

Gender Diversity in Medical Physics: Where We Stand and Where to Go

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INTRODUCTION

This is the first mixed-methods study investigating gender diversity in the field of medical physics. Similar to their physician colleagues, medical physicists across the United States report notable differences in work/life integration, mentorship, and discrimination experiences between men and women. As the clinical role of the medical physicist continues to broaden, these results should inform future investigations of diversity within medical physics and inspire meaningful policy changes and interventions to benefit the entire field.

AIM

To investigate gender diversity within the field of medical physics using both quantitative and qualitative data.

METHODS

Evaluation by gender was performed based on the AAPM website for:

- AAPM Leadership, Council chairs, Award/recognition recipients
- Medical Physics Editorial Board members

Additional evaluation was done with gender assigned based on names and photographs for:

- Employed leadership positions (self-reported in the AAPM directory)
- CAMPEP graduate and residency programs directors (CAMPEP website)

The percentage (%) gender representation was compared in leadership vs % of women in the AAPM in 2019 (23.3%).

In addition, qualitative data from 32 interviews of medical physicists participating in a concurrent mixed methods study to evaluate gender disparities in the medical physics field for:

- Work/life integration, mentorship, and discrimination

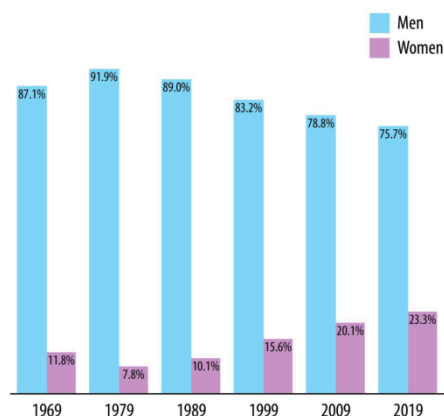


Figure 1. Percentage of male and female AAPM members for the listed year in 10-year increments from 1969 to present.

RESULTS

Self-reported employment data indicate that women hold 12.0% of medical physics clinical leadership positions in the US, compared to 13.6% in Canada, and 18.0% in other countries combined. CAMPEP graduate program directors and residency program directors are 7.5% and 21.5% female, respectively. Fewer than 1 in 10 AAPM presidents have been female, and a woman has never served as Editor-in-Chief of Medical Physics. Award recognition within AAPM is lower than the corresponding female membership figure for all award categories but one. Two women have served as AAPM council chairs since 1970 (4.7%).

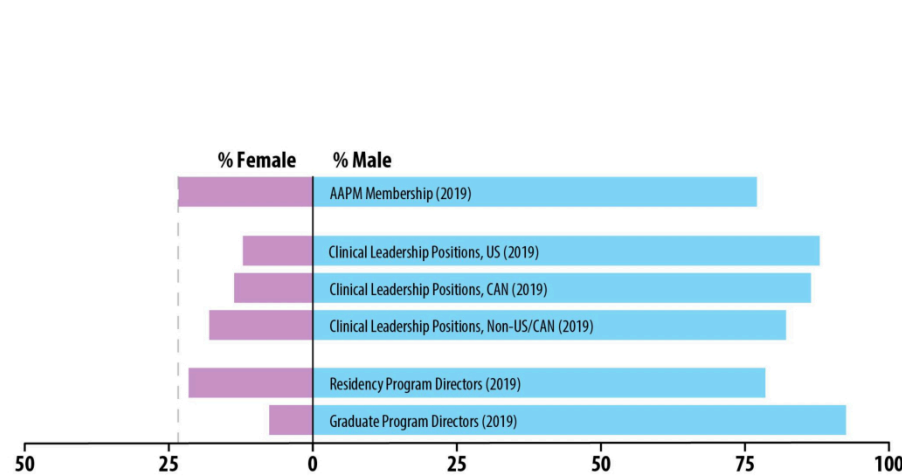


Figure 2. Percentage of males and females identified as clinical leaders in the 2019 AAPM directory, and 2019 residency and graduate program directors, compared to the overall 2019 AAPM membership gender breakdown.

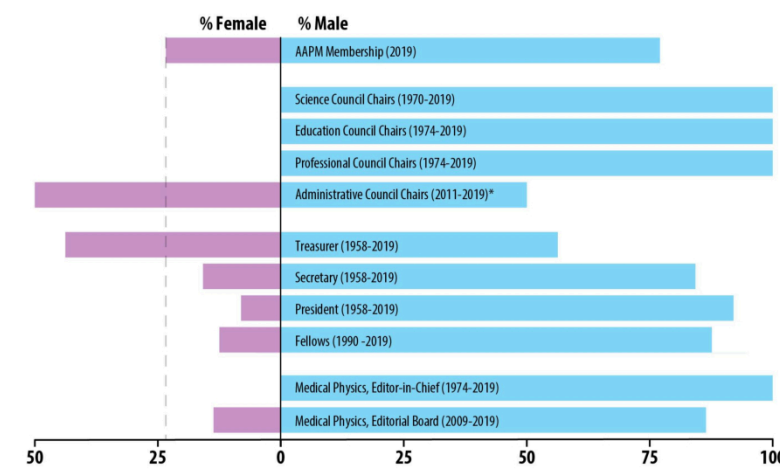


Figure 3. Percentage of male and female AAPM council chairs, members of the Executive Committee, and the Medical Physics editorial board compared to the overall 2019 AAPM membership gender breakdown. *Note that the Administrative Council has had 1 female chair out of 2 total positions since 2011.

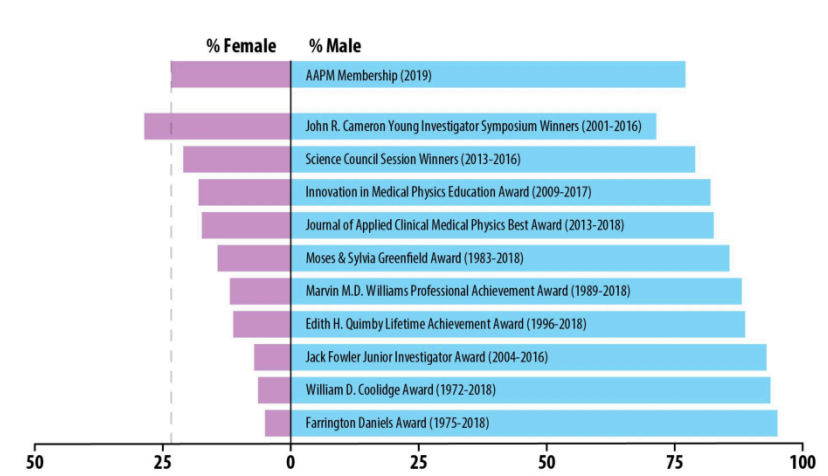


Figure 4. The percentage of male and female AAPM awardees compared to the overall 2019 AAPM membership gender breakdown.

ONGOING WORK

- Quantifying gender disparities in the field of medical physics is just one part of addressing these issues.
- Our team is performing an ongoing mixed methods study to better understand the factors that have led to gender disparities in the field and potential interventions to address them.
 - Phase 1 of this study included interviews with 32 practicing medical physicists from across the United States, evenly split between faculty/staff and residents, and by gender. Interviews encompassed three primary topics: mentorship, work/life integration, and discrimination. These are elements that have been shown to impact burnout rates among physicians¹⁻⁴, and each impacts men and women differently.
- The results of Phase 1 of this study are currently being analyzed. Preliminary results indicate dramatic differences in the way that men and women experience and attempt to address work/life integration struggles⁵. Phase 1 results will be used to inform Phase 2 of the study which involves a quantitative survey instrument distributed to a much larger cohort of practicing medical physicists.

CONCLUSIONS

Gender disparities within the profession of medical physics must be addressed. The current analysis is beneficial for those seeking to champion diversity within both the AAPM and the international medical physics community.

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