**ACS 2024 Surgeons and Engineers: A Dialogue on Surgical Simulation Meeting**

**P-D-01**

**Challenges in Surgical Education**

# Challenges in Early Exposure to Microsurgery in Medical School

Daniela Lee; Iulianna Taritsa; Jose Foppiani, MD; Angelica Hernandez Alvarez; Kirsten A. Schuster, MD; and Samuel J. Lin, MD, MBA, FACS

*Beth Israel Deaconess Medical Center, Boston, MA*

**Background:** Microsurgery is a subspecialty with extensive training, often requiring a 1-year fellowship after completion of plastic and reconstructive surgery (PRS) residency. There has also been a recent downtrend in applicant numbers, with a subsequent increase in unfilled positions. The long road to becoming a fellowship trained microsurgeon begins in medical school, with students needing to select PRS as their primary specialty within the first few years to be considered competitive. However, raising interest before elective or auditioning rotations is challenging.

**Current Challenges:** There are many barriers that prevent early microsurgical exposure and training of medical students, especially with how niche the field is. The cost of the average microsurgical suturing kit ($100) is notably ten times the average price of a regular suturing kit ($10), making self-teaching cost prohibitive. Moreover, to determine which schools publicly emphasize microsurgery exposure, we conducted a sweeping review of the term “microsurgery” for each accredited medical school in the US. Only 52 out of the 155 medical schools described microsurgical exposure for students on their websites, out of which 77% were through rotations, 13% were microsurgery simulation labs, and 10% had designated training courses. Most of these schools appeared to be coastal, also creating a geographical advantage in early exposure to the field (Figure 1).

**Need of Innovation:** Solutions are required to make microsurgery more accessible to medical students earlier in their careers. Creating early enthusiasm is crucial to recruiting future microsurgeons. This can be done through workshops that are integrated into the first or second-year curriculum. Creative, low-cost solutions have begun to be proposed to increase exposure to microsurgery early in medical straining, such as anastomosing vessels in chicken legs or suturing the inner membranes of peeled eggs. Similar efforts should continue to be developed to help promote microsurgery in medical school.

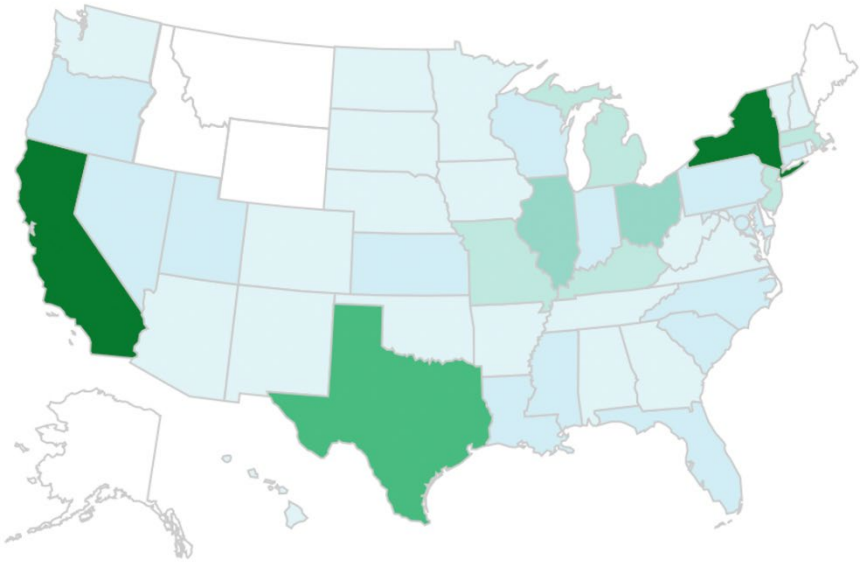

Figure 1 – Distribution of medical schools in the US with websites that describe any exposure to microsurgery via rotations, simulation labs, or training courses within the curriculum