these events are confident that their reports will be taken seriously and know that actions have been taken. In the case of classism, the creation of support structures that promote recognition and success of all, independently of background or network. This can be accomplished through transparent evaluation methods and equal access to support systems.
- Training on macro- and microaggressions for all Departmental members.

Annex 1 – Summary of Recommended Actions

Actions recommended based on the results from this Survey, classified by general action type, and indicating what aspect of the survey needs they respond to. We also note what aspect of the Department (whole Department vs. Unit) they are the most likely to impact and/or be implemented in.

Practice	Community Building	Communication & Coordination	Departmental Culture	Work-Life Balance	Collaborative Environment	Proactive Inclusivity	Acknowledgement of the Person	Department	Unit
Communication									
Create opportunities for open communication.		x	x					x	x
Establish an introduction of all members to the Department. This can be done at the beginning of each Fall semester for the first seminar of the semester.	x	x	x			x	x	x	(x)
Unit heads/supervisors/mentors. Provide leadership in integrating new members into units, and building a collaborative team mentality where members' social and professional needs are met, and people feel a sense of belonging.		x	x		x	x	x	x	x
Continue publicly showing gratitude and appreciation for housekeepers, maintenance workers, and showing respect and hospitality to other occupants of the building.	x		x			x	x	x	x
Improve communication of services available in the Department for new parents, international members, services by Human Resources, etc.		x				x	x	x	x
Maintain and increase communication between ESO and leadership		x				x		x	

Practice	Community Building	Communication & Coordination	Departmental Culture	Work-Life Balance	Collaborative Environment	Proactive Inclusivity	Acknowledgement of the Person	Department	Unit
Communication (cont.)									
Establish clear (written) communication structures that allow explicit goal setting, workload expectations, working guidelines, and evaluation of progress, and that would provide regular feedback on progress. Related to this, establishing strong mentorship programs when they are still lacking would be central. This should be done for all sections of our Department.		x		x				x	x
Create a sense of community, where members know each other and are quickly integrated to the Departmental population. For example, timely onboarding, through the creation and distribution of welcome packets, and monthly emails with introductions of new Department members.	x		x			x	x	x	x
Promote the public celebration of successes. An addition to this can be the creation of a “Gratitude Board” either physical or virtual for anybody to publicly recognize other members of the Department.	x		x			x	x	x	(x)
Provide clarity about what is acceptable and not in communications within the Department and units, with clear articulation of a vision and expectations.		x	x			x		x	x

Practice	Community Building	Communication & Coordination	Departmental Culture	Work-Life Balance	Collaborative Environment	Proactive Inclusivity	Acknowledgement of the Person	Department	Unit
Training									
Require diversity and mentoring training for all members by services external to the Department. Some ideas are doing this at the retreat or at one of the Colloquium dates.			X			X	X	X	X
Monitor Office of Civil Rights & Sexual Misconduct training compliance at the Dept level. These reports are made available through the President's Office to all the Divisions and Colleges for the respective unit heads to monitor their faculty and staff completion rates upon request.			X					X	X
Train Department members to acquire cultural sensitivity in their professional and inter-personal interactions, including macro- and microaggressions.		X	X			X	X	X	X
Reporting									
Create a space to voice concerns. Perhaps through the establishment of a structure that is more personable than big University-wide structures (e.g., a position, ODI services, tiers).	X	X	X				X	X	
Create safe spaces and transparent paths for reporting and intervention when needed (esp. for reported cases of "isms").		X	X			X	X	X	

Practice	Community Building	Communication & Coordination	Departmental Culture	Work-Life Balance	Collaborative Environment	Proactive Inclusivity	Acknowledgement of the Person	Department	Unit
Reporting (cont.)									
Provide clear guidance for reporting issues. Create and distribute a simple guide for reporting, which includes what should be reported where and how. This can include a summary of UMD/ENTM resources, and could be placed in very visible spaces and/or distributed.		x	x				x	x	
Take a hard stand on first acknowledging and then addressing events of several “isms”, such as classism, racism, and sexism.	x		x			x	x	x	(x)
Listen to and believe reported concerns.			x			x	x	x	x
Take action on the issue of protecting people in positions of power at the detriment of lower-ranked members.			x			x	x	x	x
Accessibility and Equity									
Increase representation in the leadership and decision- and policy-making.		x	x		x	x		x	
Host social, casual, and professional community activities (parties, colloquium, ESO), expanding them also into non-graduate student levels.	x		x	x			x	x	x
Hold Departmental retreats during week days.	x			x		x	x	x	
Host events that are not based on religious holidays. Events that happen at random dates (Spring fling or Oktoberfest-type) are good options.	x			x		x	x	x	
Ensure that representation is present for policy-making		x			x	x		x	x

Practice	Community Building	Communication & Coordination	Departmental Culture	Work-Life Balance	Collaborative Environment	Proactive Inclusivity	Acknowledgement of the Person	Department	Unit
Accessibility and Equity (cont.)									
Increase and value publicly-accessible broader impacts activities in underserved communities, including locally (both in-person and virtually).	X		X			X		X	X
Provide direct and explicit financial support to actions leading to making our environment inclusive, instead of leaning on volunteers (e.g., running climate surveys, hosting trainings from external professionals).	X		X			X		X	
Establish structures that successfully promote diverse hiring and recruitment. This should be done for all sections of the Department.	X		X			X		X	X
Increase equity-minded approaches into the everyday structures of the Department.			X			X	X	X	X
Promote pronoun use (especially by Faculty).	X		X			X	X	X	X
Consider DEI work as part of research, teaching and extension rather than peripheral work. Include DEI work as a section in performance evaluations, promotion processes, departmental reviews, and staff PRD's.			X		X			X	X
Invest time, money and other resources in programs that provide research opportunities for underrepresented members of STEM.	X					X		X	X

Practice	Community Building	Communication & Coordination	Departmental Culture	Work-Life Balance	Collaborative Environment	Proactive Inclusivity	Acknowledgement of the Person	Department	Unit
Reduce classism by the creation of support structures that promote recognition and success of all, independently of background or network. Create equal opportunities to success, where all programming takes into consideration the need of accessibility across identities and backgrounds. Establish strong publicizing of these resources and transparent evaluation methods and equal access to support systems.	x	x	x			x	x	x	x
Interactions									
Establish and promote the creation of inter-unit interactions and mixing. For example. the formation of category-based and/or shared-interests groups (e.g., undergraduates, people interested in systematics, staff groups), which could promote connections among the different Departmental units and groups, or the creation of a community board for people to make requests and offer assistance, promoting rotations for students and academic collaborations, or promoting the shared use of offices by members of different units (e.g., graduate office, post-doc office, etc.).	x		x		x	x		x	x

Practice	Community Building	Communication & Coordination	Departmental Culture	Work-Life Balance	Collaborative Environment	Proactive Inclusivity	Acknowledgement of the Person	Department	Unit
Interactions (cont.)									
Promote the sharing of knowledge and training resources across units. Create lists of skills for all people, ways to know when people are going to be trained on certain skills.	x	x	x		x	x		x	(x)
Integrate a post-doc representative in ESO or another (new?) Departmental organization.		x	x			x		x	
Provide spaces for casual gatherings. For instance, a "lounge" room with a couch, a board and coffee machine, to sit and meet casually (or not).	x		x	x	x			x	(x)
Promote the formation of staff groups, and their direct communication to leadership	x	x				x		x	
Support and maintain ESO activities, because it is crucial to students' sense of belonging.	x		x			x		x	