

One Woman Scientist's Perspective on 50 Years Since the UN International Year of Women

by Mary Anne White

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This year marks 50 years since the UN declared 1975 as the International Year of Women. The memorable slogan, “Why Not?”, often written as “Why N♀t?” was provocative in its own right. To me, as a young woman in 1975, it was life-changing.

In 1975, I entered a PhD program in Chemistry. There were no other scientists in my family, and no women with a graduate degree. But when I was questioned about my decision to study for a PhD in Chemistry, the UN had supplied me with a ready reply: “Why Not?”

I acknowledge that I have lived a life of privilege as I am from an educated family and had scientific mentors who supported me in launching my career. I also benefited by riding the wave of adding women to male-dominated committees and boards, giving me insights into the scientific process and international contacts, and eventual committee exhaustion.

And all these years later, I am still a scientist. Although I am not a specialist in women's rights or related matters, I am a human being, wife, mother and grandmother, and I have some observations about how things have changed in the past 50 years.

My career was bracketed by “Why Not?” at the start, and “#MeToo” at the end.

Some things have changed for the better, others not.

First to the fundamentals: washrooms. Early in my career, I never had to line up to use the women's washroom. There were so few women in my building in grad school, and in my early working career, including my postdoctoral fellowship in England and my first academic postings, that I rarely saw other women in the washroom. The changing situation really hit home about 25 years ago when I was a member of an international scientific advisory board that was about half women, all mid-career like me. In the meeting break, we had to queue to use the women's washroom, a first for all of us. What a companionable turning point.

In my present university, where I am now Professor *Emerita*, I was the first woman appointed as a professor in my department. Now seven of the twenty full-time professors are women. I admit I have not done as much as I could have to encourage women scientists. Early in my career, I gave an invited

talk about women in science that was attended by strident feminists who accused me of ‘male logic’. There was no possible reply to that. I took up the stance that being a successful woman scientist was the most important thing I could do to help advance other women in science.

I did occasionally face anti-female headwinds, but I did not dwell on it. However, one situation stands out. I always highlighted women’s contributions to science if I had pertinent information that fit into my lectures. In the last class of the term in early December 1989, I spoke of Katherine Blodgett, first woman to hold a PhD in Physics from Cambridge, granted in 1926.¹ She was a researcher at General Electric and the inventor of anti-reflective coatings for glass, but rarely mentioned in textbooks. She was overshadowed by her more-famous male colleague, Irving Langmuir. From the back of the lecture room a young man shouted that that was the way it should be. I said nothing in reply. The next day fourteen women were massacred at École Polytechnique, and I have been forever sorry I had not expelled that student from my lecture.

The goals of the 1975 International Year of Women, which the UN decided were so far-reaching that it extended the recognition to the UN Decade for Women, included promotion of equality between men and women, to ensure the full integration of women in society and to strengthen world peace.

When I officially retired and had more time to see what was happening in the world around me, I was shocked at how little had changed over the decades. So how far have we come?

Let’s look at two main aspects of equity, namely women’s work and women’s quality of life.

Pay equity starts with fair hiring practices. By 1990, Canada had achieved about 90% of the recommendations of the 1972 Royal Commission on the Status of Women, including elimination of formal workplace discrimination based solely on sex and marital status. Early in my career, there was still talk about well-educated women who had temporarily filled university faculty positions in World War II, while their professor husbands did war work. In 1945 these women were told to go home. I also recall that when I was young, “Help Wanted” ads were separated by positions for women or for men. As a personal example of how things evolve, a Chair who hired me had declared a few years prior that he would never hire a woman professor; I believe he was educated by his daughters when he saw that such attitudes were blocking their career paths. Bias in hiring women has been proven time and again by gender-neutral résumé studies; now some hiring committees have been educated on potential bias, and are (probably) less reliant on the old boys’ club. There are some workarounds to remove hiring bias such as hiring orchestra members based on performance interviews behind a screen. I used to publish with just my first initials, not my first name, to hide that I was a woman, until a very supportive colleague told me he would preferentially read a paper written by a woman. But when I hear of Dr. Lastname, my default assumption is that it’s a man: internalized misogyny prevails. Just ask someone who has lost a public-facing job because she decided to let her hair go grey. It will take more generations for this to smooth out, but we have a step-function increase in awareness with each public situation.

Pay is another factor in career equity. I once received a 10% boost in my salary based on gender parity within my university, righting an inequity from the time of my hiring. It is well documented that women’s voices are not ‘heard’ as well as men’s, and not just in times of wage negotiation. Women’s wages in Canada are still about 20% behind men’s for equal work, and much worse for some areas such

as sports. And if, for example, we are going to talk about ‘women’s hockey’, let’s also say ‘men’s hockey’, not just ‘hockey’.

In a more nuanced look beyond direct job comparisons, women still occupy the majority of jobs with the contradictory factors of low pay and high responsibility, including day care work, teaching, nursing and personal care. Remedying their wages requires great public will.

Women still pay a so-called ‘pink tax’ on comparable consumer items like deodorant. Women’s clothes are often more expensive and inferior to men’s. For example, men’s dress shirts are much better made and with superior fabric, often at lower prices than women’s. More appalling were the Canadian hockey shirts objectifying women and girls, fortunately pulled from the market earlier this year after public outrage.

For a scientist, career development, and grants and awards all march in parallel: awards lead to increased grant funds, and more scientific contributions. (Science progress is not a linear function of grant dollars, and certainly the intercept is non-zero as some science can be accomplished without external funding, but that’s a topic for another day.) I cringe when I receive annual prize notifications from one of the male-dominated professional societies to which I belong, showing five of the last ten years with no women awardees, and only eleven women receiving awards out of a total of seventy (16% women) in the past decade. I have served on national and international award selection committees and have often lamented the absence of nominations of women and people from other under-represented groups. One proven way to approach equity for awards is to allow self-nominations, which bring forward files for candidates who have fewer connections. The professional society mentioned above instituted self-nominations in 2024, and already the success rate for women has improved to four out of fourteen prizes (29% women) in the past two years.

A second part of equality is improvements to women’s quality of life. All across the country we now have better parental leave. Maternity leave was three months when I had my two babies, but work pressures as a pre-tenure professor meant mine were abbreviated. The national funding agency, NSERC, which supported my research for more than 40 years now has clear and generous extensions of grants and student support during parental leave, something unheard of in the 1980s. These changes now accommodate different career paths and interruptions for all genders. The recent significant reduction in costs of day care in many parts of Canada is another huge boost for families with young children. As a benchmark, we paid a lifetime total for two children of about \$20,000 in day care and then lunch and after-school care, starting at a time when my gross annual salary was less than \$30,000. And initiation of the lunch and after-school care required me to argue publicly with the school principal, despite the program’s location being off the school grounds. More engagement of parents in the present workplace would be possible if before- and after-school childcare were made more affordable.

Especially when children are involved, having a true partner can level the load. I did not have any close role models for full-time working mothers. However, my husband and I were both PhD students when we married, and household chores have been equitable since the start. Our children made us laugh when they came home from a friend’s house and announced that the mom had been doing laundry, which they both viewed as ‘men’s work.’ We need to raise our sons and daughters to be equal partners in household relationships.

In some jurisdictions in Canada we now have free menstrual products and birth control, and open discussion of menstruation and menopause, all making women more accepted in society. However, many clinical drug trials on which medical treatments are based have been carried out mostly using male subjects, optimizing dosages for male bodies. (Apparently the thinking on this goes back to Aristotle who characterized females as ‘mutilated males.’²) As a result, women can experience side effects due to over medication. This is just bad science! And it is only the tip of the toe for harmful health outcomes for women, from misdiagnosis of cardiovascular disease which presents differently in women and men, to sub-optimal treatment of lung cancer due to lack of understanding of the role of sex hormones in its development. Five years ago, only 5% of the global biopharmaceutical R&D spending was for women’s health. Yet it has been estimated that closing the women’s health gap could add \$1 trillion to the global economy by 2040. The Canadian Institutes of Health Research’s Women’s Health Research Initiative was recently set up to advance research that addresses under-researched and high-priority areas of women’s health and brings forward new evidence to improve women’s and gender-diverse people’s care and health outcomes. It’s about time.

One of the greatest privileges in my life was to be invited to preside at Canadian citizenship ceremonies. In the opening remarks, presiders are asked to highlight the Charter of Rights and Freedoms, which are meant to ensure that every citizen is treated with the same respect, dignity and consideration, regardless of gender expression or identity, race, religion and culture. Full implementation is still a work in progress.

On an international scale, there have been some positive developments in terms of women’s equity. According to the UN, in 1975 only four countries had ever had a woman leader.³ Although now more than sixty countries have been led by a woman, that means fewer than one-third of the countries in the world have ever had a woman leader. Today, 90% of the world’s population lives in countries that criminalize domestic violence, compared with 50% in 1975.³ At least 150 countries have laws on domestic violence and most have laws on sexual harassment in the workplace.³ I am pleased that such matters are more in the open now than when I was a child, and in some jurisdictions domestic violence has been rightly declared an epidemic. Non-disclosure agreements are under scrutiny never seen before. But laws alone don’t change attitudes and behaviour. And from many locations in Canada you can see a country where the right to reproductive freedom is under attack.

Women play a critical but undervalued role in the peace process, and global conflicts disproportionately hurt girls and women. A recent UN report extrapolates it will take 137 years to end extreme poverty among women and girls.⁴ More than 100 million girls around the world are denied the human right to education.⁵ More women in politics can make a difference in these matters. We have progress to make, including in Canada where I doubt we will have increased numbers of women running for office until we respect the women we elect.

I certainly thought that by the time I was retired there would be no more ‘first women’ anything, but sadly, that’s not so. In the past couple of years we have seen installations of the first woman President of the Métis National Council, the first female Chief of the Defence Staff, and the first woman umpire in Major League Baseball. And there are many more ‘firsts’ yet to be achieved.

One thing my scientific background has revealed to me is that a swing can go higher when you push with its natural rhythm, not against it. The increased use of inclusive language can go far to

enhance equity for all genders. It is now common to hear gender-inclusive terms such as ‘firefighter’ or ‘actor’. I now rarely hear the phrases “best man for the job” or “manpower” or “girl” (in reference to a woman), and, when I do, I politely suggest alternatives. And I am especially proud of the change of the words of O Canada from “in all our sons command” to “in all of us command”; the two-word change finally makes me feel included.

While I have focused on the role of women, the rights and freedoms of many people are under attack across the globe, including in Canada. Social media, which held such promise for free flow of information, has opened new channels for hateful words to spurt out. As a society we are far from equality when it comes to respect.

And, already AI is proving to be part of the problem, by perpetuating gender bias as it is trained on data which itself has gender bias, by AI developers who are mostly male. To get on a better footing and circumvent inappropriate health advice for women, to name just one potentially lethal example, the AI field needs to have more women and to take up equity as a platform.

I think we can agree that the world is in a real mess right now, in many ways. Research has shown that diversity enhances problem solving. I have witnessed this action first-hand in my lab, as different people approach issues in different ways. We need the perspectives and thoughts of all people everywhere to move us forward to a more humane way of living, one that is sustainable for generations to come. True equity can play a major role in this process.

After all: Why not?

References Cited:

¹ https://en.wikipedia.org/wiki/Katharine_Burr_Blodgett

² *Chemistry World*, June 2025.

³ <https://unfoundation.org/blog/post/international-womens-day-at-50-strides-setbacks-and-solidarity/>

⁴ UN-Women (United Nations Entity for Gender Equality and the Empowerment of Women). 2025. *Women’s Rights in Review 30 Years After Beijing*. New York: UN-Women.

⁵ <https://www.ohchr.org/en/press-releases/2023/01/world-failing-130-million-girls-denied-education-un-experts>