

## Appendix F

# Summary

Important gains have been made in the past two decades in the participation of women in science, engineering, and biomedical disciplines at the undergraduate and graduate levels in the United States. More women than ever are also joining the faculty ranks in these fields and moving into leadership positions in higher education (e.g., as senior faculty, department chairs, and deans). There has been parallel growth in women's participation in business, government, and the nonprofit sectors as well. While progress is slow, the reduction in the "gender gap" is encouraging.

However, more rapid and sustained progress in closing the gender gap in science, engineering, and medicine is jeopardized by the persistence of sexual harassment and its adverse impact on women's careers in our nation's colleges and universities.

In a survey conducted by the University of Texas System (Swartout 2018), about 20 percent of female science students (undergraduate and graduate) experienced sexual harassment from faculty or staff, while more than a quarter of female engineering students and greater than 40 percent of medical students experienced sexual harassment from faculty or staff. The Pennsylvania State University System conducted a similar survey and found similar results with 33 percent of undergraduates, 43 percent of graduate students, and 50 percent of medical students experiencing sexual harassment from faculty or staff. Other survey data reveal similarly high rates of sexual harassment of students and faculty in our colleges and universities. These data should not be surprising considering that the academic workplace (i.e., employees of academic institutions) has the second highest rate of sexual harassment at 58 percent (the military has the high-

est rate at 69 percent) when comparing it with military, private sector, and the government (Ilies et al. 2003).

Too often, judicial interpretation of Title IX and Title VII has incentivized institutions to create policies and training on sexual harassment that focus on symbolic compliance with current law and avoiding liability, and not on preventing sexual harassment.

What is especially discouraging about this situation is that at the same time that so much energy and money is being invested in efforts to attract and retain women in science, engineering, and medical fields, it appears women are often bullied or harassed out of career pathways in these fields. Even when they remain, their ability to contribute and advance in their field can be limited as a consequence of sexual harassment—either from the harassment directed at them; the ambient harassment in the environment in their department, program, or discipline; or the retaliation and betrayal they experience after formally reporting the harassment.

There are three categories of sexually 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 (verbal or physical unwelcome sexual advances, which can include assault), and (3) sexual coercion (when favorable professional or educational treatment is conditioned on sexual activity). Harassing behavior can be either direct (targeted at an individual) or ambient (a general level of sexual harassment in an environment).

Sexual harassment becomes 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 considered *quid pro quo* sexual harassment (when favorable professional or educational treatment is conditioned on sexual activity). Additionally, any sexual harassment that involves sexual assault is also illegal.

Sexual harassment undermines women’s professional and educational attainment and mental and physical health. 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 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. 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, transferring to another educational institution, and dropping out. Decades of research demonstrate how quality and innovation in business and science benefit from

having a diverse workforce (Østergaard, Timmermans, and Kristinsson 2011; Francoeur, Labelle, and Sinclair-Desgagné 2008; Dwyer, Richard, and Chadwick 2003; Cady and Valentine 1999). Thus, the cumulative effect of sexual harassment is a significant and costly loss of talent in academic science, engineering, and medicine, which has consequences for advancing the nation's economic and social well-being and its overall public health.

Four aspects of the science, engineering, and medicine academic workplace tend to silence targets of harassment as well as limit career opportunities for both targets and bystanders: (1) the dependence on advisors and mentors for career advancement; (2) the system of meritocracy that does not account for the declines in productivity and morale as a result of sexual harassment; (3) the “macho” culture in some fields; and (4) the informal communications network, through which rumors and accusations are spread within and across specialized programs and fields.

At least five factors create the conditions under which sexual harassment is likely to occur in science, engineering, and medicine programs and departments in academia:

- There is often a **perceived tolerance for sexual harassment** in academia, which is the most potent predictor of sexual harassment occurring in an organization. The degree to which the environment within academic departments, schools, programs, and institutions reflects an unflinching commitment to the principle that any form of sexual harassment behavior (from expressing any form of gender harassment to making any type of unwanted sexual advance) is unacceptable is a critical factor in determining whether harassment is likely to occur. The evidence suggests that the workplace climate is seen as *intolerant* of sexual harassment when targets of sexual harassment are supported and protected; instances of harassment are investigated fairly and in a timely way—with due process for both targets and alleged harassers;<sup>1</sup> those found to have committed harassment are punished appropriately; and the campus community is regularly informed about how the institution is handling/attending to claims and disciplining those who have violated policies. These are important ways to demonstrate and declare that sexual harassment is taken seriously and is unacceptable under any circumstances.
- Environments where men outnumber women, leadership is male dominated, and/or jobs or occupations are considered atypical for women have more frequent incidents of sexual harassment for women (USMSPB 1995; Fitzgerald et al. 1997; Berdahl 2007a; Willness, Steel, and Lee 2007; Schneider, Pryor, and Fitzgerald 2011). On many campuses, these

---

<sup>1</sup> 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.

programs and departments persist as **male-dominated work settings**. More often than not, men are in positions of authority—as deans, department chairs, principal investigators, and dissertation advisors—and women are in subordinate positions as early-career faculty, graduate students, and postdocs.

- The environments in which the **power structure** of an organization is hierarchical with strong dependencies on those at higher levels or in which people are geographically isolated are more likely to foster and sustain sexual harassment. Moreover, when power is highly concentrated in a single person, perhaps because of that person's success in attracting funding for research (i.e., academic star power), students or employees are more likely to feel as if revealing the harassing behavior will have a negative impact on their lives and careers.
- An increased focus on **symbolic compliance** with Title IX and Title VII has resulted in policies and procedures that protect the liability of the institution but are not effective in preventing sexual harassment. Judicial interpretations of these statutes incentivize creating policies and procedures and having training on the policy. However these policies and procedures have not been shown to prevent sexual harassment, and they are based on the inaccurate assumption that a target will promptly report the harassment without worrying about retaliation. While policies against sexual harassment are widely in place and have been for many years, nonetheless, sexual harassment continues to exist and has not significantly decreased. While adherence to legal requirements is necessary, it is not sufficient to drive the change needed to address sexual harassment. Fortunately, if there is the will among campus leaders to reduce and eliminate sexual harassment, there are policy and programmatic paths forward to achieve that goal.
- Uninformed **leadership** on campus that lacks the intentionality and focus to take the bold and aggressive measures needed to reduce and eliminate sexual harassment is another contributing factor. While most college and university presidents, deans, and department chairs aspire to reduce or eliminate harassment on their campuses, many lack the tools needed to achieve that goal. Fortunately, some institutions have begun creating and implementing strong, campuswide policies that start with explicit statements from presidents, provosts, and deans and that include concrete intervention strategies aimed at preventing sexual harassment.

This committee offers the following evidence-based recommendations as a road map for colleges and universities to consider and adapt to their particular circumstances:

**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 these should include students/trainees, staff, faculty, and those in leadership) and should 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 determine 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, specifying consequences for failing to meet these expectations, and identifying 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.<sup>2</sup>
- 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, 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

---

<sup>2</sup> 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.

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.<sup>3</sup> Federal agen-

---

<sup>3</sup> See <https://www.aaas.org/news/sea-change-program-aims-transform-diversity-efforts-stem>.



- cies 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 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 to 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 that 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.