'We stand on the shoulders of the women that came before us'

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Isn't that a nice quote? I personally think it lacks something.

As a woman heavily ingrained in science, it is true that there are several inspiring women in history that have led future generations of women into science, and as the saying goes 'well behaved women rarely make history'.

To me, it is the everyday women in science who make the real impact. Small steps lead to big changes. Women can be successful in science without having to 'think like a man'. This is not about hating or resenting the opposite sex but celebrating our differences as strengths.

Before I tell the story of my journey into science, let me tell you about some women of science who have inspired me. Every single one of these women has had an impact on my life, and in their own worlds, are superheroes.

- My boss, P, has had a long-standing career in science. She now works at executive level and leads an enormous, successful team with empathy, strength, and grace.
- My mentor, C, works in a challenging executive-level role striving to impact change whilst providing mentoring support and guidance to those who need it most.
- My best friend, K, completed a PhD while pregnant, works as a consultant geriatrician in a crumbling NHS, and has worked tirelessly through a global pandemic. She has never questioned putting her own physical and mental health at risk only to help others.
- My neighbour, J, who works for the government. She has worked tirelessly and led a team in a high-stress environment, all while battling cancer and her partner's health struggles.
- E, a boss and mentor I had briefly years ago. E brought me into a consultancy team and helped me develop my skills. She has since offered support and advice when I have needed it throughout my career.
- Every. Single. Female colleague I've worked with past and present. Over the years I have watched female colleagues struggle with the management of work and home and imposter syndrome, never feeling like enough.

For all these women, and anyone reading this, you are seen. We have your back.

Note what I did not mention here. I did not mention that these women achieved this while also raising families. Why did I not mention it? Because it should not matter. Their achievements belong to them. If this were an article about inspiring men in science, their family life would not even be considered.

> **Everyone should be applauded for their achievements, big or small, regardless of gender or circumstance.**

The most beautiful thing about being a woman in science is you are consistently supported and lifted by the women around you. We should not resent or step on others to get ahead, we should support each other and remember everyone that has their own journey. Never compare your chapter 2 to someone else's chapter 22. Each of us has the power to make a small change, and collectively these small changes are what make the largest impact.

On to my personal journey as a woman in science. Why am I sharing this? Not to get sympathy or 'likes', but in the hope that my story can inspire one woman to continue their career in science, despite the personal and professional challenges they may face. Each of us has a story.

I grew up in Inverness, and as an only child, my parents never had any lofty expectations. Just quiet support for whatever choices I made. I was distinctly mediocre (or at least I felt that way). I did not get straight A's in high school, I was not gorgeous and popular (read: short, spotty, and awkward), and really did not know where I belonged. I came to Glasgow University at 17, initially studying electrical engineering. Do you know how difficult it is to decide what you want to do for the rest of your life at 17? After two years of drinking, working, and not nearly enough studying, I switched courses and started second year of maths and statistics.

As it turns out, this was the best step I ever took. I continued this into my honours year and was invited to join a summer project before entering my final year. This project offered me the opportunity to travel to MIT to compete in and present at an international competition, which ignited my interest in research. I completed my honours degree with a 2:2, not with a first as people assume. Do you remember when I said I was distinctly mediocre? Well, I hate to disappoint those who think I am some kind of savant. I am just average but have an unbridled enthusiasm and love for science.

I was lucky enough to obtain an MSc in research and had no idea where I wanted to go or what I wanted to do next. I applied for PhDs to continue my research career. I was told by several people that, despite having an MSc, my 2:2 would hold me back. It did not. I was offered 5 different paid PhDs.

In 2009 I entered a PhD programme in medical statistics, working within a stroke research group. Throughout my PhD I worked on some of the most interesting projects with world leading medical researchers, travelled all over the world to conferences, published several papers, and, most importantly, made some of my closest friends. My male supervisor was a professor of medicine and known to be difficult. To me, he was one of the most encouraging, inspiring and committed people I have had the pleasure to work with, and I consider myself lucky to have had him help me develop my statistics career.

In the middle of completing my PhD, I had heart failure for the first time when my aortic valve failed. In 2011, I had to take 3 months out of my research to have open heart surgery and recover. I was 25 at the time, and terrified. I was TOLD by my male surgeon that I would be given a mechanical valve and would be on Warfarin for the rest of my life.

Thankfully, my supervisor had told me of all the options I would have, and logically walked me through all the pros and cons. Because of this knowledge, I had the confidence to speak up and request a tissue valve, omitting the need for Warfarin, which comes with its own host of issues, including serious dangers if you choose to get pregnant.

I recovered, completed my PhD, and started my career as a postdoctoral research fellow. After graduating with my PhD I also attained a black belt in karate during my spare time. At this point in my career, I aspired to become a 'cool' professor. I was very, very wrong.

During my post-doc, 10 weeks before my wedding, my father died in Tenerife. He had previously gone from being a loving supportive father to an alcoholic beyond help. This was another point in my life when I realised how important the women who surround us are. My mum, friends, and aunts surrounded me with love, support, and encouragement, and eventually partied all night at my wedding.

In 2016, as my boss was retiring from academia, I decided that 2-year contracts and no defined future were not worth the grief and so I moved into industry. I became a senior statistician and worked 2016-2020, during which I had my son. In 2020, during the pandemic, while looking after a baby and working full-time, I decided to move on for progression and more money. Two weeks before my contract ended, I almost died of heart failure. I was taken into hospital and did not come home for a month. I could not see my friends, my partner, or my son. I had open-heart surgery for the second time, and after some time to recover, eventually started a new role as a principal statistician.

Eventually, I received a call from MAC looking for a statistician. I took the job, working 4 days a week. Since working here, I have had opportunities to develop my skills and not only grow my own career but also my own team. I am now Head of Statistics at MAC and love where I am and the person I have become. I also tutor and mentor kids in my spare time as a way to give back.

If you have made it this far thank you for reading my story. I could not be in the position I am in without all the fantastic women who inspire me on a daily basis, and colleagues who support me every day. If I can make a series of small impacts and change one person for the better, then that would make me happy.

Dr Rachael MacIsaac is Head of Statistics at MAC Clinical Research and leads our in-house team of highly skilled statisticians.

Our statistics team play a crucial role in the end-to-end delivery of clinical studies, and provide additional bespoke support when needed.

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