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Discussion: Trends and Predictors of National Institutes of Health Funding to Plastic Surgery Residency Programs

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DISCUSSION

Over the past two decades, there has been a dramatic decrease in federal support for medical research, with a concomitant rise in competition for grants from the National Institutes in Health (NIH). Silvestre et al. analyzed NIH funding in plastic surgery research and identified institutional factors associated with grant acquisition.¹ These authors examined NIH grants awarded over a 9-year period and compared plastic surgery to other surgical specialties. Their findings suggest that, per capita, plastic surgeons receive the least NIH funding of all the specialties evaluated. Programs with stronger academic reputations, as assessed by Doximity and US News ranking, and >10 full-time faculty were more likely to obtain NIH funding.

Financial challenges to academic centers include declining clinical revenues, capricious third-party payment structures, and a paucity of extramural support. Historically, academic centers utilized external funding as a source of income to offset revenue losses from researchers who did not have robust clinical practices. Contemporary academic programs, in contrast, are not significantly different than non-academic practices where clinical revenue dictates financial solvency. In this context, academic surgeons are often forced to choose between a busy clinical practice and a funded-research enterprise.

All plastic surgeons are impacted by these challenges, regardless of practice type. Research contributions from academic plastic surgeons shape treatment paradigms, improve patient outcomes, and keep our specialty competitive in an environment where non-plastic surgeon providers are expanding scopes of practice. Silvestre et al. have highlighted an important discrepancy in the state of federal funding for plastic surgery research and taken a critical step toward addressing this issue by identifying institutional factors associated with grant acquisition. Their work should serve as a catalyst for discussion among all stakeholders in the specialty.

As with many novel studies, this work raises as many questions as it answers.

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With no data available on the number of applications submitted, it is difficult to definitively state that certain programs were more successful without knowing how many unsuccessful applications there were.

Academic reputation and faculty size were identified as primary predictors of success. While it is plausible that these factors influence successful grant acquisition, grants are allocated to individuals and surgeon-specific factors are likely more important.² The anecdotal evidence provided in the authors' discussion includes such individual faculty characteristics: a doctoral degree in molecular biology, Academic Scholar Award, and individual interest in obtaining funding. These factors are undeniably important drivers of success.

The institution-level measures included, while important, are only useful in a limited context. Academic reputation is largely subjective and may not be a meaningful metric for an aspiring investigator, since junior faculty rarely have more than a few choices for their first job. Larger programs may have a higher probability of having senior faculty who can successfully mentor junior faculty with regard to grant funding. However, programs that want to have funded investigators cannot achieve this goal simply by hiring additional faculty. Over 50% of NIH funding in plastic surgery research went to 3 programs – while these programs are known for their clinical excellence, they also house well-known plastic surgeon-scientists. An alternative interpretation of these data is that grant funding is related to an individual investigator's reputation, rather than institutional reputation, and the total number of primary investigators (i.e. the ratio of number of grants to number of PIs), rather than total number of faculty.

The authors neglect to mention a major barrier to NIH-funded research in academic plastic surgery units: the disparity between the NIH salary cap and the remuneration paid to an academic plastic surgeon. This difference is nearly twofold: \$187,000 (NIH salary cap) versus \$341,000 (2015–2016 American Association of Medical Colleges median for plastic surgery assistant professors), and widens with increasing academic rank. The income disparity needs to be balanced either by clinical revenue or endowments and may be an insurmountable barrier for aspiring investigators.

The authors mention opportunities via the Plastic Surgery Foundation (PSF) and the Association of Academic Plastic Surgeons as funding sources for plastic surgery research. A pessimistic view of funding is that plastic surgery research is poorly funded in terms of NIH dollars. A more optimistic view is that, perhaps, plastic surgeons rely less on NIH funding for research support because of robust mechanisms within affiliated specialty societies, as well as within their divisions/departments. Such mechanisms exist because of practitioners who realize the importance of academic investigators to the specialty at large. Sadly, these resources are also becoming scarce: the rate of participation in supporting the PSF has dwindled from >70% a decade ago to 16% today. The importance of encouraging broad support of intra-specialty funding mechanisms in plastic surgery cannot be overstated. Silvestre et al. have identified an important problem in academic plastic surgery – it is up to all of us to work toward solutions to ensure the future of our specialty.

References

1. Silvestre J, Abbatematteo JM, Chang B, Serletti J. Trends and Predictors of National Institutes of Health Funding to Plastic Surgery. *Plast Reconstr Surg*. 2017 In Press.
2. Lopez J, Ameri A, Susarla SM, et al. Does Formal Research Training Lead to Academic Success in Plastic Surgery? A Comprehensive Analysis of U.S. Academic Plastic Surgeons. *J Surg Educ*. 2016 May-Jun;73(3):422–8. [PubMed: 26796512]
3. American Association of Medical Colleges. Faculty Salary Report (2015–2016). Available at: <http://www.aamc.org/data>. Accessed June 18, 2017