



Evaluating the prevalence and quality of conference codes of conduct

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Efforts to increase inclusion in science face multiple barriers, including cultural and social behaviors in settings such as academic conferences. Conferences are beneficial, but the culture can promote inequities and power differentials that harm historically underrepresented groups. Science suffers when conference culture propagates exclusion and discrimination that leads to attrition of scientists. Codes of conduct represent a tool to shift conference culture to better support diverse scientists and clearly detail unacceptable behaviors. We examined the prevalence and content of codes of conduct at biology conferences in the United States and Canada. We highlight how codes of conduct address issues of sexual misconduct and identity-based discrimination. Surprisingly, only 24% of the 195 surveyed conferences had codes. Of the conferences with codes, 43% did not mention sexual misconduct and 17% did not mention identity-based discrimination. Further, 26% of these conferences failed to include a way to report violations of the code and 35% lacked consequences for misconduct. We found that larger and national conferences are more likely to have codes than smaller ($P = 0.04$) and international or regional ($P = 0.03$) conferences. Conferences that lack codes risk creating and perpetuating negative environments that make underrepresented groups feel unwelcome, or worse, actively cause harm. We recommend that conferences have codes that are easily accessible, explicitly address identity-based discrimination and sexual misconduct, provide channels for anonymous impartial reporting, and contain clear consequences. These efforts will improve inclusivity and reduce the loss of scientists who have been historically marginalized.

discrimination | inclusion | people of color | sexual misconduct | women

People of color of all or no genders and white women are plagued by underrepresentation and mistreatment in academia, including STEM disciplines (science, technology, engineering, and math). Research on organizational behavior reveals compounded negative implications of incivility and misconduct in the workplace (1, 2), including high turnover and attrition (3, 4), high levels of stress and anxiety (5), dissatisfaction (6), and disengagement from organizational culture and the field (7). Academia is an important context in which workplace misconduct should be studied because employees report instances of sexual harassment at rates of 58%—second only to the high rates found in the United States military (8, 9). The social inequities historically underrepresented groups experience in science cause real emotional, psychological, and physical harm (10, 11) and need further consideration to stem loss of talent.

Women of color who experience marginalization based on the intersection of their racial and gender identities experience compounded negative outcomes (intersectionality; Table 1 provides definitions of terms). The numbers of women of color are declining in science faculty positions while the numbers of white women are increasing (12). Although this is understudied, research shows that women of color experience more sexual and

racial harassment and thus a greater burden related to harassment (9). For example, 40% of women of color in astronomy and planetary sciences who were surveyed felt unsafe in their workplace because of their gender and 28% felt unsafe because of their race (13). Furthermore, women of color experienced a more hostile work environment, including harassment and assault; these reported incidences were higher than for their male or white women colleagues (13). Some women of color faculty members in science and engineering fields reported feeling like outsiders in their disciplines and that their views are validated less often than those of their white counterparts (14). These consequences detrimentally affect the attraction and retention of underrepresented scientists (9). Improving inclusion in all scientific spaces will minimize these impacts and advance science. This includes an infrequently considered venue: Academic conferences.

Academic conferences are essential venues for scientists to actively participate in their fields by disseminating scholarship and networking with colleagues. Early-career scientists also meet prospective advisors, employers, and mentors at academic conferences. However, conferences can foster unequal power dynamics that privilege heterosexual, cis-gendered white men at the expense of other attendees. For example, organizations invite more men speakers at conferences compared with women (15, 16), and men speak 75% of the time in mixed-gender discussion groups (17), further disadvantaging women. Men also ask more questions than women, which garners them more social capital

Significance

Academic conferences encourage collaboration and ignite ideas but can have negative impacts that disproportionately affect historically marginalized groups. Conference codes of conduct can help protect against abuses and foster diversity, but less than one fourth of the biology conferences we studied from the United States and Canada had them. Of these, few codes addressed or denounced identity-based discrimination and sexual misconduct that fuels attrition of scientists from historically marginalized groups. Most codes did not provide clear or impartial reporting mechanisms. Only two thirds listed consequences for violations. We provide recommendations for codes of conduct at biology conferences to improve equity in more platforms of science.

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Table 1. Operationalizing key terms

Term	Definition
Bystander intervention	Bystander intervention occurs when an individual witnesses an incident of harassment or incivility, feels responsible for intervening, and takes action (9, 53).
Diversity	The range of proportional representation of people with various categorical identities (e.g., race, gender, socioeconomic status) within a group (36).
Inclusion	The degree to which all people feel welcome, safe, and included in a group or structure (54).
Equity	In contrast to equality (or sameness), equity is the systemic pursuit of fairness and justice (54). Equity reinforces that rights and opportunities should be unfettered by cultural, political, and institutional biases.
Identity-based discrimination	Discrimination based on any or multiple aspects of one's identity. A full list of identities found in codes of conduct is included in <i>SI Appendix, Table S3</i> .
Incivility	General disrespectful behavior, such as use of patronizing or otherwise inappropriate language (5). When targeted at people with minoritized social identities, it becomes a "covert manifestation" of prejudice (e.g., racism, sexism) and can contribute to institutionalized inequities (55).
Intersectionality	Intersectionality suggests a multiplicative rather than additive approach to understanding the ways in which historically oppressed people's subjectivities are inextricably linked (56–58).
Sexual harassment	A 3-part term indicating gender harassment, unwanted sexual attention, and sexual coercion. Of these three, gender harassment is the most prevalent form of sexual harassment in the scientific community, and it includes nonsexual harassment an individual receives because of their gender (e.g., offensive or degrading remarks, sexist slurs, and demeaning comments) (9).
Sexual misconduct	Any unwelcome sexual behavior enacted without consent and/or via intimidation, coercion, or exploitation (9).

and scientific legitimacy (18). Women disproportionately experience sexual harassment at conferences, including gender harassment (Table 1), unwanted sexual advances, and inappropriate remarks (9, 19). For example, a biology conference made national news in July 2018 when a distinguished scientist included revealing photos of junior women scientists in his presentation (20). In addition, women have reported harrowing experiences at conferences, including unwanted comments, unwanted touching, escaping unwanted advances by barricading oneself in a hotel room, and sexual assault (19). Furthermore, important conference networking occurs during evening conversations that often involve alcohol, or at locations removed from the conference venues. These events increase liability and potentially compromise the safety of participants. Women have reported instances of men distorting after-hours networking events for predatory purposes to lodge unwanted sexual advances, druggings, and sexual assault (19). This forces some attendees to choose between potentially unsafe environments and career advancement (4, 13, 21). These unacceptable predicaments reduce equitable visibility and pursuit of knowledge.

People of color of all or no genders and white women report experiencing incivility at academic conferences (1, 9). An example of racial harassment comes from an archaeology and classics conference in 2019: A white audience member accused a black scholar presenter of being employed only because of his identity as a black person (22). Assumptions like this can lead to stereotype threat, underperformance from fear of confirming negative stereotypes (23), which can hinder the performance of academics in marginalized groups. Discrimination and harassment at conferences negatively impact marginalized researchers' participation in science (4). Although there are few studies published on the experiences of women of color at conferences, one study showed that women of color experience more audience disturbances while presenting than white women and men (14). Propagating inclusive and positive standards of behavior in off-campus contexts such as conferences will improve the effectiveness of efforts made within organizations to increase diversity and retention of marginalized groups in STEM (9). Creating codes that outline behavior to ensure safe, inclusive, and equitable environments is one important avenue to discourage discrimination and harassment and promote an inclusive climate (24, 25).

A code of conduct, or code, is a statement providing clear guidelines for ethical behavior (24, 26). Codes guide productive and acceptable behavior when followed (25) and create an inclusive environment that welcomes all voices, especially those who are historically marginalized. In general, harassment is more likely to occur when environments lack strong standards of behavior against sexual misconduct (9). Furthermore, ambiguous codes of conduct can lead to unethical behaviors and inconsistent reporting (27). Effective codes clearly define and explain unacceptable behavior (ref. 27; see *SI Appendix, Table S1* for examples), which includes verbal and nonverbal harassment, intimidation, sexual misconduct, and identity-based discrimination (25). A code should clearly outline procedures for reporting violations so attendees know how to seek support immediately. Codes should encourage bystander reporting, which creates a culture of collective accountability and may alleviate the burden from targets of misconduct. Furthermore, targets of sexual harassment often do not lodge formal reports that lead to an investigation because of the fear of retaliation (28). Conferences should have a range of reporting options, including anonymous, formal, informal mechanisms, and implement an impartial report review system that remove barriers to addressing and reporting misconduct (29–34). Finally, enforced consequences for misconduct can deter poor behavior (27). Well-developed codes of conduct with these components help maintain high ethical standards and outwardly demonstrate that a conference values an inclusive, welcoming, and accessible environment (24).

Recent work has called for conferences to develop codes of conduct (25, 34) because they can improve the experience of historically marginalized groups. We sought to assess the prevalence and content of conference codes in the field of biology. We first determined the percent of conferences that had a published code. To our knowledge, this has not previously been quantified. Second, we assessed the quality of codes, specifically examining language regarding (i) sexual misconduct, (ii) identity-based discrimination, (iii) reporting procedures, and (iv) consequences for misconduct. Finally, we explored if conference size and geographic scope were related to having a code. We conclude by making recommendations for best practices on the adoption of conference codes.

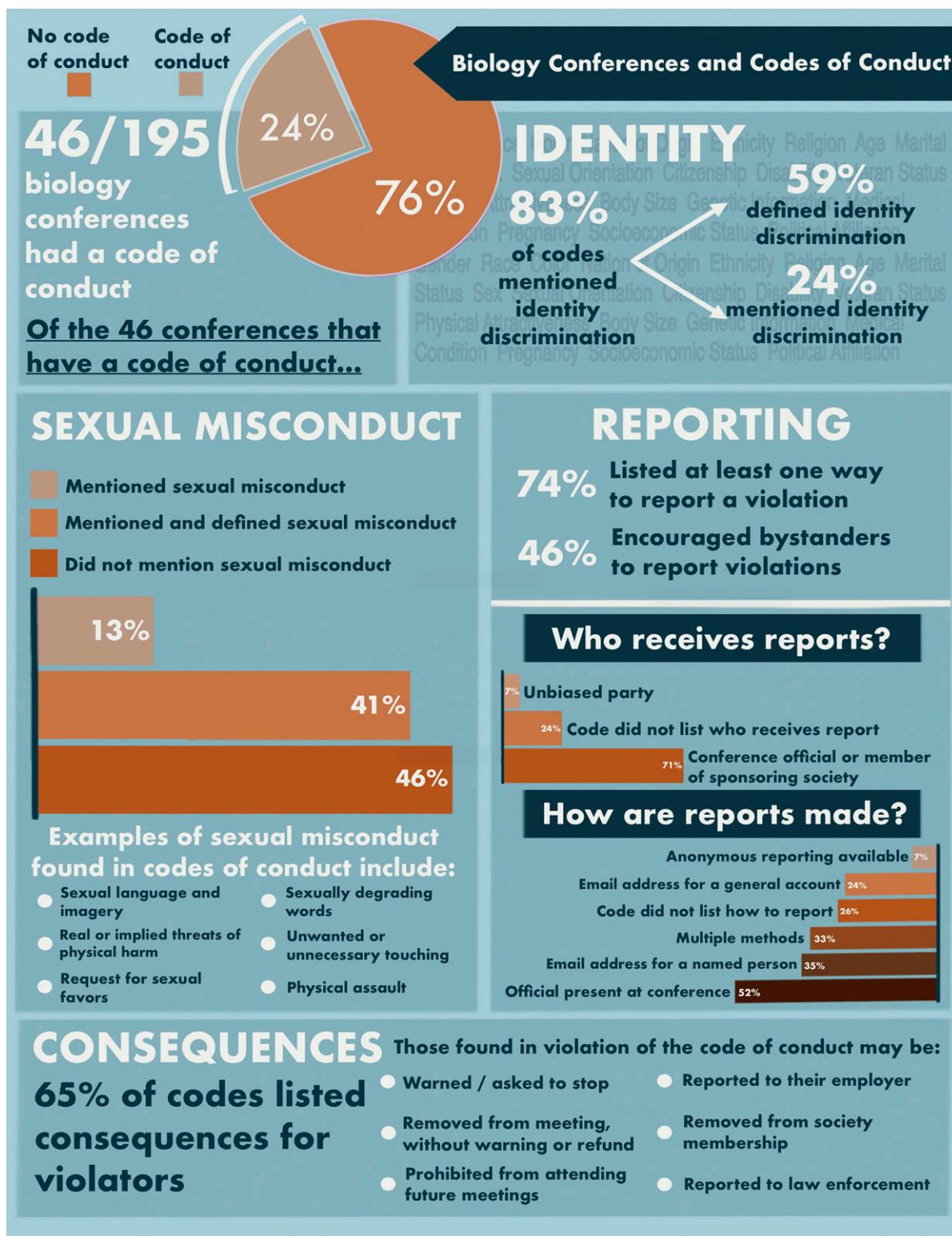


Fig. 1. Infographic summarizing data from biology codes of conduct. Percentage data are provided in *SI Appendix, Table S4*. Examples of identities, types of sexual misconduct, and consequences from violating codes are taken from codes of conduct in our data set (*SI Appendix, Table S1*). Figure courtesy of Katherine Andrews.

Results

We constructed a list of 195 Canadian and US biology conferences using systematic Internet searches and various lists of compiled conferences. Forty-six of the conferences identified (24%) had codes of conduct. Of the 41 Canadian conferences

represented, 80.5% lacked codes of conduct, and, of the 154 US conferences, 74.5% lacked codes. We conducted a content analysis on the 46 codes we obtained, and each coauthor quantitatively scored the codes of conduct. We determined if they referenced identity-based discrimination (specifically race and gender),

referenced sexual misconduct, instructed how to report misconduct, informed who receives reports, described consequences for violating codes, and encouraged bystander reporting (see *SI Appendix*, Table S2 for rubric and *SI Appendix*, Table S3 for data). Each code was independently scored by 4 reviewers on 6 variables (e.g., references to identity-based discrimination) by using a rubric. We found that reviewers disagreed when giving scores in 112 of 456 total scorings possible. This 24.5% scoring disagreement produced a Krippendorff's alpha of 0.745, indicating intermediate agreement on scoring codes of conduct.

Most codes that mentioned identity-based discrimination and sexual misconduct also included reporting information and listed consequences (Fig. 1 and *SI Appendix*, Table S4). However, most did not encourage bystanders reporting, nor did reports go to unbiased third parties (Fig. 1 and *SI Appendix*, Table S4). Most codes (65%) listed consequences for those who violated the code. Seventeen codes (37%) contained a “no retaliation” clause. Examples from the analyzed codes on identity-based discrimination, incivility and sexual misconduct, and consequences for violating the codes are found in *SI Appendix*, Table S1. None of the codes met all criteria (*SI Appendix*, Table S4).

We also determined whether size (number of attendees) or scope (international, national, or regional) influenced whether a conference had a code. We found estimates of the number of attendees for 96 conferences (range, 47–24,000 attendees, $\bar{x} = 1,347$, median = 420). The best model showed that larger conferences were more likely to have a code (estimate = 0.0004 ± 0.0002 SE; $P = 0.03$) and that national conferences were more likely to have a code compared with international and regional ones (-1.36 ± 0.67 SE; $P = 0.04$). This was true even when we removed an outlier conference with 24,000 participants.

Discussion

Science is making an important ideological shift toward enacting a commitment to diversity. Although representation is important, it will not solely eradicate cultural norms that perpetuate the exclusion of people of color of all or no genders and white women (35). We must actively pursue strategies that move toward equity in the culture and practices of science (36). The authors of the present study are a group of 2 black women and 3 white women who have personally experienced incivility, unwanted comments on personal appearance and behavior, and inappropriate personal contact at conferences. People from historically marginalized groups report experiencing incivility leading to exclusion in academic conferences (4, 6, 16, 37), and sexual harassment experiences are unlikely isolated (9). These experiences and our results motivate our recommendations that organizations create robust codes for academic conferences to increase inclusivity and promote equitable access for marginalized groups in science (9).

Codes of Conduct Survey. We located 46 codes of conduct after surveying 195 biology conferences (24%). If codes existed but were too difficult to locate, they are not useful (38) because they do not serve as a resource in moments of crisis. We cannot know why so many conferences lacked codes; however, it is possible that organizations without codes have received few complaints in the past, or that gender harassment—the most prevalent form of sexual harassment in academic organizations—is trivialized (9). Codes of conduct serve to discourage incivility and discrimination, and not having one burdens marginalized groups to create or find a system of support in the event of a crisis. We also found that national conferences with many attendees had a higher probability of having a code. Larger conferences may recognize the need to monitor conduct at conferences where staff/attendee ratios may require additional guidelines.

Having a code is a crucial basis for enforcement of positive behavioral norms. However, simply having a code is not enough to produce cultural change and inclusivity at conferences. Vague

codes lead to underreporting and inconsistent reporting of misconduct (27). We examined whether codes mentioned and defined the actions they are meant to discourage. Forty percent of codes failed to even mention sexual misconduct. Discouraging sexism is critical because sexism leads to low satisfaction with the field and conference, feelings of exclusion (6), and attrition in science (11, 39, 40). Additionally, 17% made no reference to identity-based discrimination on the basis race and gender. Defining and denouncing sexual misconduct and discrimination not only lays out expected behaviors (25, 34), but indicates whether a conference or organization values equity and inclusion.

To combat the loss of demographic diversity in biology, conferences should condemn predatory and discriminatory behaviors. The reporting infrastructure forms a critical component of addressing these issues and improving the safety of participants. Twenty-six percent of codes lacked information on where or how to submit reports. A small portion (6%) provided anonymous reporting, and another 6% sent reports to unbiased parties (e.g., human resource representatives, ombudspersons). Incidences of sexual misconduct and discrimination often go underreported as a result of fear of being blamed, ostracized, or humiliated, or of facing retaliation following reporting (28, 31, 41). Reports are not lodged when people observe or experience unethical behaviors and lack confidence in the trustworthiness of the reporting system (27). Furthermore, people are more likely to submit an anonymous report when reports go to impartial reviewers (33). We found that reports were mostly submitted via email or in person to a designated representative at the conference (70%), and, surprisingly, some reports could only be submitted to CEOs and/or presidents of the conference's participating societies. This is problematic and may lead to even lower rates of reporting because persons in power may not be viewed as impartial. Codes that provide a range of reporting methods, including anonymous reporting, allow targeted groups to choose a method they are comfortable with, increasing the likelihood of reporting (42).

We found that 47% of codes included language encouraging bystanders to report misconduct when they observed violations. Bystanders can intervene directly or indirectly (9, 43), and this speaks to the benefit of clear reporting procedures for everyone to engage in addressing misconduct. Encouraging others to support targets of misconduct helps alleviate the burden of marginalized people. Training will be beneficial to identify and address negative behaviors (9). Furthermore, witnesses of sexual misconduct experience negative impacts on their well-being (44). Conferences should cultivate a culture where it is everyone's responsibility to ensure a safe and collegial space for all attendees.

In addition to implementing thoughtful reporting mechanisms for targeted groups and bystanders, research shows that it is important to offer protections against retaliation. When women faced discrimination, concern about retaliation was a major factor discouraging them from speaking out against misconduct (28). In the present study, we found that 65% of codes included language detailing the consequences of misbehavior. These ranged from warnings to removal by law enforcement (Fig. 1). Clear consequences for gender harassment will reduce its occurrence (9). However, listing consequences is necessary but insufficient; following through on consequences is important, as people forgo reporting misconduct when they lack faith that they will be taken seriously or that the consequences will be enough (20, 31). It must be clear that codes apply to all conference attendees, regardless of seniority or celebrity (9). Further, 37% of codes provided language denouncing retaliation. An explicit (and enforceable) “no retaliation” clause is an important component of a code. Retaliation can be perceived as a limitation to a target's career options through informal communication networks and potential power differential between involved individuals (9). No codes detailed the reporting process or protections for bystanders, but a “no retaliation” clause is pertinent for both targets and

bystanders. Several codes of conduct linked retaliation for reporting harassment to reporting an incident in “bad faith” as unacceptable. Reporting misconduct is courageous, costly, and not done lightly. However, language of “bad faith” centers harassers over targets. This language may signal that reports are not taken seriously, which can further discourage reporting. We recommend removal of “bad faith” language.

Limitations of the Study. We chose methodologies to produce reliable and generalizable results, but there were some limitations to our study. First, we gathered conference information in a nonrandom fashion by searching lists because there is no single standardized list of all biology conferences in the United States and Canada to our knowledge. So, conferences that fit our criteria may be missing in our dataset. Additionally, we limited our search for codes of conduct to the Internet, so if organizations housed codes of conduct in other locations, we did not find them. Finally, our study concentrated on a limited range of social identities, notably people of color of all or no genders and white women. In general, we found a dearth in the literature on the experiences and support of women of color both in academia and at conferences that future research should address. Finally, we encourage research that utilizes intersectionality as a lens to better understand how systems of power interact to afford or constrain the agency of people with multiple, compounding marginalized identities (e.g., transgender black women, differently-abled Asian men) in scientific conferences.

Recommendations for Creating Substantive Codes of Conduct. Here, we present (inexhaustive) recommendations for conferences to show their commitment to equity, inclusion, and pursuits of civility at these engagements. These recommendations are grounded in an extensive review of the literature, the findings from this study, and insights from the authors’ lived experiences as women in academia.

Recommendations for Conferences. Conferences should make codes apparent and easily accessible online and on-site (e.g., acknowledge at registration or in opening remarks); center the needs and experiences of historically marginalized groups; explicitly state examples of inappropriate conduct; provide clear and anonymous formal and informal reporting channels; establish a team of diverse and impartial reviewers of misconduct reports; create a clear, credible, and transparent enforcement system with known consequences; provide protections against retaliation from the organization and the accused; improve the conference using reports and postconference surveys; and list reporting contacts on conference communications, such as official email correspondence, name badges, and program agendas.

Conclusions

Moving toward a conference culture that centers equity increases morale and a sense of belonging among scholars in science and enhances the quality of scholarship produced by the field. Ideally, quality codes of conduct can be part of comprehensive sociocultural change in organizations and indicate an organization’s values. When used intentionally and responsibly, codes of conduct make essential contributions toward equity in science. This research provides an impetus for conferences to create and reevaluate codes of conduct to enhance inclusion for all.

Materials and Methods

Generating the Conference List. We first determined the percentage of biology conferences with a code by developing a list of biology conferences held in the United States and Canada in 2018. We compiled information from multiple sources for a broad list. We compiled a conference list between March 4, 2018, and June 14, 2018. We used multiple compiled conference lists, and we used a list of 180 ecology, evolution, and conservation journals to search if they had conferences (*SI Appendix, Table S5*). Next, to provide fuller

coverage of biology topics, we used the following search terms in Google: “US and Canada conferences” with “agriculture,” “aquatic,” “bacteria,” “biology,” “bird,” “carnivore,” “ecosystem,” “entomology,” “fish,” “forestry,” “fungi,” “genetics,” “invasive species,” “marine biology,” “microbiology,” “paleontology,” “plant,” “population biology,” “systematics,” or “vertebrate.” We excluded conferences that appeared to be for-profit with aggressive and/or misleading promotion and recruitment. These procedures produced a substantial conference list (*SI Appendix, Table S3*). Although it may not represent all relevant conferences, these methods can readily be applied to more fields in future research. We found 212 conferences; some were run by the same governing organization and had the same code. We removed these duplicates, so each governing organization had 1 representative conference, for a total of 195 conferences.

Identifying Codes of Conduct. We searched the Web site of each conference to identify (i) if there was a code listed (yes or no); (ii) conference size (number of participants); and (iii) the geographic scope of a conference (regional, national, or international). To find the code, we searched the full conference Web site but used the search bar (if present) to search “code of conduct.” If we did not find a code on the conference Web site, we entered the name of the conference and “code of conduct” into Google search. If these procedures yielded no code, we recorded that the conference did not have a code. These conferences may have codes of conduct; however, if a code is not easily accessible online, this greatly reduces its ability to serve marginalized people and promote equity (38). We archived the text of all codes we found for the next steps of our analysis.

Analyzing Codes of Conduct. We conducted a qualitative content analysis of the codes to determine whether they: (i) referenced identity-based discrimination (specifically gender and race); (ii) referenced sexual misconduct; (iii) instructed on how to report misconduct; (iv) informed who receives reports; (v) described consequences for violating the code; and (vi) encouraged bystander reporting. To address these points, we used a standard rubric to evaluate the codes. To assess references to identity-based discrimination, we evaluated if the code was explicit about identity discrimination (0, no mention of it in the code; 1, the code explicitly discourages identity-based discrimination; and 2, the code explicitly defines and discourages identity-based discrimination). To assess references to sexual misconduct, we asked if the code was explicit about sexual misconduct (0, no mention of it in the code; 1, the code explicitly discourages sexual misconduct; and 2, the code defines and explicitly discourages sexual misconduct).

We had 2 questions to assess reporting ([iii] and [iv] in the previous list). “Where reports go” examines who received reports (0, nothing listed on how to report; 1, reports go to a member of the organization sponsoring the conference; and 2, reports go to an unbiased party). “How to report misconduct” documented the means of reporting (0, no way listed to submit reports; 1, an email address is to a general account; 2, email address is to a named person; 3, reports can be submitted to a person at the conference; and 4, anonymous reporting). For these 2 questions, multiple values were acceptable; for example, organizations may provide an email address and a point person at the conference to report issues to. We also asked whether codes encouraged bystander reporting and reported consequences for misconduct (with yes and no options for both). Finally, we conducted a text search of the codes of conduct for the term “retaliat*” to identify codes of conduct that had a “no retaliation” clause, indicating that individuals will not face negative consequences for reporting a violation of the code. After finding the search term, we read through the code to confirm the presence of a “no retaliation” clause.

Each code was evaluated independently by 3 coauthors for these variables. Next, we calculated intercoder reliability because each code was evaluated independently, language was not standardized across codes, and we needed to account for differences in interpretation among reviewers. We used Krippendorff’s alpha (45), a measure of reliability among multiple coders for content analysis, using the package irr (46) with the “nominal” option in R (47, 48). Alpha values range from 1.00 for “perfect reliability” (i.e., complete matches between all coders) to 0 representing “the absence of reliability” (49). Disagreement arose when one reviewer interpreted a code differently from another. In this case, we resolved most discrepancies by using majority rule. There were 12 instances in which all reviewers disagreed, which were reevaluated by 4 coauthors, with the final evaluation selected by majority rule of the larger group. We compiled data and calculated the percentage of each conference that had a code, and, of those that had a code, the percent that had each of the aforementioned components. The data analyzed here are available in the *SI Appendix (SI Appendix, Tables S2 and S3)*. To visualize

the data, we created an alluvial diagram by using ggalluvial (50) in R (51) (Appendix, Fig. S1).

Data Analysis. To determine whether conference size or scope (international, national, or regional) influenced whether a conference had a code, we used general linear models implemented in the package lme4 (51) with code presence (yes or no) as a binary response variable. We used diagnostic plots using SjPlot

(52) to evaluate model fit and to visualize models. For these analyses, we used only conferences with a reported size.

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- P. Schilpzand, I. E. De Pater, A. Erez, Workplace incivility: A review of the literature and agenda for future research. *J. Organ. Behav.* **37**, 557–588 (2016).
- L. M. Andersson, C. M. Pearson, Tit for tat? The spiraling effect of incivility in the workplace. *Acad. Manage. Rev.* **24**, 452–471 (1999).
- D. S. Chiaburu, D. A. Harrison, Do peers make the place? Conceptual synthesis and meta-analysis of coworker effects on perceptions, attitudes, OCBs, and performance. *J. Appl. Psychol.* **93**, 1082–1103 (2008).
- J. Biggs, P. H. Hawley, M. Biernat, The academic conference as a chilly climate for women: Effects of gender representation on experiences of sexism, coping responses, and career intentions. *Sex Roles* **78**, 394–408 (2018).
- N. A. Bowling, T. A. Beehr, Workplace harassment from the victim's perspective: A theoretical model and meta-analysis. *J. Appl. Psychol.* **91**, 998–1012 (2006).
- I. H. Settles, R. C. O'Connor, Incivility at academic conferences: Gender differences and the mediating role of climate. *Sex Roles* **71**, 71–82 (2014).
- R. S. Dalal, A meta-analysis of the relationship between organizational citizenship behavior and counterproductive work behavior. *J. Appl. Psychol.* **90**, 1241–1255 (2005).
- R. Ilies, N. Hauserman, S. Schwochou, J. Stibal, Reported incidence rates of work-related sexual harassment in the United States: Using meta-analysis to explain reported rate disparities. *Pers. Psychol.* **56**, 607–631 (2003).
- National Academies of Sciences, Engineering, and Medicine, *Sexual Harassment of Women: Climate, Culture, and Consequences in Academic Sciences, Engineering, and Medicine* (The National Academies Press, Washington, DC, 2018).
- L. F. Fitzgerald, M. J. Gelfand, F. Drasgow, Measuring sexual harassment: Theoretical and psychometric advances. *Basic Appl. Soc. Psych.* **17**, 425–445 (1995).
- V. E. Sojo, R. E. Wood, A. E. Genat, Harmful workplace experiences and women's occupational well-being: A meta-analysis. *Psychol. Women Q.* **40**, 10–40 (2016).
- M. A. Armstrong, J. Jovanovic, Starting at the crossroads: Intersectional approaches to institutionally supporting underrepresented minority women STEM faculty. *J. Women Minor. Sci. Eng.* **21**, 141–157 (2015).
- K. B. Clancy, K. M. Lee, E. M. Rodgers, C. Richey, Double jeopardy in astronomy and planetary science: Women of color face greater risks of gendered and racial harassment. *J. Geophys. Res. Planets* **122**, 1610–1623 (2017).
- D. Rios, A. J. Stewart, Insider and outsider-within standpoints: The experiences of diverse faculty in science and engineering fields. *J. Women Minor. Sci. Eng.* **21**, 295–322 (2015).
- L. A. Isbell, T. P. Young, A. H. Harcourt, Stag parties linger: Continued gender bias in a female-rich scientific discipline. *PLoS One* **7**, e49682 (2012).
- L. King et al., Diversity in geoscience: Participation, behaviour, and the division of scientific labour at a Canadian geoscience conference. *Facets* **3**, 415–440 (2018).
- C. F. Karpowitz, T. Mendelberg, L. Shaker, Gender inequality in deliberative participation. *Am. Polit. Sci. Rev.* **106**, 533–547 (2012).
- A. Hinsley, W. J. Sutherland, A. Johnston, Men ask more questions than women at a scientific conference. *PLoS One* **12**, e0185534 (2017).
- S. Custer, "Twitter responses show sexual harassment is rife at academic conferences." *Times Higher Education* (2019). <https://www.timeshighereducation.com/blog/twitter-responses-show-sexual-harassment-rife-academic-conferences>. Accessed 21 May 2019.
- S. Mervosh, "Turtle researcher's award rescinded after he uses racy photos of women in presentation." *The New York Times* (2018). <https://www.nytimes.com/2018/07/16/us/turtle-researcher-women-bikinis-richard-vogt.html>. Accessed 16 July 2018.
- B. S. Dansky, D. G. Kilpatrick, "Effects of sexual harassment" in *Sexual Harassment: Theory, Research, and Treatment*, W. O'Donohue, Ed. (Allyn and Bacon, Boston, 1997).
- E. Pettit, "After racist incidents mire a conference, classicists point to bigger problems." *The Chronicle of Higher Education* (2019). <https://www.chronicle.com/article/After-Racist-Incidents-Mire-a/245430>. Accessed 7 January 2019.
- C. M. Steele, A threat in the air. How stereotypes shape intellectual identity and performance. *Am. Psychol.* **52**, 613–629 (1997).
- J. S. Adams, A. Tashchian, T. H. Shore, Codes of ethics as signals for ethical behavior. *J. Bus. Ethics* **29**, 199–211 (2001).
- B. Favaro et al., Your science conference should have a code of conduct. *Front. Mar. Sci.* **3**, 103 (2016).
- G. Wood, M. Rimmer, Codes of ethics: What are they really and what should they be? *Int. J. Value Based Manag.* **16**, 181–195 (2003).
- D. Nitsch, M. Baetz, J. C. Hughes, Why code of conduct violations go unreported: A conceptual framework to guide intervention and future research. *J. Bus. Ethics* **57**, 327–341 (2005).
- A. Lawton, Operating in an empirical vacuum: The Ellerth and Faragher affirmative defense. *Columbia J. Gen. Law* **13**, 197–278 (2004).
- V. J. Magley, Coping with sexual harassment: Reconceptualizing women's resistance. *J. Pers. Soc. Psychol.* **83**, 930–946 (2002).
- S. A. Wasti, L. M. Cortina, Coping in context: Sociocultural determinants of responses to sexual harassment. *J. Pers. Soc. Psychol.* **83**, 394–405 (2002).
- L. M. Cortina, J. L. Berdahl, "Sexual harassment in organizations: A decade of research in review" in *Handbook of Organizational Behavior*, J. Barling, C. L. Cooper, Eds (Sage, Thousand Oaks, CA, 2008), vol. **1**, pp. 469–497.
- N. T. Buchanan, I. H. Settles, A. T. Hall, R. C. O'Connor, A review of organizational strategies for reducing sexual harassment: Insights from the U.S. military. *J. Soc. Issues* **70**, 687–702 (2014).
- J. Gao, R. Greenberg, B. Wong-On-Wing, Whistleblowing intentions of lower-level employees: The effect of reporting channel, bystanders, and wrongdoer power status. *J. Bus. Ethics* **126**, 85–99 (2015).
- E. Parsons, So you think you want to run an environmental conservation meeting? Advice on the slings and arrows of outrageous fortune that accompany academic conference planning. *J. Environ. Stud. Sci.* **5**, 735–744 (2015).
- D. Solorzano, M. Ceja, T. Yosso, Critical race theory, racial microaggressions, and campus racial climate: The experiences of African American college students. *J. Negro Educ.* **69**, 60–73 (2000).
- C. Puritty et al., Without inclusion, diversity initiatives may not be enough. *Science* **357**, 1101–1102 (2017).
- C. Harrison, K. D. Tanner, Language matters: Considering microaggressions in science. *CBE Life Sci. Educ.* **17**, fe4 (2018).
- D. A. Potvin, E. Burdfield-Steel, J. M. Potvin, S. M. Heap, Diversity begets diversity: A global perspective on gender equality in scientific society leadership. *PLoS One* **13**, e0197280 (2018).
- J. Blickenstaff, Women and science careers: Leaky pipeline or gender filter? *Gend. Educ.* **17**, 369–386 (2005).
- L. F. Fitzgerald, F. Drasgow, C. L. Hulin, M. J. Gelfand, V. J. Magley, Antecedents and consequences of sexual harassment in organizations: A test of an integrated model. *J. Appl. Psychol.* **82**, 578–589 (1997).
- Department of Justice, Bureau of Justice Statistics, "Female victims of sexual violence, 1994-2010," Report NCJ 240655 (Office of Justice Programs, Bureau of Justice Statistics, Washington, DC, 2013).
- C. Stangor, J. K. Swim, K. L. Van Allen, G. B. Sechrist, Reporting discrimination in public and private contexts. *J. Pers. Soc. Psychol.* **82**, 69–74 (2002).
- K. J. Holland, L. M. Cortina, "Sexual harassment: Undermining the wellbeing of working women" in *Handbook on Well-Being of Working Women*, M. L. Connerley, J. Wu, Eds (Springer, New York, 2016), pp. 83–101.
- R. T. Hitlan, K. T. Schneider, B. M. Walsh, Upsetting behavior: Reactions to personal and bystander sexual harassment experiences. *Sex Roles* **55**, 187–195 (2006).
- K. Krippendorff, *Computing Krippendorff's Alpha-Reliability* (Annenberg School of Communication: University of Pennsylvania, 2011).
- M. Gamer, J. Lemon, P. Singh, Package 'irr'. Various Coefficients of Interrater Reliability and Agreement (Version 0.84.1, 2012).
- RCoreTeam, R: A Language and Environment for Statistical Computing (Version 3.5.0, R Foundation for Statistical Computing, Vienna, Austria, 2018).
- RStudioTeam, RStudio: Integrated Development for R. (Version 3.5.0, RStudio, Boston, MA, 2016).
- A. F. Hayes, K. Krippendorff, Answering the call for a standard reliability measure for coding data. *Commun. Methods Meas.* **1**, 77–89 (2007).
- J. C. Brunson, ggalluvial: Alluvial Diagrams in 'ggplot2' (R Package Version 0.9.0, 2018).
- D. Bates, M. Mächler, B. Bolker, S. Walker, Fitting linear mixed-effects models using lme4. *J. Stat. Softw.* **67**, 1–48 (2015).
- D. Lüdtke, sjPlot: Data Visualization for Statistics in Social Science, Version R Package Version 1.8.2. <http://CRAN.R-project.org/package=sjPlot>. Accessed 30 August 2018.
- K. J. Holland, V. C. Rabelo, L. Cortina, See something, do something: Predicting sexual assault bystander intentions in the US military. *Am. J. Community Psychol.* **58**, 3–15 (2016).
- Center for Urban Education, *Institute on Equity in Faculty Hiring at Community Colleges Toolkit* (Rossier School of Education, University of Southern California, Los Angeles, CA, 2017).
- L. M. Cortina, Unseen injustice: Incivility as modern discrimination in organizations. *Acad. Manage. Rev.* **33**, 55–75 (2008).
- K. Crenshaw, "Demarginalizing the intersection of race and sex: A black feminist critique of antidiscrimination doctrine, feminist theory, and antiracist politics [1989]" in *Feminist Legal Theory*, K. T. Bartlett, R. Kennedy, Eds (Routledge, Abingdon, United Kingdom, 2018), pp. 57–80.
- D. W. Carbado, K. W. Crenshaw, V. M. Mays, B. Tomlinson, Intersectionality: Mapping the movements of a theory. *Du Bois Rev.* **10**, 303–312 (2013).
- L. Bowleg, When Black+ lesbian+ woman ≠ Black lesbian woman: The methodological challenges of qualitative and quantitative intersectionality research. *Sex Roles* **59**, 312–325 (2008).