

Enshrining equity in democracy

On 18 August 2020, the United States celebrated the 100th anniversary of the 19th amendment to its Constitution, which granted the right to vote to female U.S. citizens. This amendment had a profound, yet uneven, impact on the lives of female scientists and on the scientific enterprise at the time and into the 21st century, enabling white women in science to gain greater professional acceptance, to expand their opportunities for scientific work, and to fight for equal pay. At the same time, women of color did not receive the right to vote until 1965. The participation of women of color in scientific professions was thus severely limited during the intervening years; a disparity that continues today, and which may worsen as women throughout the country are being tasked with new and more extensive childcare, elder care, and household responsibilities as a result of the coronavirus disease 2019 (COVID-19) pandemic.

As the distinguished historian Margaret Rossiter noted in the first volume of her path-breaking trilogy *Women Scientists in America: Struggles and Strategies to 1940*, in the period from 1880 to 1919, white women in the United States had begun to earn doctorates in scientific fields in greater numbers and to increase their presence in many leading scientific organizations. However, earning more doctorates did not necessarily lead to more desirable jobs, nor to an increase in the number of major publications. And even the most outstanding white female scientists frequently held lowly titles in universities and laboratories, if they held positions in these spaces at all. Some were relegated to women's colleges, departments of home economics, and separate women's scientific clubs. Often, they were only recognized for their contributions to science decades after their achievements.

Many of these women joined in the suffrage movement, with the idea that the vote would help to advance their progress in scientific fields, but they often failed to confront their own exclusionary practices, particularly those surrounding race. In not advocating for voting rights for all women, they helped to support the segregation of scientists of color within scientific institutions, especially female scientists of color. Indeed, little was done by leading scientists to address issues of race

or the representation of women of color in science until after World War II. Even after decades of efforts to increase the diversity of the U.S. scientific workforce, we are still struggling with this legacy of exclusion today.

It is apt that we reflect on the historical struggles of women and the disproportionate burdens borne by women of color now, at a time when many female scientists find themselves once more disadvantaged professionally, as they assume greater familial responsibilities during the COVID-19 pandemic. Universities and other scientific institutions have never met the capacity to support the needs of all families, and the burden to

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bridge gaps in child and elder care still falls mainly on women. Most routinely piece together support by combining paid care services and help from family members, or compete for limited access to, and financial support from, institutional benefits. The pandemic has complicated this already difficult process and introduced new household stresses. Online home-based education, for example, is poised to remain part of the education system from K-12 through college for the foreseeable future. These burdens cross lines of race, ethnicity, age, and class, but are likely to disproportionately affect women from groups that

have been historically disenfranchised in science, technology, engineering, and mathematics (STEM) fields, including Black and Latinx women, who have a long history of shouldering more family responsibilities than their white counterparts.

Prioritizing the creation of a national, federally supported, robust system for family care would represent a long-needed step toward justice and equity for women in science. Other developed countries have various programs and policies in place, but much more research and more proposals for how to implement and support such programs are needed. If scientific institutions do not begin to address the issue of family support, the nation runs the risk of losing an entire generation of talented female scientists. We do not need a report written years from now bemoaning this loss. If we wish to create a more equitable future for all scientists, then now is the time to redress this long-neglected issue that hinders the full participation of women in STEM.

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