Gender and Science
A Case for Inclusion and Diversity

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A narrative of the struggles that a woman has to go through in order to establish herself in an area of research dominated by men and by ideas rooted in patriarchy shows how the mathematical playing field is skewed against women. Not only do they have to struggle much more than their male counterparts, but women mathematicians who have made important contributions are still not given their due. The problems that women in the natural sciences face and the possible ways in which these can be addressed in order to create a more equitable work atmosphere in science research institutions and universities is discussed.

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When I was invited to give a TEDx talk in Pune a few years ago (TEDx Talks 2014), the organisers told me that it was a theme-based event; the theme being that of women achievers from different spheres of life. It was one of the most interesting events that I have attended, with a fruitful exchange of ideas and meaningful networking between different women. There were women philanthropists, entrepreneurs, teachers and scientists from different geographical and economic strata, many of whose talks held the audience in thrall. The woman behind the event had done a very thorough job in choosing the speakers, and had left the choice of topic to the respective speakers.

There were two scientists, including me, the other being Anu Acharya, a geneticist–entrepreneur who is the chief executive officer (CEO) of Mapmygenome. Anu gave a fascinating talk on the theme "From Janam Patri to Genome Patri" and what this meant for the betterment of public health in India. Another talk that had been engraved in the listeners' minds was by Shravani Pawar, the CEO of Safehands 24x7—a security company that largely employs women security guards—about how it has helped transform the lives of rural women. It struck me then that these talks were rendered different because they were devised and delivered by women. It was very natural for Anu to think how of her expertise in genetics and biotechnology could be useful in improving people's lives, and for Shravani to wonder why only men should be employable as security guards, when there were circumstances, such as in the case of needy single older women, where women security guards would be more of a natural choice. When Shravani was asked what was the biggest challenge she faced, pat came the reply, "Getting my employees to wear pants and shirts; because they felt this would alienate them from their communities."

It then came home to me that both Anu and Shravani were dealing with women's issues, in domains that had a very tangible connection to the everyday lives and concerns of people. I, on the other hand, had to talk about women in mathematics, which, being so abstract, had at least no apparent impact on the quotidian concerns of human existence. Keeping this in mind, I chose to speak about Emmy Noether, whose story for me reflects the gender gap, gender attitudes and patriarchal mindset faced by women in science. I had proposed the title "From Maitreyi to Noether: Science by Women," but it was later changed to "Falling in Love with Maths and Science."

Finding a Role Model

Emmy Noether was a mathematician of the highest order, whose work in the first half of the 20th century laid the foundations for much of modern algebra and the mathematical aspects of Albert Einstein's theory of relativity. Was it a smooth journey for her, one may ask. I would like to share some well known evidence related to how Noether faced gender discrimination and the obstacles she faced within the German academic establishment. Even David Hilbert, the most recognisable mathematician at the time could not secure a teaching position for her at the University of Göttingen; universities in Europe were largely closed to women. Exasperated, Hilbert exclaimed that he did not see why gender posed a problem in what was, after all, a university and not a bathhouse (Tent 2008)! Moreover, it is striking how little the general public knows about her, when, after all, she is considered by experts as a mentor-of-sorts to Einstein.

While Einstein has become a household name, Noether, in comparison, is hardly known, though her work is recognised in mathematics and theoretical physics circles and has also recently attracted attention in the history of science circles. Noether's theorem is now even referred to as "The Greatest Theorem Ever Proved." In fact, the magazine *New Scientist* carried a cover story speculating about why so little was known about the person behind this theorem, wondering whether it was because of her gender (Goldberg 2015). Happily, I note now that Google even featured a digital doodle in 2015 in honour of her birthday (23 March 1882), and also that the internet is now populated with serious content about her.

While researching for my talk on Noether, I realised that even though she is being written about in recent historical accounts, her gender is still often neglected. A woman who authored a book on Noether's theorem, wrote about the tingle that ran down her spine when she realised Noether was actually a woman. Noether's father, Max Noether was also a mathematician and the error of mistaking Noether for her father Max is quite instructive of the implicit assumptions made about gender in science.

Other than being a top-notch mathematician, Noether had also built a reputation for being an excellent mentor to other young mathematicians and theoretical physicists working in Göttingen. It was from R Sridharan, one of my mentors at the Tata Institute of Fundamental Research (TIFR) where I worked on my PhD, that I first learnt that one of the young people that Noether had mentored was Einstein. Hearing Sridharan speak so highly of Noether made me believe that women can be great mentors, as well as mathematicians of immense calibre. When I brought up this topic with a German colleague recently, who is also a historian of mathematics, he gleefully remarked that he wonders even now as to how much of her work and its profundity were actually understood by her contemporaries, including Einstein. Such voices, when heard by younger women, would go a long way in reinforcing their own self-worth and can help them form an image where men in mathematics are not infallible and that women in mathematics can be exceptionally good. It is for these reasons that I believe that Noether's story is very relevant as it highlights the issues faced by women in science, even today.

Against this backdrop, I want to describe my own trajectory in my chosen career path. From a young age, I demonstrated the ability to do mathematics and a love for the subject, especially the abstractions with which it brought me to engage. I, however, think that it is the support and encouragement that I received from my family, and the mentorship that I received from my professors at the university and in my research that ultimately led me to pursue my chosen career path. This is what I seek to bring out through my narrative.

One of the important factors that influenced me in deciding to pursue mathematics was the recognition and encouragement I received from my family, especially my parents and grandparents. As a young girl, when they recognised that I liked studying, especially mathematics, and was good at it, they just let me explore and find my passion without trying to influence me by offering arguments for or against my choices. Looking back, I realise how much this led to discovering and carving my own path, as well as building my self-esteem. I am also conscious that this is a luxury and is out of reach for so many girls. I can vividly recall my grandmother talking about the mathematical legend Srinivasa Ramanujan to me and my brother when we were very young. Ramanujan's mother and my paternal grandparents belonged to the same community and came from the same region in Tamil Nadu (Erode district). She had closely followed Ramanujan's life story and would narrate it to us. Perhaps, this played a role in her continuous appreciation of my mathematical talents, which in turn was greatly encouraging for me. The reality in India, even today, is that families choose to invest in the education of the male child at home, sacrificing scarce funds from the family kitty for tutoring the boys, but not the girls.

Many of my teachers were women, which contributed to forming images of role models in the domain of knowledge dissemination. One of my teachers planted the idea and possibility of a career in research, even in mathematics. This shaped my own views and plans in my college years. An important interaction with a woman, a postgraduate chemistry student who had helped me with my chemistry lessons, brought home the possibilities and opportunities of a career in science. It was then that I realised that more than the physical sciences, it was the component of abstraction in mathematics that held a deep aesthetic appeal for me. I found this sentiment neatly encapsulated by Bertrand Russell in his quote, "Mathematics, rightly viewed, possesses not only Truth, but Supreme Beauty—a Beauty cold and austere, like that of sculpture without appeal to any part of our weaker nature." When I was at the crossroads of having to choose between a professional engineering degree and a degree in pure science, I was fortunately encouraged to pursue the latter by a senior student in my college who quickly recognised that abstraction appealed to me. My father and grandmother were also very pleased when I expressed my desire to choose the pure sciences.

In 1985, when I opted for basic research and joined TIFR (I was married and had a young daughter by then), one of the

first impressions that I formed there was how many of my male peers already knew each other because of having participated in various summer camps and other similar events. Invariably, women end up not having the same exposure as the men do, given that many of them are not allowed to travel. This adds to the set of parameters that work against women when it comes to traversing into and within academia. At TIFR, I was fortunate to have two supportive faculty members, namely, R Sridharan and Parimala Raman.[1] Raman was my PhD adviser and Sridharan had been her adviser. Both of them went the extra mile in rescheduling appointments and classes, given the long distances I had to commute during my time at TIFR. They were particularly appreciative of the other constraints I faced in my personal life—having a young child to look after—and created a supportive and enabling environment.

I believe that there is a good amount of mentoring that takes place, simply through the sharing of narratives of lived experiences, especially for women mathematicians and scientists. Noether's life has been a great source of inspiration for me and my own, and in its modest way it can help other younger women confront issues similar to the ones I faced.

I will take the liberty of sharing a personal story that has left a deep impression on me. A few years ago, I was in China to participate in a workshop and a woman PhD student who was in the same department came to meet me. Our conversation was at one level professional, about mathematics and our careers, and at another level, it was very personal. She was married with a young child, and had a supportive family who encouraged her to pursue PhD when she was granted admission into the prestigious Beijing University. She had read my essay in the book *Lilavati's Daughters* (Godbole and Ramaswamy 2008), and had learnt that I had started my PhD only after I became a mother. She said that while she tremendously enjoyed her work and the challenges of research, she often suffered serious pangs of guilt at the thought of her young child growing up in her absence. She inquired whether I had experienced similar feelings, and how I coped with them.

Speaking about this, a little more in depth, she explained that she spoke to her family and her child almost every other day on Skype, and that they saw each other at least once a month. It was clear that the child was growing up in a secure environment, not wanting for care or love. I explained to her that my case was slightly different, as my daughter lived with us back then and I only had to commute each day, albeit a long distance. I had indeed felt those pangs of separation and a sense of guilt when I went to conferences or workshops, or worked long hours. I advised her that it was essential, that she talk to her colleagues and supervisor on maintaining a certain level of work–life balance and that the sense of guilt she felt was unnecessary. She was comforted to hear this, and for me it brought about a sense of self-worth that a young woman was able to talk about this openly and freely on a woman-to-woman basis. This story captures the power of networking, mentorship and guidance amongst women, when available.

Institutional Marginalisation

In this section, I will discuss the issues of gender within the institution of science and the possible ways of addressing these problems. I will not restrict myself to mathematics, but discuss mathematics and natural sciences together, because the issue of gender in science crops up in different areas of science in very similar ways. Of course, a more specialised discussion may bring out those issues in biology that, say, do not show up as apparently as they might in mathematics. But, the larger issues in each of these subject areas are the same, because the rules for the playing field in science, as a whole, were set up and have evolved over a long period of time from when knowledge was predominantly a male bastion. To break this stranglehold of patriarchy, the scientific community should first acknowledge that there is a problem that needs addressing. This should then be pursued with sincere exploration—through the processes of redressal and correction mechanisms.

To a large extent, especially in India, the response is still that of tokenism or is patronising in nature, rather than a genuine recognition of the capabilities and strengths of women, or towards creating enabling pathways. Science is still largely viewed as a male-dominated field and there is a network, similar in spirit to Freemasonry, which works to the advantage of men. The allusion to Freemasonry is because information is conserved, disseminated and used within a well-demarcated network or territory that serves at empowering a pre-identified set of members within a group. Such a system ensures a sense of belonging, identity and power, and additionally, confers a sense of pride, enlightenment and a feeling of "doing good."

It is due to this privilege of patriarchy that discourses about women practitioners in science often come out in a derisory tone, a recent example being the statement of Nobel laureate and English biochemist Tim Hunt in 2015. His comments, that women caused trouble in the labs because they made men fall in love with them and that women would cry when they were criticised, raised worldwide consternation (Jayaraman 2015; Ratcliffe 2015). I have been asked as to why there is uproar only when comments like this are made by men and should not women become agents of their own voices in order to be heard? My submission is that the microphones are mainly controlled by men and that the agenda is also set by them, and, therefore, we should be appreciative of the fact that when such comments are made the collective outrage that is voiced is increasingly snatching the microphones away from these men and is handing them over to women. Thus, it is heartening that the statement by Hunt had the unintended effect of amplifying and bringing about a sharper focus to the complicated issues faced by women in science. However, in the discussion accompanying Hunt's statement, why were two fundamental and obvious questions never asked? "What is shameful about being emotional and crying?" and "Why is it always the woman's fault when a couple falls in love or get involved emotionally?" I know for a fact that, even in India, this is the easiest stick, immediately available, to beat a woman with in any sphere of life, including science (Jayaraman 2015). I would even go to the extent of saying that it is perhaps in the larger interests of

society that science be accompanied by greater sensitivity. Propagating the image of emotional women as antithetical to that of a successful scientist is unnecessary and detrimental.

The Art of the State

I had the privilege of serving for over a decade, on various advisory committees for the Government of India, among which were the National Knowledge Commission (NKC; from 2007 to 2010) and the Scientific Advisory Council to the Prime Minister. This experience brought home to me the importance of diversity, gender and regional ties, which should consciously be taken into account by the state while constituting such committees. I realised that many such national and international committees have minimal women members and, thus, problems tend to be viewed through a dominant masculine prism. Further, even if women members are present, there is an element of tokenism in the Constitution of such committees, rather than a mindset of genuine empathy and learning with the view to alter reality so as to make a difference.

The outcome on the ground then turns out to be one of incremental improvement, rather than being transformative. Counselling for women students, easier pathways for lateral entry into research, and encouraging networking events for women at all levels would be the obvious steps to explore. Additionally, there is often no serious follow-up or review combined with feedback from the stakeholders at whom these specialised schemes are supposedly aimed. Thankfully, both the committees mentioned above were aware of this, and often the discussions were not confined to a narrow view. These are probably exceptions to the rule. It is imperative that we consciously be aware of these pitfalls and that we rectify them systematically. A suggestion would be to have more of a diverse representation as well as observers and advisors in such committees.

Perhaps, the committees should be encouraged to interact with women's groups, non-governmental organisations (NGOs), with researchers from women's studies departments, sociologists, and experts from other relevant areas. Another practice that has worked to the benefit of women is that of mentorship. Young women hired in departments should have a senior researcher assigned as a mentor so as to help them navigate their multiple roles, if any. This is again where the lack of networking among women makes this a necessity. In general, such mentors should ideally be made available for all young researchers.

Research Funding and Discrimination

In the 2000s, even in developed countries, funding mechanisms have been dictated by dominant views and perspectives. This, in turn, has lead to the stunted participation of women in various areas. More importantly, there are reports that also highlight how this, in turn, leads to a skewed focus on the areas of research pursued thus, perpetuating the exclusion of different groups from contributing to the advancement of knowledge. One example that is often cited is that of cancer research. The funding for certain types of cancers, predominant in women, was not up to the requisite levels so as to merit serious research, when compared to the funding received by researchers of other forms of cancer. This had to be stridently called into attention by a few women researchers in biology, which then led to awareness, advocacy, and then to advances in treatment.

In another simple case—it is now known that painkillers act differently in women and men, because of their genetic and hormonal differences—it turns out that most of the clinical trials and models are based on male populations. "Almost all basic research—regardless of whether it involves rodent models, dogs or humans—is predominantly done in males. The majority of research is done with the assumption that women and men are the same," says Deborah J Clegg from Cedars-Sinai hospital in the United States (Davies 2016). Thus, it now emerges that even the basic paradigms of basic scientific research and clinical trials need a rethink and an overhaul. Though there are no parallel examples in mathematics, mathematical research is also subject to current fashions and the whims of funding agencies.

These pointers are, in turn, largely set by the entrenched practitioners, amongst whom men form a majority. One, therefore, finds it simply ingenuous when there are voices from within society calling into question the innate ability of women to participate as equals in science. This is simply a case of setting ground rules and creating conditions for fulfilling certain prophesies and then perpetuating them. It is important that there be an understanding of the larger narrative, context and history to this situation, rather than blithe passing of judgments or forming of opinions. We should have more inspirational stories on the innate potential of women as well as on the extraordinary achievements of women from different walks of life, so that this percolates into the society's mindscape.

Minorities, Peers and Community

An essential component of any profession is peer networking, peer acknowledgement and a sense of belonging within the community. One could argue that all these have not been handed on a platter to women and other minority groups within academia. By minority groups, I only mean groups that are not represented adequately in the mainstream. It could range from racial, religious, gender, or regional minorities. Developed countries have experimented with various forms of affirmative action programmes to address this systemic issue and have succeeded to an extent.

An important factor contributing to the success of these programmes has been the monitoring of the policies that were instituted, and the course correction that is undertaken whilst reviewing and analysing the data. A simple but effective step is to conscientiously look for and include women speakers and participants in conferences or workshops. This is now done routinely in many international conferences. In fact, some international funding agencies make it compulsory for proposals to have a certain percentage of gender equity at all levels; from participants and speakers to the organisers. This is another mechanism that needs to be put in place and strengthened meaningfully in the Indian context.

An NKC study looked at the representation of girls in school and college education as well as in science contests as part of a

project related to a more serious understanding of science education and research in India. It studied one of Agastya International Foundation's—an NGO that has been doing pioneering work in improving the quality of science education in rural schools—flagship programmes that prepares children from underprivileged areas, starved of access to resources, to compete in national science contests, like the INTEL–IRIS (Intel Corporation's Initiative for Research and Innovation in Science) contest. While examining data from the 2000s, it was interesting to find that the finalists, from the groups that the NGO worked with, were largely girls. Many of them went on to become winners at the national level. Hearing them speak about their projects was a rewarding experience, and listening to the passion and animation with which the girls presented their projects, their future hopes, plans and dreams would make it clear that interest and talent in science is not determined by gender. However, when we tried to map their future trajectories, it was starkly apparent as to how the system and society had failed them completely. It was almost as if their talents and successes worked against them, and were interpreted as encumbrances that would hinder their marriage prospects.

The visibility and accessibility of role models cannot be overstated enough. The networking component can be of great importance towards grooming, which eventually can increase the participation of women in many fields, including science. Sheryl Sandberg's book, *Lean In: Women, Work, and the Will to Lead* (2013) makes this point eloquently. There is a lot of subliminal messaging that goes on, both consciously and inadvertently, given the 24x7 mediums of communication that are a feature of modern society.

Interacting with the Agastya International Foundation provided me with a simple example. When children in rural communities were asked about their ambitions, before the foundation had set up their mobile science and education labs, the answers that they often gave were "bus driver/conductor, postman, truck driver." After a year or more of intervention and active work with the schools and children in the same villages, the answers were totally different; "teachers, doctors, engineers, scientist" were now a part of the children's vocabulary and aspirations. Viable and credible role models are hence vital to attract, nurture and encourage talent across groups, especially for children from under-represented groups. There is a larger challenge when it comes to the specific case of girls, especially in the Indian context, where one has to take into account the existing societal mindsets, stereotypes and the diversity of communities.

The other obvious and glaring vacuum was in the sphere of access to childcare facilities. This is an area that institutions and the state have to address jointly. In a recent welcome announcement, the Rajya Sabha passed a bill increasing the period of paid maternity leave. This is a step in the right direction, and should be buttressed by other mechanisms aimed at improving the academic and financial security of young women in the scientific milieu.

On one of my early trips abroad, it was a pleasant surprise to see the kind of childcare facilities that were available on campus, which helped make conditions more conducive for young couples to focus on their research. Happily, it seems that many Indian institutions have taken note of this and there is some progress on this front. Studies have shown that safe and secure workplaces go a long way in realising the full potential of women at the workplace. Thus, access to childcare facilities close to the workplace can help young mothers work with a sense of peace and would enable them to focus more sharply on their research.

The State of the Art

For close to three decades now, many developed countries have remained focused on improving the overall participation of women in higher education and research, at all levels. The missteps, if any, are corrected and efforts continue towards addressing policy issues, funding and networking. The results and accompanying data clearly point to why such efforts are necessary given the overall gains to science and society in general. The example of Germany is a case in point. During my postdoctoral years in the early 1990s, the number of women pursuing science education at higher levels was dismal, as was the number of tenured women professors and researchers. Today, the situation has significantly improved, thanks to funding focused on encouraging and supporting women. Friendly policies such as maternity and enhanced childcare, to name a few, were introduced. The most interesting of these policies were the networking events and workshops. From senior women researchers providing students with tips for preparing their resumes and for job interviews, to sharing information about job openings and advice on tackling the "two body problem" (which is when couples are looking for jobs together, preferably in the same institution or geographically closely located ones), such meetings provide a fascinating glimpse not just of the innate abilities of women researchers to do great work, but also of how they are able to negotiate a variety of attendant issues. In meetings where women are a minority, many of these possibilities and pathways would be closed to them.

Such groups have also helped shape policies for funding. Many funding agencies now allow researchers (both men and women) to use their grants for childcare costs, such as nannies during workshops and conferences, as well as for increased costs related to childcare expenses after working hours. Many venues that host research conferences and workshops now have dedicated childcare facilities, making it easier for women researchers to be able to attend more workshops and conferences.

It is interesting that there is now a lot of open discussion about the dearth of women in top positions not just in science, but also in other areas such as members of boards, and as CEOs of companies, for example. Various studies have pointed out the clear benefits of diversity at the workplace, gender diversity being at the top. The global consulting firm McKinsey has many reports related to this theme, which make for an interesting reading. Thematic workshops in mathematics aimed at women are gaining currency and many workshops do make very conscious efforts to increase the representation of women at all levels. Social media has played a role in leveraging and sustaining such networks. To name the few in mathematics, we have Women in Numbers (whose members are WINNERS),

Women in Topology, Women in Algebraic Geometry, amongst others. It is heartening that the impact of such groups has not gone unnoticed, and also that people supporting these initiatives (both women and men) see the value in spreading such networks, the lessons learnt, and the accompanying best practices to other geographical locations. Thus, there are associations—such as American Women in Math, European Women in Math—that focus on advocacy and policy issues within their geographical locations as well as sharing their experience and efforts with women from other countries and continents. Thus there are fledgling associations focusing on women in math in Africa, Latin America, India and Asia. The International Mathematical Union recently set up an International Committee of Women in Mathematics to look at the issues related to the gender gap and gender representation, and work on improving the overall picture.

Closing Reflections

I would like to close this article with some personal reflections and experiences. In January 2015, I was diagnosed with a rare form of brain cancer.[2] We returned to India for chemotherapy (a total of 12 sessions lasting a year), and it was at this time that I developed an understanding of science from a completely different dimension within the larger knowledge systems. My mother's traditional knowledge of dietary systems that increased immunity and haemoglobin levels played a major role in seeing me through the debilitating side-effects of chemotherapy. In addition, the knowledge and medical advice of practitioners of traditional knowledge systems such as yoga and ayurveda helped me tremendously as well. I used this period of non-functionality to read voraciously about Western medicine and the approach to cancer research in juxtaposition to traditional knowledge systems. The lessons learnt were valuable and provided, in their own way, a microcosmic view of the dangers of perpetuating and exacerbating divides at different levels.

While the gender divide was discussed in this article, there are similar underlying forces at work in the divides and gaps among knowledge systems too. The overarching influence of Western medicine stifles voices from other traditional systems, and the pervasive paradigms of validation (clinical trials, drug research, patents) have an overreaching breadth and depth that smothers any other paradigm. I believe that the trappings of modern science and the established practice of it, in my opinion, have blinded established practitioners from being open to exploring other approaches and experiment with them. Just as in the case of the gender divide, this knowledge divide, in my opinion has a detrimental effect on society and humanity. The other similarity is that a mightier force sets the rules, agenda, funding mechanisms and validation of rules from within, therefore, calling into question the efficacy of any other alternate approach. It would be worthwhile to acknowledge the need for greater participation of alternate approaches, rather than trying to propagate an existing set of beliefs and hypotheses.

These remarks on medical science necessarily want me to reflect about the place of traditional and indigenous knowledge systems in other sciences, especially mathematics. I have often been asked if it would not be better for us to go back to our traditional knowledge systems and explore ways of disseminating them to make our students excel in science. I am sympathetic to this view and we did deliberate on it as part of the NKC discussions. Given that there is immense contribution from ancient India to mathematics, it is a valid question. However, there is the danger of confusing it with other (for example, nationalist) paradigms in the prevailing discourse, which would be antithetical to the way science and knowledge progress. We do not have enough experts who even understand the ways in which this ancient knowledge operated, let alone how it was disseminated over time. It would be worth one's while to first do a serious study on these aspects and package the approach in a satisfactory way, given the present context of education in the country. The impact and outcome should be measured and validated, which could then lead to plans for a larger rollout.

NOTES

1 Reflecting on my early student years at the Tata Institute of Fundamental Research, I am conscious of the intangible but palpable support provided by R Sridharan. Sridharan is a true scholar, humane to the core with none of the "macho" trappings and beliefs about the practice of science. Perhaps, his widespread interests in the arts, languages and poetry helped him hone such a world view. He genuinely believed that women were as capable, if not better, as men in almost any walk of life. He also saw the limitations, especially in the Indian context that acted as barriers to the advancement of their true potential. Parimala was his student and is an internationally recognised mathematician in her own right. He would often talk about the women students he had and how they went on to do great things in spite of having to cope with situations that men never had to confront. Being in this supportive circle did help me express myself freely to Sridharan and Parimala, and I did not have to assume artificial roles to prove my interest or capability in a scientific career.

2 I had to undergo emergency brain surgery when I was all by myself at the University of British Columbia (UBC), Vancouver. Thankfully, my husband could rush to be by my side at the time of the surgery. My colleagues and students at UBC rallied around me in the hour of need and the university went a long way (and continues to do so) in seeing me through a very difficult time. This brought home to me how essential it was to have strong support structures in place, both at the institutional level as well as in the larger administrative context.

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