Trends In Academic Productivity Among Canadian Clinical Medical Physicists By Career Stage

Jade Fischer, Maryam Golshan, Eugene Wong, Sarah Quirk, Kundan Thind, Tyler Meyer, and Michael B. Roumeliotis

INTRODUCTION

- Medical physicists' advance cancer care through both clinical practice and research.
- Peer-reviewed publications provide a measure of scholarly activity.
- The transition to independent clinical practice changes in mentorship, research time, and clinical responsibilities that may affect academic productivity.
- Little is known about how research productivity changes over the course of a medical physicist career.

AIM

Quantify the longitudinal publication output of Canadian MCCPM-certified medical physicists across career stage and certification cohort using bibliometric analysis.

METHODS

- Publication data were obtained by querying the Sosido database for Canadian Organization of Medical Physicists (COMP) members.
- Peer-reviewed publications indexed in PubMed from 2016–2024 were included.
- Each physicist was assigned their Canadian College of Physicists in Medicine (CCPM/MCCPM) certification year.
- Canadian physicists holding only ABR certification were excluded from the analysis.
- Analyses examined publication output as a function of calendar year, years since MCCPM certification, and certification cohort to evaluate trends in scholarly productivity throughout early career development.

RESULTS

- A total of 334 MCCPM-certified Canadian medical physicists published ≥1 peer-reviewed publication between 2016–2024

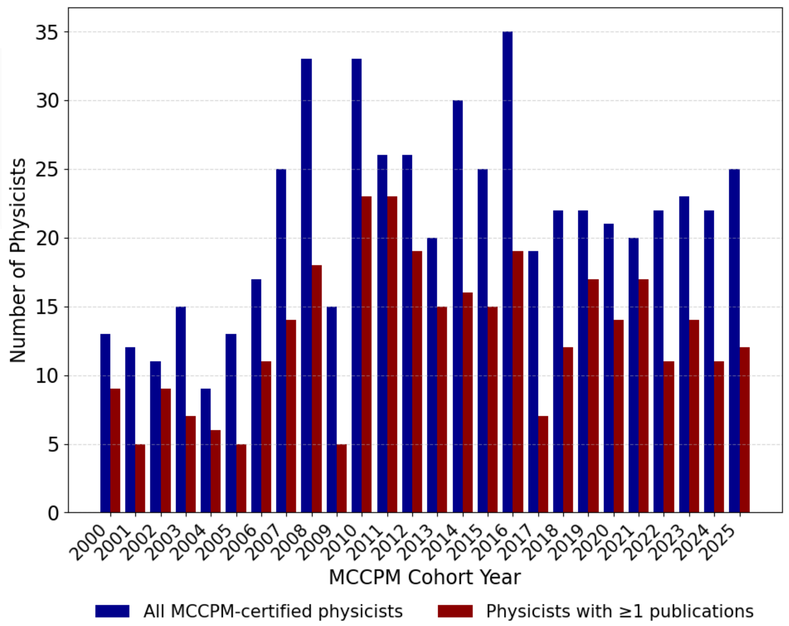

Figure 2. Mean annual number of peer-reviewed publications per MCCPM-certified Canadian medical physicist by years since MCCPM certification. The shaded region represents the standard error of the mean (SEM).

- Individual publication productivity increased with career progression, rising from 1.2 ± 0.2 to 1.8 ± 0.2 publications per physicist (50% increase).

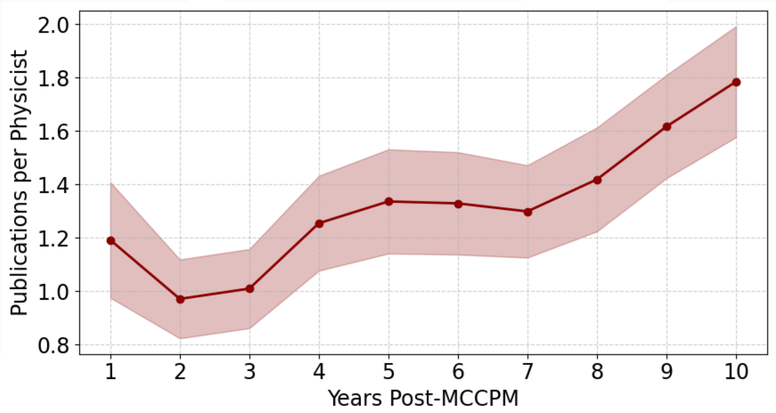

Figure 2. Mean annual number of publications per MCCPM-certified Canadian medical physicist by years since MCCPM certification. The shaded region represents the standard error of the mean (SEM).

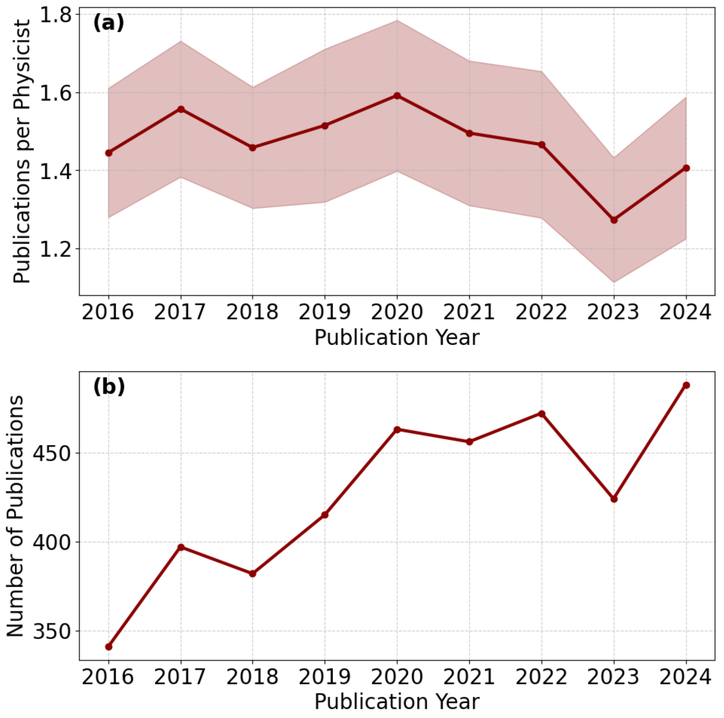

Figure 3. (a) Mean number of peer-reviewed publications per eligible physicist, with the shaded region representing the standard error of the mean (SEM). (b) Total number of peer-reviewed publications.

- The mean publication rate remained relatively stable over the study period with an average of 1.5 ± 0.3 publications per physicist per year.
- Middle authorship accounted for the majority of publications (60–76%)

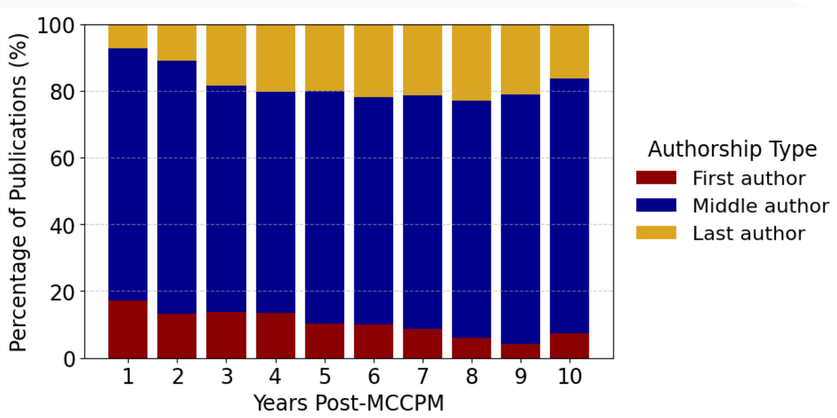

Figure 4. Percentage of publications by certified Canadian medical physicists according to authorship position during the first 10 years following MCCPM certification.

CONCLUSIONS

- Publication productivity increases with career progression, while annual publication rates remain relatively stable.
- Research remains a sustained component of Canadian medical physics, with these findings providing benchmark data for future workforce and productivity studies.

Contact: JadeFischer@uvic.ca