



Moving Towards Gender Equality in Medical Toxicology

Meghan B. Spyres¹ · Elizabeth C. Moore¹ · Anne-Michelle Ruha² · Ayrn D. O'Connor²

Received: 18 August 2019 / Revised: 23 August 2019 / Accepted: 26 August 2019 / Published online: 16 September 2019
© American College of Medical Toxicology 2019

Keywords Gender equality · Promotion · Women in medicine · Women in toxicology

The unique struggles of women in academic medicine are receiving heightened attention thanks in part to the rise of the #MeToo and TimesUp™ movements which received global attention in 2017. That same year held other important landmarks for women in medicine. A *JAMA* publication demonstrated improved outcomes for patients cared for by female physicians, and for the first time women surpassed men in matriculation in US medical schools. (<https://news.aamc.org/press-releases/article/applicant-enrollment-2017/>). With increased numbers, heightened attention, and demonstrated quality, we would expect to see women advancing into leadership and senior positions in academics. Instead, we find fewer women than anticipated in the academic rank of associate or full professor [1, 2]. Moreover, despite being more often fellowship trained, women are less likely to become core faculty or department chairs, are less likely to take on administrative roles, and mostly report experiencing some form of gender discrimination [3, 4].

One of the more influential factors affecting women's careers in academic medicine is parenthood. All four authors of this commentary are in different stages of parenthood from dealing with infertility, breast-feeding a newborn, raising young children, and parenting a teenager. Each stage brings unique challenges to achieving a successful career in medicine.

Previous presentation of data This data has not been previously presented.

Supervising Editor: Mark B. Mycyk, MD

✉ Meghan B. Spyres
mspyres@gmail.com

¹ Division of Medical Toxicology, University of Southern California Department of Emergency Medicine, 1200 N State St. Rm 1011, Los Angeles, CA 90033, USA

² Banner-University Medical Center Phoenix, University of Arizona College of Medicine Phoenix, 1012 E Willetta St. 2nd Floor, Phoenix, AZ 85006, USA

The impact of motherhood on career is apparent before the first child is even born. Fatigue, nausea, and complications during pregnancy have stalled our projects and made career-advancing academic activity beyond the minimum required feel unmanageable at times. Honors and opportunities, such as invitations to speak at national conferences, time-sensitive publications and projects, or even key meetings that provide crucial networking relationships, have been reluctantly turned down during peripartum periods. After birth, many of the same struggles remain as you try to navigate availability for academic engagements as well as for your children's milestones, school events when they are young, and activities as they grow. The desire to be present for your children conflicting with the drive to advance your academic medical career can feel like an unsolvable occupational hazard.

These conflicts are made more difficult when women encounter sexism in the workplace. In a survey of physician mothers, 36% reported experiencing maternal discrimination, frequently attributed this to maternity leave, and 48% reported discrimination surrounding breast-feeding [5]. Women returning from maternity leave report being perceived as less interested in leadership positions due to family responsibilities, being passed over for promotions and projects, and being required to make up time without pay [6]. Some choose to leave academics entirely due to these struggles. For those who stay, they face an uphill battle. Challenges include lack of alternative scheduling options and difficulty finding childcare for unusual or extreme work hours [6]. Additionally, specialty conference attendance, an important aspect of career advancement for academic physicians, can be difficult for primary caregivers of small children as childcare is not readily available [7].

Motherhood is not the only challenge women face. Implicit bias against women is pervasive and difficult to combat and may begin to affect women's careers as early as medical school and residency. Studies find gender-based differences in evaluation descriptors and scores to negatively reflect on female students and trainees [8, 9]. This bias continues once women become faculty and may impact disparities in career

advancement. In a survey to assess barriers to promotion, EM departmental chairs noted that women faculty may disproportionately be assigned or assume task-oriented or citizenship roles that are beneficial for the department but are less likely to lead to promotion. Female faculty were noted to have fewer peer-reviewed publications which was attributed to competing family obligations, and they were less likely to come forward for promotion despite being qualified. Additionally, women are erroneously perceived as being less interested in leadership positions particularly if they necessitate off-hour obligations [10]. Women also tend to be underrepresented as speakers in academic conferences, missing these key opportunities for broader exposure and academic advancement [11, 12].

What can be done to mitigate these obstacles? Support through networking, mentorship, and sponsorship is essential for women to succeed. A recent study found strong networks to be predictive of male business school graduates attaining leadership positions. For women to gain similar job placement, they had to have not only a strong school network but also a separate female-dominated inner circle [13]. In another study, women across multiple professions who attended “Conferences for Women,” a leadership and networking conference, were found more likely to be promoted and to receive a raise than women who had not yet attended (<https://hbr.org/2018/02/do-womens-networking-events-move-the-needle-on-equality>). When specifically looking at medicine, one published survey of NIH grant recipients found that sponsorship was associated with greater rates of success and that men were more likely than women to report a sponsorship experience [14].

In response to the need for systemic change, women across multiple specialties and organizations have created initiatives to bring awareness to gender equity. In this spirit, Women in Tox (WiT) was formed as a section of ACMT in 2017. Since its formation, the group has developed several successful initiatives to promote gender equality including the creation of a speaker’s bank to increase the presence of female speakers at national conferences, the curation of semi-annual web-based discussions on strategies to promote women’s voices and achievements, and cultivation of a social media presence. In addition, WiT has held career development workshops and recruited nationally recognized speakers to discuss gender bias, mentorship, and faculty development. Through WiT, we hope to equip and inspire both men and women in medical toxicology to break down barriers to gender equality in our field.

In order to achieve this goal, we sought to better understand how ACMT is doing, evaluating both our strengths and opportunities for improvement. We conducted a review of the ACMT website, archives, and roster to assess women’s standing in the College with regard to speaking events, presentation of research, awards, grants, and leadership positions. A review of ACMT membership for 2018 reveals that 31% are women.

The current President and Vice-President of the College are women, and women comprise 38.5% of the Board of Directors. From 2015 to 2019, 34% (range 22–40%) of speakers for invited lectures or panel discussions were women, with women representing 40% of individual lecture roles but only 28% of panelists or group discussants. During the same 5 years, women presented 36% of platform research studies. With the gender composition of the membership in mind, ACMT appears to be doing well, although review of ACMT awards reveals there is still room for improvement. Notably, women received only 10% of reported awards in the last 13 years. In the 22-year history of ACMT’s most prestigious award, the Ellenhorn award, only one woman has ever been given this honor: Dr. Carol Angle in 2003. However, women have received the significant majority of ACMT grant awards (78%) since 2012.

ACMT benefits from a diverse group of physicians with strong female leadership and supportive male allies. Engaging men in these initiatives is essential to making meaningful change. When women shatter the glass ceiling, it creates more opportunities and pathways for everyone, regardless of gender. WiT would like to harness these strengths to continue to advance women in the field of medical toxicology, and thereby advance the specialty as a whole. Given 42% of medical toxicology fellows are now women, we hope to see growth in the number of female conference speakers and to see an increase in the proportion of women award recipients in coming years. Through conscious attention and focus on gender issues, Medical Toxicology as a specialty has the opportunity to lead in creating a more gender-balanced framework for career advancement in academic medicine and a more equitable environment for all.

Funding Information Dr. Meghan Spyres, Dr. Elizabeth Moore, Dr. Michelle Ruha, and Dr. Aym O’Connor have no financial disclosures to make.

Compliance with Ethical Standards

Conflict of Interest None.

References

1. Nonnemaker L. Women physicians in academic medicine: new insights from cohort studies. *N Engl J Med.* 2000;342(6):399–405.
2. Bennett CL, Raja AS, Kapoor N, Kass D, Blumenthal DM, Gross N, et al. Gender differences in faculty rank among academic emergency physicians in the United States. *Acad Emerg Med.* 2019;26(3):281–5.
3. Madsen TE, Linden JA, Rounds K, Hsieh YH, Lopez BL, Boatright D, et al. Current status of gender and racial/ethnic disparities among academic emergency medicine physicians. *Acad Emerg Med.* 2017;24(10):1182–92.
4. The state of women in academic medicine: the pipeline and pathways to leadership 2015–2016. <https://www.aamc.org/members/gwims/statistics/> Accessed February 18, 2019.

5. Adesoye T, Mangurian C, Choo EK, Girgis C, Sabry-Elnaggar H, Linos E, et al. Perceived discrimination experienced by physician mothers and desired workplace changes: a cross-sectional survey. *JAMA Intern Med.* 2017;177(7):1033–6.
6. Halley MC, Rustagi AS, Torres JS, et al. Physician mothers' experience of workplace discrimination: a qualitative analysis. *BMJ.* 2018;363:k4926.
7. Kass D, Datta P, Goumeniouk NL, Thomas K, Berger ZD. Are children allowed? A survey of childcare and family policies at academic medical conferences. *Acad Emerg Med.* 2019;26(3):339–41.
8. Mueller AS, Jenkins TM, Osborne M, Dayal A, O'Connor DM, Arora VM. Gender differences in attending physicians' feedback to residents: a qualitative analysis. *J Grad Med Educ.* 2017;9(5):577–85.
9. Dayal A, O'Connor DM, Qadri U, Arora VM. Comparison of male vs female resident milestone evaluations by faculty during emergency medicine residency training. *JAMA Intern Med.* 2017;177(5):651–7.
10. Madsen TE, Heron SL, Rounds K, Kass D, Lall M, Sethuraman KN, et al. Making promotion count: the gender perspective on behalf of the Society for Academic Emergency Medicine Equity Research Taskforce. *Acad Emerg Med.* 2019;26(3):335–8.
11. Casadevall A. Achieving speaker gender equity at the American Society for Microbiology general meeting. *MBio.* 2015;6(4):e01146.
12. Johnson CS, Smith PK, Wang C. Sage on the stage: women's representation at an academic conference. *Personal Soc Psychol Bull.* 2017;43(4):493–507.
13. Yang Y, Chawla NV, Uzzi B. A network's gender composition and communication pattern predict women's leadership success. *Proc Natl Acad Sci U S A.* 2019;116(6):2033–8.
14. Patton EW, Griffith KA, Jones RD, Stewart A, Ubel PA, Jagsi R. Differences in mentor-mentee sponsorship in male vs female recipients of National Institutes of Health Grants. *JAMA Intern Med.* 2017;177(4):580–2.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.