Book Review

Women in Science Now: Stories and Strategies for Achieving Equity. By Lisa M.P. Munoz. Columbia University Press, 2023, 338 pp.

In *Women in Science Now: Stories and Strategies for Achieving Equity,* Lisa M.P. Munoz presents us with an exceptional contemporary review of the gender gap paradigm in science and engineering. It is a perfect mix of anecdotes and peer-reviewed data assembled into a non-biased, engaging narrative. Any woman working in a STEM field is sure to have several déjà vu moments when reading this book, which is organized around eight major interventions: Representation, Signals, Mentorship, Recruitment, Environments, Visibility, Work-Life Balance, and Reporting. The review is comprehensive and data-driven, covering the female experience in STEM from elementary school all the way to senior career status, across a multitude of disciplines.

One major recurring theme throughout the book is the internal and outward-facing perceptions of girls and women within the greater context of modern societal norms. In Chapter 1, Fixing Representation, Munoz introduces us to the classic "Draw a Scientist" studies, for which a recent five-decade meta-analysis indicated marked improvements in the numbers of children who would draw females when they drew a scientist. She addresses the impact societal influences have on how girls imagine a scientist to be, even including an image drawn by her daughter in the fourth grade. Munoz presents a convincing argument for the malleability of a child's perception of scientists and provides a framework within which we can promote meaningful change.

In Chapter 2, Fixing Signals, Munoz explores the compelling evidence in support of a role for environmental cues in influencing internal perceptions around fitting-in in STEM, namely how girls and women feel connected to the subject matter, and department culture. She

highlights stereotypes and the roles of TV and media in reinforcing them, even calling attention to the way a room is designed and decorated in influencing perceptions of a STEM field. I found myself mulling over past interactions with students and colleagues and reimagining teaching spaces as I reflected on the kinds of signals I was portraying as a college biology professor. Munoz keeps it positive, though, presenting exemplars of institutional change; for example, Harvey Mudd College was able to improve graduation rates of women in computer science from 10 to 50% in just ten years with intentional retention and recruitment efforts.

Chapters 3, 4, and 5 converge upon early-career experiences as Munoz engages the reader in conversations around Mentoring, Recruitment and Environments. She introduces each chapter with a personal story of a woman in STEM, hoping to connect with her readers. Krystal Tsosie, a Navajo nation citizen, first-generation college student, and current PhD student, addresses the roles of identity and representation in mentoring in her own words, prompting Munoz to make a strong case for mentorship training programs as an intervention method. Of course, for these mentoring programs to be effective, she argues that we need mentors that look like our students, presenting evidence in support of race mattering more than gender for role models, which needs to be considered when developing mentoring programs. The outcomes of several studies designed to eliminate biases during the recruitment process were also described by Munoz; she uses examples of institutional interventions that have been evaluated for their effectiveness, yielding positive results. The successful efforts of female science faculty at MIT in 1999 " . . . had ripple effects across academia, leading to similar shifts across institutions" (p.103), according to Munoz. Dr. India Johnson, a social psychologist, provides another important perspective, describing the mental health impacts of microaggressions and sexual harassment as a woman of color in Chapter 5, Fixing Environments. She talks of lapses in

civility in her workplace as a teacher from both students and colleagues, providing reassurance that "being assertive is a necessity sometimes to survive in navigating a world that isn't kind to Black women" (p.113). Munoz not only provides these stories but offers up a set of tools for combating these kinds of transgressions in our own personal lives.

Munoz next tackles the challenges of gender equity in funding, publishing, and conference-presenting in Chapter 6, Fixing Visibility. Tools are introduced such as the gender citation balance index to encourage authors to evaluate their citations for gender bias. Munoz also reviews practices that articulate the extent to which an author contributes to an article rather than attributing most recognition to first authorship. These practices are presented as important efforts put in place to bridge the equity gap. The COVID-19 pandemic had significant impacts on women working in science. Munoz writes, "In dissolving what remained of the boundaries between work and life, it laid bare the myth that they were ever separate in the first place rather than an integrated part of individual identity" (p.177).

Chapter 7 summarizes the experiences of women scientists who are also shouldering the burdens of family life, citing the importance of having access to "drop-in daycares" at conferences and the benefits of virtual meetings. Dr. India Johnson's story reappears in this chapter, as she shares her relatable struggles to pay for childcare despite receiving full funding to go to the Ohio State. One thing that Munoz fails to address is the impact that a two-scientist family has on the job search, with women oftentimes relinquishing opportunities in favor of their partner's job offer.

In Chapter 9, Fixing Reporting, Munoz presents institutional and societal responses as both successful and unsuccessful attempts at redemption, highlighting the importance of a culture of reporting in propagating change. Dr. Kristina Rapuano was one of many women who

sued Dartmouth College for their responses to sexual misconduct and harassment cases by three professors. She tells a tough story in this chapter, revealing a system in which "Institutions are moving toward change, but the change is too slow. . . ." according to Munoz (p.203). In the wake of the #MeToo movement, Munoz points to the power of social media to initiate discussions and rally support for community resources. As she concludes, Munoz admits these conversations need to continue to happen along the full gender-identity continuum, while also earlier in the book identifying race to be an even greater factor in certain equity interventions. I would be thrilled to see Munoz write a parallel text on racial inequities and/or non-binary gender biases in science.

Whether you are a woman working in science, or an ally seeking to better understand "her" perspective and experiences, this book is engaging, entertaining and so very relative to present day experiences. It provides a rare positive perspective on our breakthroughs in gender equity in a way that is motivating to keep pushing forward.

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(1075 words)

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