

Medical Student Publications: How Does Research Productivity During Medical School Impact Productivity in Plastic Surgery Residency?

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Background

- Integrated plastic surgery residency is one of the most competitive medical specialties.
- Research is an important component of medical student applications to plastic surgery residency.
- This study aims to evaluate the relationship between research productivity in medical school and residency.
- This study also examines the institutional level factors that may influence research productivity amongst plastic surgery applicants.

Methods

- Plastic surgeons who graduated from an integrated plastic surgery residency program and obtained board certification between 2020 and 2022 were included in the study.
- Website profiles were used to obtain medical school and residency training information.
- The National Institutes of Health (NIH) iCite database was utilized to identify publications in *Plastic and Reconstructive Surgery (PRS)*, first author publications, and total publications during medical school and residency training.
- Linear regression was performed to assess for correlation between research productivity during medical school and residency.
- Unpaired *t-tests* were performed to compare the mean number of publications between medical students.

Figure 1. Correlation Between Medical School and Residency Productivity

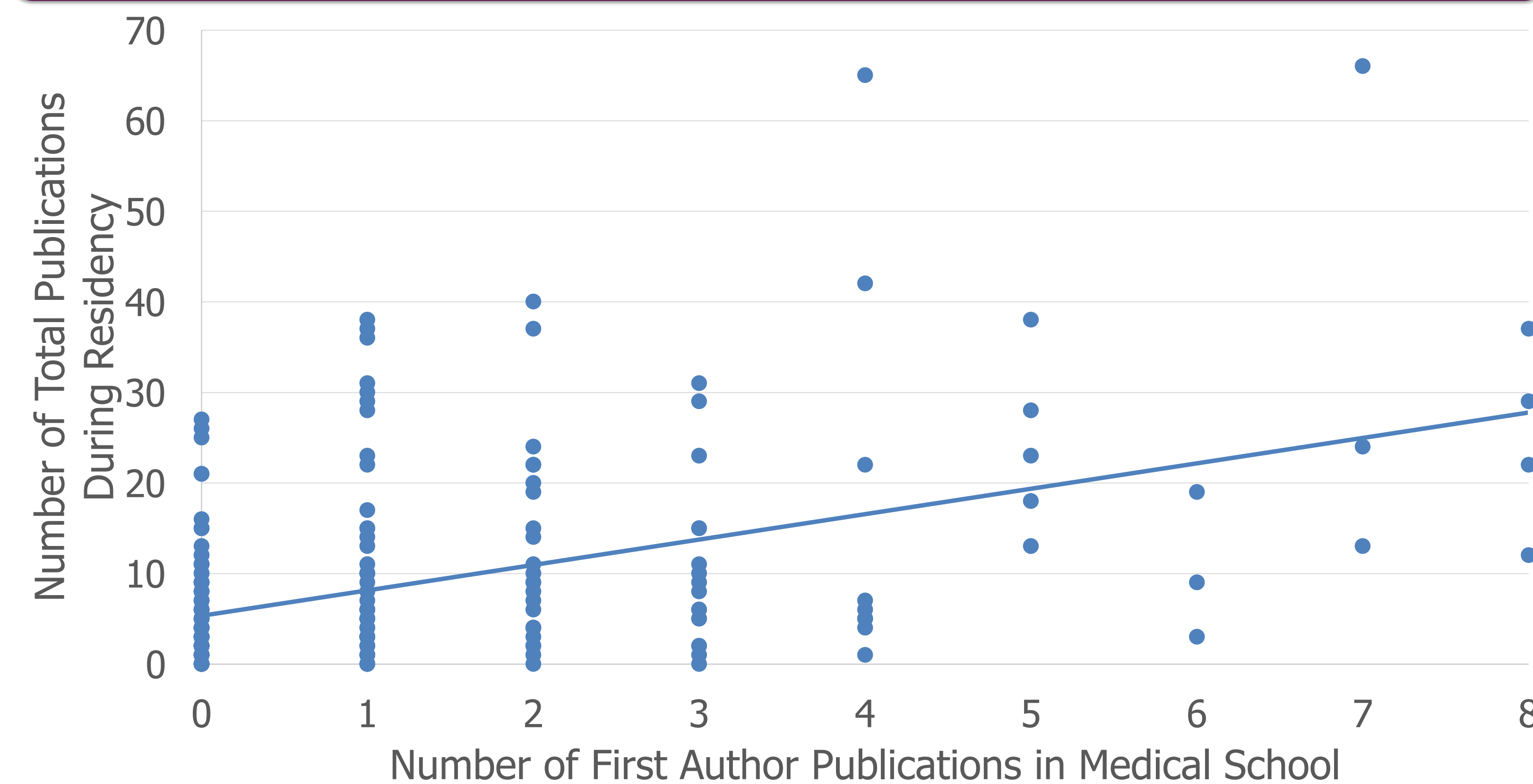
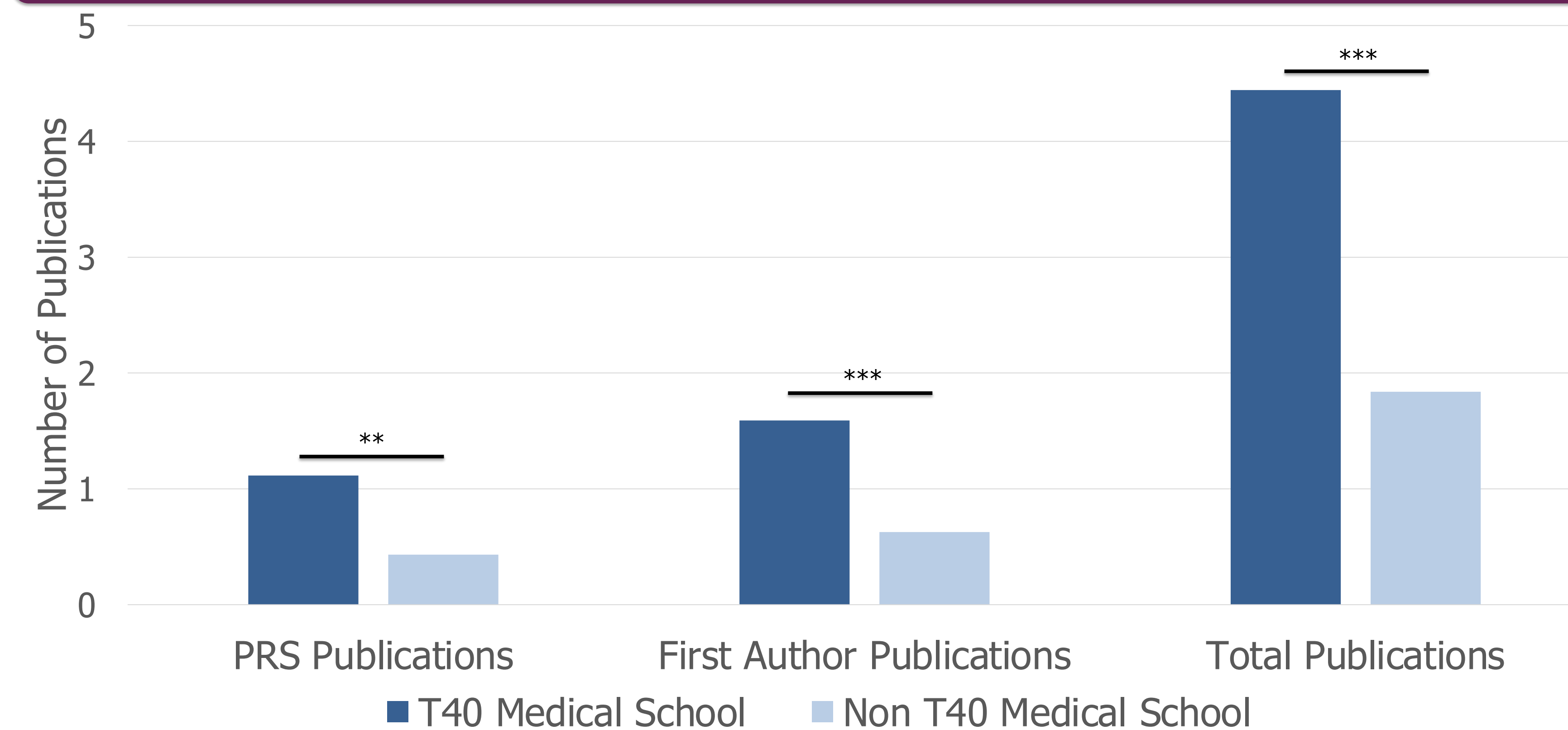


Figure 2. Productivity of T40 Medical Schools



** denotes statistical significance < 0.01, *** denotes statistical significance < 0.001

Figure 3. Productivity of Schools With Affiliated Residencies



* denotes statistical significance < 0.05, *** denotes statistical significance < 0.001

Results

- 277 plastic surgeons were included in analysis.
 - 44% attended a top 40 (T40) NIH funded medical school.
 - 82% attended a medical school with an affiliated plastic surgery training program.
- The mean total number of publications during medical school and residency was 3 and 8.8, respectively.
- The number of first author publications ($r^2 = 0.23$, $p < 0.0001$), publications in *PRS* ($r^2 = 0.07$, $p < 0.0001$), and total publications ($r^2 = 0.20$, $p < 0.0001$) during medical school had positive correlation with total research output during residency.
- Medical students from T40 NIH funded medical schools had significantly more publications than their peers at schools ranked outside of the top 40.
 - PRS* publications: 1.1 vs 0.4.
 - First author publications: 1.6 vs 0.6.
 - Total publications: 4.4 vs 1.8.
- Medical students at schools with an affiliated plastic surgery training program (home students) had significantly more publications than their peers at schools without an affiliated training program (orphaned students).
 - PRS* publications: 0.9 vs 0.2.
 - First author publications: 1.1 vs 0.6.
 - Total publications: 3.3 vs 1.6.

Conclusions

- The number of first author publications during medical school may be the strongest predictor of research productivity during residency.
- Students at schools ranked outside of the top 40 NIH funded and students at schools without an affiliated plastic surgery training program may have fewer opportunities to participate in scholarly activity.
- National plastic surgery organizations should take a role in creating a centralized database of research opportunities to ensure all students have access to pursue these endeavors.