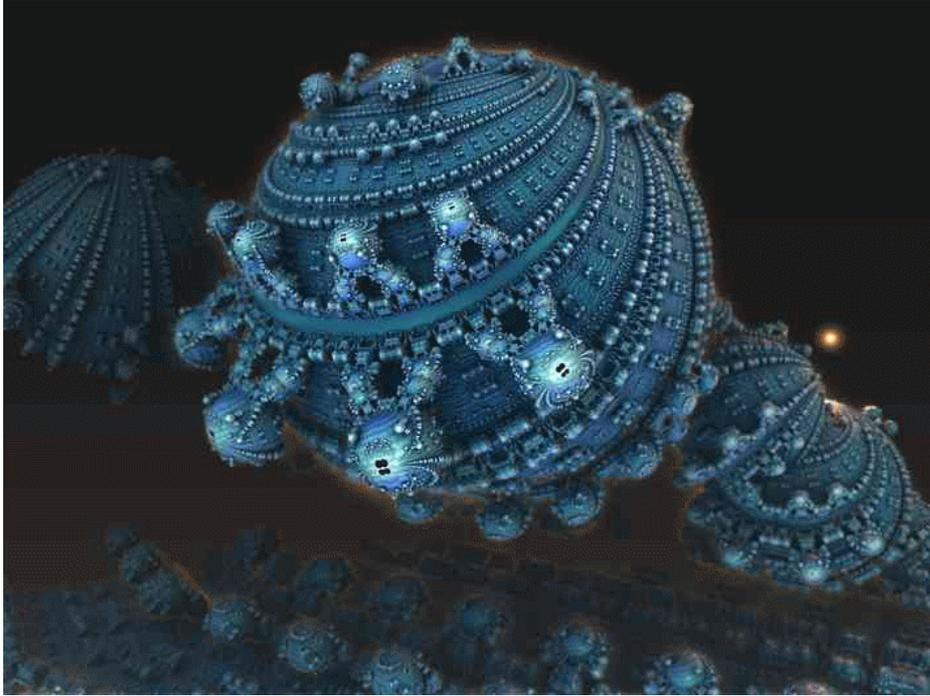


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Women Challenging the Culture in Science: Inciting Inclusion

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Professor of chemistry, Frances Separovic, University of Melbourne
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1 comments



On 30 March 2016, the Faculty of Health and Menzies Institute for Medical Research at the University of Tasmania hosted a gender equity forum, "Inciting Inclusion: A Conference and Conversation Engendering Equity in Health, Science and Academia". **Professor of chemistry, Frances Separovic, from the University of Melbourne, was a speaker. This article is an edited version of her address.**

In recent years, the number of women involved in science has significantly increased, although we are still under-represented. Women account for less than 30% of today's researchers (UNESCO), and far less at higher decision-making levels. We cannot continue to discount the scientific potential of over half of the world's population and need to examine the issues and overcome gender disparities in STEM (science, technology, engineering and mathematics). Although improving, this disparity in the ranks of working scientists has been in the news for a long time and institutions and professional societies are now openly and publically discussing why this has occurred and attempting to fix the leaky pipeline.

Why are women underrepresented in STEM? In science, as in many areas of society, bias against women exists. The effects of bias may accumulate over time to shape careers or gender differences in preferences may play an important role. Differences in innate ability are unlikely to play a role, although both women and men may need convincing that this is true.

Let me tell you briefly about my career. In 2012 I became a Fellow of the Australian Academy of Science, the first woman elected as a chemist. I feel a bit like a historical figure, or an anachronism from a past age, but this was less than four years ago. At the School of Chemistry, University of Melbourne, I was a series of firsts: appointed in 1996 as first woman Associate Professor & Reader in Chemistry; then in 2005, I became the first woman Professor of Chemistry in Victoria (third in Australia); and in 2010 the first female Head of School. The men (and women) in the department made me aware that I was a woman (in case I forgot).

I started off as a junior technical assistant in the microbiology section at CSIRO and, after the birth of my son, I decided I needed the financial advantages of an education. As a single parent, I worked full-time and studied part-time, starting with a Biological Technician's certificate at TAFE and then a BA in Maths & Physics at Macquarie University. This was tremendously rewarding financially, in that my salary doubled, but also intellectually rewarding: I enjoyed learning and solving problems. I then did Honours in Physics at Macquarie and a part-time PhD at University of NSW. By the time I graduated my son had completed High School, so I took leave from CSIRO in 1994 and went onto a postdoc at NIH (USA) and joined the University of Melbourne in 1996. It was a difficult year – if I asked for help or advice, I was told that as a senior academic (woman), I should know this already - but I realized that if I survived this first year, the next would be easier, and it was.

It has been an 'interesting' journey: I call myself a biophysical chemist with a PhD in physics, working in the biological and chemical sciences. The cultures have much in common and many differences. I found the physics community welcoming but am not sure if that was because I was a rarity or, now in hindsight, due to my youth. The biologists were in general less welcoming: women were not special and often made to feel less equal. The chemists at first were not sure about me and felt it better to leave me alone, as I was not really one of them, but times change and now I am one of the 'old guard'.

What has worked for me? The three P's: Passion, Patience and Persistence (or Perseverance), qualities described by former Chief Scientist, Ian Chubb, as essential for a successful scientist. Interestingly, a colleague and Laureate fellow

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thought that impatience worked for her: she worked hard because she was impatient to get the answer. Yet again, this reflects her passion and persistence/perserverance to solve the problem.

Luck or recognizing opportunity, 'luck favours a prepared mind', also plays a part. Throughout my career I have taken opportunities or prepared myself to be able to take advantage of them when they arose. Putting myself forward or letting others know of my interest for certain roles. Organizing conferences or seminars where others in my field can put the case forward for my type of research.

Hard work is important as is being good at what we do (i.e., talent): you need both.

Writing skills are essential: the ability to write in a compelling and persuasive fashion. Communicating your ideas is essential. Good sales skills are a requisite but you need balance. Do not oversell (ethics and integrity are paramount).

Be brave: take some risk but try to set it up so you win something even when you lose. Do not be afraid of not succeeding or be devastated by failure. I still feel a kick in the gut after each paper/grant review but know that in a day or two I'll recover and fight back. Try to develop a thicker skin, and call out patronizing comments.

Political skill or a bit of animal cunning is needed. Have a strategy and contingency plans. Build a network. I naturally want people to be comfortable which makes 'networking' easier for me. Be noticed. Get recognized. People we don't know have to work harder at proving they're good or are part of the community. Just do it: talk, ask questions, volunteer/organize (but not too much).

The times are a-changing: I no longer have to argue for gender representation on conference committees and no longer get sighs and disparaging comments when I suggest a woman speaker. I recall a male committee taking credit for inviting a Nobel laureate to speak; they forgot that they had actually en masse thought her not good enough when her name was put forward prior to her award. This group made me feel so humiliated that I resigned from the committee. I was a full professor and the only woman in a group of 10. We discussed having more women on the committee; apparently the ones I suggested were too old but at least 10 years younger than the chair. After one of the members suggested I perform a sexual act on him, I was told I did not have a sense of humour. I resigned and I was replaced by a younger woman and heard that the attitude has greatly improved.

Success in science for women vs. men: Women have to really want to do it because the obstacles add up. Sometimes they wear you down but my enthusiasm still keeps coming back and, despite setbacks, have had a wonderful journey.

Change in perspective with experience: Women are seen as more disruptive when taking over; females are OK as junior colleagues but more difficult to accept in senior roles, especially if you don't have sufficient gravitas and still want to be yourself. Interestingly, I am now more aware of unconscious bias, which becomes more obvious as I get older. Possibly I was just more accepting of this behavior when I was more junior. I notice when I am ignored and excluded from conversations and, very recently, it's interesting to compare being Head of School with post-Head position. I learnt how the words 'focused', 'collegiate' and 'excellence' at times could be code for 'selfish', 'willful' and 'similar academic background'.

What I learnt from being Head of School: I appreciate and value diverse teams and contributions far more. We need more women in academia – we need to change the culture. I encourage women to stay: it's worth it. Most of the time I love what I do - what a privilege: to create knowledge and pass it on. I note the difference in behavior from 31 Dec 2015 when I stopped being Head. I became less visible and easier to ignore and realized that the difference was due to respect for the position rather than the person. As the only woman present in a group of over a dozen, I note that I am being excluded from discussion as two male professors chat and watch as they turn their backs on me and invite a third male to join them. Having been invited to meet and discuss how to include women in a leadership team, after a five minute monologue by a department head I try to comment but am told to wait my turn to speak. Then the two men talk, continuously interrupting one another for 15 minutes, and now ask if I have any comments. Why is it not OK for a woman to interrupt?

Why do many of our female colleagues disproportionately drop out of academic STEM & Medicine careers? Although the percentage of doctorates awarded to women in life sciences (USA) increased from 15 to 52 percent between 1969 and 2009, only about a third of assistant professors and less than a fifth of full professors in biology-related fields in 2009 were female and the numbers are similar today. Women make up only 15% of permanent chairs in medical schools. Recently I was on a selection committee and a senior colleague asked me what I had been doing, and I replied that we had searching for a new head in a science department. He responded: "Did you choose a woman? Because they have been doing such a great job at running the university." With such attitudes, no wonder the pipeline to leadership is leaking women.

The problem is not outright discrimination: it is a culture of exclusion and unconscious bias that leaves us feeling unsure, demoralized and marginalized. Most of us know of the study where, given identical résumés in which the names and genders were swapped, both male and female academics judged the male applicant to be more competent and offered him a higher salary.

Unconscious bias also appears in the form of a series of 'microassaults' that women scientists endure daily. This accumulation of put-downs, sexist jokes and insults over the years undermines our confidence and ambition. Each time, the damage is reinforced.

We have all been in a meeting where a woman has made a suggestion that was ignored and then heard a man receive praise and support for making the same point a little later. Microassaults are especially damaging when they come from a teacher, lecturer, professor, dean or a renowned scientist, who should be inspiring and supporting our next generation of scientists.

We need to ensure full and equal participation of women in science. Men need to take the lead and become 'champions of change'. We must outlaw blatant harassment, incite inclusion and change the culture so that the value women bring to science is encouraged and celebrated.

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