

# **Graduate Women in STEM at Princeton University Experiences and Recommendations**

**A Climate Report from the Graduate Women in STEM Leadership Council  
July 2015**

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# I. Introduction

In order to ensure equal access to education for all students in accordance with Title IX, an informed effort must be made to ensure a safe and professional climate for women in STEM fields. To inform efforts in this area, this document is intended to accomplish two aims:

1) To share personal stories from women in STEM at Princeton that illustrate the types of experiences affecting women on this campus, 2) To provide recommendations to the administration with steps they can take to resolve climate issues, including training and programming, and the qualities that they should have

The Princeton Women in STEM Leadership Council solicited personal stories from women in all fields of STEM (excluding the social sciences) across campus to ask for their experiences. Some responses were solicited in person by members of the council through their respective Women in STEM groups. In addition, a general survey was sent (in March 2015) to all women graduate students in the STEM departments. The prompt in the written survey was as follows:

*What are your experiences as a female STEM graduate student at Princeton?*

*Please include your own experiences and not those of others. Experiences can be specific events or general feelings. Events can range from minor interactions to more uncomfortable situations and may include, but are not limited to, unintended discrimination or bias, interactions where the intent may have been good but it negatively affected you/made you uncomfortable, uncomfortable working environments, issues with career advancement/mentoring, a biased climate, harassment, etc. If you were ever made uncomfortable by something but are unsure if it was discriminatory in any way, please include it anyway.*

*Feel free to include as much detail as you are comfortable including. Any information within your testimony (eg. names or other identifying information) will be redacted by the council. Your responses will provide valuable feedback to the university administrators who decide upon the content of faculty and staff training.*

*Feel free to provide your responses in whatever forms you feel best reflect your experiences. Your responses will be collected and organized only by students, and will be presented to the administration with recommendations.*

*Thank you for your time and valuable responses.*

Students were given the option of providing the name of their department with the intent of allowing the council to make recommendations about which departments may need special attention. Based on the results of this survey, the council felt that not enough information was provided to make specific recommendations in this regard.

The personal stories and examples submitted were found to fall into several themes or categories, which formed the basis for organizing this document. The categories are as follows:

**II. Microaggressions III. Discrimination IV. Isolating Women V. The Perception of Women as Sexually Available or Commodifiable VI. Pregnancy and Family VII. Perceived Existence of “Reverse Discrimination” VIII. Benevolent Sexism IX. Crossing Physical Boundaries and Harassment X. Backlash in Response to Attempts to Improve the Climate**

One longer personal story is included as the council believes it makes a powerful statement about the cumulative effects of experiences of gender discrimination and sexual harassment. In addition, the council sums up its finding with a note on women’s responses to harassment and discrimination and its recommendations for the university in the later sections:

**XI. A Personal Story XII. Understanding Women’s Responses XIII. The Council’s Recommendations**

Formatting of the examples is as follows:

- All edits for grammar and confidentiality made by the council are contained in square brackets [ ].
- (M) indicates an experience that was separately submitted by multiple women.
- (F) indicates that the story is a fictional example created by the Council to capture the essence of submitted examples while masking the specific circumstances and protecting the identities of those involved.

This council wants to strongly emphasize that the examples shown in the sections below are not isolated incidents. Many women who responded to the survey shared multiple examples which fell into several categories. We have separated and grouped these experiences into categories for anonymity and organization, but we would like to emphasize the commonality and pervasiveness of these experiences. Together they constitute a whole greater than the sum of its parts, making women feel that their presence in this community is less valued or welcome than that of their male peers.

## II. Microaggressions

“Microaggressions are the everyday verbal, nonverbal, and environmental slights, snubs, or insults, whether intentional or unintentional, which communicate hostile, derogatory, or negative messages to target persons based solely upon their marginalized group membership.” 1

Microaggressions constitute some of the most pervasive contributors to a hostile environment because although each instance may seem insignificant, the cumulative effect is greater than the sum of individual events. Microaggressions can also trigger stereotype threat, where members of an underrepresented group (such as graduate women in STEM) perform poorly because they are anxious that they might confirm negative stereotypes. (44 reports)

### **Treating women as if they are all the same:**

- Many women mention being seen as women more than professional coworkers and scientists. (M)
- Being able to differentiate male voices on the phone but not female ones (M)
- Group members refuse to differentiate between women in a group (e.g. using one name for both women in the group). (M)
- *I was doing really well in my classes and studying with a group of male colleagues, but another woman student was struggling. A professor suggested that we should study together so that “you girls won’t fall behind.” (F)*

Assuming stereotypical things about women: Stereotyping is the practice of ascribing perceived characteristics, attributes, or roles to an individual because of their membership to a group.

- *My lab group has several men and I am the only woman. My advisor always chooses me to show around new students and to help guests reserve their hotels even though there are several other students in the group. My time would be better spent working on my projects. (F)*
- *While arguing about a scientific problem, one of my colleagues said, “You’re letting your emotions get the best of you. I guess women are just more emotional.” (F)*
- *I am always given the responsibility of cleaning the lab because “girls are just better at it.” (F)*

### **Sexist jokes and gendered language:**

- Sexist jokes are prevalent and were the subject of numerous submissions. There are many jokes in labs about the sexual nomenclature of common tools. Some examples of tool parts that are often joked about are nipples as well as male and female parts. (M)
- There is a common acceptance of rape jokes and the casual use of the word “rape” (e.g. “That exam raped me”). (M)
- A group of men talking about a woman in the group and calling her a bitch. (M)

1 Definition from

<https://www.psychologytoday.com/blog/microaggressionsineverydaylife/201011/microaggressionsmorejusttrace>

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### **Ignoring women's suggestions and interrupting them in conversation:**

- A woman student suggests something, and a male student Y says it again right after her. People congratulate Y on the great idea. (M)
- Many women report they feel that they are disproportionately interrupted or talked over, even when they attempt to regain control of the conversation through direct confrontation (e.g. "Let me finish"). Studies show that this is a wellknown gendered effect, and that even though men dominate conversation in mixedgender groups, it is difficult to address because people perceive the opposite. (M)
- *I was giving a professional talk and I was asked a question in the middle of it by a professor. Before I could answer, another professor in the audience jumped in and answered it before I even had a chance to answer. The two argued about the question for a while despite my efforts to address the question myself and to get back to my talk. This has never happened to any of my male colleagues.* (F)

### **Reminding women of their rarity in the field:**

- Women in the research groups are hyped, e.g. "We have a woman!" or "We finally have a girl in our group! I don't know why we couldn't get any before." (M)
- In one department, men use the women's restroom because it's closer and, "There's no one in there." They also routinely leave the seat up. (M)
- There is often hero worship of "a few great men" while neglecting the contributions of women in the field when discussing the history of the subjects. (M)
- The pictures of scientists in many buildings are almost all men. (M)
- *We were assembling a panel with three speakers, and a committee member suggested two candidates that were women and one that was a man. All of the candidates were leaders in the field. Another committee member interjected and said that if the panel had two women and one man that it wouldn't be representative of the field.* (F)
- *Tokenism is the act of including a minimal number of minorities in a group to give the impression of equality. The minority members often have less power or authority than other members of the group: I was on the committee for recruiting prospective students and we were planning the members of a panel for a Q&A session with current graduate students. We planned to have people from different years and subfields on the panel. At the end of the planning, one of my colleagues said, "Oh, we need a woman, so that women will come here." Everyone nodded in agreement as they added a woman's name to the list.* (F)
- *When I came to Princeton about 5 years ago, the basement restroom labels said "Men" (plural) and "Woman" (singular). I'm not sure why they would do that, but it was an early reminder that I was a minority here.*

**Other microaggressions:**

- There is a culture of venerating some scientists as great people when they are/were very misogynistic. (M)
- Men often refuse to walk through doors when women hold them open for them. (M)
- Women are often called “girls”. It plays into the infantilization of women and perceiving them as less competent in STEM fields. (M)



### III. Discrimination

Discrimination is the differential treatment of a person based on their membership in a class or group of people. Based on the examples submitted, there is evidence that discrimination based on the gender of graduate students exists and leads to significant disadvantages for women. In the section on microaggressions, there were several examples of the stereotypes held about women in STEM that were vocally expressed to women graduate students. However, the following examples show instances where stereotypical attitudes caused significant differences in how women graduate students were treated compared to their male peers. (9 reports)

Assuming that women cannot do well in STEM: One common stereotype in the STEM departments is that women are not smart enough and are incapable of doing well in STEM fields.

- *“Women are just not as good as men at quantitative science, but they are better at people-oriented fields.” (F)*
- *I was at a department social event with colleagues of both genders. One colleague brought up a recent women in STEM article, and the other men in the group started discussing it. One said, “Well how many major discoveries have been made by women anyway? Maybe that’s a sign that they’re just not built for it.” Another said, “It’s well established that we are genetically different. Men’s brains are wired to better understand science.” (F)*
- *A postdoctoral researcher in my group was presenting during a meeting and misspoke. I began to say, “Wait, don’t you mean X?” Before I could finish, the postdoc began explaining the fundamentals of the concept to me, which I already understood. It was demeaning and it wasted everybody’s time. (F)*

Relegating women to secretarial tasks: Women are often expected to perform secretarial and managerial tasks. There is often the passive assumption that women will take up these responsibilities. Women and minority students are often assumed to be staff. People talk to them as if they are not knowledgeable about research until they have proven themselves.

- *There was a lot of glassware in my lab because no one in the group had cleaned up. I started cleaning it myself, but some of them were full of liquids and unlabeled. I asked people to label their things and help clean up. At first others in my lab seemed like they would help, but they never did, so I had to do it myself and had to deal with environmental and public safety to handle the unlabeled chemicals. (F)*
- *I was talking to an administrator in her office and a professor I don’t know walked in and started talking to us as if we were both staff. (F)*
- *My advisor said, “You’re so much more organized than us sloppy guys. Why don’t you be in charge of keeping all the minutes?” (F)*



## IV. Isolating Women

Many women have expressed that they feel isolated from work and social activities due to their gender. This isolation can negatively impact women on more than just an emotional level as they look for jobs, recommendations, and mentors because networking is crucial in the STEM fields. The examples below are divided into instances of professional and social isolation. (8 reports)

Professional isolation: Women graduate students at Princeton feel that they have been excluded from conversations and experiences in academic settings due to their gender. These can result in lost opportunities to network and fewer mentorship opportunities.

- *A visiting scholar, who I thought I might want to do a postdoc with, was touring our lab. A conversation started up between him and my groupmates about our research. Even though my work was being mentioned my comments were generally ignored as though I wasn't part of the conversation. (F)*

Academic and social isolation: Due to the atmosphere of graduate school, the line between academic and social events is sometimes blurred, leading to possibly insightful discussions occurring in seemingly nonacademic settings such as a bar after a conference or even a weekend party. Many women expressed instances where they were not included in informal gatherings with coworkers and classmates. As a result, they felt that they may have missed out on important discussions or opportunities. Others expressed instances of having to choose to attend informal events that made them feel unsafe or uncomfortable in order to not be left out.

- All male cliques often go socialize together after work/conferences/prelims. (M)

- Many departments hold events at the Dbar during their prospective visit days. It was expressed by several women students that these events can be uncomfortable. (M)

- *On occasion, my adviser spontaneously takes male students individually out for drinks to talk about research and other things. He mentioned that it would be inappropriate for him to invite me for drinks, but he didn't offer another avenue for me to receive the same kind of advisement. (F)*

- *At a conference cocktail hour, offered as a networking opportunity, many of the male participants left early to go out a bar in another part of town. At previous conferences I have found myself walking home alone from such events late at night in a city I don't know. Out of concern for my safety, I decided to not go to the bar, however, I feel that I may have missed an opportunity to network with the other scientists that were there. (F)*

## V. The Perception of Women as Sexually Available or Commodifiable

This section deals with experiences of women being treated as sexual objects or receiving inappropriate comments of a sexual or suggestive nature. These experiences are isolating, undermine women's professionalism, and distract women from work, and women often feel they have to change the way they dress and/or behave to avoid them. (23 reports)

### **Calling women “hot” or “pretty” at work or discussing their “attractiveness”:**

- *“You’re too pretty to be in [this field of science].” (M)*
- *At a recent prospective week social event, several professors and grad students in my department were discussing the attractiveness of female prospective students and even ranking them or giving them ratings from one to ten. One person said, “This batch is slim pickings compared with last year.” Then someone else replied: “I don’t know, I think that one is hot. She’s a solid 8.” (F)*

### **Commenting on appearance or the femininity of women’s clothing:**

- Commenting on women’s dress at conferences: if it’s too dressy, she’s not serious about the science, if it’s not dressy enough, she isn’t serious enough. Women find the intervening space to be impossibly thin or nonexistent. (M)
- Around the office or lab, women sometimes get comments about what they are wearing, and while most of the time it appears that they are meant as compliments, it is again a reminder that their appearance is on people's minds. (M)
- *I normally dress casually at work, just like all of my male colleagues jeans and a tshirt. One day I had a professional event after work so I wore a skirt and nice shoes to the office. One coworker did a doubletake and said, “Woah! Got a hot date?” Another commented, “Oh, now you look like an actual girl.” This made me extremely uncomfortable and selfconscious. I have stopped dressing up so that I won't receive such comments. (F)*

### **Discussing women as sex objects or things to be viewed for enjoyment:**

- In a colloquium, the speaker interrupted his talk in the middle to show an unrelated lingerie headshot of Hedy Lamarr, an actress known for performing a controversial love scene in a film called “Ecstasy” and also her invention of important radiotechnology. This image was shown, as the speaker put it, “to give everyone a break.” He also referred to her as his dream girl. The image is included below in this section and can be found here:

<http://www.quotessays.com/images/hedylamarrsquotes7.jpg>

- The image used for testing imaging algorithms is a nude image of a woman that comes from a 1972 issue of the Playboy magazine (see <http://en.m.wikipedia.org/wiki/Lenna>). Using this

image is an industry standard, which in itself speaks to the larger culture within the field. Given the nature of the image and its source, several academics have criticized its continued use in scientific publications and higher education as both sexist and unprofessional. The cropped version of this image is shown below in this section.

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- *The other day I was sitting near two men in my research group when they noticed a woman from a different lab who regularly wears dresses and high heels to work walk by. Once she was out of earshot, one turned to the other and said, “Man I wish I worked in her lab so I could look at THAT every day.” The other tried to call him out on the comment by saying, “Dude, that’s not cool to say,” but the first guy responded emphatically with, “Hey, if she didn’t want us to look, then she wouldn’t dress that way!” (F)*

### **Inappropriate references to sex:**

- Women are often inappropriately “hit on” at conferences. (M)
- *During my last field season, after a long day of collecting samples with several colleagues, we were all dirty and sweaty and I casually said, “I can’t wait to take a shower.” One colleague quickly replied, “Let’s not talk about you in the shower!” as if what I had just said was inherently sexual. I immediately felt uncomfortable and now feel like I need to worry about what I say every time I am around this person. (F)*
- *One of my male colleagues (not a close friend) seems to enjoy talking about his own sexual stories to me, unsolicited. This is not only unprofessional, but makes me feel awkward around him and sometimes I try to avoid him so as not to be subjected to another unwanted story. (F)*

### **Unwanted attention because of gender:**

- *There is one male staff member who seems to give extra attention to the female grad students because of our gender, which makes us uncomfortable. Whenever I meet with him to discuss work, it seems like he is more interested in looking at me than in listening to my ideas. (F)*

### **Images:**

On the left is the image of Hedy Lamarr used in a colloquium talk on global warming. On the right is the cropped version of Lenna that is typically used for image processing.

## VI. Pregnancy and Family

This section discusses the issues that those with families or those wanting to start families face. Though graduate students have the right to form families whenever they choose without being discriminated against, women are often discouraged from having children or face discriminatory behavior if they choose to have children. The culture at large heavily implies that graduate school is an impossible time to start a family and encourages women to delay their family goals. The expectation that women will have children and leave to take care of them heavily influences hiring, pay, and mentorship opportunities for women, and it is often implied that women will be unable to get anything done/finish their degrees if they have children. Good managers in other environments shuffle around projects and work to accommodate pregnancy and families, but graduate women in STEM are often treated as lost personnel. Family issues disproportionately affect women because women must go through the visible physical changes of pregnancy while men can be more discreet about their family choices. Not only are these attitudes and discriminatory behaviors harmful for graduate students who have or start families, but there is also the very human cost to women and men who choose to delay or forego family goals because of the perception that those goals are not achievable or are too costly. (5 reports)

- *Family and pregnancy are often brought up when it's irrelevant and without the invitation of the person. An example of this is: A professor introduced me to a scientist at a conference by saying, "This is \_\_\_\_\_. She's graduating this summer, and she's going to be a mom too! So much going on for her."* (F)
- *I often get unsolicited advice from my advisor about family issues, but I don't even plan on having kids.* (F)
- *"You should wait until after this project is done/ after you graduate/ after you've secured a tenure track position to have kids."* (F)
- *"Now that you're having a baby, you should spend a year or two at home. You don't get those years back."* (F)
- *After I had a baby, my professor told me, "You're probably really busy with the baby, and don't have time to travel right now. I'll have \_\_\_\_\_ go give the talk instead."* (F)
- Many professors hold meetings at times that people with families would have trouble attending or at times when women may not feel safe coming in (night) without consulting the group. (M)

## VII. Perceived Existence of “Reverse Discrimination”

“Reverse discrimination” describes the phenomenon in which members of a group which has been historically discriminated against is conferred an unfair advantage due to their traditionally underrepresented status. This phenomenon is often imagined to be in effect when strategies attempting to mitigate continued bias or correct for previous discrimination are used, such as affirmative action. The perception that being a woman in STEM can confer an advantage in admissions and hiring can cause many men in STEM fields to assume that their women colleagues are less capable or competent than their male counterparts, believing that their admission can be attributed more to their gender than their accomplishments and merit. These perceptions are harmful to women, who may begin secondguessing their own accomplishments. This can lead to impostor syndrome, a phenomenon in which the subject constantly feels like they do not deserve their success and will be “discovered” as an imposter. (14 reports)

Perceived advantages in hiring: The most common example stems from the belief of colleagues that a woman will have an advantage in getting a job or a fellowship. Frequently this assumption is based on the idea that those doing the hiring/awarding are working towards increasing the presence of women and thus would prefer to hire a woman. Not only do these perceptions underestimate women’s accomplishments, studies from Yale University, the University of Columbia Business School, 2 3 and the University of Pennsylvania show that biases against women in hiring and mentorship 4 opportunities are prevalent.

- Many women reported hearing statements like, “You’ll have no trouble landing a professorship since you’re a woman.” (M)
- Many women also reported hearing men complain about the difficulty they anticipated facing on the academic job market, saying things like, “I’m screwed for finding a job because I’m a white guy.” (M)
- Women have experienced men talking about how women are taking the jobs of qualified men because the university needs to fill quotas. (M)

Impact of perceived hiring advantages on women: This mindset not only leads to men devaluing the accomplishments of women colleagues, but it may lead women to secondguess their own achievements.

- *“You only got the job because you’re a woman” (F) Denying the existence of biases:*

2 Corinne A. MossRacusin, John F. Dovidio, Victoria L. Brescoll, Mark J. Graham, and Jo Handelsman. Science faculty’s subtle gender biases favor male students. PNAS 2012 109 (41) 1647416479; published ahead of print September 17, 2012,doi:10.1073/pnas.1211286109 3 Ernesto Reuben, Paola Sapienza, and Luigi Zingales. How stereotypes impair women’s careers in science. PNAS 2014 111 (12) 44034408; published ahead of print March 10, 2014,doi:10.1073/pnas.1314788111 4 Milkman, Katherine L. and Akinola, Modupe and Chugh, Dolly, What Happens Before? A Field Experiment Exploring How Pay and Representation Differentially Shape Bias on the Pathway into Organizations (December 13, 2014). Milkman, K.L., M. Akinola, and D. Chugh. “What Happens



Before? A Field Experiment Exploring How Pay and Representation Differentially Shape Bias on the Pathway into Organizations.” *Journal of Applied Psychology*, Forthcoming. Available at SSRN: <http://ssrn.com/abstract=2063742> or <http://dx.doi.org/10.2139/ssrn.2063742>

Yet it can be equally damaging when people claim that there is no bias in hiring, which can cause them to conclude that efforts to level the playing field are unnecessary.

- *A colleague insisted that there was no gender bias in science because of a study he'd read. I pointed out that it was thoroughly debunked, but he insisted that that still didn't prove that there was still bias. (F)*

- *I was discussing bias with my female professor, and she said, "It's not like it was when I was starting out. That stuff just doesn't happen anymore." (F)*

**Other perceived advantages:**

- *"We don't get a 'men in science' group! That's discrimination!" (F)*

5 Wendy M. Williams and Stephen J. Ceci. National hiring experiments reveal 2:1 faculty preference for women on STEM tenure track. PNAS 2015 112 (17) 53605365; published ahead of print April 13, 2015, doi:10.1073/pnas.1418878112 6 <http://othersociologist.com/2015/04/16/mythaboutwomeninscience/>

## VIII. Benevolent Sexism

Benevolent sexism is a class of behaviors and attitudes about gender that may appear subjectively positive, but are actually damaging to gender equity. Benevolent sexism has a number of harmful effects, including creating the perception that women are weaker or less skilled than men, creating an illusion of equality by affording women token advantages over men that are not actually beneficial, and creating a restrictive model of womanhood that shuns or punishes women who do not fit the ideal. Men who provide chivalrous favors may feel satisfied that they are appropriately helpful to women and therefore feel no need to help with other, more pressing issues. A general declaration that women are kinder and more nurturing or that women are more moral or chaste than men leads to sterner judgments against women who do not fit these ideals, and creates a doublestandard regarding women's choices. Benevolent sexism, though it seems harmless or even beneficial at first glance, has detrimental effects. (9 reports)

- Taking heavy objects away from women students when things need to be carried is a common occurrence. (M)
- Men often run in front of women to open doors. The intention behind this behavior is good, but some women feel uncomfortable or threatened by the fact that they are getting special treatment. (M)
- Advisors or colleagues may offer unsolicited advice or treat women students differently with the intent of helping the student, but the advice is often stereotypical and patronizing. (M)
- *As a new graduate student I met with a professor whose work I found interesting. During our first discussion he mentioned that he is a big supporter of women in STEM and believes that women need to build their confidence. He went on to say he tries to help women with the things they are not traditionally taught, like machining, and said he would be really happy to have me in the lab. These comments made me feel that I would be held to a lower standard than his male students. (F)*
- *A senior graduate student in my group told me. "Women often feel afraid to look like they don't know things because people will think they don't belong, but you should always tell me when you don't understand something." (F)*
- *When I do fieldwork, we have to drive a stick shift vehicle to the site and change flat tires often. My male colleagues always insist on doing these tasks, so I never get the opportunity to learn them. (F)*

## **IX. Crossing Physical Boundaries and Harassment**

Among the aggressions many women in STEM endure on the Princeton campus are unwanted physical interactions and verbal harassment directly attributable to their gender. This unequal conduct leads many women to feel belittled, devalued, and patronized. These behaviors can be pervasive and/or severe. While this behavior is often sexual in nature, physical interactions that are infantilizing or are meant to express a threat or generate intimidation are also extremely problematic. Some examples of cases where women's physical boundaries were crossed or where women were sexually harassed are listed below. (10 reports)

- Some professors initiate hugs with women but not men. (M)
- *While I was walking to the lab with a male colleague, he placed a hand on the small of my back to guide me. (F)*
- Some foreign collaborators kiss women graduate students on the cheek. In this case, they should have affirmative consent to do this to students. (M)
- Several women have reported having behinds grabbed or slapped, or other inappropriate touching. (M)
- *Sometimes my professor pats me on the head after I show him my work. This makes me feel like he views me as a child, rather than a colleague. (F)*

## **X. Backlash in Response to Attempts to Improve the Climate**

This section discusses what women encounter from colleagues within their groups and departments when they speak out about harassment/sexism and when the university takes disciplinary action. Women who bring up issues are often told that they are overreacting, too sensitive, or are met with hostility. Certain forms of harassment are accepted as the norm or are not considered harassment by the community, so complaints about harassment often remain unaddressed. When the university does take action, people within the community often assume that it is because someone was overly offended in response to a minor behavior and that the university responded with draconian zero-tolerance policies. The lack of communication and transparency from the university in these matters to the relevant groups and departments perpetuates an environment in which rumors spread, offenses are downplayed, perpetrators are praised, and victims are berated for reporting. The lack of protection for victims from these forms of backlash creates distrust in the system and further discourages reporting. (18 reports)

### **Responses to General Incidents:**

- Justifying discriminatory or harassing behavior with statements like “He’s just charming” and “That’s just the way he is.” (M)
- People that women tell about their harassment sometimes express disbelief that people would act in the way described. (M)
- When women students report harassment to others, it is often dismissed as something that is normal and happens all the time and told that they should just ignore it. (M)
- Women are often told that they are too sensitive or overreacting. (M)
- Some do not believe students when a they report harassment or personal difficulties/conflicts. This creates a fear of confiding in people and reporting. (M)
- When telling perpetrators to stop or telling others about harassment, women are often told that they are overreacting with statements like, “You’re overreacting,” “Give them a break they were joking,” and “That happens all the time you’ll get used to it.” (M)
- *I asked my colleague to stop calling women “girls,” and now when we talk he emphasizes the word “women” and says to colleagues, “We wouldn’t want to offend [my name].” (F)*

## **XI. A Personal Story**

The following is a personal story submitted in the survey that was condensed by the person who submitted it and published here with her permission.

*When I started graduate school, I saw hints of a culture that I perceived as unprofessional, but not hostile. These hints would later bloom into a pervasive set of experiences that permeate and define my life as a female scientist.*

*As a first year I was initially surprised by the accepted work culture. At the first social function I went to with my group, a technical staff member (we'll call him Greg), commented that the female REU students and the girlfriends of some of the graduate students sitting on the lawn were "sitting there like whores." Another graduate student had a sexy anime devil doll as the mascot for our experiment on his desk. Yet another graduate student ranked the first year female students on their appearance, leaving me out because I was engaged. In addition to this, I was told to work solely with a postdoc (we'll call him David) who refused to give me enough tasks to keep me busy, would berate me for asking questions (or not asking enough questions) and sent me an email telling me I was the worst scientist he had ever met, that I was "haughty," didn't smile enough, and that he didn't think I was prepared for a career in [STEM]. When I showed this email to the professor who was in charge of my group, he laughed and said, "David can be like that." He then "fixed" the problem by removing me from the project (but we still shared an office).*

*Though I cannot prove that this particular experience had anything to do with gender, some of his complaints (such as the lack of smiling) do have a gendered basis. A postdoc in the lab would repeatedly end arguments about science by saying things like, "I guess men and women just think differently," or "You're getting emotional. Women are more emotional than men." The complete ambivalence on the part of my group to all of these things and more taught me that such behavior is tolerated and normal, and that I should learn to accept it, so I did for a while.*

*My ability to accept these behaviors changed when I was assaulted by Greg. Because I was so desperate to fit in with the group culture, I had befriended Greg despite his lewd comments and general disregard for professional conduct. One night while socializing, he grabbed my rear, but I chose to ignore the behavior, thinking it would stop. Later that night, we walked to his house, and I decided to stay for a while because I had had some drinks and did not feel it was responsible for me to drive home yet. While there he tossed me into his bed, and I felt sure that I was about to be raped. I screamed, "No! I don't want to!" at which point, Greg released me and berated me for thinking he would do something inappropriate. I fled the house as he followed me saying I should stay the night on his couch. I spent the rest of the weekend crying sporadically, having flashbacks, and being unable to sleep. On Monday, I approached Greg in private, telling him what had happened (since he had been too drunk to remember). He told me he would never have thrown me on his bed (the implication being that I must have imagined it). I told Greg that*

*such a thing could never happen again, and that if it did I would have to report him. He seemed repentant, and after that, he never touched me again.*

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*In the wake of the assault, other behaviors that seemed acceptable before began to grate on me and undermine my confidence and my sense of belonging. My advisor calling me “sweetheart” and “my dear” and patting me on the head for doing a good job stopped feeling naïve and grandfatherly and started feeling patronizing and demeaning. Every time this advisor mentioned a woman scientist he’d worked with, he would always say, “I worked with a very good scientist, Brenda. She’s a woman, actually.” He would also kiss me on occasion; one time after I gave a talk, he approached me and said, “Good talk! I need a kiss and a hug!” and proceeded to embrace me and kiss me on the cheek.*

*To add to everything, in my fourth year of graduate school, my husband and I decided to start a family. I dealt with chemicals and radioactive sources in my work occasionally, and told my advisor I would not be able to work with these substances anymore as I was trying for a baby. His first response was to say, “Now isn’t a good time. There’s a lot going on with the experiment, and it would really be better for you to wait until after graduate school.” I was shocked by this discouraging language, and that he felt he had a right to tell me what to do with my personal life. He told me I would be tired all the time, and I wouldn’t be able to do much.*

*When I became pregnant, I sought to prove myself to him, but it seemed to have no effect on his opinion of me. I worked harder than ever during my pregnancy, traveling internationally for the experiment, traveling during my third trimester, and working until midnight the night before I gave birth. I was in labor while I was sending him data. I worked during my leave on analysis and a paper we were writing. And yet, when I asked my advisor for career advice outside of academia his only suggestion was that I take a few years off to take care of my kid, showing a complete lack of confidence in my potential. Despite my hard work during the pregnancy, he expressed disappointment that I didn’t finish my dissertation before the birth (though it was early in my fifth year) because he felt I would have no ability to work after becoming a mother. He continually expressed doubt that I would graduate on time and that I would have any time to work once the baby was born. When reading my thesis, he kept telling me I had to give credit to my other colleagues, pointing to work that I had done. When I corrected him and told him that I had done the work, he said, “Well, I am surprised by that.”*

*Things came to a head when Greg assaulted another friend of mine in the department. An investigation was launched that led to Greg being fired. It became clear that he had a long history of harassing behavior that was never reported (though our entire department was aware of his tendency toward lewd comments). The aftermath of his firing was awful. Everyone in my group commented on how horrible and unfair it was that Greg was fired, and how important he was to our group, and how awful for the experiment it was that he was gone. No communication was made to my group as to why he was fired. Former members of my group solicited our group to write letters of appeal to the University. I attach an excerpt below:*

*“This is absolutely unacceptable, especially for someone that has provided so much for the University community for the last twentythree years... It appears it started by a complaint about*



*some "inappropriate" behavior that escalated to unreasonable proportions by a gross mismanagement of the case ... I beg you not to remain idle! Feel free to contact [Greg], he's a hell of an honest man. Contact others that have*

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*interacted with him extensively in the recent years to better understand what's going on. There are people of all backgrounds that can offer a testimony.”*

*The outcome of the lack of communication with my group on the part of the administration was horrible for me and for former members of the group who had been harassed by Greg. I, for one, felt extremely alone and unable to express that I did feel that Greg deserved to be fired. My advisor repeatedly brought up Greg's absence and his feeling that the University had treated him unjustly. Though I tried to explain to him that he maybe didn't know the whole story, he openly expressed his disapproval that whoever this happened to didn't come to him directly, saying that he would have taken care of it without firing Greg. He personally asked me to write a letter of support for Greg. A former female student who had been harassed by Greg called me at 11:30 at night, worrying because my advisor had emailed her asking for a letter of support, and she was afraid to say no.*

*I went to the department chair, and cried in his office trying to explain why there needed to be communication with my group. He told me that if anyone didn't believe Greg should have been fired, I should tell them to go to him on an individual basis! Thus, the onus was on me to be the one person in the group who would speak against this verywellliked individual. I even went to the Viceprovost's office, begging for someone to communicate with our group about why Greg needed to be fired. Nothing ever came of it. This backlash affected me very personally. I began to have flashbacks and nightmares again. I felt angry and unfocused. I feared that I would be exposed as a victim of Greg and retaliated against. Finally, I felt that my group didn't value my safety or my integrity as a person, and that they felt it was my responsibility to put up with whatever behavior someone felt like imposing on me.*

*After a year since Greg has been gone, the comments have slowed but not stopped. The group administrative assistant sent a reminder last week that it was Greg's birthday and wedding anniversary. The most triggering incident recently was a letter sent by my advisor to the entire collaboration. The excerpt is below:*

*“I don't often make excuses for my many failures, but I agree, this might have been done better. Unfortunately, as some of you know, we had serious changes in personnel during this activity, with the loss of [Greg], an important and experienced technical person for our group, and [my name] who recently had a baby.”*

*This hit me on two levels at once. In the same breath, my advisor glorified my attacker and bemoaned me as “lost personnel.” I decided that I had to stop this behavior even if it meant coming forward about my assault. I went to my advisor's office and explained to him that his continued praise of Greg was hurtful to me. He launched into a defensive rant about the unfairness of the decision, and spent two hours lecturing me about the virtues of forgiveness, specifically mentioning that forgiveness is a good Catholic virtue (he knows I am a devout Catholic, while he is an exCatholic). He indirectly blamed me for my friend's assault and the*

*subsequent investigation, saying that if I had told him right away, he would have warned Greg that his job was on the line, Greg would have listened, and the University would never have to have been involved. He even asked me to tell him what happened specifically, as if his curiosity and desire to judge my situation was more important than my privacy.*

*After the conversation with my advisor, I couldn't focus well on my dissertation for weeks. I felt vulnerable and unsafe for days. With the initial backlash, it wasn't as bad because no one knew I had been assaulted. Now, someone knew, and thought it didn't matter. I felt like my assault had been legitimized and accepted as the appropriate price of good science. After I had given this experiment my all, my advisor saw me as so worthless and expendable that a tech who assaults people is more important than the safety of me and his other female students.*

*After all of these experiences, I fully intend to leave academia behind. As much as I enjoyed research, no fulfilling work is worth putting up with the barrage of sexist behavior and the stress of feeling unwelcome and undervalued for reasons having nothing to do with the quality of your work.*

## XII. Understanding Women's Responses

Given the prevalence of instances of bias, sexism, hostile environment, and harassment experienced by graduate women in STEM, and given that the University has a reporting and disciplinary system in place, it is important to understand why these resources are not utilized more often. According to this survey, the prevalent response of women experiencing gender bias is to do nothing, justify the behavior, and/or try to handle the situation by themselves. The examples submitted provide trends that explain the predominant response.

Uncertainty and labeling of experiences: In order to take action against instances of gender bias or harassment, the behavior must be identified as such. For many of the women graduate students surveyed, there was an uncertainty about whether a behavior constituted an actionable offense or a breach of University policy, or even sexism at all. Though women were unsure of the cause of a behavior, it is important to note that this uncertainty does not mean that the behavior was not detrimental or that it did not create a hostile environment. For example:

- *Although it sounded trivial but at the moment I felt offended because I wonder if the fact that I am a woman played into their unaware behavior with me...*
- I thought I was just being paranoid and imagining things, but my labmates have also independently noticed this... Statements like these show that women are hesitant to label their experiences as instances of gender discrimination unless it is confirmed by others. This uncertainty can lead to inaction.

In addition to being unsure of the origins of problem behaviors, many women had the tendency to justify behaviors they found harmful by citing the intention or ignorance of the offending party. The responses show that women often use rationalization as a defense mechanism. They hesitated to label the behaviors as ones worthy of action because the offender didn't intend to be hurtful, didn't know the parameters of appropriate conduct, or didn't do something that fell into the person's definition of harassment or discrimination. They attributed harassing or offensive behavior to ignorance, misspeech, or tactlessness. These mitigations demonstrate the tendency of women to downplay their experiences and the resulting effects because of a perceived lack of intended hostility. Even if women experience a pervasive hostile climate, they may still label their experience as not serious enough for action, expressly citing harassing or discriminatory behaviors and then claiming never to have been truly harassed or discriminated against. In social science, this phenomenon is wellknown under the appellation of minimization: the tendency of victims to minimize their experiences or characterize them as exceptions, rather than matching them to labels of discrimination and abuse.

Harmful behavior is still harmful, even if it is written off by the target of the behavior. For example, a woman may feel that the discrimination she is experiencing is not intentional and choose to ignore it, but the discrimination still has an effect on how her colleagues view and treat

her. Though women may be uncertain of the gendered nature of their experiences or downplay their significance, these small but pervasive inequities can have a serious effect on women's career trajectories and wellbeing in STEM.

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Action is stifled or suppressed by the culture: It is a difficult and significant step to report a hostile environment or an instance of harassment. Women may test the potential consequences of coming forward about their experiences with trusted colleagues, peers, and mentors, or by addressing the offending individual directly. In this stage of the process, women's voices may be trivialized and met with open hostility, in effect silencing them.

Many women graduate students have reported experiences in which their attempts to draw attention to the issues affecting them were dismissed due to a culture that does not acknowledge the potential for gender discrimination. For example, a woman expressing a feeling of offense may have her feelings dismissed as illegitimate. In some cases, this dismissal takes the form of a person directly telling the woman that the behavior isn't or shouldn't be offensive. In other cases, humor is used to distract from the legitimate attempt to call attention to harmful behavior. Individuals at all levels reported being discouraged to report, either by accusing the student of overreacting or simply by not acting on the information or following up with the student. A culture that supports victims of harassment should minimize the amount of effort required by the individual in reporting.

Other women cite concerns that they will not be believed if they come forward with their experiences, or that people will find other explanations for the problem behavior. Others fear being dismissed as "too sensitive." The perception of "reverse discrimination" makes it difficult for women to speak up about how their sex/gender identity has caused problems for them. Thus, the onus is on women to put up with problem behavior without complaining, instead of on the perpetrators of the offensive behavior to stop.

Some attempts to promote women's equality in science have been met with open hostility by members of their departments. For example, male students may schedule competing departmental events at the same time as women's group events and pressure female students to attend their event instead. Some individuals retaliate against students who attempt to communicate openly about these issues by escalating the problem behavior.

All of these dismissive or hostile behaviors discourage women from speaking up about their experiences. Reporting a problem exposes women to the further emotional, social, and professional consequences of having their feelings and perceptions disregarded or being considered unpleasant to work with.

Social isolation dampens resistance: Scientific discoveries are no longer made by individuals working on their own. Getting along with one's colleagues and networking is integral to being included in scientific progress and sometimes requires access to informal opportunities. Personal reputations have professional consequences in more than just a social nature. Reporting carries risks to both personal and professional relationships.

Women may already feel that their social standing in their research groups are in jeopardy, like the students who expressed feelings of isolation or being an outsider. For example, social groups





often form amongst graduate students, which can leave out students with minority identities. For someone already feeling this sense of isolation, creating conflict carries significant risk. The prevalence of these behaviors makes it still more difficult for women to speak out, since they may get a reputation for being sensitive, mean, bossy, or unpleasant. As a result, women often feel discouraged from challenging harmful or stereotypical opinions held by their colleagues.

Finally, the culture of acceptable behavior is set by the male students and faculty, who constitute a majority. They become the accepted arbiters of what behavior is tolerated, rather than listening to minority voices. Women can find themselves outnumbered when expressing their point of view about an offensive behavior. The cultural standards set by men make it difficult for women to “blend in” socially. The social activities that women are invited to tend to be what the majority (men) enjoy. For example, at conferences, groups usually go out to drink at night, but women may feel excluded from this because they are concerned about their safety at night in unfamiliar locations. This exclusion is not purely social as these are often good opportunities to network, and thus may have an impact on a student’s professional development.

Reporting and speaking up require time and energy: A hostile environment consumes the mental resources of women graduate students, which can negatively impact their productivity.

Hypervigilance is a common sideeffect of living in a hostile environment. In a culture that values scientific output above all else, it can be difficult for a woman to justify spending time and energy to rectify a situation when her work demands her full attention. The sheer volume of problematic behavior experienced by some women makes personally addressing each individual incident an impossible demand. However, the emotional stress of enduring a hostile environment continues to consume mental resources.

Furthermore, a hostile environment can exacerbate/induce impostor syndrome in which the subject constantly feels that they do not deserve their success and will be “discovered” at any minute. While impostor syndrome is common in graduate students, it is especially prevalent in underrepresented groups. Women graduate students in STEM may suffer from the impression that they were admitted because of their gender, which can be worsened by lacking a sense of belonging and women rolemodels.

Reporting is not necessarily anonymous: In many cases, there is added reluctance for women to report because the reporting process is not necessarily anonymous. A woman who wants to report something may be easily identified because there are so few women in some STEM departments. Even if a bystander reports an incident, it is often assumed that the victim was the one who reported. In some cases the number of women graduate students is low enough that once others in the department learn there is an investigation underway the anonymity of the reporter is compromised. Furthermore, the witnesses and the respondent in reports are not sworn to secrecy, so rumors of the case can spread without the consent of the reporter. This lack of anonymity coupled with the fear of backlash for reporting is enough to effectively silence many

women.

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Lack of awareness of solutions or trust in a reporting system: There is a widespread lack of awareness as to how the disciplinary and complaint process works. Given all of the risks mentioned above, women are unwilling to go forward with a complaint not knowing what the consequences will be. Women may not be aware of the confidential resources on campus, or they believe these resources are dedicated to serious offenses and not more subtle instances of discrimination. Many women do not even know what to do if they want to report. Additionally, when men lack awareness of the disciplinary process and when there is no transparency in the disciplinary procedure, there is greater potential for backlash.

There is also a sense that the University frequently speaks about women's equality without any accompanying action. The disciplinary process is distant, but the experiences of women scientists are dominated by their immediate work environment. One student put it this way: "The university at large talks very loudly about improving the situation for women, and yet the sorts of attitudes that make the environment uncomfortable in the first place are alive and well inside labs, meeting and research groups." There is a sense that the University cannot protect students from backlash should they come forward about their experiences.

One particular problem for graduate students in STEM is the power dynamic between students and their advisors. They are afraid to speak up against advisors because they need their recommendation to graduate and letters of recommendation to get jobs after graduation. Some advisors may want to solve the situation themselves, ignoring their duty to report instances of harassment, if they are even aware of those responsibilities. Women who hear of past events being mishandled by the University are discouraged from reporting, especially since the investigation is out of their hands after the initial reporting.

How women respond: Due to all of the aforementioned difficulties associated with reporting and speaking up, women often deal with their negative experiences via inaction or trying to solve the problems themselves. These improvised fixes can be as detrimental to women's careers as the problem behaviors that inspired them. For example, several women have reported switching advisors or leaving their research group because of gender discrimination or harassment. A switch of this kind is a major upheaval in the life of a graduate student, which exemplifies the severity of the hostile climate. Others accommodate the environment by changing their behavior, such as changing the way they dress. Many women see that inappropriate behavior around them is accepted and recalibrate to accept that behavior as the norm. This process puts students at risk because in a culture where inappropriate behavior is tolerated, it can escalate much more readily.

### **XIII. The Council's Recommendations**

It is clear from the response to this survey that many of the STEM departments at Princeton have yet to achieve an equitable, safe, and productive environment for its women graduate students. From the stories women graduate students shared with this council, it is clear that sexist jokes are prevalent, microaggressions are common, and women are not treated as equal to men. Serious instances of sexual harassment and assault have also occurred. Furthermore, gender discrimination is now an "invisible problem;" the hostile environment persists while the consensus claims that bias has been eliminated, if not reversed. Much of the time offenders lack malintent, but massive ignorance on the part of the community leads people to say and do harmful things. Other times, offenders feel threatened by attempts to correct their behavior, and the behavior continues, often intensifying, even after an attempt has been made to stop it. A small subset are aware that what they are doing is wrong and just don't care.

Additionally, the institutional strategy of improving climate by relying solely on women to report instances of harassment or hostile environments is not working. We cannot put the onus on women, who are a minority and often isolated, to correct this problem. Given that the problems are cultural and systemic, not isolated, it is this council's recommendation that the best way to promote a healthy working environment is to approach the issue as a cultural problem rather than relying on a reporting/disciplinary model. If a proactive approach to changing the culture can be made, it may circumvent many of the problems associated with backlash, the silencing of minority voices, and social isolation.

**A cultural acceptance of inappropriate behavior allows such behavior to escalate much more readily. This escalation is more difficult to detect and define in environments where smaller incidences of harassment are not properly labelled and are widely considered the norm. Creating an environment where more subtle and pervasive forms of harassment are recognized and not tolerated is a necessary preventative measure. To protect students, programs that eradicate the hostile cultural norms in STEM departments must be implemented.**

Recommendation 1: Sensitivity training A large number of responses cited ignorance as a cause of harmful behaviors. Because women cannot enforce a professional culture by themselves, there is a strong need for everyone to understand the problems women face and what constitutes a professional environment. Male allies, particularly professors, need to feel an obligation to recognize and intervene in situations that violate University policy, and they need effective tools for doing so.

The desire for the training of faculty, staff, and students was a recurring theme in the survey responses. Different students cited different sources of discriminatory behavior, including graduate students, staff, postdoctoral researchers, and professors. A recurring theme in the responses received was the claim that most people are ignorant of University expectations and

the desire for sensitivity training. These responses highlight the need for training at every level.

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Some of the people who contribute to this hostile environment for women have had some kind of sexual harassment training before, but their continued harmful behavior speaks to the ineffectiveness of the previous training. It is this council's recommendation that any training mandated meet the following standards:

1) Training should involve students and faculty, but they should be trained separately to highlight different potential problems. For the faculty, there should be an emphasis on power dynamics and its implications for consent and the honest expression of women's feelings and concerns. In one particularly salient example, a faculty member demonstrating a clear breach of University policy believed that his behavior was acceptable because no one had told him otherwise. He relied on voluntary feedback to police his behavior without regard for the inherent power inequality between himself and his students.

2) The training must establish that the situation for women in science is inequitable and problematic before there can be any discussion. Without a firm understanding about the real, deleterious effects of a hostile environment, any sensitivity training will come across as a mandate from the faceless ideal of "political correctness" and will be ignored. It also needs to be made clear that these problems exist in actuality and in our own environment. These claims should be backed with appropriately confidential/masked data and quantitative studies. The training needs to be personal so that the importance and immediacy is understood. For faculty, framing the training as a way to protect students could be very effective.

The knowledge that these problems exist and affect women's lives, careers, and wellbeing is needed before any intervention is done. Several examples included male hostility toward "political correctness" and women's groups in general, showing a lack of understanding of the motivation behind these efforts. Action without establishing the problem will be ineffective. The establishment of the problem must be done without exposing the women whose examples were shared in this document in confidence. It is also problematic to treat all women as a single group, as such an impression could create a counterproductive division between men and women.

3) Once the problem is established, resources for women and allies must be made available in order for a cultural shift to occur. Subconscious biases can't be fixed by consciously knowing them. Awareness of a problem this pervasive is not useful without an accompanying set of strategies and resources to create the desired environment. Women and their allies must be educated on the disciplinary process and who/where they can go to. This process and these resources should be mentioned in the training, but a passive education campaign should be pursued in parallel (ex. signs in hallways/bathroom stalls). The training should also highlight who mandatory reporters are. In the case of faculty, participants should be told if they are a mandatory reporter and what their responsibilities entail. There is evidence that many mandatory reporters are unaware of their obligations.

4) The training must take into account the social nature of the academic workplace. For many women graduate students, the laboratory is also their social circle. Training should include

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friendly/romantic interactions in order to properly instruct trainees on how to navigate department spaces professionally.

5) The training must take into account the variation of experience and feelings among women graduate students. People in underrepresented groups don't want to be wholly defined by that group and need to be seen as individuals. The acknowledgement of other identities is paramount. There is the feeling that you are a woman doing science, not a scientist that's a woman. The situation wherein women are seen as uncomplicated representatives of their group must be avoided. Since many women have multiple identities, the training should speak to other underrepresented groups as well.

6) As an international community, we need to address differences in cultural norms between America and other countries.

7) We recommend a series of training sessions separated by topic to begin the process. Training should be reinforced through repetition and reminders, and enough time should be spent on training for it to be maximally effective.

8) We suggest that the more stereotypical examples be isolated to a single training session while the more subtle issues be covered in several sessions. The training must emphasize the cumulative effect of a hostile environment in addition to touching on the more serious individual offenses. Most often, discussions of sexual harassment focus on the more stereotypical examples of quidproquo sexual misconduct, unwanted sexual advances, or sexual assault. While it should be acknowledged that these things can and do occur, and strategies for dealing with them should be outlined, care should be taken that these more inflammatory issues do not dominate the conversation.

Subtle instances of harassment should be emphasized, as they are more common. They should be clearly defined as sexual harassment, to avoid the misattribution and downplaying of experiences. The examples should cover a wide variety of issues, including less common topics like pregnancy/family discrimination, backlash, and microaggressions. These examples should emphasize the effect they have on the community.

9) Most importantly, training should include a twoway dialogue. The people who are part of the problem cannot unpack their problematic behavior and attitudes with an online module or a seminar. The resources needed for such a discussion may be higher, but without the opportunity to have their points of view challenged by an authority figure directly, the message will be lost.

10) How the training is labeled, packaged and presented is vital to its effectiveness. Labels like "sexual harassment training" and "sensitivity training" can evoke hostility from many in the STEM departments and diminish the weight of the discussion. The training needs to be vetted and/or presented by members of the community (department) that it's being presented to. The presenter of the material should be someone that is a well respected leader in the department



(like a male professor). The presenter must also understand the needs of the department,

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support the cause, and receive adequate sensitivity and moderation training to present the material.

### **11) The training for faculty should include basic managerial training for faculty to**

understand how to manage their postdocs and graduate students. In general, faculty only have scientific training and don't receive any managerial training. It is necessary for faculty to understand that group members need to maintain a worklife balance, especially when they have families, and that their time and professional boundaries should be respected. A substantial amount of inequity can be corrected by a basic understanding how to manage a lab.

Recommendation 2: Critical mass without the perception of affirmative action Women may feel uncomfortable discussing issues of gender discrimination or issues particular to women with a male authority figure. Women mentors with an understanding about how the STEM research community works are sorely needed for women students. The desire for such mentors was expressed by multiple women in the survey. Furthermore, women faculty may be overburdened with the obligation to mentor women students who are not in their research group. This can create a sense of coldness on the part of the faculty member. There is also awareness that women faculty members may be overtaxed with these issues, leading many women not to take advantage of these few women mentors.

However, perceptions of preferential hiring are also detrimental to the work environment, and some women feel strongly that the increase of women mentors is not worth it if there is the perception that they and other women achieved their success unfairly. As one student put it, "I worry the topdown incentives for hiring women and engaging them in science will only encourage this mentality and will actually be detrimental in long run (I often question if I got my position because I am a female)." Not only does the perception that women are preferentially hired cause other scientists to question women's abilities, it may cause women to question themselves and can lead to imposter syndrome. Another said, "Subconscious biases can't be fixed by consciously knowing them. If Princeton wants to improv[e] the environment for women in STEM and actually help them, hire more women in faculty, hire more men in administration [secretarial support staff]. And do it silently." There is a large pool of extremely qualified women in STEM fields that Princeton could recruit for faculty positions. Instituting family leave and childcare incentives and promoting a safe and productive environment for underrepresented groups could positively influence the candidate pool.

Recommendation 3: Involving men Men make up a strong majority of the population in most STEM departments. Women's groups on campus that would like to include male allies in meetings often don't have the financial resources to maintain such a large group for any appreciable amount of time. Further, WomeninSTEM events that specifically invite men to participate often have a woefully small level of participation from men. One student said, "Sometimes, when there are events organized to discuss about the gender gap in STEM, I only

see women there. I think it will be helpful for Princeton to organize an orientation event mandatory for all graduate students in STEM to discuss these sensitive issues. That is the only way to get the majority of my department to get

*involved in this discussion. And let's be honest, that's the only way we will see change. Discussing these issues amongst women who are already aware of them isn't going to help. We need to make the male students aware too."* Another student feels that women's groups have some helpful attributes but fall short of creating the change she really needs: *"Honestly, I think that [women's] groups address only half the problem. Yes, we need mutual support and mentor networks, but by definition the groups are exclusive to the other half (or at this point, greater than half) problem, which is getting our male colleagues to understand the challenges we face, and teaching them to respect and give due credit to all female colleagues, not just the ones they personally know."*

Male allies can relieve some of the pressure on women to speak up when someone acts inappropriately by intervening. If male allies are encouraged to report, then it becomes a cultural norm to address harassment, rather than a gendered expectation. If people know that women are not the only ones reporting, there may be less backlash on victims.

Recommendation 4: Involving students and departments (with guidance and feedback) Members of the STEM communities are more likely to accept change if they are invested in it. Periodic assessments such as this one can help the University be aware of problems and avenues for improvement. Helping departments form their own formal community standards (with the help of appropriately trained administration) will help all members of the community feel invested in creating an environment where science and scientists can flourish.

One useful strategy is to institute committees or designated individuals in each department designed to address climate change. Members should be selected with student input and trained appropriately to carry out these tasks. Women often feel more comfortable going to someone that they already trust within their department. Women's voices at all different levels (undergrad, grad, postdoc, staff, faculty) must be adequately represented and heard equally in these spaces, as their perspectives will be different than those of their male colleagues. This may involve ensuring women are adequately represented on committees. Tokenism should be avoided, as one woman may have trouble convincing a group of men of her point. There could also be a member from Title IX and/or SHARE on the committee to provide oversight and to feed anonymous information back to the department in cases where department members want the committee to know what is happening but would prefer to maintain anonymity.

Recommendation 5: Response to investigations or reports Sometimes a report should be filed in cases of misconduct or violations of University policy. In these cases, departments should be trained on how to handle the situation, aid the recovery process, and control backlash. Feedback should be provided and departments should have twoway communication with administration to promote best practices. In these situations where the disciplinary process is put into practice, several things need to happen to promote recovery.

1) Timely communication with those directly involved (such as the PI of the group) to establish

that a disciplinary process is taking place. 2) While protecting the privacy of individuals involved, there should be timely communication with the general community, particularly the research lab involved.

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3) The research lab should be told what constitutes retaliation and/or a hostile environment and the penalty for these actions. 4) People should be educated on how to support members of the community who were affected

by the perpetrator. 5) Emphasis should be made to clarify what behaviors constitute what actions. Clarifying the level of potential consequences will enhance understanding of the reporting process and may encourage others to report minor offenses (with the understanding that minor offenses only merit minor action, not consequences such as an individual getting fired).

Conclusion It is this council's hope that this document provides insight into the real experiences of graduate women in the STEM fields at Princeton. Incidents reported here range from blatant cases of sexual misconduct to the more common daytoday instances of subtle discrimination and harassment that, when added up, take a toll on women scientists. Responses to our survey indicate that gender discrimination remains embedded in many of our departments' cultures. Although many women have adapted to rationalize and accept their current situations as the norm, these seemingly small instances of discrimination have a cumulative effect that results in an unnecessary distraction to students' productivity and has a deleterious effect on their careers as scientists.

Addressing this problem will require a concerted effort at all levels of the Princeton community. This document outlines the recommendations for an educational effort with an emphasis on motivating and humanizing the problems of gender discrimination and harassment. In addition, efforts to promote a critical mass of women scientists at all levels and involve men in the discussion to promote gender equality can help to embed a cultural awareness of the problem and change the expected norms. Finally, a reporting and investigation system that encourages communication about these problems with an emphasis on recovery and preventing retaliation will help maintain feedback as to the efficacy of other approaches. With these combined efforts, it is this council's hope that a safer, more equitable environment can be created in our community for the women who work and study here.