SEXUAL HARASSMENT OF WOMEN:
Climate, Culture, and Consequences in Academic Sciences, Engineering, and Medicine

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Findings, Conclusions, and Recommendations

Preventing and effectively addressing sexual harassment of women in colleges and universities is a significant challenge, but we are optimistic that academic institutions can meet that challenge—if they demonstrate the will to do so. This is because the research shows what will work to prevent sexual harassment and why it will work. A systemwide change to the culture and climate in our nation's colleges and universities can stop the pattern of harassing behavior from impacting the next generation of women entering science, engineering, and medicine.

Changing the current culture and climate requires addressing all forms of sexual harassment, not just the most egregious cases; moving beyond legal compliance; supporting targets when they come forward; improving transparency and accountability; diffusing the power structure between faculty and trainees; and revising organizational systems and structures to value diversity, inclusion, and respect. Leaders at every level within academia will be needed to initiate these changes and to establish and maintain the culture and norms. However, to succeed in making these changes, all members of our nation's college campuses—students, faculty, staff, and administrators—will need to assume responsibility for promoting a civil and respectful environment. It is everyone's responsibility to stop sexual harassment.

In this spirit of optimism, we offer the following compilation of the report's findings, conclusions, and recommendations.

FINDINGS AND CONCLUSIONS

Chapter 2: Sexual Harassment Research

1. **Sexual harassment is a form of discrimination that consists of three types of harassing behavior**: (1) **gender harassment** (verbal and nonverbal behaviors that convey hostility, objectification, exclusion, or second-class status about members of one gender); (2) **unwanted sexual attention** (unwelcome verbal or physical sexual advances, which can include assault); and (3) **sexual coercion** (when favorable professional or educational treatment is conditioned on sexual activity). *The distinctions between the types of harassment are important, particularly because many people do not realize that gender harassment is a form of sexual harassment.*

2. **Sexually harassing behavior can be either *direct* (targeted at an individual) or *ambient* (a general level of sexual harassment in an environment) and is harmful in both cases.** It is considered illegal when it creates a *hostile environment* (gender harassment or unwanted sexual attention that is "severe or pervasive" enough to alter the conditions of employment, interfere with one's work performance, or impede one's ability to get an education) or when it is *quid pro quo sexual harassment* (when favorable professional or educational treatment is conditioned on sexual activity).

3. **There are reliable scientific methods for determining the prevalence of sexual harassment.** To measure the incidence of sexual harassment, surveys should follow the best practices that have emerged from the science of sexual harassment. This includes use of the Sexual Experiences Questionnaire, the most widely used and well-validated instrument available for measuring sexual harassment; assessment of specific behaviors without requiring the respondent to label the behaviors "sexual harassment"; focus on first-hand experience or observation of behavior (rather than rumor or hearsay); and focus on the recent past (1–2 years, to avoid problems of memory decay). Relying on the number of official reports of sexual harassment made to an organization is not an accurate method for determining the prevalence.

4. **Some surveys underreport the incidence of sexual harassment because they have not followed standard and valid practices for survey research and sexual harassment research.**

5. **While properly conducted surveys are the best methods for estimating the prevalence of sexual harassment, other salient aspects of sexual harassment and its consequences can be examined using other research methods,** such as behavioral laboratory experiments, interviews, case studies, ethnographies, and legal research. Such studies can provide information about the presence and nature of sexually harassing behavior in an organization, how it develops and continues (and influences the organizational climate), and how it attenuates or amplifies outcomes from sexual harassment.

6. **Sexual harassment remains a persistent problem in the workplace at large**. Across workplaces, five common characteristics emerge:

    a. **Women experience sexual harassment more often than men do**.

    b. **Gender harassment (e.g., behaviors that communicate that women do not belong or do not merit respect) is by far the most common type of sexual harassment.** When an environment is pervaded by gender harassment, unwanted sexual attention and sexual coercion become more likely to occur—in part because unwanted sexual attention and sexual coercion are almost never experienced by women without simultaneously experiencing gender harassment.

    c. **Men are more likely than women to commit sexual harassment**.

    d. **Coworkers and peers more often commit sexual harassment than do superiors**.

    e. **Sexually harassing behaviors are not typically isolated incidents**; rather, they are a series or pattern of sometimes escalating incidents and behaviors.

7. **Research that does not include the study of women of color and sexual- and gender-minority women presents an incomplete picture of women's experiences of sexual harassment.** The preliminary research on the experiences of women of color, and sexual- and gender-minority women reveals that their experiences of sexual harassment can differ from the larger population of cisgender, straight, white women.

    a. **Women of color experience more harassment** (sexual, racial/ethnic, or combination of the two) than white women, white men, and men of color experience. Women of color often experience sexual harassment that includes racial harassment.

    b. **Sexual- and gender-minority people experience more sexual harassment** than heterosexual women experience.

8. **The two characteristics of environments most associated with higher rates of sexual harassment are (a) male-dominated gender ratios and leadership and (b) an organizational climate that communicates tolerance of sexual harassment** (e.g., leadership that fails to take complaints seriously, fails to sanction perpetrators, or fails to protect complainants from retaliation).

9. **Organizational climate is, by far, the greatest predictor of the occurrence of sexual harassment, and ameliorating it can prevent people from sexually harassing others.** A person more likely to engage in harassing behaviors is significantly less likely to do so in an environment that does not support harassing behaviors and/or has strong, clear, transparent consequences for these behaviors.

Chapter 3: Sexual Harassment in Academic Science, Engineering, and Medicine

1. **Academic science, engineering, and medicine exhibit at least four characteristics that create higher levels of risk for sexual harassment to occur**:
   a. **Male-dominated environment**, with men in positions of power and authority.
   b. **Organizational tolerance for sexually harassing behavior** (e.g., failing to take complaints seriously, failing to sanction perpetrators, or failing to protect complainants from retaliation).
   c. **Hierarchical and dependent relationships between faculty and their trainees** (e.g., students, postdoctoral fellows, residents).
   d. **Isolating environments** (e.g., labs, field sites, and hospitals) in which faculty and trainees spend considerable time.
2. **Sexual harassment is common in academic science, engineering, and medicine**. Each type of sexual harassment occurs within academic science, engineering, and medicine at similar rates to other workplaces.
   a. More than 50 percent of women faculty and staff and 20–50 percent of women students encounter or experience sexually harassing conduct in academia.
   b. Women students in academic medicine experience more frequent gender harassment perpetrated by faculty/staff than women students in science and engineering.
   c. Women students/trainees encounter or experience sexual harassment perpetrated by faculty/staff and also by other students/trainees.
   d. Women faculty encounter or experience sexual harassment perpetrated by other faculty/staff and also by students/trainees.
   e. Women students, trainees, and faculty in academic medical centers experience sexual harassment by patients and patients' families in addition to the harassment they experience from colleagues and those in leadership positions.

Chapter 4: Outcomes of Sexual Harassment

1. **Sexual harassment undermines women's professional and educational attainment and mental and physical health**. Negative outcomes are evident across lines of industry sector, occupation, race, ethnicity, and social class, and even when women do not label their experiences as "sexual harassment."
   a. When women experience sexual harassment in the workplace, the professional outcomes include declines in job satisfaction; withdrawal from their organization (i.e., distancing themselves from the work either physically or mentally without actually quitting, having thoughts or

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intentions of leaving their job, and actually leaving their job); declines in organizational commitment (i.e., feeling disillusioned or angry with the organization); increases in job stress; and declines in productivity or performance.

b. When students experience sexual harassment, the educational outcomes include declines in motivation to attend class, greater truancy, dropping classes, paying less attention in class, receiving lower grades, changing advisors, changing majors, and transferring to another educational institution, or dropping out.

2. **Gender harassment has adverse effects.** Gender harassment that is severe or occurs frequently over a period of time can result in the same level of negative professional and psychological outcomes as isolated instances of sexual coercion. Gender harassment, often considered a "lesser," more inconsequential form of sexual harassment, cannot be dismissed when present in an organization.

3. **The greater the frequency, intensity, and duration of sexually harassing behaviors, the more women report symptoms of depression, stress, and anxiety, and generally negative effects on psychological well-being**.

4. **The more women are sexually harassed in an environment, the more they think about leaving, and end up leaving as a result of the sexual harassment**.

5. **The more power a perpetrator has over the target, the greater the impacts and negative consequences experienced by the target**.

6. **For women of color, preliminary research shows that when the sexual harassment occurs simultaneously with other types of harassment (i.e., racial harassment), the experiences can have more severe consequences for them**.

7. **Sexual harassment has adverse effects that not only affect the targets of harassment but also bystanders, coworkers, workgroups, and entire organizations**.

8. **Women cope with sexual harassment in a variety of ways, most often by ignoring or appeasing the harasser and seeking social support.**

9. **The least common response for women is to formally report the sexually harassing experience**. For many, this is due to an accurate perception that they may experience retaliation or other negative outcomes associated with their personal and professional lives.

10. **Four aspects of the science, engineering, and medicine academic workplace tend to silence targets as well as limit career opportunities for both targets and bystanders:**

    a. **The dependence on advisors and mentors** for career advancement.

    b. **The system of meritocracy** that does not account for the declines in productivity and morale as a result of sexual harassment.

    c. **The "macho" culture** in some fields.

    d.   **The informal communication network**, in which rumors and accusations are spread within and across specialized programs and fields.

11. **The cumulative effect of sexual harassment is significant damage to research integrity and a costly loss of talent in academic science, engineering, and medicine.** Women faculty in science, engineering, and medicine who experience sexual harassment report three common professional outcomes: stepping down from leadership opportunities to avoid the perpetrator, leaving their institution, and leaving their field altogether.

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Chapter 5: Existing Legal and Policy Mechanisms
for Addressing Sexual Harassment

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1. **The legal system alone is not an adequate mechanism for reducing or preventing sexual harassment**. Adherence to legal requirements is necessary but not sufficient to drive the change needed to address sexual harassment.

    a.   An overly legalistic approach to the problem of sexual harassment is likely to misjudge the true nature and scope of the problem. Sexual harassment law and policy development has focused narrowly on the sexualized and coercive forms of sexual harassment, not on the gender harassment type that research has identified as much more prevalent and at times equally harmful.

    b.   Much of the sexual harassment that women experience and that damages women and their careers in science, engineering, and medicine does not meet the legal criteria of illegal discrimination under current law.

2. **Judicial interpretation of Title IX and Title VII has incentivized organizations to create policies, procedures, and training on sexual harassment that focus on symbolic compliance with current law and avoiding liability, and not on preventing sexual harassment**.

    a.   Private entities, such as companies and private universities, are legally allowed to keep their internal policies and procedures—and their research on those policies and procedures—confidential, thereby limiting the research that can be done on effective policies for preventing and handling sexual harassment.

    b.   Various legal policies, and the interpretation of such policies, enable academic institutions to maintain secrecy and/or confidentiality regarding outcomes of sexual harassment investigations, arbitration, and settlement agreements. Colleagues may also hesitate to warn one another about sexual harassment concerns in the hiring or promotion context out of fear of legal repercussions (i.e., being sued for defamation and/or discrimination). This lack of transparency in the adjudication process within organizations can cover up sexual harassment perpetrated by repeat or serial harassers. This creates additional barriers to researchers

and others studying harassment claims and outcomes, and is also a barrier to determining the effectiveness of policies and procedures.

3. **Title IX, Title VII, and case law reflect the inaccurate assumption that a target of sexual harassment will promptly report the harassment without worrying about retaliation.** Effectively addressing sexual harassment through the law, through institutional policies or procedures, or through cultural change, requires taking into account that targets of sexual harassment are unlikely to report harassment and often face retaliation for reporting (despite this being illegal).

4. **Fears of legal liability may prevent institutions from being willing to effectively evaluate training for its measurable impact on reducing harassment.** Educating employees via sexual harassment training is commonly implemented as a central component of demonstrating to courts that institutions have "exercised reasonable care to prevent and correct promptly any sexually harassing behavior." However, research has not demonstrated that such training prevents sexual harassment. Thus, if institutions evaluated their training programs, they would likely find them to be ineffective, which, in turn, could raise fears within institutions of their risk for liability because they would then knowingly not be exercising reasonable care.

5. **Holding individuals and institutions responsible for sexual harassment and demonstrating that sexual harassment is a serious issue requires U.S. federal funding agencies to be aware when principal investigators, co-principal investigators, and grant personnel have violated sexual harassment policies.** It is unclear whether and how federal agencies will take action beyond the requirements of Title IX and Title VII to ensure that federal grants, composed of taxpayers' dollars, are not supporting research, academic institutions, or programs in which sexual harassment is ongoing and not being addressed. Federal science agencies usually indicate (e.g., in requests for proposals or other announcements) that they have a "no-tolerance" policy for sexual harassment. In general, federal agencies rely on the grantee institutions to investigate and follow through on Title IX violations. By not assessing and addressing the role of institutions and professional organizations in enabling individual sexual harassers, federal agencies may be perpetuating the problem of sexual harassment.

6. **To address the effect sexual harassment is having on the integrity of research, parts of the federal government and several professional societies are beginning to focus more broadly on policies about research integrity and on codes of ethics rather than on the narrow definition of research misconduct.** A powerful incentive for change may be missed if sexual harassment is not considered equally important as research misconduct, in terms of its effect on the integrity of research.

Chapter 6: Changing the Culture and Climate in Higher Education

1. **A systemwide change to the culture and climate in higher education is required to prevent and effectively address all three forms of sexual harassment**. Despite significant attention in recent years, there is no evidence to suggest that current policies, procedures, and approaches have resulted in a significant reduction in sexual harassment. It is time to consider approaches that address the systems, cultures, and climates that enable sexual harassment to perpetuate.

2. **Strong and effective leaders at all levels in the organization are required to make the systemwide changes to climate and culture in higher education**. The leadership of the organization—at every level—plays a significant role in establishing and maintaining an organization's culture and norms. However, leaders in academic institutions rarely have leadership training to thoughtfully address culture and climate issues, and the leadership training that exists is often of poor quality.

3. **Environments with organizational systems and structures that value and support diversity, inclusion, and respect are environments where sexual harassment behaviors are less likely to occur**. Sexual harassment often takes place against a backdrop of incivility, or in other words, in an environment of generalized disrespect. A culture that values respect and civility is one that can support policies and procedures to prevent and punish sexual harassment, while a culture that does not will counteract efforts to address sexual harassment.

   a. Evidence-based, effective intervention strategies are available for enhancing gender diversity in hiring practices.

   b. Focusing evaluation and reward structures on cooperation and collegiality rather than solely on individual-level teaching and research performance metrics could have a significant impact on improving the environment in academia.

   c. Evidence-based, effective intervention strategies are available for raising levels of interpersonal civility and respect in workgroups and teams.

   d. An organization that is committed to improving organizational climate must address issues of bias in academia. Training to reduce personal bias can cause larger-scale changes in departmental behaviors in an academic setting.

   e. Skills-based training that centers on bystander intervention promotes a culture of support, not one of silence. By calling out negative behaviors on the spot, all members of an academic community are helping to create a culture where abusive behavior is seen as an aberration, not as the norm.

4. **Reducing hierarchical power structures and diffusing power more broadly among faculty and trainees can reduce the risk of sexual ha-**

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rassment. Departments and institutions could take the following approaches for diffusing power:

a. Make use of egalitarian leadership styles that recognize that people at all levels of experience and expertise have important insights to offer.

b. Adopt mentoring networks or committee-based advising that allows for a diversity of potential pathways for advice, funding, support, and informal reporting of harassment.

c. Develop ways the research funding can be provided to the trainee rather than just the principal investigator.

d. Take on the responsibility for preserving the potential work of the research team and trainees by redistributing the funding if a principal investigator cannot continue the work because he/she has created a climate that fosters sexual harassment and guaranteeing funding to trainees if the institution or a funder pulls funding from the principal investigator because of sexual harassment.

5. **Systems and policies that support targets of sexual harassment and provide options for informal and formal reporting can reduce the reluctance to report harassment as well as reduce the harm sexual harassment can cause the target.**

a. Orienting students, trainees, faculty, and staff, at all levels, to the academic institution's culture and its policies and procedures for handling sexual harassment can be an important piece of establishing a climate that demonstrates sexual harassment is not tolerated and targets will be supported.

b. Institutions could build systems of response that empower targets by providing alternative and less formal means of accessing support services, recording information, and reporting incidents without fear of retaliation.

c. Supporting student targets also includes helping them to manage their education and training over the long term.

6. **Confidentiality and nondisclosure agreements isolate sexual harassment targets by limiting their ability to speak with others about their experiences and can serve to shield perpetrators who have harassed people repeatedly.**

7. **Transparency and accountability are crucial elements of effective sexual harassment policies**. Systems in which prohibitions against unacceptable behaviors are clear and which hold members of the community accountable for meeting the behavioral and cultural expectations established by leadership have lower rates of sexual harassment.

a. Key components of clear anti-harassment policies are that they are quickly and easily digested (i.e., using one-page flyers or infographics and not in legally dense language) and that they clearly state that people will be held accountable for violating the policy.

b. A range of progressive/escalating disciplinary consequences (such as counseling, changes in work responsibilities, reductions in pay/benefits, and suspension or dismissal) that corresponds to the severity and frequency of the misconduct has the potential of correcting behavior before it escalates and without significantly disrupting an academic program.

c. In an effort to change behavior and improve the climate, it may also be appropriate for institutions to undertake some rehabilitation-focused measures, even though these may not be sanctions per se.

d. For the people in an institution to understand that the institution does not tolerate sexual harassment, it must show that it does investigate and then hold perpetrators accountable in a reasonable timeframe. Institutions can anonymize the basic information and provide regular reports that convey how many reports are being investigated and what the outcomes are from the investigation.

e. An approach for improving transparency and demonstrating that the institution takes sexual harassment seriously is to encourage internal review of its policies, procedures, and interventions for addressing sexual harassment, and to have interactive dialogues with members of their campus community (especially expert researchers on these topics) around ways to improve the culture and climate and change behavior.

8. **While sexual harassment training can be useful in improving knowledge of policies and of behaviors that constitute sexual harassment, it has not been demonstrated to prevent sexual harassment or change people's behaviors or beliefs, and some training shows a *negative* effect (or impact).** Sexual harassment training efforts need to be evaluated and studied to determine their efficacy and indicate where they need to be changed or improved, particularly the types of training that show *negative* effects.

9. **To the extent that the training literature provides broad guidelines for creating impactful training that can change climate and behavior, they include the following:**
   a. **Cater training to specific populations**; in academia this would include students, postdoctoral fellows, staff, faculty, and those in leadership.
   b. **Attend to the institutional motivation for training**, which can impact the effectiveness of the training; for instance, compliance-based approaches have limited positive impact.
   c. **Conduct training using live qualified trainers and offer trainees specific examples of inappropriate conduct**. We note that a great deal of sexual harassment training today is offered via an online mini-course or the viewing of a short video.
   d. **Describe standards of behavior clearly and accessibly** (e.g., avoiding legal and technical terms).

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e. **Establish standards of behavior rather than solely seek to influence attitudes and beliefs**. Clear communication of behavioral expectations, and teaching of behavioral skills, is essential.

f. **Conduct training in adherence to best standards**, including appropriate pre-training needs assessment and evaluation of its effectiveness.

10. **Creating a climate that prevents sexual harassment requires measuring the climate in relation to sexual harassment, diversity, and respect, and assessing progress in reducing sexual harassment**.

11. **Efforts to incentivize systemwide changes, such as Athena SWAN,[1] are crucial to motivating organizations and departments within organizations to make the necessary changes.**

12. **Sexual harassment in academic science, engineering, and medicine will be more effectively addressed in higher education if the standards of behavior are also upheld in off-campus environments such as professional society meetings and collaborative research and field sites**.

13. **Professional societies have the potential to be powerful drivers of change through their capacity to help educate, train, codify, and reinforce cultural expectations for their respective scientific, engineering, and medical communities**. Some professional societies have taken action to prevent and respond to sexual harassment among their membership. Although each professional society has taken a slightly different approach to addressing sexual harassment, there are some shared approaches, including the following:

a. Enacting new codes of conduct and new rules related specifically to conference attendance.

b. Including sexual harassment in codes of ethics and investigating reports of sexual harassment. (This is a new responsibility for professional societies, and these organizations are considering how to take into consideration the law, home institutions, due process, and careful reporting when dealing with reports of sexual harassment.)

c. Requiring members to acknowledge, in writing, the professional society's rules and codes of conduct relating to sexual harassment during conference registration and during membership sign-up and renewal.

d. Supporting and designing programs that prevent harassment and provide skills to intervene when someone is being harassed.

e. Strengthening statements on sexual harassment, bullying, and discrimination in professional societies' codes of conduct, with a few defining it as *research misconduct*.

f. Factoring in harassment-related professional misconduct into scientific award decisions.

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[1] Athena SWAN (Scientific Women's Academic Network). See https://www.ecu.ac.uk/equality-charters/athena-swan/.

14. **There are many promising approaches to changing the culture and climate in academia; however, further research assessing the effects and values of the following approaches is needed to identify best practices**:
    a. Policies, procedures, trainings, and interventions, specifically how they prevent and stop sexually harassing behavior, alter perception of organizational tolerance for sexually harassing behavior, and reduce the negative consequences from reporting the incidents. This includes informal and formal reporting mechanisms, bystander intervention training, academic leadership training, sexual harassment training, interventions to improve civility, mandatory reporting requirements, and approaches to supporting and improving communication with the target.
    b. Mechanisms for target-led resolution options and mechanisms by which the target has a role in deciding what happens to the perpetrator, including restorative justice practices.
    c. Mechanisms for protecting targets from retaliation.
    d. Rehabilitation-focused measures for disciplining perpetrators.
    e. Incentive systems for encouraging leaders in higher education to address the issues of sexual harassment on campus.

RECOMMENDATIONS

RECOMMENDATION 1: Create diverse, inclusive, and respectful environments.
    a. Academic institutions and their leaders should take explicit steps to achieve greater gender and racial equity in hiring and promotions, and thus improve the representation of women at every level.
    b. Academic institutions and their leaders should take steps to foster greater cooperation, respectful work behavior, and professionalism at the faculty, staff, and student/trainee levels, and should evaluate faculty and staff on these criteria in hiring and promotion.
    c. Academic institutions should combine anti-harassment efforts with civility-promotion programs.
    d. Academic institutions should cater their training to specific populations (in academia this should include students/trainees, staff, faculty, and those in leadership) and follow best practices in designing training programs. Training should be viewed as the means of providing the skills needed by all members of the academic community, each of whom has a role to play in building a positive organizational climate focused on safety and respect, and not simply as a method of ensuring compliance with laws.
    e. Academic institutions should utilize training approaches that develop skills among participants to interrupt and intervene when inappropriate behavior occurs. These training programs should be evaluated to deter-

mine whether they are effective and what aspects of the training are most important to changing culture.

f. Anti–sexual harassment training programs should focus on changing behavior, not on changing beliefs. Programs should focus on clearly communicating behavioral expectations, specify consequences for failing to meet these expectations, and identify the mechanisms to be utilized when these expectations are not met. Training programs should not be based on the avoidance of legal liability.

RECOMMENDATION 2: Address the most common form of sexual harassment: gender harassment.

Leaders in academic institutions and research and training sites should pay increased attention to and enact policies that cover gender harassment as a means of addressing the most common form of sexual harassment and of preventing other types of sexually harassing behavior.

RECOMMENDATION 3: Move beyond legal compliance to address culture and climate.

Academic institutions, research and training sites, and federal agencies should move beyond interventions or policies that represent basic legal compliance and that rely solely on formal reports made by targets. Sexual harassment needs to be addressed as a significant culture and climate issue that requires institutional leaders to engage with and listen to students and other campus community members.

RECOMMENDATION 4: Improve transparency and accountability.

a. Academic institutions need to develop—and readily share—clear, accessible, and consistent policies on sexual harassment and standards of behavior. They should include a range of clearly stated, appropriate, and escalating disciplinary consequences for perpetrators found to have violated sexual harassment policy and/or law. The disciplinary actions taken should correspond to the severity and frequency of the harassment. The disciplinary actions should not be something that is often considered a benefit for faculty, such as a reduction in teaching load or time away from campus service responsibilities. Decisions regarding disciplinary actions, if indicated or required, should be made in a fair and timely way following an investigative process that is fair to all sides.[2]

b. Academic institutions should be as transparent as possible about how they are handling reports of sexual harassment. This requires balancing issues of confidentiality with issues of transparency. Annual reports,

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[2] Further detail on processes and guidance for how to fairly and appropriately investigate and adjudicate these issues are not provided because they are complex issues that were beyond the scope of this study.

that provide information on (1) how many and what type of policy violations have been reported (both informally and formally), (2) how many reports are currently under investigation, and (3) how many have been adjudicated, along with general descriptions of any disciplinary actions taken, should be shared with the entire academic community: students, trainees, faculty, administrators, staff, alumni, and funders. At the very least, the results of the investigation and any disciplinary action should be shared with the target(s) and/or the person(s) who reported the behavior.

c. Academic institutions should be accountable for the climate within their organization. In particular, they should utilize climate surveys to further investigate and address systemic sexual harassment, particularly when surveys indicate specific schools or facilities have high rates of harassment or chronically fail to reduce rates of sexual harassment.

d. Academic institutions should consider sexual harassment equally important as research misconduct in terms of its effect on the integrity of research. They should increase collaboration among offices that oversee the integrity of research (i.e., those that cover ethics, research misconduct, diversity, and harassment issues); centralize resources, information, and expertise; provide more resources for handling complaints and working with targets; and implement sanctions on researchers found guilty of sexual harassment.

RECOMMENDATION 5: Diffuse the hierarchical and dependent relationship between trainees and faculty.

Academic institutions should consider power-diffusion mechanisms (i.e., mentoring networks or committee-based advising and departmental funding rather than funding only from a principal investigator) to reduce the risk of sexual harassment.

RECOMMENDATION 6: Provide support for the target.

Academic institutions should convey that reporting sexual harassment is an honorable and courageous action. Regardless of a target filing a formal report, academic institutions should provide means of accessing support services (social services, health care, legal, career/professional). They should provide alternative and less formal means of recording information about the experience and reporting the experience if the target is not comfortable filing a formal report. Academic institutions should develop approaches to prevent the target from experiencing or fearing retaliation in academic settings.

RECOMMENDATION 7: Strive for strong and diverse leadership.

a. College and university presidents, provosts, deans, department chairs, and program directors must make the reduction and prevention of sexual

harassment an explicit goal of their tenure. They should publicly state that the reduction and prevention of sexual harassment will be among their highest priorities, and they should engage students, faculty, and staff (and, where appropriate, the local community) in their efforts.

b. Academic institutions should support and facilitate leaders at every level (university, school/college, department, lab) in developing skills in leadership, conflict resolution, mediation, negotiation, and de-escalation, and should ensure a clear understanding of policies and procedures for handling sexual harassment issues. Additionally, these skills development programs should be customized to each level of leadership.

c. Leadership training programs for those in academia should include training on how to recognize and handle sexual harassment issues, and how to take explicit steps to create a culture and climate to reduce and prevent sexual harassment—and not just protect the institution against liability.

RECOMMENDATION 8: Measure progress.
Academic institutions should work with researchers to evaluate and assess their efforts to create a more diverse, inclusive, and respectful environment, and to create effective policies, procedures, and training programs. They should not rely on formal reports by targets for an understanding of sexual harassment on their campus.

a. When organizations study sexual harassment, they should follow the valid methodologies established by social science research on sexual harassment and should consult subject-matter experts. Surveys that attempt to ascertain the prevalence and types of harassment experienced by individuals should adopt the following practices: ensure confidentiality, use validated behavioral instruments such as the Sexual Experiences Questionnaire, and avoid specifically using the term "sexual harassment" in any survey or questionnaire.

b. Academic institutions should also conduct more wide-ranging assessments using measures in addition to campus climate surveys, for example, ethnography, focus groups, and exit interviews. These methods are especially important in smaller organizational units where surveys, which require more participants to yield meaningful data, might not be useful.

c. Organizations studying sexual harassment in their environments should take into consideration the particular experiences of people of color and sexual- and gender-minority people, and they should utilize methods that allow them to disaggregate their data by race, ethnicity, sexual orientation, and gender identity to reveal the different experiences across populations.

d.   The results of climate surveys should be shared publicly to encourage transparency and accountability and to demonstrate to the campus community that the institution takes the issue seriously. One option would be for academic institutions to collaborate in developing a central repository for reporting their climate data, which could also improve the ability for research to be conducted on the effectiveness of institutional approaches.

e.   Federal agencies and foundations should commit resources to develop a tool similar to ARC3, the Administrator-Researcher Campus Climate Collaborative, to understand and track the climate for faculty, staff, and postdoctoral fellows.

RECOMMENDATION 9: Incentivize change.

a.   Academic institutions should work to apply for awards from the emerging STEM Equity Achievement (SEA Change) program.[3] Federal agencies and private foundations should encourage and support academic institutions working to achieve SEA Change awards.

b.   Accreditation bodies should consider efforts to create diverse, inclusive, and respectful environments when evaluating institutions or departments.

c.   Federal agencies should incentivize efforts to reduce sexual harassment in academia by requiring evaluations of the research environment, funding research and evaluation of training for students and faculty (including bystander intervention), supporting the development and evaluation of leadership training for faculty, and funding research on effective policies and procedures.

RECOMMENDATION 10: Encourage involvement of professional societies and other organizations.

a.   Professional societies should accelerate their efforts to be viewed as organizations that are helping to create culture changes that reduce or prevent the occurrence of sexual harassment. They should provide support and guidance for members who have been targets of sexual harassment. They should use their influence to address sexual harassment in the scientific, medical, and engineering communities they represent and promote a professional culture of civility and respect. The efforts of the American Geophysical Union are especially exemplary and should be considered as a model for other professional societies to follow.

b.   Other organizations that facilitate the research and training of people in science, engineering, and medicine, such as collaborative field sites (i.e., national labs and observatories), should establish standards of behavior

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[3] See https://www.aaas.org/news/sea-change-program-aims-transform-diversity-efforts-stem.

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and set policies, procedures, and practices similar to those recommended for academic institutions and following the examples of professional societies. They should hold people accountable for their behaviors while at their facility regardless of the person's institutional affiliation (just as some professional societies are doing).

RECOMMENDATION 11: Initiate legislative action.

State legislatures and Congress should consider new and additional legislation with the following goals:

a. Better protecting sexual harassment claimants from retaliation.
b. Prohibiting confidentiality in settlement agreements that currently enable harassers to move to another institution and conceal past adjudications.
c. Banning mandatory arbitration clauses for discrimination claims.
d. Allowing lawsuits to be filed against alleged harassers directly (instead of or in addition to their academic employers).
e. Requiring institutions receiving federal funds to publicly disclose results from campus climate surveys and/or the number of sexual harassment reports made to campuses.
f. Requesting the National Science Foundation and the National Institutes of Health devote research funds to doing a follow-up analysis on the topic of sexual harassment in science, engineering, and medicine in 3 to 5 years to determine (1) whether research has shown that the prevalence of sexual harassment has decreased, (2) whether progress has been made on implementing these recommendations, and (3) where to focus future efforts.

RECOMMENDATION 12: Address the failures to meaningfully enforce Title VII's prohibition on sex discrimination.

a. Judges, academic institutions (including faculty, staff, and leaders in academia), and administrative agencies should rely on scientific evidence about the behavior of targets and perpetrators of sexual harassment when assessing both institutional compliance with the law and the merits of individual claims.
b. Federal judges should take into account demonstrated *effectiveness* of anti-harassment policies and practices such as trainings, and not just their *existence*, for use of an affirmative defense against a sexual harassment claim under Title VII.

RECOMMENDATION 13: Increase federal agency action and collaboration.

Federal agencies should do the following:

a. Increase support for research and evaluation of the effectiveness of policies, procedures, and training on sexual harassment.

b. Attend to sexual harassment with at least the same level of attention and resources as devoted to research misconduct. They should increase collaboration among offices that oversee the integrity of research (i.e., those that cover ethics, research misconduct, diversity, and harassment issues); centralize resources, information, and expertise; provide more resources for handling complaints and working with targets; and implement sanctions on researchers found guilty of sexual harassment.

c. Require institutions to report to federal agencies when individuals on grants have been found to have violated sexual harassment policies or have been put on administrative leave related to sexual harassment, as the National Science Foundation has proposed doing. Agencies should also hold accountable the perpetrator and the institution by using a range of disciplinary actions that limit the negative effects on other grant personnel who were either the target of the harassing behavior or innocent bystanders.

d. Reward and incentivize colleges and universities for implementing policies, programs, and strategies that research shows are most likely to and are succeeding in reducing and preventing sexual harassment.

RECOMMENDATION 14: Conduct necessary research.
Funders should support the following research:

a. The sexual harassment experiences of women in underrepresented and/or vulnerable groups, including women of color, disabled women, immigrant women, sexual- and gender-minority women, postdoctoral trainees, and others.

b. Policies, procedures, trainings, and interventions, specifically their ability to prevent and stop sexually harassing behavior, to alter perception of organizational tolerance for sexually harassing behavior, and to reduce the negative consequences from reporting the incidents. This should include research on informal and formal reporting mechanisms, bystander intervention training, academic leadership training, sexual harassment and diversity training, interventions to improve civility, mandatory reporting requirements, and approaches to supporting and improving communication with the target.

c. Mechanisms for target-led resolution options and mechanisms by which the target has a role in deciding what happens to the perpetrator, including restorative justice practices.

d. Mechanisms for protecting targets from retaliation.

e. Approaches for mitigating the negative impacts and outcomes targets experience.

f. Incentive systems for encouraging leaders in higher education to address the issues of sexual harassment on campus.

g. The prevalence and nature of sexual harassment within specific fields in

science, engineering, and medicine and that follows good practices for sexual harassment surveys.

h. The prevalence and nature of sexual harassment perpetrated by students on faculty.

i. The amount of sexual harassment that serial harassers are responsible for.

j. The prevalence and effect of ambient harassment in the academic setting.

k. The connections between consensual relationships and sexual harassment.

l. Psychological characteristics that increase the risk of perpetrating different forms of sexually harassing behaviors.

RECOMMENDATION 15: Make the entire academic community responsible for reducing and preventing sexual harassment.

All members of our nation's college campuses—students, trainees, faculty, staff, and administrators—as well as members of research and training sites should assume responsibility for promoting civil and respectful education, training, and work environments, and stepping up and confronting those whose behaviors and actions create sexually harassing environments.