



The Bulletin
msgsQ&A

***Mathematics and Statistics
Graduate Students Association***

The fourth edition of the Bulletin is finally here, better late than never! For this editorial we have a very special topic - women in mathematics. We asked women from our department to share their feelings and their experiences for being part of this world. I have to say that their views are interesting and their words are very inspiring.

Although this topic is about female mathematicians, I do believe that being a woman is difficult in any field. We have been raised with a certain set of values that strangely resonate across cultures and countries — women have to look a specific way, behave in a particular manner and that some career paths are not for us to take. Funny fact is that when I was younger, I wanted to eliminate any sign of femininity because I was considered it to be a flaw. I wanted to behave like a man - wear baggy clothes and never show anyone that I could get emotional. I even learned how to drive a manual car because I never wanted any man to tell me that “women can’t drive”. I was trying to fill every possible hole so that no one will ever accuse me for being weaker because I was a woman.

Now I realize (fortunately) that this is makes no sense. Not because people will not judge you, they will do so anyway, but because such behavior should not be acceptable to me or to any woman out there. In this world, where we are criticized for every single step we take, for every single decision we make, we should not allow such stereotypes make us doubt ourselves even more.

I know that a editorial addressing such an issue should include an example of a perfect woman, preferably mathematician, and her remarkable career that we should all look up to, but I think we already have access to such examples. What I will do instead, is to share with you my female role model, a woman who didn't even go to school - my grandmother. She is the strongest woman I have ever met, physically and emotionally. She spent her whole life working in the fields harvesting vegetables. I remember her carrying a heavy big basket of vegetables on her back and working nonstop, in cold winters and incredibly hot summers. Her hands are till this day brown and rough. With all this work she was able to provide her family, her two daughters and even us - her grandchildren. All these by her own two hands. And at the end of the day this is how things are, we all have the power in our own hands. They do not have to be as rough as my grandmother's hands, but is there. We just have to believe in it and put the work in to see it through.

Last but not the least, I would like to thank everyone who has supported our idea for this bulletin. Unfortunately, I do not think that we will have more issues (at least for now) since the workload is exceeding our capacity. If there is anyone that would like to help and be part of our team please let me know. I would like to thank Abhishek Guin for his help with the editing.

Finally, I would like to thank every woman out there who has been a support for all of us. A mother, a sister, a family member, a teacher, a wife, and any female out there that against the difficulties, is still a fighter.

Enjoy your reading,

Maria

Have I ever experienced any type of gender discrimination? Absolutely. Back in the 60's, things were very different for women. First, a woman needed higher SAT scores than men to get into college. They were also required to have higher class standing. Even though I was attending Penn State and grew up in the college town which was very liberal and advanced for its time, entrenched structures take a while to be razed.

I remember, when my sister, who is a year older than me, asked my father if she could go to college, he was surprised because she was a woman. That was pretty common at then time. If a woman really wanted to go to



Ms. Bonny Tighe

college, they would advise her to go be a nurse or a teacher because these were considered to be good jobs for women. When I got married, I was still in college and my mother in law assumed that I was going to stop my studies because of that.

Later on, I moved to California to find a job. Unfortunately, I was turned down by multiple jobs because I was a woman. They would even say to me "we really like you but we need a man" - they were allowed to say that back then. But I never let this treatment stopping me from achieving my goals. I was able to do jobs that I was not qualified at all, just because I believed that I can do it. You just have to believe in yourself.

It is a hard world for women out there but never let the men's club keep you out. STEM is a male dominated area and they keep it this way for a purpose, but is going to change. Things are definitely improving. I always say to my female students "you are the better students but for some reason you do not think that you can do it". As women we have to stick up for ourselves and know our worth. We have to be as aggressive going after what we want, just like men do naturally. A strong man is a strong man. A strong woman is usually characterized otherwise (rhymes with ditch)! Women tend to be harder workers and better employers, and yet men will get the job first. Why?



Neha Agarwala

My experience as a woman in science has been wonderful and challenging at the same time. As a woman in statistics, I have had to get used to being a minority, especially at the beginning of my career. Although gender stereotypes in science are a little less rife today than they were back then, one challenge I occasionally faced was getting my peers to take seriously what I said. There were definite instances of unconscious biases and outdated comments. Another issue I found fairly common is women being hired in some organizations merely to promote gender diversity. I think a woman should be judged solely based on her merit and not just to advocate diversity.

Having said that I am also fortunate to be surrounded by family, scientists and leaders which includes men who constantly supported and inspired me. One of the female role model I have is definitely my mom. I come from a community which, probably a decade ago, was not very open with women pursuing their PhD. I found it surprising when my mom said to me "Yes you can do it, just go for it!". She has been really encouraging throughout my life. Moreover, I recently read the book "Becoming" from Michelle Obama. I found it to be very positive and inspirational and I find her hard work very motivating.

I now work in a diversified department and I have many male colleagues and friends, who are very respectful of women making their mark in science. I no longer feel like I'm seen as a woman first; I am just a researcher. To all the women out there, the most important thing is to never lose confidence and to stay focused on what's important: doing great science because working hard truly pays its rewards.

I have experienced gender discrimination only once. It happened when I was an undergraduate in a physics lab and the TA asked me, "Why would a woman ever like to study physics?". Why would someone ask me that? I do it because I like it! Other than that, I never experienced discrimination that I know of, I guess I have been lucky.

I had no restrictions from my parents as to what I should become. They were always telling me to find something that I like to do, that I will be paid for and that is what I did. They were always very supportive. My mom is the one that influenced me the most. She was always telling me "you should always ask because the worst someone can say is no".



Dr. Kathleen Hoffman

Concerning female academic role models, Dr. Robinson in the Biology department has been one for me, particularly early in my career. She helped me a lot when I first came here. I also admire Lisa Fauci from Tulane University. I like the way she handles things and am impressed with all her accomplishments.

As a general advice to women in STEM, I would say to decide what you want out of life and do that. Being a mathematician is part of who I am and I cannot see myself not being one. I also knew that I wanted a family so my husband and I made it happen. It was not easy but that is what we wanted and that is what we have achieved. Moreover, I would advise other women in STEM to make sure that they have a community of mentors. In a faculty position, it is important to have mentors inside the department, outside the department but inside the university, outside the university but in your field and then cheerleaders - people that are not in your field but will be there for you. It is always crucial to have someone you can turn to when an issue comes up.



Mingkai Yu

Every girl should follow a path that she enjoys. No woman should ever feel discouraged for following her dream - no matter what the general public might say. I have never felt any discrimination for being a woman in science, but I do believe that there is a general opinion that girls cannot perform well in challenging fields, like mathematics.

When it was time for me to choose my major, many people were surprised with my decision and they were telling me "Really? You want to do mathematics? You might not be able to handle it". But since I have been pursuing my passion, I noticed that the math community generally does well in being supportive and inclusive with women.

There were times in my career when I was not sure if I can succeed with my PhD project and sometimes I question myself whether I am smart or hardworking enough. But being a girl has never come to my mind when I am having difficulties because I see that my fellow male graduate colleagues struggle a lot as well.

It is true though that the number of women in mathematics is definitely smaller than men. I have been thinking what are the reasons for that. I personally believe that this is because generally women are expected to be perfect, whereas men are more encouraged to be brave. Sometimes girls are discouraged from taking risks and since math is a challenging subject it might have an impact on a career decision.

As far as it concerns female role models in my life, my mother has been a force to reckon with. She really supports me and when I face difficulties she always believes in me, even when I do not. I really admire her ability to balance her family with her work. My academic role model is Marie Curie.

When I finished my undergraduate degree, my mother was in poor health. So my grandmother and father decided that I should get married straight away. My mother was a very strong supporter, a kind of fighter, and insisted that I should get my Master's degree. I did start my PhD, cleared my coursework and qualifying exam and was on the brink of starting my thesis work when I discovered that I was pregnant. When my son was born, I could not stay at school as much as I wanted. I was unsure whether I will be able to find a balance between school and family and consequently quit my PhD.



Ms. Raji Baradwaj

I did regret my decision because my advisor was very sweet and he was trying to convince me to go back to my research, but when I found a job and I was able to spend time with my child, the guilt went away. My son says that "I wrote my PhD thesis because my mom quit her PhD for me".

My biggest female role model is one of my very close friends. We came to the US around the same time. She has an MS in Physics from India and was employed in a nuclear reactor facility there. She already had a baby when we came to the US and after the baby was a year old, she started taking classes in Nuclear Engineering and eventually got a PhD. Now she is the Radiological Safety Officer at Texas A&M. She has balanced her career and home life beautifully.

Although I have never felt any discrimination against me, I do believe that it exists. For me, it is not even a matter of discrimination. The status quo is not because men do not want to respect women, it is because some men feel that women are not good enough or they want to feel that they are above women. Having said this, my math teacher in high school was the one who motivated me to go into mathematics.

It is hard to be a woman in the STEM fields, but this should not be the reason for not moving forward. Sometimes women have to give more than 100% to succeed in their lives, but we have to be strong to accept criticism. If you have a specific goal in your mind, do it with passion. Passion is what is going to take you the long way. Never give up.



Alyssa Berez

Gender has nothing to do with the skills you have. Being raised with a twin brother, I learned from my parents that I can do anything a man can. Gender does not matter, is what you do in the world that matters. And this is what I am trying to achieve.

When I was a kid and used to say to people that math is my favorite subject, I was getting responses like "Oh that is weird for a girl". Growing up, math was my favorite subject and I was fortunate enough to have great female teachers that were very encouraging. But that was not the case for all the girls out there. I know about other girls that they were told

by their teachers that they will not do as well as the boys in the class. Coming from people of my age, it is really surprising.

I am aware that being a girl in this field might seem scary, but this feeling is never going to change if we do not make a concerted effort to do so. We, as women, are the responsible ones to make the difference for females in science. Getting young girls from as early as elementary school into STEM cannot happen unless there are female role models they can look up to. We have to prove to the world that we can do it.

There might be fewer people nowadays expressing the rusty patriarchal opinion that girls cannot be as good as men in science, but it is definitely still an attitude. Especially when you are progressing higher in academia and you meet older people in the field, they might have that mindset - whether they realize it or not! I think that the first step we have to take is to acknowledge that there is a problem. It is not enough to just say "yes we need more girls in STEM". We have to do a better job in acknowledging that those women that are already in the field of science, are facing different problems than men are, and think about what can we do to fix that.

Traditional gender roles are more explicit in some Asian countries than they are in America, so my experience with gender discrimination is biased by those cultural norms. In my past, if any such incident had happened to me, I might have perceived it as normal. I adapted to a different set of standards growing up in China, but have come to appreciate the environment that we presently benefit from. Recognizing the different societal contexts of my past and present circumstances, I have to say I've been lucky not to have been effected by gender discrimination.



Dr. Yi Huang

Although I was raised in an environment where women pursuing careers in science were vastly outnumbered by men, I just followed my passion for becoming a statistician working in public health areas after getting a M.S. degree in Atmospheric Physics. I would advise all students, especially girls, to not be afraid to strive for what you really desire. Just focus on your goals and try your best.

Regarding female role models that I admire, one of the women that was a strong, positive influence was my PhD advisor, Dr. Karen Bandee-Roche. Another significant role model is Dr. Kathleen Hoffman, who I continue to admire as one of our most impressive faculty leaders. Both Karen and Kathleen are always very thoughtful, in words and deeds, and has a special way of communicating that I really appreciate. I also look up to Dr. Phyllis Robinson from the Biology department. She leads our local WISE (Women in Science and Engineering) chapter, and is extraordinarily welcoming and encouraging for women faculty. I feel lucky to have come to know these women leaders, and with their support, to have become one of their colleagues.

In my personal life, I really look up to one of my best friends - she is more like a sister. And, our close friendship dated back to the good old college's days in 1992. We have been through a lot together, including divorce and surviving as a single mom with young kids and full time academic careers. She is very strong emotionally and has been a great support for me like a family.

