

Survival Tips

If you could blog about survival strategies for women graduate students in the STEM fields, especially in lab cultures, it would be very helpful. In the early days of the writing workshop course, I would suggest the women find a female faculty member to mentor them. To a person, they say, "Our female professors are so overworked. They only have time for their own work and their own students. We can hardly talk to them."

Being a young woman in a field dominated by men is, at the very least, challenging. Science, technology, engineering, and math (STEM) are such fields. There are few female role models. There are few female peers, so women feel isolated. Similar to other underrepresented minorities, women face enhanced professional expectations (a woman must do twice as much to get half the recognition) in order to successfully combat the perception of intellectual inferiority. There are many stereotypes about a woman's priorities or career plans ("Of course you want babies and a family," even though you say you don't, or "Since you have children, you are certainly not working as hard as you should," or "You will certainly follow your husband for his job"). There is a large body of literature about the challenges of women in science and engineering: a quick Google search will reveal a number of articles, blogs, and forums that the reader is encouraged to explore. I will not argue whether or not women face obstacles in STEM careers. They do.

Instead, I am going to try and give some practical tips on how to navigate what I feel is a typical STEM graduate experience for a woman, largely based on my own experiences. As a graduate student in a physical sciences discipline notorious for its low representation of women, I was often the only woman in my graduate classes. Even when I wasn't alone, women never exceeded 10-15 percent of the class, and this percentage remains true for most graduate programs in my discipline. What I write here is by all means not exhaustive; it resembles what I would say to a female student who came to my office for advice. I consider my experiences to be fairly typical but by no means universal. Luckily, I believe that a *typical* experience no longer entails sexual harassment (although there are still terribly unfortunate exceptions), but rather a palette of phenomena that stem from the peers' or Ph.D. adviser's often unconscious biases. Over time, small obstacles to a young woman's professional development can accumulate into a marked disadvantage in the job market, not to mention a permanent scar to a woman's perception of her own worth as a scientist and a person.

Be realistic about support from female faculty. Young women in STEM are often referred to the few women faculty in their departments for guidance. However, they may find that women faculty have little time to spare and may appear unwilling to engage in a mentoring relationship. It is important not to take rejection personally. For instance, many female professors on the tenure track have small children and a developing research program -- both requiring tremendous energy and time. Also, just because a woman is a professor, that does not mean that she is no longer facing biases in her own career – she too is often isolated from other women, faces enhanced expectations and preconceived notions from peers, and has to work extremely hard to gain adequate recognition. Therefore, if a junior female faculty member is not responsive to your inquiries, don't take it personally, as she is herself likely facing tremendous personal and career challenges.

I find that tenured female faculty are more responsive to inquiries by female students for informal or formal mentorship on how academia works. Tenured female professors are more established in their careers and likely have older children, so they are often more willing and able to invest time into helping other women up the academic ladder. But, even so, some tenured women don't see it as a big priority or may be too busy, so if you are having a hard time finding a female mentor in your department, try not to take it personally and explore other opportunities to find female mentors (below).

Connect with other women in STEM. It may seem impossible to make friends with other female graduate students when there are virtually none around. However, most professional organizations in STEM disciplines have a designated section to help broaden the participation of women and their career advancement. Here are some links: [Women in Physics](#) (organization of the American Physical Society), [IEEE Women in Engineering](#), [Women in Biomedical Careers](#), [ACS Women Chemists Committee](#). There are also interdisciplinary organizations such as the [Association for Women in Science](#) and the [Society of Women Engineers](#). Consider joining a local chapter of one or more of these organizations and volunteering. Chances are you will meet many young women such as yourself and also some senior, more established ones, who are truly interested in mentoring younger women.

Fight "impostor syndrome." Often, young women in academia feel they don't belong in their graduate programs. This is a manifestation of the well-known "impostor syndrome," exacerbated in women in STEM because there are so few other women

around and so few senior women. The woman can wonder if she really belongs in the lab; these insecurities are often only deepened by the vibes the woman receives from those around her – their biases against, or simple discomfort due to the presence of a woman. The best way to fight the impostor syndrome is to tell yourself that everyone – everyone! – feels it, even BigWig famous professors. You are not the only one feeling like a fraud, as you will find out once you establish trust and start talking more openly with the people around you.

So don't worry whether you belong. If you are successful in your coursework, if you enjoy your research (for the most part – science has plenty of frustrating moments!) and feel that you are good at it, you most certainly belong in science.

Let stupid remarks slide. Often, people say insensitive things not because they mean to belittle, but because they are themselves insensitive, ignorant, or socially awkward. It helps if you can learn to let the small stuff, especially blunders, slide off your back. I don't mean keeping quiet when things are clearly meant to hurt or offend – by all means speak up. But stupid remarks are sometimes just that: stupid. Learning to distinguish between these two types of remarks can save you plenty of annoyance. For instance, if you have a lab mate who is friendly and supportive of you but occasionally says something that stereotypes you or other women, this person is likely talking from his own biases of which he may not even be aware. Call him out on his remarks and explain why they bother you or would bother another woman, but don't give up on your lab mate entirely. Men, especially very young ones, are often unaware of their biases or how some things they say affect women; at the same time, most really don't want to be or to appear sexist and will likely take your comments to heart. Chances are that your male lab peers will become some of your most fervent supporters throughout your career.

Actions speak louder than words. It is generally a good idea to view a person's actions together with what comes out of their mouth. For instance, a senior male member of my Ph.D. committee was very supportive of me in all aspects of my professional career. He also happened to have a bit of a potty mouth and enjoyed somewhat inappropriate jokes of all sorts. It took me a while to realize he simply likes to shock people (women and men) and that in reality he was a supportive and caring mentor.

In contrast, there are many people who have mastered the art of political correctness and are very careful about avoiding verbal blunders. However, they still *act* according

to their sexist or otherwise biased convictions (such as look down on female students, oppose the hiring of female faculty or accommodation of family leave policies). These people are who you should be on the lookout for. Just because a prospective Ph.D. adviser is a smooth talker, that does not mean that he or she will be supportive or caring of you (or any other student). Before committing to anyone's lab, make sure you talk to other students about how they feel, how the professor treats women and people who are underrepresented minorities, and where the professor's former students are currently employed.

Find support wherever you can. A number of successful women scientists and engineers had supportive male mentors and colleagues. The numbers of men and women in many STEM fields, especially those designated as "hard STEM" are such that you are exceedingly likely to be advised by a man throughout much, if not all, of your career. There are many wonderful male professors who are very supportive of women. There are also many wonderful young men, currently your peer graduate students, who will become future professors and will benefit from having smart female peers in graduate school, and from being nudged – gently or a little less so – to grasp what a female scientist's experience is really like.

Try not to depend on women alone for companionship or support. If we are to make the STEM labs equitable, both men and women have to realize it isn't so yet, and both have to work towards removal of bias (to women or other underrepresented minorities).

Seek help. In the horribly unfortunate case that you are a young woman in an academic setting facing sexual harassment, please seek external help immediately. If you are feeling very uncomfortable at your place of work or study because of interactions with your peers or your adviser, if anyone is making unwelcome remarks or overtures which you cannot stop, or if someone is making your professional advancement contingent on romantic or sexual involvement, know that these are gross violations of your rights and you ought to talk to someone outside of the lab about the best course of action (such as removing yourself from the situation and penalizing the perpetrator). Many universities have an employment assistance office where you can see a counselor; alternatively you can contact your department administration or the college or university human resources, who will point you to the channels for filing complaints and getting counseling. Getting help and feeling safe again are much more important than any immediate career concerns you may have.

Be a mentor yourself. As you advance through your graduate program (hopefully never knowing harassment) you will become more confident in your command of "how things work in graduate school" and in your technical specialty. But don't forget the feelings of isolation and doubt, and reach out to new students – of both genders and any ethnicity, ability, or sexual orientation – to help them feel welcome and appreciated in the lab. Also, as you progress throughout your career, many of the issues may resurface, as you have to prove yourself all over again to new colleagues. Staying connected to your professional association, nurturing a network of supportive peers and professional elders, and helping develop a new cohort of enthusiastic scientists are the best ways to ensure long-term satisfaction with your career.