

# The Myth of Meritocracy in the Pharmaceutical Sciences

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I recently came across the phrase “the myth of meritocracy” and was intrigued enough to dig a bit deeper into what this meant. Digging in requires starting with the keyword *meritocracy*, a concept that many of us are firm believers in: in our professional lives, if we have the correct training and skillset for the role combined with enough ambition, if we work hard and do well at our job, then we will be appropriately rewarded via promotion and other recognitions of our career. In contrast, if we fall behind, then we only have ourselves to blame. Meritocratic ideology is particularly potent within science and engineering, whereby scientists take pride in perceived objectivity and neutrality, assuming only those with the appropriate talent and motivation are advanced.<sup>1</sup> The concept of meritocracy is thus deeply ingrained within our pharmaceutical sciences community.

So, I challenged myself to re-examine this. What if meritocracy is, in fact, a myth? In other words, what if our success on the career ladder is not solely determined by an objective assessment of our contributions? As one example, let us consider for a moment inequality among women faculty. It is well recognized that there are fewer women faculty in STEM (science, technology, engineering, and math) disciplines than men, particularly at the higher academic ranks.<sup>2</sup> Inequality in the workplace is normally attributed to two broad causes. In the context of meritocratic ideology, people often believe that those who fail to do well in the workplace either only have themselves to blame or have made a personal choice to leave the profession. For instance, it is often assumed that women lack the commitment, personal drive, and innate talent to be successful in a competitive meritocratic environment.<sup>3</sup> The strongly opposing viewpoint is that inequalities arise from structural factors within the organization such as discrimination, stereotyping, and exclusion from networks.<sup>4,5</sup>

It turns out that the data are pretty compelling: meritocracy is indeed a myth for women and minorities working in scientific and engineering fields.<sup>2,6</sup> Thus, I wanted to raise awareness of the contradiction between cultural beliefs and empirical reality. These discrepancies in beliefs need to be reconciled in order for academic pharmaceutical science departments, biopharmaceutical companies, and other organizations employing pharmaceutical scientists to address the inequalities faced by women and minorities.

To convince my pharmaceutical scientific colleagues who may be feeling skeptical at this point, let us start with looking at some of the data published on this topic. There are decades of research documenting the realities of entrenched structural inequality in STEM,<sup>2,7</sup> although nothing has been specifically documented for the pharmaceutical sciences. For example, in 2007, the National Academies of Science, Engineering, and

Medicine published a report entitled “Beyond Bias and Barriers: Fulfilling the Potential of Women in Academic Science and Engineering”.<sup>2</sup> Some of the primary findings in this report are summarized below:

- (1) Women have the innate ability as well as the drive to succeed in science and engineering careers.
- (2) Women who are interested in careers in science and engineering are lost at every transition stage (i.e., the “leaky pipeline”).
- (3) The problem is not just the pipeline. At the higher career levels, women and minorities are underrepresented.
- (4) Women and especially minority women are likely to face discrimination in every field of science.
- (5) Both men and women tend to have implicit biases against women, which means that they may be less likely to hire women and less likely to value their contributions. This includes scientists and engineers who inherently “believe” that they are objective.
- (6) Women are disadvantaged by evaluation criteria with arbitrary and subjective language being used. They are paid less, receive fewer honors, and hold fewer leadership positions than men. These discrepancies cannot be ascribed to differences in productivity, the significance of their research, or other performance metrics.


The National Academies report, especially point no. 6, demonstrates most clearly to me that meritocracy is a myth within the scientific workforce. Bird and Rhoton point out that it is well documented that women and racially minoritized STEM faculty face many systemic barriers to career success.<sup>6</sup> These include balancing work and family (the so-called “second shift” for primary caregivers), a token status that leads to isolation, reduced recognition, and higher levels of service work. However, these issues are rarely acknowledged within STEM departments or discussed by scientists and engineering colleagues (although it is clearly a widely studied topic by social scientists!). Further, despite detailed reports such as the one summarized above, a recent study from 2021 documented that many women faculty working in STEM still believe in meritocracy.<sup>6</sup> From a representative pool of 53

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women STEM faculty from a single institution, Bird and Rhoton found that about 30% believed in the meritocratic practice.<sup>6</sup> Interestingly, the meritocracy idealists were highly disapproving of any organizational attempts to suggest that women as a group were systematically disadvantaged. This is an interesting observation noted in other studies. Seron et al. found that women engineering students, even when having direct experience of sexism, are firm believers in and even promoters of the meritocratic ideology, thus helping to perpetuate existing inequalities within the discipline.<sup>8</sup> Cech and Blair-Loy note that just because women have likely faced well-documented gendered barriers, this does not necessarily mean that they recognize “glass ceilings” or structural barriers.<sup>3</sup> They further note that women who have cracked the glass ceiling may rebuild it behind them if they believe in meritocracy. In other words, in order to legitimize their career success, they tend to see the advancement rules as fair, i.e., “if you put in the work and have the talent, you will get promoted just like I did.” These attitudes may come about because successful women in STEM fields are highly sensitive to and want to avoid perceptions that they are where they are in their career just because they are women (that is, because of affirmative action). Further, meritocracy believers of either gender have little desire to change the system.<sup>3,8</sup>

This exploration into the concept of the “myth of meritocracy” has certainly opened my eyes to the large body of social sciences research around this topic and has challenged some of my own perceptions and beliefs. Hopefully, I can translate this new insight into improved mentoring of early-career scientists to help them navigate the “system”, as well as being an advocate for change to help flatten some of the molehills that impede the careers of women and minority pharmaceutical scientists. At *Molecular Pharmaceutics*, we will be paying careful attention to improving gender balance within our editorial team, editorial advisory board, and reviewer pool (see the recently released ACS Publications [Diversity Data Report](#)). Further, we hope to encourage a diverse author cohort by promoting diversity, equity, inclusion, and respect training for all *Molecular Pharmaceutics* editors and by promoting the diversity of our authors through our *Voices* editorials.

Lynne S. Taylor, Editor-in-Chief  [orcid.org/0000-0002-4568-6021](https://orcid.org/0000-0002-4568-6021)

## AUTHOR INFORMATION

Complete contact information is available at:

<https://pubs.acs.org/10.1021/acs.molpharmaceut.2c00118>

## Notes

Views expressed in this editorial are those of the author and not necessarily the views of the ACS.

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