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Building an osteopathic research culture

<https://doi.org/10.1515/jom-2021-0055>

Despite a tumultuous year in 2020, the osteopathic medical community achieved notable milestones. For the first time, the number of doctors of osteopathic medicine (DOs) and osteopathic medical students totaled more than 150,000 in the United States (US) [1]. Of those, more than 31,000 students trained at 38 colleges of osteopathic medicine (COM), representing one in every four US medical students [1, 2]. Calendar year 2020 also marked the culmination of the five year transition to a single graduate medical education (GME) accreditation system. Summary data showed that 99.29% of spring 2020 graduates successfully placed in GME, with 6,815 new DOs beginning their residencies in July 2020 [3]. Over the long term, efforts to sustain this high placement rate in GME will be crucial.

In the “single match,” DOs participate with graduates from US allopathic medical schools (USMDs) and international medical graduates (IMGs). These GME positions are open equally to DOs, USMDs, and IMGs, thereby making these positions more competitive than they previously were. Program directors evaluate DO and MD applicants on their academic performance via multiple metrics, including board examination scores, letters of recommendation, medical student performance evaluations, personal statements, professionalism, and research experience [4]. In the 2018 National Resident Matching Program (NRMP) Director survey, program directors rated research experience with a mean importance of 3.7 out of 5 when selecting applicants to interview [4]. Research experience conveys a set of intangible skills desirable to program directors. These skills include interdisciplinary teamwork, critical thinking, problem-solving, time management, and conflict resolution [5, 6]. For applicants with comparable board examination scores, evaluations, and letters of recommendation, the deciding factor may be research experience. Increasingly, osteopathic medical students recognize the value of research in applying for residency and express an interest to participate

in research during medical school [7–9]. However, COMs may struggle to meet the growing demands of osteopathic medical students’ research needs in undergraduate medical education, including experienced and available mentors.

Historically, the osteopathic profession has not prioritized a culture of research [10–12]. The inattention toward research is evidenced in a lack of federal funding at COMs and criticism from graduating seniors. A recent review of grant funding data from the National Institutes of Health (NIH) RePORT database [13] showed that COMs secured 102 grants out of a total of 93,243 active grants, equaling 0.1% of all NIH funded grants in the US. While bias toward COMS may play a role in this stark discrepancy, the research environment, investigator training, and previous research experience also contribute to lower research productivity. Likewise, many graduating seniors believe the research environment and opportunities for participating in research to be insufficient. Nearly half (47%) of 2020 DO graduates felt the amount of time devoted to research during their academic training was “inappropriate.” [14] Further, they reported that a scant 3% of their time was dedicated to research during their clerkship years. Insufficient training and time devoted to research was reflected in the 2020 NRMP data. The average number of research experiences among matched MD seniors was 3.5, compared with 1.9 among DO seniors [15, 16]. Furthermore, MD seniors reported an average of 6.9 abstracts, presentations, and publications, whereas DO seniors reported an average of 2.9 [15, 16]. These data demonstrate that the osteopathic medical community continues to lag behind the allopathic community in the conduct of research (and the infrastructure to support it).

While these data are discouraging, they can serve as the catalyst for transformation. Simply put, challenges represent lessons to be learned. In 2014, Clark and Blazyk [10] outlined four strategies for the profession and its leaders to commit to a research culture that promotes “inquiry and scientific exploration.” They recommended: (1) investment in faculty with explicit expectations and accountability for research productivity; (2) additional training and support to foster a research culture; (3) increased instruction in research methodology and student mentoring; and (4) comprehensive research accreditation standards [10]. Given the financial

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consequences of the novel coronavirus 2019 pandemic and the limitations of constrained curricula, these recommendations may need to be deferred in short-term. In the interim, the osteopathic community can focus its efforts on identifying and examining its own research culture.

Research culture is a set of values, beliefs, assumptions, and behaviors about research in an organization [17, 18]. Analogous to teaching culture, in which there are values and styles of teaching, research culture reflects the values and styles for the implementation of research. Allopathic medical schools have a long, storied history of providing a supportive research culture where research is expected, produced, shared, and valued [19]. For COMs to catch up to allopathic medicine and other health professions, we must recognize the importance of cultivating a research culture as, among other things, an investment in our future. First, the osteopathic medical community must engage in a careful process of introspection to determine who we are as researchers and what type of research is important to us. Second, we must define a research culture for ourselves. We can achieve this by exploring our individual, leadership, and institutional perceptions about the implementation of research. Of note, an article [20] in this issue covers exactly that type of exploration; Hamby et al. report the results of a survey assessing the experiences and opinions of 70 mentors in a pediatric research program. Third, we must develop a strategic plan to articulate our research goals and strategies to achieve them. We can channel the momentum of the osteopathic medical community's record-breaking achievements and set our sights on building a culture of research.

In closing, I have been fortunate to work at both an allopathic medical school and a COM. When I made the decision to come to my current institution, it was with a clear understanding of osteopathic principles and practices. Anecdotally, my family physician growing up was a DO. Whenever I was sick, she made a point to include me in conversation. When I was struggling with a particular sports injury, she told me that she was going to listen to my body so she could hear what it needed. Never before had a physician focused on me as a whole person. Perhaps we can do the same for defining our research culture, listening to our osteopathic community so we can hear what it needs.

Research funding: None reported.

Author contributions: The author has accepted responsibility for the content of this manuscript and approved its submission.

Competing interests: Dr. Beverly is Section Editor for Public Health and Primary Care at *Journal of Osteopathic Medicine*.

Disclaimers: Dr. Beverly, who is a Section Editor for *Journal of Osteopathic Medicine*, was not involved in peer review of this manuscript nor the decision to publish it.

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