

The Gender Gap in Radiology: Causes and Possible Solutions

- Women are underrepresented in radiology, even though nearly half of all medical students are women.
- The gender disparity in radiology is the result of misconceptions about the specialty and relatively little exposure to radiology in medical school.
- Encouraging more women in radiology to act as role models and mentors will likely help to increase the recruitment of women.
- A recently launched Women in Radiology group at Mass General is finding new ways to facilitate interactions between medical students and senior physicians.

The number of women entering medicine has been growing steadily over the past several decades. Today, total medical school enrollments are nearly evenly divided along gender lines. According to the Association of American Medical Colleges (AAMC), nearly half of all enrollments in the 2017-2018 academic year—48.5%—were women. In fact, more than half of new enrollees in 2017 were females. However, not all specialties are benefiting from the influx of women in medicine. Radiology, especially, is still witness to a considerable gender gap. According to the 2017 American College of Radiology (ACR) Workforce Survey, only 21.5% of practicing radiologists are women.

Women are underrepresented at both the resident and faculty levels in radiology, suggesting that they decide not to pursue it as a specialty while still in medical school. While women comprise nearly 48% of medical school graduates, they account for only about 28% of radiology residency applicants. The number of women entering radiology has barely improved over the past quarter century. In 1994, the percentage of female radiology residents was 26.9%.

Possible reasons for steadfast underrepresentation of women in radiology are myriad and complex; they include persistent gender stereotypes, deeply entrenched social norms and a host of other factors. A significant body of literature has been devoted to understanding why more female doctors are not entering radiology. Over the course of these studies, several major themes have emerged.

Unchallenged Myths Prove an Obstacle to Recruiting Women in Radiology

Two of the most significant obstacles to recruiting women in radiology are widely held misconceptions about the field (a 2014 article in an Association of American Medical Colleges newsletter refers to this issue as radiology's "image" problem) and poor exposure to the specialty in medical school.

The assumptions that might inform medical students' decisions to apply for radiology residency programs include lack of patient interaction; an isolated work environment; competitiveness of the programs; and health risks related



Figure 1. In 1940, Lucy Frank Squire was the first woman enrolled as a resident at Massachusetts General Hospital. She later published the seminal text *Fundamentals of Radiology* and was the recipient of the first Marie Curie Award from the American Association of Women Radiologists. On September 25, 2018, the Mass General Department of Radiology will host the first Lucy Frank Squire Annual Women in Radiology Lecture, named in honor of this pioneer and her many accomplishments.

to radiation from computed tomography or fluoroscopy imaging, especially for women who are considering having children. While these factors should be considered, their severity may be overstated in broadly held views of radiology. The prevalence and negative impact of these assumptions are compounded by the fact that radiology is not covered in the core curricula of most medical schools. As a result, medical students applying to residency programs often base their decisions not on an informed understanding of radiology but on a series of largely unchallenged misconceptions.

The myths can be dispelled—and a major barrier to recruitment thus lifted—by better incorporating radiology into medical school training. For example, rotation through subspecialties such as breast imaging, interventional radiology and pediatric radiology would provide abundant opportunity for patient interaction in these areas.

Radiologists can play a role in clearing up misconceptions. A 2017 paper in the *Journal of the American College of Radiology* reported that 87% of female radiologists surveyed had direct contact with patients in their work and that more than 91% would recommend radiology as a specialty for women. If practicing female radiologists share these experiences with female medical students, emphasizing how rewarding a career in the specialty can be, women's representation in radiology may increase.



Figure 2. A new Women in Radiology group at Mass General is seeking to increase the recruitment of women in radiology, in part by organizing a series of social and career development opportunities throughout the year. Shown here, at a welcome reception last month, are Women in Radiology co-chairs Dania Daye, MD, PhD (left) and Sandra Rincon, MD (second from left) with Monica Johnson, MD and Aoife Kilcoyne, MD, both also in the Mass General Department of Radiology.

Residents, Fellows and Attending Physicians Can Play an Integral Role in Encouraging Women to Pursue Radiology

Female radiologists can further contribute to the recruitment of women by serving as role models and mentors. Role models can provide exemplars of the positions medical students hope to attain. (In fact, the term “role model” was coined by sociologist Robert Merton in a study of medical students.) Here, the lessons learned go beyond the skills needed to practice medicine. A comment in a 2017 issue of *Academic Radiology* notes that role models should also demonstrate the character traits that make for a successful physician—dedicated, wise, and compassionate—so that students will want to emulate those traits. Mentors not only act as role models but also engage students more directly, imparting wisdom and offering advice about subjects not covered in the classroom. For example, a mentor can share her own experience in achieving a positive work-life balance.

Encouraging women to serve as role models and mentors is especially important in radiology because of the relative dearth of women working in the specialty today. Institutions can facilitate interest groups to create opportunities for women in radiology to meet and discuss a wide range of topics.

At Mass General, physicians recently established a Women in Radiology group and are planning to host events for colleagues across the specialty. The threefold goals of the group are: (1) increase recruitment of women into radiology; (2) establish benchmarks using department data to measure progress in recruiting women over time; and (3) organize social and career development events throughout the year, including a holiday party, a book club and talks on a variety of topics such as the possible role of social media in radiology.

Also, on September 25, 2018, in the Ether Dome on Mass General's main campus in Boston, Women in Radiology will host the first Lucy Frank Squire Annual Women in Radiology Lecture. Carolyn Meltzer, MD from Emory University will speak about "shattering the glass ceiling in radiology," offering an important perspective on the persistent gender gap in radiology and how best to address it.

Further Information

For further information about Women in Radiology at Mass General, please contact [Dania Daye, MD, PhD](#), Department of Radiology, Massachusetts General Hospital, co-chair of the Women in Radiology group. We would like to thank Dr. Daye and Sandra Rincon, MD, Division of Neuroradiology, also co-chair of the Women in Radiology group, for their advice and assistance in preparing this article.

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Gary Boas, Author
Raul N. Uppot, M.D., Editor

