



Long-Term Ecological Research Network

Climate and Culture Survey



2024



*Credit: Benjamin Nash. Andrews Forest LTER.
Cover credit: Jason Dobkowski. Arctic LTER.*

Executive Summary

A safe and inclusive workplace is both a matter of justice and equity and has the potential to accelerate innovation, insight, and productivity. The Long Term Ecological Research (LTER) Broadening Participation Committee (BPC) and the LTER Network Office collaborated on a network-wide survey assessing the current workplace climate and culture across LTER sites. We found that participant experiences across our network were largely positive. However, 9% of participants reported either personally experiencing, observing, or hearing about sexual harassment at their sites. Similarly 10% of respondents reported that they occasionally or frequently experience discriminatory or demeaning behavior/speech and these negative interactions most frequently came from the site's PI team. These numbers are small, but they could be smaller. Other potential areas of growth for the network are: increasing understanding of how to request disability accommodations, and increasing acknowledgement and recognition across roles.

Our results also indicate that identity matters when it comes to LTER site experiences. Respondents who identified as members of marginalized communities rated their site's overall culture lower and were less likely to agree that: they feel welcome; feel comfortable raising safety concerns; or frequently experience others expressing interest in their work-related opinions. Also, 60% of respondents that experienced sexual harassment in the past 2 years also identified as marginalized, which is a much higher proportion of respondents that identify as marginalized overall (35%).

Through the open responses, we learned our community has many shared passions and challenges across the network in terms of workplace climate, culture and broadening participation. We also observed that a person's identity and background influence what they think is important for improving climate and broadening participation, which underscores the need for broad input when we are making decisions.

Overall, our results indicate that field site cultures across LTER are improving, but we still have work to do, and leadership matters. We will use the results of this survey to plan future network-wide activities such as professional development, tool-kits, resources, and community-building activities.

Introduction

The goal of this survey was to assess the current workplace climate and culture across Long Term Ecological Research (LTER) sites. A safe and inclusive workplace is a matter of simple fairness and also has the potential to accelerate innovation, insight, and productivity (Alshebli et al. 2018, Freeman and Huang 2014, Hong and Page 2004, Wooley et al. 2010). Further, diverse teams are shown to produce science that is more relevant and useful (Rudd et al. 2021) than homogenous teams. Yet inequities in access and advancement persist in the LTER Network and throughout the scientific research community (Marin-Spiotta et al. 2023).

By learning what the LTER Network is already doing well, where we need to improve, and by sharing those insights among sites, we can better focus our efforts to broaden participation in LTER science. When all members of the community feel they are safe, valued, respected, and free to be their authentic selves, we all benefit – and produce our best science.

We will use the results of this survey to plan future network-wide activities such as professional development, tool-kits, resources, and community-building activities.

We define climate and culture as:

- **climate:** defined as current attitudes and patterns of behaviors that influence personal interactions in the workplace and
- **culture:** the shared values, attitudes, behaviors, and standards that make up a workplace.

This survey is a collaboration of the LTER Broadening Participation Committee (BPC) and the LTER Network Office. It considers experiences within the last two years related to the LTER program.

Table of Contents

Executive Summary	3
Introduction	4
Table of Contents	5
Methods	7
Survey Results	8
Demographic Information	8
Belonging	14
Safety and Accessibility	16
Civility and Social Behaviors	18
Open Responses	21
Key Issues	22
Actions Needed	24
Site Needs	26
What is Working	29
Discussion	31
Demographics	31
Workplace Climate Findings	32
Comparisons with other Climate Survey Findings	37
Recommended Next Steps	39
Potential recruitment strategies:	40
Potential retention strategies:	41
Citations	42



Credit: Mya Darsan. Plum Island Ecosystems LTER.

Methods

Sampling Effort

We surveyed members of the LTER via two anonymous surveys (climate and culture and demographics) delivered online through Qualtrics in Fall 2024. Approximately 3300 email addresses associated with LTER sites received both surveys.

Confidentiality

Responses were anonymous. Where membership in a particular group would be identifying (groups <10 members), groups have been combined to protect anonymity. Participants self-identified as members of marginalized communities for the purposes of the climate and culture survey. A separate demographic survey was conducted to assess progress toward broadening participation goals, but the surveys were not linked. Prior to sharing any site-based results, the LTER Network Office reviewed quantitative and qualitative responses and masked, combined, or removed results that could be attributed to specific individuals.

Survey	Surveys Finished	Response Rate (%)	Completion Rate (%)
Climate and Culture	604	20	90
Demographics	975	31	94

Analysis

We calculated statistics and created figures using Qualtrics Reports, StatsiQ, and Crosstabs iQ. We compared responses to each question across gender, role, tenure with the LTER, and marginalized identity status and we reported differences in response rates that had a p-value of less than 0.05. We coded open-response questions using [LiGRE](#).

Survey Results

Demographic Information

Summary of Network Demographic Survey:

Based on the responses from the demographic survey, responding LTER participants are:

- The **LTER community is highly educated** (53% have a PhD and 97% have a college degree).
- **First generation college students are in the minority** (6%) at the LTER compared with the current national student population, with [51%](#) identifying as the first in their family to go to college.
- **Skewed slightly female** – (57%) compared with 51% in the [US](#).
- **Mostly white** (84%) and more white than the overall proportion in the US (75%).
- **Lower proportion of participants that identify as Black, or Hispanic/Latino** compared with the overall U.S population.
- **A higher proportion of LTER participants identify as belonging to the LGBTQIA+ community** (22%) compared to the most recent estimate for the US by [Gallup Polls](#) (7%).
- Only 7% of LTER participants identify as a primary caregiver.
- **Women were more likely to identify as a primary caregiver than men**, and men were more likely to share the responsibility of caregiving with another person.
- **The majority of the LTER respondents (75%) say they did not have a disability or difference**, while 25% say that they were affected by chronic illness (6%), mobility (0.7%) or sensory (2%) challenges, or neurodivergence (16%).
- **Self-reporting for chronic illness (6%) and mobility issues (0.7%) are far lower than the national averages** ([52%](#) and [8%](#)) for these conditions.
- Only 2% identify as a military veteran compared with 6% across the US.

See the [demographic report](#) for further breakdowns of demographic data.

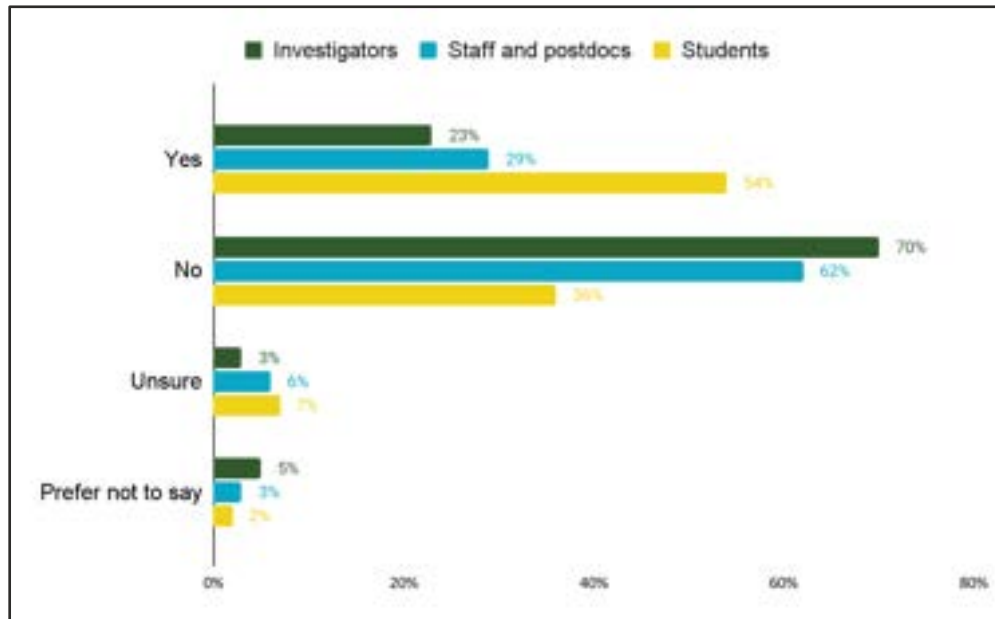


Figure 1: Marginalized identity status across roles.

Demographic Information from the Climate Survey:

In order to protect respondents' anonymity, but still understand some of the complexity in how people experience their site's culture, we asked two demographic questions in the climate survey, gender and marginalized identity status.

When asked how they would describe their gender:

- 58% woman
- 35% men
- 2% non-binary

These proportions closely align with the separate demographic survey findings (57% women, 40% men, and 3% non-binary). Since we did not get a significant proportion of participants identifying as non-binary, we will only be reporting comparisons across men and women.

We also asked if respondents identify with a marginalized community. We asked this question broadly to protect possibly identifying information. We defined marginalized communities as those that are excluded from dominant social, economic, educational, and/or cultural life. Examples of marginalized populations include, but are not limited to, groups excluded because of age, gender, race, ethnicity, religion, national origin, immigration status, language, disability, sexual orientation, and socioeconomic status.

- 57% do not identify with a marginalized group
- 34% do identify with a marginalized group
- 6% were unsure

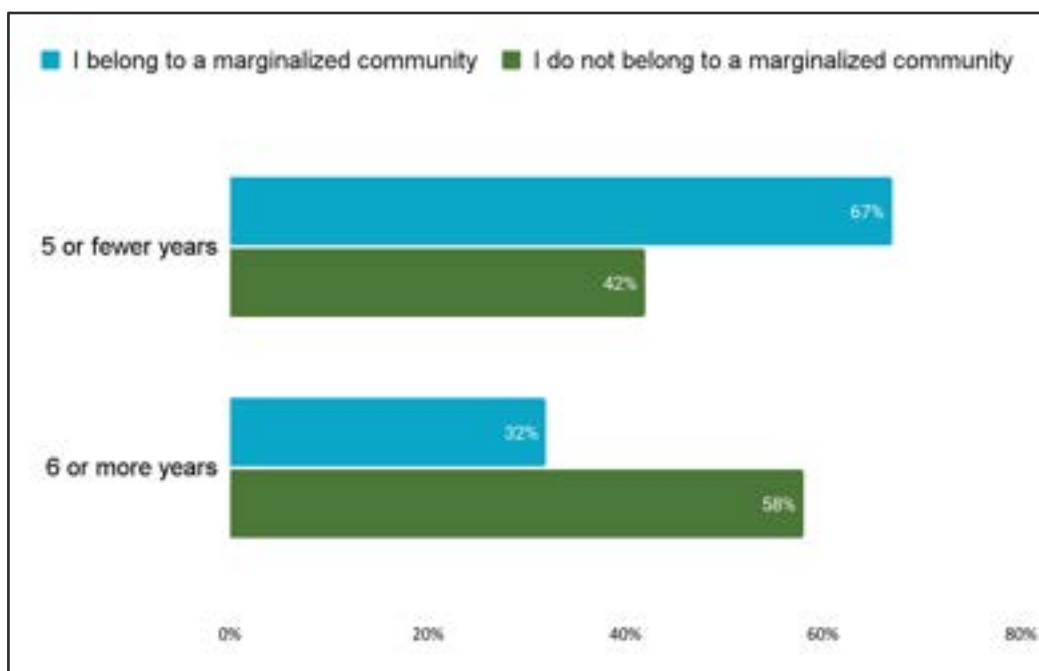


Figure 2: Marginalized identity status across tenure categories (5 or fewer years, 6 or more years) with the LTER.

Students are more likely to identify as part of a marginalized community (54%) compared to investigators (24%), or staff and postdocs (29%) (Figure 1). People who are newer to the LTER community (5 years or less) are more likely to identify with a marginalized group (67%) compared with more established participants (32%, defined as 6 or more years Figure 2).

Site Representation

All sites had at least 10 respondents with a mean of 20 responses per site.

Roles

- Investigators were the highest proportion of respondents (34%) followed by
- Graduate students (27%)
- Research technicians/assistants (11%)

All other roles (postdoc, education/communication staff, administrative staff, information managers, undergraduate student, volunteer, other and prefer not to say) were below 10%. For analysis, we combined graduate students and undergraduates into a students category, and administrative, research, information management, education/communications and postdocs into a staff and postdoc category.

Tenure with LTER

The most common response for how many years respondents have been a part of the LTER network was:

- 2-5 years (39%), followed by
- More than 10 years (32%)
- 6-10 years (16%)
- Less than one year (13%)

For analysis, we combined less than one year and 2-5 years to represent participants that are newer to the network, and combined 6-10 years and more than 10 years to represent people that have some seniority within the network.

Activities

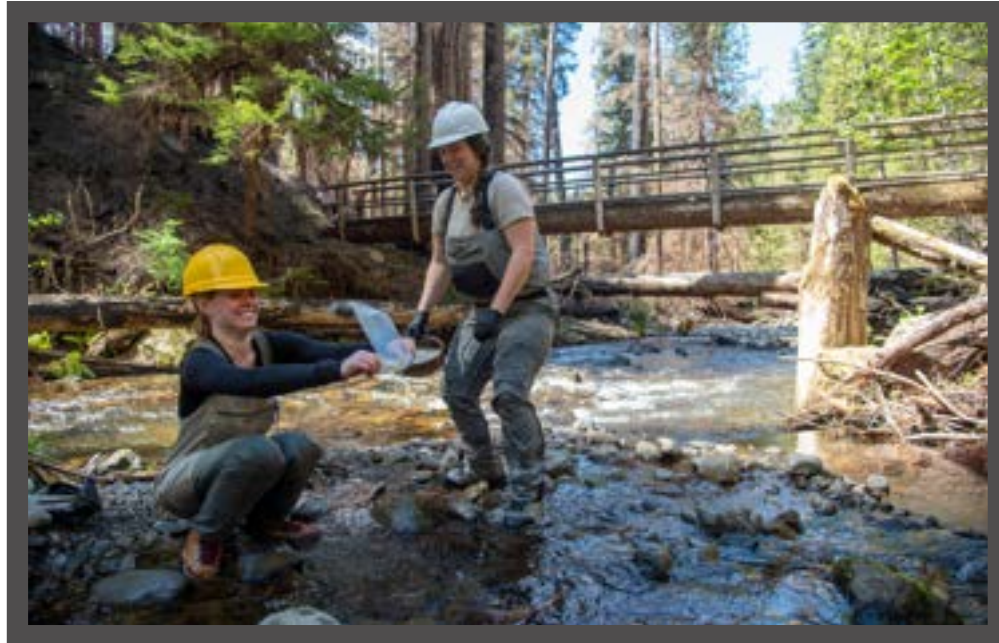
Most (81%) respondents selected research as an activity they participate in association with the LTER network.

Most respondents also chose at least one type of fieldwork

- 67% selected land-based
- 25% selected small boats
- 8% selected ship-based field work

When asked if they participated in an intense period of data collection where they are with members of the LTER community for long hours, 40% of respondents said they did not participate in this type of data collection. For those that do, 1-3 weeks was the most common duration (27%), followed by 1-3 months (22%), and longer (8%).

Outside of intense periods of data collection, 33% of respondents reported that they interacted with other members of their site on a weekly basis, followed by monthly (24%), daily (23%), and quarterly (16%).



Credit: Benjamin Nash. Andrews Forest LTER.

Overall Climate

Overall site climate is largely positive and collegial across the LTER network. Most respondents across the LTER network either agree or strongly agree that site policies and culture allow them to complete their research/work (90%) AND maintain their well being (83%) while working within an LTER project (Figure 3).

When asked to rate (1 being toxic and 10 being highly collegial) the overall climate of their respective site, the average score was 8.64, and the majority of respondents across the network (82%) rated their site 8-10 while only five percent of respondents rated their site 4 or below.

Differences across LTER role, seniority, gender, and marginalized identity status

How respondents rated their site's overall culture differed across background with respondents who did not identify as belonging to a marginalized community rating their site culture higher (87% rated 8-10) compared with respondents who do identify as belonging to a marginalized community (77% rated 8-10) (Figure 4, Chi-squared test, $p = .006$). Investigators also rated their site's culture as collegial (8-10) more often (90%) than students (76%) or staff and postdocs (79%, Chi-squared test, $p = .0005$).

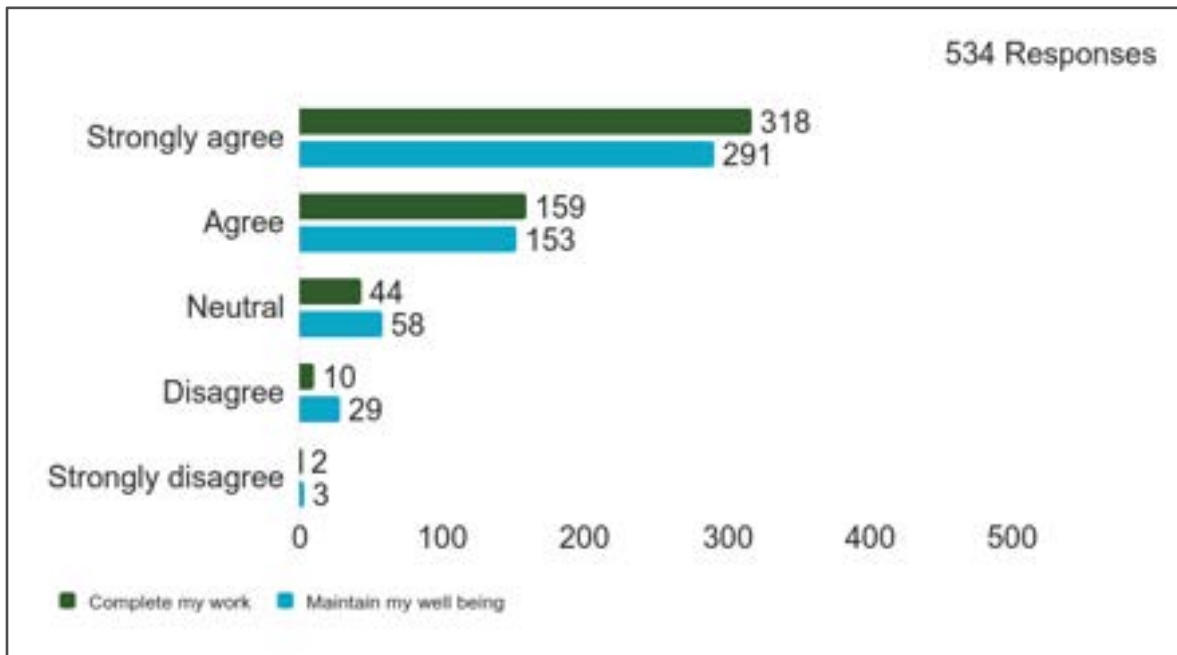


Figure 3: Site policies and culture allow me to complete my work (dark green) and maintain my wellbeing (light blue). Numbers to the right are the total number of responses.

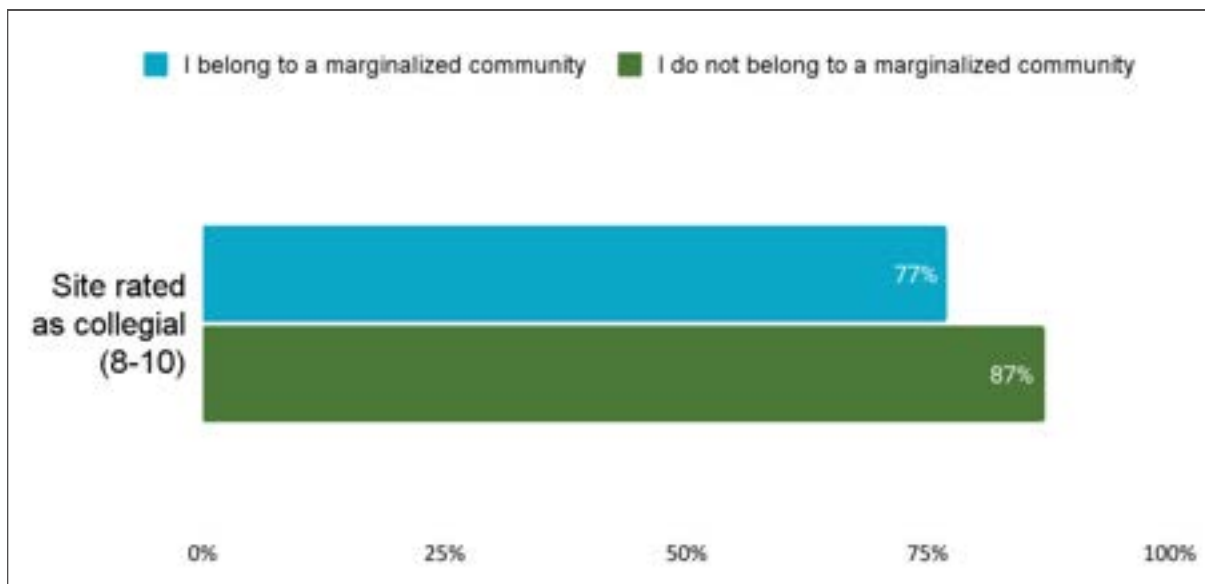


Figure 4: Overall site climate rated collegial (rated above 8 on a 1-10 scale) across marginalized identity status.



Credit: K. Stepnitz. Kellogg Biological Station LTER.

Belonging

Belonging is the feeling of security and support when there is a sense of acceptance, inclusion, and identity for a member of a certain group. Having at least some sense of belonging within a team is important for personal wellbeing as well as overall productivity (Rainey et al. 2018, Patt et al. 2022). Most respondents across the LTER network either agree or strongly agree that they feel welcome and valued (88%) and that they see evidence that people of all cultures and backgrounds are valued (81%) at their LTER site.

Differences across LTER role, seniority, gender, and marginalized identity status

People who do not identify as a member of a marginalized community had a higher proportion of respondents who agreed/strongly agreed (93%) that they feel welcome and valued and that others are welcome and valued (86%) compared with those who do identify as a member of at least one marginalized community (80%, and 71% respectively) (Figure 5, Chi-squared test, $p = .0002$ and $p = .0003$).

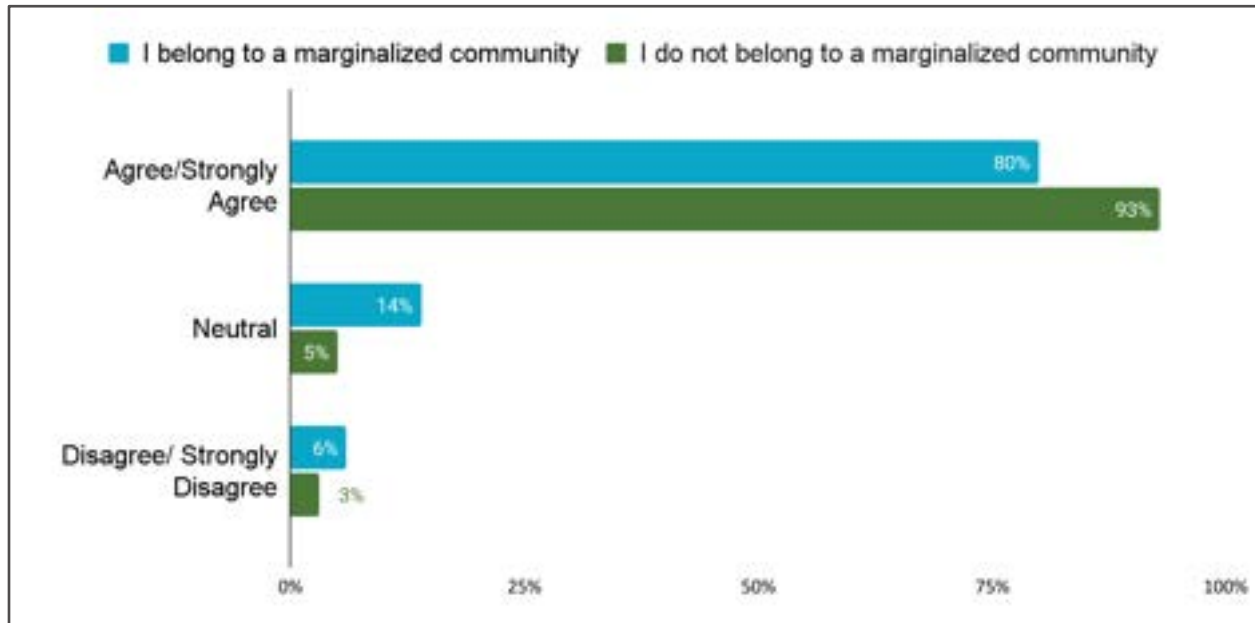


Figure 5: Agreement with the statement “I feel welcomed and valued at my LTER site” across marginalized identity status.

Safety and Accessibility

Safety is defined as having freedom from hurt or harm. Most respondents either agree or strongly agree that:

- They feel physically safe while conducting research at their LTER site (90%)
- They have the information and resources needed to safely plan and complete their research at their LTER site (91%), and
- They feel comfortable raising concerns about potentially unsafe working conditions (88%)

The majority of respondents said that their site has a field safety plan (83%) and that they would feel comfortable and know how to report an incident of misconduct or safety (81%).

When asked if they needed accommodations to fully participate in research or learning at their LTER site, would they be comfortable requesting them (Figure 6):

- 68% of respondents said they would feel comfortable requesting accommodations from their LTER site, and they know how to do so
- 19% would feel comfortable, but don't know the process
- 8% feel unsure
- 3% would not feel comfortable requesting accommodations from their field site.

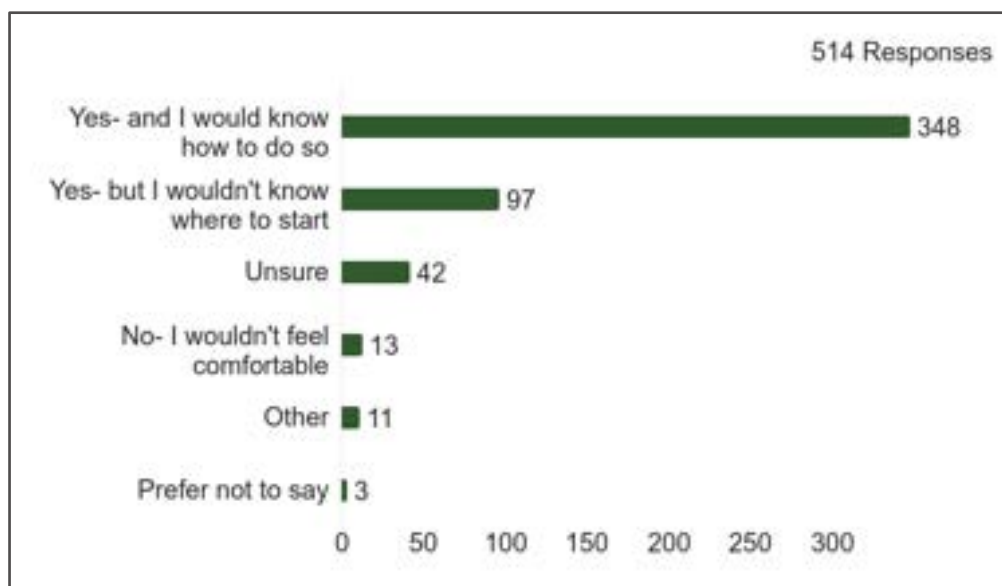


Figure 6: Responses to “If you required accommodations to fully participate in research and learning associated with your LTER site, would you feel comfortable requesting them?”

Figure 7: Agreement with the statement "I feel comfortable raising safety concerns at my site" and marginalized identity status.

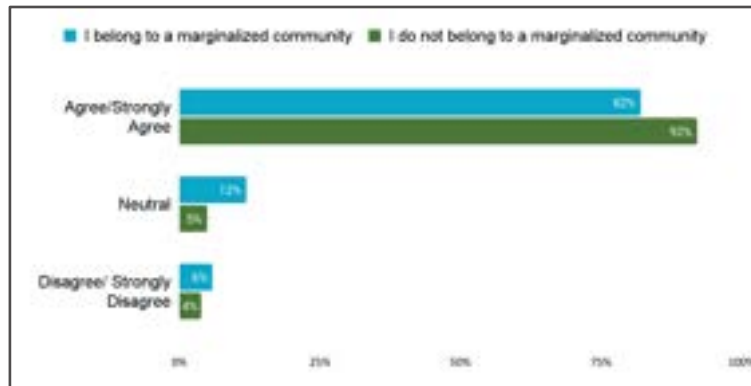
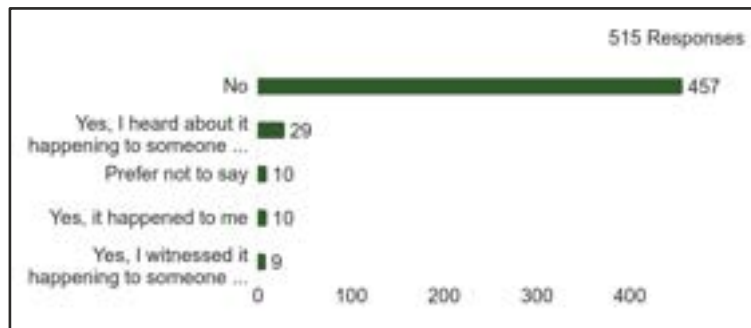


Figure 8: In the past two years, have you experienced gender/sexual harassment while working at your LTER site.



Differences across LTER role, seniority, gender, and marginalized identity status

Whether respondents feel comfortable raising safety concerns at their site varies based on their background. People who do not identify as belonging to a marginalized community are more likely to agree/strongly agree that they feel comfortable raising concerns (92%) compared with those who identify with a marginalized community (82%) (Figure 7, Chi-squared test, $p = .0007$).

Sexual or gender harassment is a form of unlawful sex discrimination under the Title IX of the Educational Amendments of 1972 and is defined as:

- Unwanted sexual behavior, advances, or requests for favors
- Unwelcome verbal, visual, or physical sexual conduct
- Offensive, severe, and/or frequent remarks about a person's gender
- Harassment of a sexual nature which interferes with an individual's right to an education and participation in a program or activity (Cipriano et al., 2022).

The majority of respondents have not experienced sexual harassment at their LTER site in the past two years (89%) with 7% of respondents reporting that they had heard of or personally observed sexual harassment, and 2% reporting that they personally experienced sexual harassment in the past 2 years at their LTER site (Figure 8). Of the respondents that reported that they have experienced sexual harassment at their site in the past 2 years:

- 8 out of 10 were women
- 6 out of 10 identified as belonging to a marginalized community.

Civility and Social Behaviors

Civility is defined as treating others with dignity, respect, and making a “good faith effort” with regard to other’s feelings and social behaviors and the way people interact and treat each other.

Sixty five percent of respondents report that they never observe or experience demeaning, discriminatory, or harassing behavior or speech by members of the LTER community, while:

- 25% say they do rarely
- 8% occasionally
- 2% experience it frequently/very frequently.

Similarly, 60% respondents report they never observe or experience demeaning, discriminatory, or harassing behavior or speech by individuals outside of the LTER community, while 30% say they do rarely and, 9% occasionally (Figure 9).

Within the 35% or respondents who said they had frequently, occasionally, or rarely been treated unfairly, 40% said that treatment came from someone on the PI team, followed by other faculty and researchers (21%), non-LTER staff (12%), and visiting faculty/researchers (9%). All other categories were selected less than 10 times (Figure 10).

Respondents reported that they frequently/very frequently experience someone (Figure 11):

- Showing genuine concern or courtesy (83%)
- Expressing interest in their work-related opinions (76%)
- Going out of their way to help with a work related problem (73%)
- Noticing when they do their best possible work (57%)
- Public recognition of their work (45%)

Differences across LTER role, seniority, gender, and marginalized identity status

People who do not identify with a marginalized community report that they experience others expressing interest in their work-related opinions frequently/very frequently at a higher proportion (81%) compared with people who do identify with a marginalized community (67%, Chi-squared test, $p = .001$).

Figure 9: Responses from “Rate how frequently you have observed or experienced demeaning, discriminatory, or harassing behavior and/or speech” from the internal LTER community (dark green) and external to the LTER (light blue).

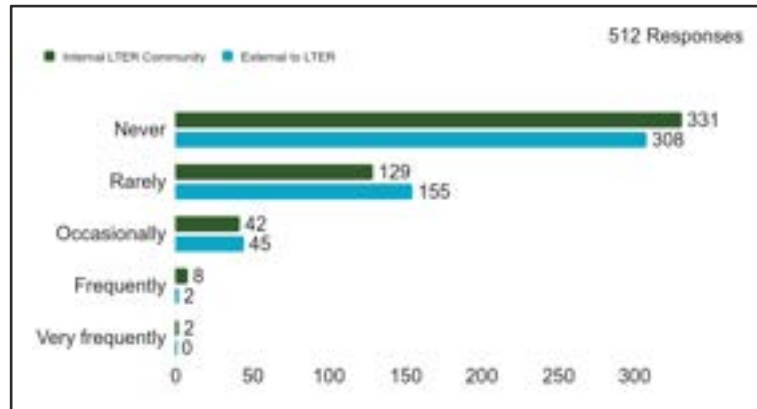


Figure 10: Responses for the question “If you’ve been treated unfairly at your LTER site, what was the professional stage of the person that made you feel this way?”

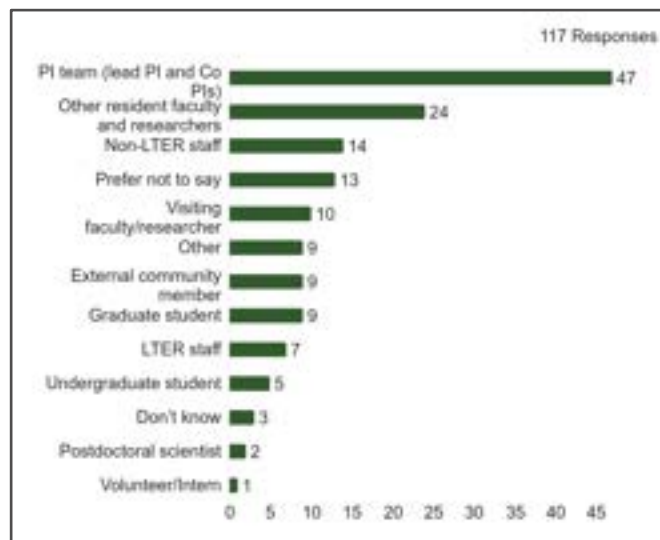
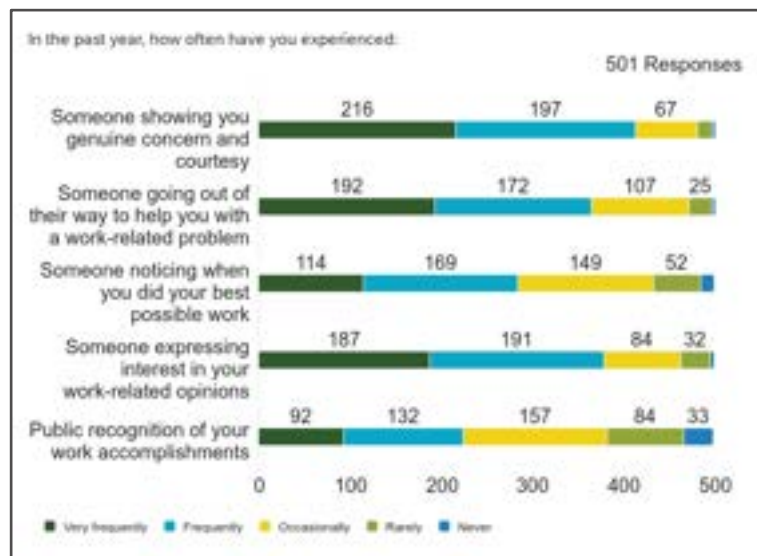
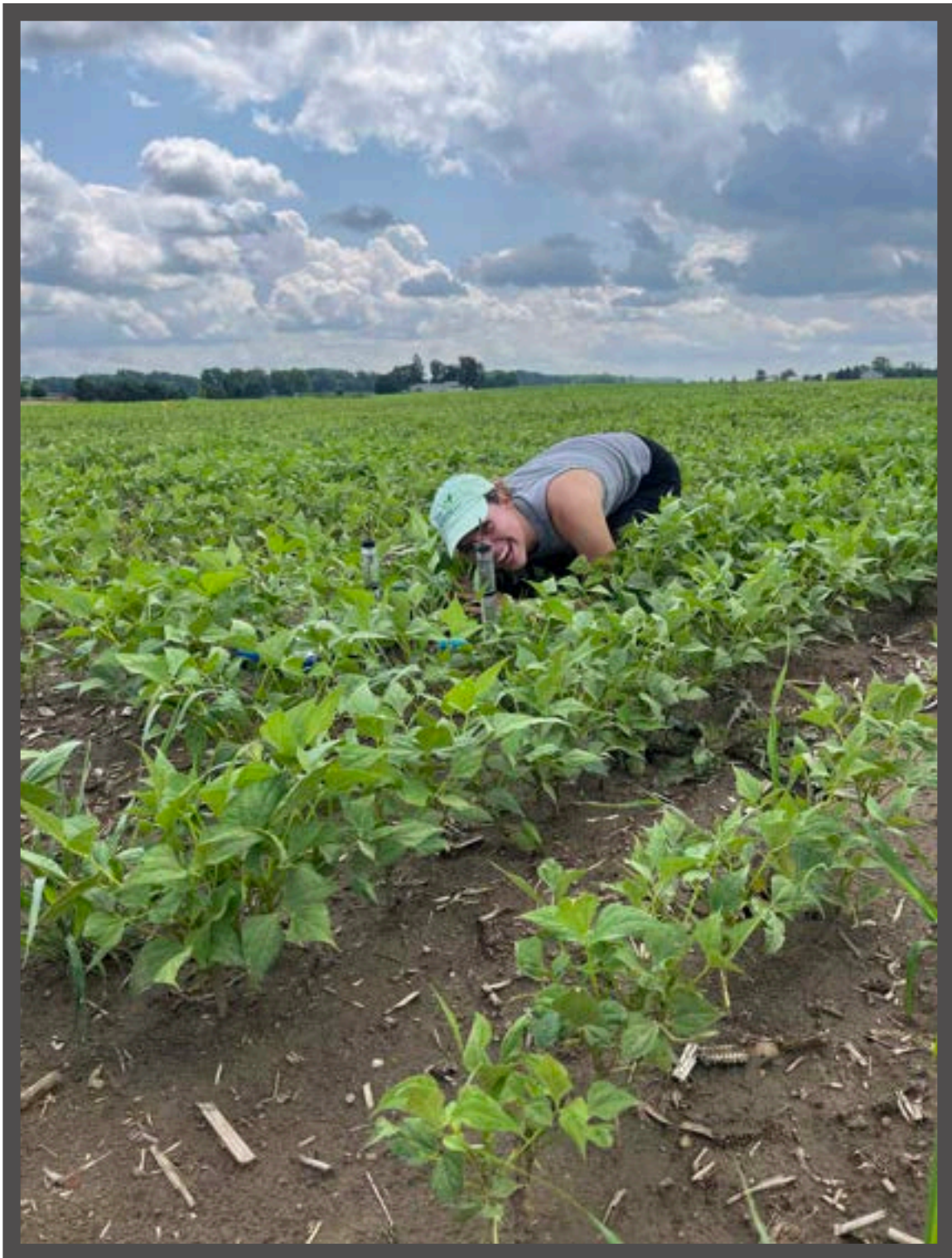


Figure 11: Responses to “In the past year how often have you experienced...”





Credit: Rachel Drobnak. Kellogg Biological Station LTER.

Open Responses

The remainder of the insights that follow come from responses to the survey's four open-response questions where we asked respondents to expand on their thoughts and feelings about their site and the network and share suggestions for improving site culture and participation in LTER. The responses were sorted into five categories: key issues, actions needed, site needs, barriers, and what is working at sites and across the network.

Key Issues

The important issues sites are facing pertaining to climate, culture, and broadening participation are diverse, but we categorized twenty issues shared amongst at least two sites. The three most prevalent issues in order of number of occurrences are: bureaucracy and hierarchy, exclusivity/discrimination, and insular and/or unwelcoming culture. See the table below for the full list of site issues coded for at least five sites.

Key issues across LTER role, seniority, gender, and marginalized identity status.

The frequency with which different issues were raised as important differed across roles, years with the LTER, gender, and marginalized identity status. Below we breakdown the important issues across identities and backgrounds in our community.

Role

Along with the issues common across the network, investigators noted lack of diversity and antagonistic interactions as important, students were concerned about field safety, and staff and postdocs noted overwork as a concern.

Tenure with the LTER

People who are newer to the network (participated for 5 or fewer years) see field safety as a particular concern, in addition to caring about other issues common across the network. Respondents that have been with the network longer (6 or more years) aligned with the general top three issues for the network overall, with the addition of antagonistic interactions and overwork.

Gender

Respondents who identify as women frequently note field safety as an important issue to address, along with the issues of exclusivity/discrimination and general site culture which are concerns shared across all responses. Respondents who identify as men frequently note the general lack of diversity as an important issue to address. They also share the issue of bureaucracy and/or hierarchy with overall site responses.

Marginalized Communities

The top issue for respondents who identify as a member of a marginalized community was exclusivity and discrimination, and for respondents who do not identify as a member of a marginalized community it was antagonistic interactions followed by lack of diversity in leadership and in general. There were also several shared issues including field safety.

Site Issue	Definition	# of sites	# of occurrences
Bureaucracy and hierarchy	Comments about institutional red tape, or behaviors such as gatekeeping, territoriality, power dynamics as issues.	13	19
Exclusivity/discrimination	Comments pertaining to difficulties starting at a site, or a persistent unwelcoming environment, like mentions of a “good old boys club” etc.	13	18
Insular and/or unwelcoming culture	Comments from respondents about observing or experiencing discrimination, favoritism, or other exclusionary behaviors.	12	16
Antagonistic Interactions†	Comments about interactions with others at their site described as hostile, or antagonistic behaviors such as bullying, or harassment.	8	15
Lack of diversity §, #	Lack of site diversity was used to code responses that mentioned the lack of human diversity at their site as an issue for them.	10	14
Overwork†	Comments about the amount of work negatively impacting personal safety or wellbeing or their site’s culture, climate or participation.	9	13
Field safety*, ‡	Comments raising concerns about field hazards and risk.	9	13
Lack of diversity in leadership #	Comments about the lack of leadership team diversity being an issue for site culture, climate, and/or participation	8	12
Gender harassment	Comments regarding experiencing or observing gender harassment.	5	9

■ Yellow indicates top three issues across the network.

■ Blue represents top issues for investigators.

■ Orange represents top issues for staff and postdocs.

■ Green represents top issues for students.

* Indicates top issues for people **newer** (fewer than five years) to the network.

† Indicates top issues for people who have been with the LTER for **longer** (6 or more years)

‡ Indicates top issues for **women**.

§ Indicates top issues for **men**.

¶ Indicates top issues for those who identify with a **marginalized** community.

Indicates top issues for those who **do not identify with a marginalized** community.

Actions Needed

In this section we summarize which actions were most commonly cited as needed to improve site culture, climate, and/or participation. The top three most common actions that respondents cited as important were: targeted recruitment, conflict management, and community building both at the site level and network level. See the table below for the full list of site issues coded for at least five sites.

Actions needed to improve site culture across LTER role, seniority, gender, and marginalized identity status.

The frequency of different actions that are needed to improve site climate and broaden participation differed across roles, tenure with the LTER, gender, and marginalized identity, however targeted recruitment and conflict management were two actions that were shared across all identities except students. Below we breakdown the important actions called for across identities and backgrounds in our community.

Role

Along with the overall top actions, respondents that identified as staff and postdocs also think that training for leadership is an important action for improving site climate and culture. Respondents that identified as students had many actions that were different from the overall consensus, including accountability for leadership, opportunities for marginalized students/scientists, community engagement and new or updated protocols and procedures.

Tenure with the LTER

Respondents who have been with the network for six or more years noted that increasing cross-site collaborations could help improve site-specific culture, climate, and broaden participation because through collaboration, sites are able to combine resources, skills, and expertise across the network. Respondents who are newer to the LTER (five years or fewer) talked about the importance of engaging local communities at their sites, as well as increasing community-building activities to improve site cohesion, and creating or enhancing opportunities for marginalized communities.

Gender

Respondents who identify as women talked about how learning and working with other sites across the network could help their site's climate, culture, and broaden participation. Respondents who identify as men suggested that more opportunities targeted to marginalized scientists/students would help their site improve their site's climate, culture, and participation.

Marginalized Identity

Respondents who identify as a member of a marginalized community talked about the importance of engaging the local community in LTER science, and creating more formal opportunities for marginalized scientists/students while respondents that did not identify as a member of a marginalized group were more likely to speak to the importance of site community building for improving culture and climate at their site.

Action Needed	Description	# of sites	# of occurrences
Targeted recruitment	Remarks about the need for targeted recruitment in order to increase diversity of LTER participants.	15	25
Conflict management	Comments about actions pertaining to interpersonal conflict management at sites.	14	22
Site-level community building	Comments about actions and activities to increase the sense of community at a site.	11	13
Cross-site collaborations	Comments about actions and activities to increase cross-site collaboration and sense of community.	8	13
Community engagement ¶	Comments about the need to engage local communities through outreach, partnerships, and/or collaboration.	5	11
Opportunities for marginalized scientists & students*, §, ¶	Comments about the need for programs and resources targeted to marginalized students and staff to increase recruitment and/or improve retention.	10	11
New or updated protocols and procedures	Comments about the need for updated or additional site documentation and/or policies to improve site culture, climate and participation.	9	10
Training for leadership	Comments about the need for leadership to participate in trainings to improve site culture, climate and/or participation.	8	9
Accountability for leadership	Actions around holding leadership accountable including assessment and consequences for misconduct.	6	9
Visibility for existing opportunities and efforts	Comments about the need to increase visibility and support of current opportunities and efforts to improve site climate, culture, or participation.	9	9
Career development	Comments about the need for more career-related opportunities and professional development for students and early-career participants.	5	6

Yellow indicates top three actions needed across the network.

Orange represents top issues for staff and postdocs.

Green represents top issues for students.

* Indicates top issues for people **newer** (fewer than five years) to the network.

§ Indicates top issues for **men**.

¶ Indicates top issues for those who identify with a **marginalized** community.

Site Needs

Improving site culture, climate and broadening participation requires more than just identifying key issues and taking action; it also requires physical, social, and intellectual resources. The three most common needs cited by sites across the network were professional development, funding, and updated or additional physical infrastructure.

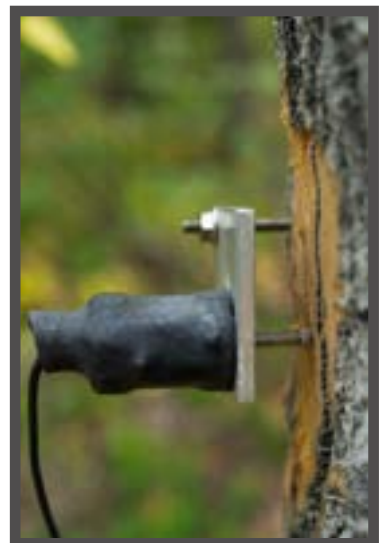
We categorized a response as “professional development” when a need for more educational materials and programs, for the site or the network, was noted. “Funding” was used anytime respondents mention a need for additional site funding in order to improve the culture, climate or participation. Funding was most commonly referenced along with targeted recruitment. We coded a response with “updated or additional physical infrastructure” when a need for improvements, updates, or additional infrastructure was cited to improve culture, climate, or participation. Examples include additional lodging or updates to site infrastructure to improve accessibility.

See below for a complete list of site needs noted in the open responses.

Site Need	Number of Sites	Number of Occurrences
Professional development	13	17
Funding	13	15
Updated or additional physical infrastructure	4	11
Local representation among personnel	3	4
Personnel	3	3
Gear or equipment	3	3
Time	2	2

■ Yellow indicates top three site needs across the network.

Facing: All photos credit Gabriel De La Rosa. Clockwise from top left: Niwot Ridge LTER. Kellogg Biological Station LTER. Central Arizona-Phoenix LTER. Arctic LTER. Niwot Ridge LTER. Bonanza Creek LTER.



Barriers

We labeled respondent comments as barriers if they described an issue that was hampering progress to improving site culture and climate. The most common barriers noted across the network mentioned were labor inequities, lack of power/responsibility, performative statements or lack of buy-in for broadening participation, and misconceptions. See below for all site needs coded for at least two sites.

Barrier	Definition	# of sites	# of occurrences
Labor inequities	Comments about unequal distributions or contributions to labor in support of broadening participation at their site.	8	12
Lack of power/responsibility	Comments about lack of power or responsibility to create site-level change.	9	11
Performative or lack of buy in for Broadening Participation	Comments about resistance, lack of interest, or work that is disingenuous or surface level being a barrier to progress.	7	11
Misconceptions	Comments about misconceptions surrounding broadening participation such as that it is antithetical to a merit-based system, or that it is reverse discrimination.	7	10
Lack of time for broadening participation work	Comments about not having enough time to pursue broadening participation work.	4	6
External systemic issues	Comments about systemic issues outside of the site impacting site culture.	5	5
Generational divide	Comments about a generational divide in attitudes surrounding climate, culture, and participation.	4	4
Cultural differences among personnel	Comments about cultural differences increasing the complexity of site dynamics.	4	4
Harsh conditions	Comments about harsh field conditions inherent to a site.	3	3

What is Working

The most common comments were general positive affirmations about the respondent's site (66 occurrences across 23 sites) or the LTER network (60 occurrences and 22 sites). These comments included statements like:

- My site is doing great
- I don't have any issues
- I really enjoy working at my site
- My site really cares about broadening participation

Many respondents also went into detail on what they appreciate or what is working well at their site. Beyond the general positive comments, the top three positive remarks about site/network culture were that the site climate and culture is better now than it was in the past, the All Scientists' Meeting (ASM) is key for community building and collaboration, and positive comments about their site's leadership.

What is Working	# of sites	# of occurrences
Site climate and culture is better now than it was in the past	11	17
the ASM is key for community building and collaboration	12	15
Positive comments about site leadership	11	12
Network collaborations	8	8
Promotion and networking across LTER	5	6
Network support	4	5
Network office	4	5
BP committee	3	4
promotion and appreciation	2	2
External systems/regulations	2	2
Education Committee	2	2
Opportunities for students	2	2



Credit: Tommy Shannon. Florida Coastal Everglades LTER.

Discussion

Demographics

In comparison with demographic data of the overall US population, the LTER community has more people who identify as women, White, or Asian and fewer people that identify as men or as Black.

	LTER (% Representation)	U. S. National Average (census.gov) (% Representation)
Men	40	50
Women	57	51
Hispanic/ Latino	12	20
White	84	75
Asian	8	6
Black	3	14

*I know there is strength in the differences between us
And I know there is comfort where we overlap - Ani DiFranco*

Workplace Climate Findings

One important take away from these survey results is that we have many shared passions and challenges across the network in terms of workplace climate, culture and broadening participation. We also observed that a person's background influences their experience at LTER field sites as well as what they think is important for improving climate and broadening participation, which supports the importance of having broad input when we are making decisions.

Based on responses from the multiple-choice section of the survey, the workplace climate at sites across the network is generally perceived as positive, with the majority of participants reporting positive experiences across categories. A few places where scores are comparatively lower overall, which could indicate areas for improvement are:

- Understanding how to request accommodations at a site
- Feeling noticed for a job well done
- Public recognition of their work
- Rare to occasional antagonistic interactions with internal and external individuals.

Another important finding was that 9% of participants reported either personally experiencing, observing, or hearing about sexual harassment at their sites. Similarly 10% of respondents reported that they occasionally or frequently experience discriminatory or demeaning behavior/speech and these negative interactions most frequently came from the site's PI team. Although these numbers are small, across the network it is imperative that we drive this number from small to zero.

Our results also indicate that background matters when it comes to LTER site experiences. People who identify as a member of a marginalized community (defined as those excluded from dominant social, economic, educational, and/or cultural life) were less likely to:

- Rate their site as highly collegial (8-10 on a 1-10 point scale)
- Feel personally welcomed and valued, and feel that everyone, regardless of identity/background, was welcome and valued
- Feel comfortable raising safety concerns at their site
- Frequently experience others expressing interest in their work-related opinions

Other important findings were that:

- Investigators rated their site’s culture as collegial (8-10) more often than students, or staff and postdocs
- 8 out of 10 respondents who experienced sexual harassment in the past 2 years identified as women
- 60% of respondents that experienced sexual harassment in the past 2 years also identified as marginalized, which is a much higher than the proportion of respondents that identify as marginalized overall (35%)

These findings emphasize the importance of considering identity and power dynamics in safety protocols and reporting structures, and to be intentional about creating welcoming spaces for everyone regardless of identity or background.

The most common comments from the four open questions in the survey were generally positive affirmations about the respondent’s site (66 occurrences across 23 sites) or the LTER network (60 occurrences and 22 sites). Other repeated comments fell into 5 categories. See tables for the three most common comments across each category.

Key Issues	Actions needed	Site Needs
<ul style="list-style-type: none">• Bureaucracy/ hierarchy• Exclusivity discrimination• Insular/ unwelcoming culture	<ul style="list-style-type: none">• Targeted recruitment• Conflict management• Community building (site and network)	<ul style="list-style-type: none">• Professional development• Funding• Updated/ additional infrastructure

Barriers to broader participation	What is Working Well
<ul style="list-style-type: none">• Labor inequities• Institutional/external barriers or work is done by institution/ external body• Lack of substantive buy-in for broadening participation goals• Misconceptions about implementation	<ul style="list-style-type: none">• Site climate is better now than it was in the past• ASM is key for community building and collaboration across the network• Positive comments about site leadership

The three most frequent topics across all categories, overall.

Respondent identity and background impacted the frequency of certain comments about key issues and actions needed to improve site culture and broadening participation. For example, the frequency with which issues were raised as important differed across roles, years with the LTER, gender, and marginalized identity status. For example, the most frequent issues raised by respondents that identified as:

Respondent identifies as...	Key Issues
Man, Investigator, or Does not identify as a member of a marginalized community	<ul style="list-style-type: none"> • Bureaucracy and hierarchy • Lack of diversity

Top issues shared across respondents who identified as men, investigators, or not belonging to a marginalized community.

“Bureaucracy and hierarchy” was one of the top three issues overall and “lack of diversity” was used to code responses that mentioned the lack of human diversity at their site and/or institution as an issue. These respondents hold at least one identity that either has power, or is the majority in most academic spaces, or both. We find it encouraging that a key issue for many in these groups is increasing the diversity of perspectives and backgrounds in the spaces we inhabit. That is exactly the support and motivation that is needed to diversify our sites and other academic spaces!

Respondent identifies as...	Key Issues
Woman, Student, or Identifies as a member of a marginalized community	<ul style="list-style-type: none"> • Exclusivity and discrimination • Field safety

Top issues shared across respondents who identified as women, students, or belonging to a marginalized community.

Exclusivity and discrimination was one of the top three issues across the network. Field safety was used to code comments from respondents that expressed concern about field hazards and risk. In this grouping, respondents hold at least one identity that lacks power, or is in the minority in most academic spaces, or both. It is important to note that many individuals holding marginalized identities in our communities are more concerned with issues of safety, inclusion, and equity than their non-marginalized counterparts.

This is a great example of how the diversity present in the backgrounds and/or identities of a community can impact what ideas surface when we are identifying priority issues. See the table below for the most common key issues and actions needed that were unique to each category (gender, role, seniority, and marginalized identity status):

Gender	Demographic	Key Issues	Actions Needed
	Women	Exclusivity and/or discrimination Insular and/or unwelcoming culture Field safety	Cross-site collaborations
	Men	Lack of diversity Bureaucracy and hierarchy	Opportunities targeted to marginalized scientists and students
Marginalized identity	Marginalized?	Key Issues	Actions Needed
	Identifies with a marginalized group	Exclusivity and Discrimination	Community engagement Opportunities targeted to marginalized scientists and students
	Does not identify with a marginalized group	Antagonistic Interactions Lack of diversity Lack of diversity in leadership	Site-level community building

Role	Demographic	Key Issues	Actions Needed
	Investigators	Lack of diversity Antagonistic interactions	None unique
	Staff and Postdocs	Insular and/or unwelcoming culture Overwork	Cross-site collaborations Training for leadership
	Students	Field Safety	Accountability for leadership Opportunities for marginalized students/scientists Protocols/procedures Community engagement
Seniority	Years at the LTER	Key Issues	Actions Needed
	5 or fewer	Field Safety Lack of diversity	Community engagement Site-level community building Opportunities targeted to marginalized scientists and students
	6 or more	Insular and/or unwelcoming culture Antagonistic interactions	Cross-site collaborations

Comparisons with other Climate Survey Findings

This climate survey serves as a first benchmark for the LTER network’s overall climate in 2022-2024 and we plan to administer it again regularly so we can track changes through time and impact of interventions.

2020 ESA Climate Survey

We can also compare our findings with similar efforts such as the climate survey conducted with Ecological Society of America (ESA) members and ECOLOG-L subscribers in 2020 (Primack et al. 2023). The LTER climate survey received a higher response rate which could mean that it has captured a more accurate representation of our community, but according to these two surveys results:

- The LTER network’s proportion of women, and people of color (POC) are similar to ESA’s membership
- The LTER network’s proportion of people who identify as students and postdocs, LGBTQIA+, or having a disability are higher than ESA’s membership.

The LTER climate survey also had a higher proportion of positive responses across comparable climate metrics including safety, inclusive behaviors, and respectful treatment compared with findings from the ESA survey (see tables below).

Overall Metrics:

	ESA Survey	LTER Survey
Timing	Fall 2020	Fall 2024
Community	ECOLOG-L listserv	LTER participant list
Community size (emails)	~25,0000	~3,500
Completed surveys	384	604 for climate, 975 for demographic
Response rate %	~1.5%	20% (climate) 31% (demographic)

Network demographics:

	ESA (%)	LTER (%)
Women	54	58
LGBTQIA+	14	22
Disability	8	23*
Students and postdocs	24	37
POC	14	15

** Included people that identified as neurodivergent*

Constituent concerns:

	ESA (%)	LTER (%)
Mentoring (frequently or always/agree strongly agree)	32.9	66.6
Respectful treatment (frequently or always/agree strongly agree)	78.5	82
Psychological safety (frequently or always/agree strongly agree)	62.6	88
Inclusive Behavior (frequently or always/agree strongly agree)	40.2	81
Sexual harassment (once or twice, or more)	9.8	4



Credit: Ryan Schroeder. Jornada Basin LTER.

Recommended Next Steps

Based on the responses from the categorical sections of the climate and culture survey, sites across the network should focus on clarifying how requests for accommodations are made, increasing internal and external recognition across roles, and managing occasional antagonistic interactions with both internal and external individuals. Sites should also be aware of, plan for, and respond proactively to the differing levels of risk and hazard for experiencing harassment and other antagonistic interactions (social risk and subjective harassment) participants across identities. ADVANCEing FieldSafety offers a comprehensive course and toolkits that helps field teams identify and mitigate both objective hazards like terrain and subjective hazards such as harassment.

Based on the open responses from the climate and culture survey, sites should focus on both recruitment and retention of a diverse research community to improve climate and participation across the LTER. In the tables below we outline some potential actions for both.

Potential recruitment strategies:

Strategy	Potential Network partners and actions	Potential site-level partners and actions
Targeted recruitment: Actively seek out candidates from underrepresented groups to address imbalances in representation.	Partners: TRIO, SACNAS, Diversify EEB, SEEDS Actions: Host network discussions on recruitment, share recruitment resources and best practices.	Partners: HBCUs, MSIs, Tribal Colleges, Community Colleges. Actions: Create or update recruitment/hiring strategies, develop relationships with near-by institutions and communities.
Funding to support marginalized students and scientists	Partners: States and foundations Actions: Host network discussions on funding options, share funding resources across the network.	Partners: NSF, Institutions, Local/Regional orgs Actions: Pursue site funding, collaborate across sites on programs that support marginalized scientists and students.
Inventory, update and/or create more accessible spaces	Partners: NSF, OBFS Actions: Host network discussions on options, share funding resources and best practices for increasing accessibility.	Partners: NSF, OBFS, FSML, Institutions Actions: Conduct site-level accessibility audits, pursue site funding.

In 2025, the LTER Network office is offering field safety and mentoring trainings, and launching the revamp of our broadening participation resources webpage with additional tool kits on important topics including field safety, mental health in the field, mentoring, and conflict management.

Potential retention strategies:

Strategy	Potential Network partners and actions	Potential site-level partners and actions
Inclusive practices: understanding and addressing social inequities, power dynamics, intersectionality, and privilege	<p>Partners: ADVANCE Geo Partnership, CIMER, Fieldwork Initiative, Field Inclusive Inc.</p> <p>Actions: Host trainings and discussions focused on inclusive practices and accessibility, share resources and best practices.</p>	<p>Partners: Institutions, and local communities</p> <p>Actions: Recognize and accommodate individual differences in risk, and challenges across field teams; include mental health supports in field safety plans; create field gear closets; host site orientations for new and returning participants, create and enforce a code of conduct, value and recognize all contributions, collaborate and work with other sites.</p>
Field Safety: Increasing physical and psychological safety for participants conducting fieldwork	<p>Partners: Field Futures, Field Inclusive Inc, FieldWork Initiative, ADVANCEing FieldSafety</p> <p>Actions: Continue to host network-wide trainings and discussions, share resources and best practices.</p>	<p>Partners: Field Futures, Field Inclusive Inc, FieldWork Initiative, ADVANCEing FieldSafety, Institutions</p> <p>Actions: Audit of reporting processes, training, raise awareness of field safety issues, plans, and other resources.</p>
Misconduct and conflict management	<p>Partners: NSF, FieldWork Initiative</p> <p>Actions: Continue to host network-wide discussions on conflict management strategies, share resources and best practices for managing conflict and misconduct.</p>	<p>Partners: NSF, FieldWork Initiative, Institutions</p> <p>Actions: Audit reporting processes and responses, explore institutional resources and support for mediating interpersonal conflict. Consider options for anonymous reporting structures.</p>

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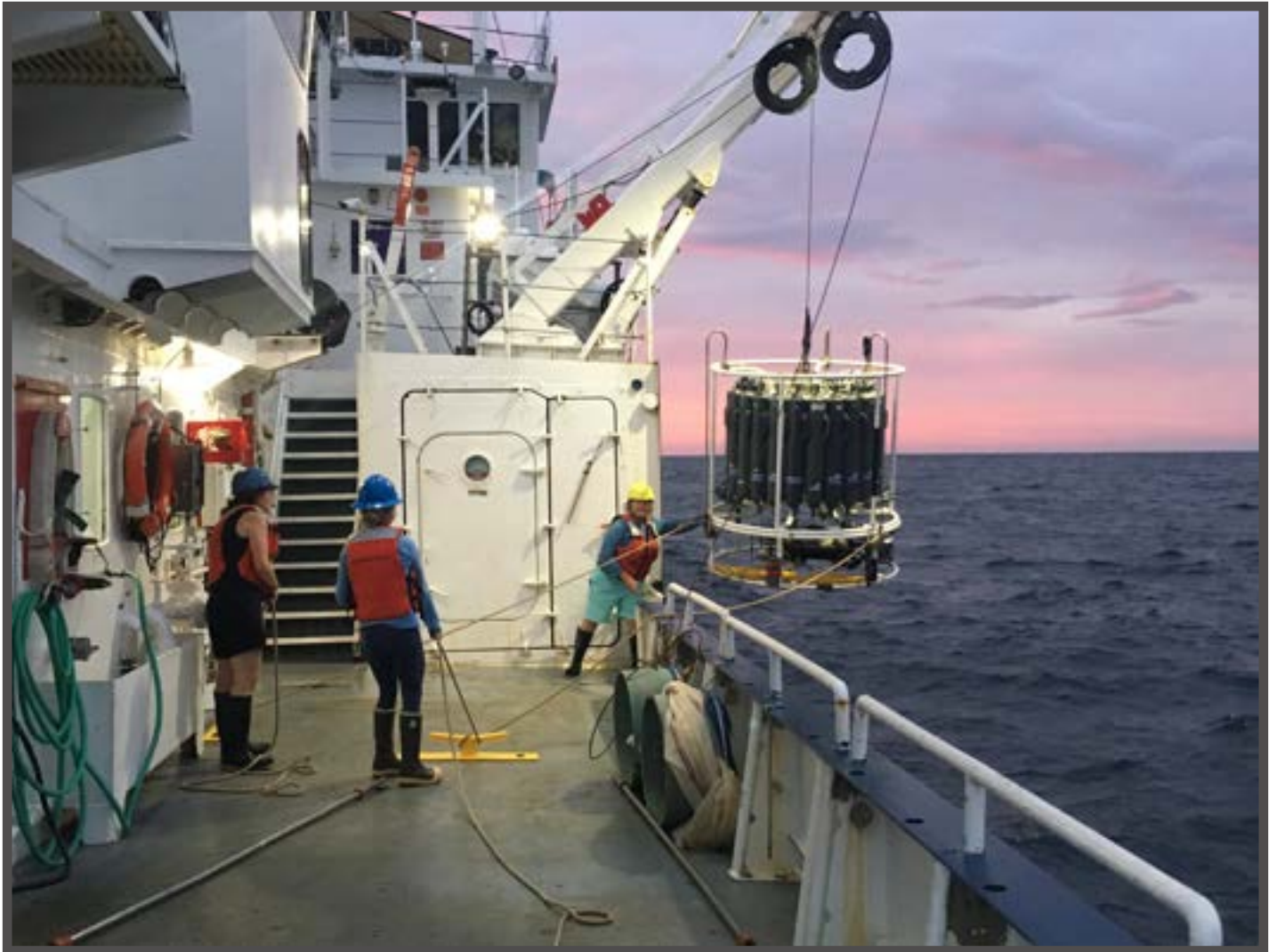
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Credit: Joel Llopiz. Northeast U.S. Shelf LTER.