laboratory I have not been able to deal with. Let us get together to increase the supply not only over successful but also long-term investigators to satisfy the demands for novel research in thoracic surgery.

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Commentary: For thoracic surgeons, a strategic approach to the funding game

Tony E. Godfrey, PhD,^a and Virginia R. Litle, MD^b

In this educational manuscript from the American Association for Thoracic Surgery's 2020 annual meeting, Narahari and colleagues¹ hypothesize that thoracic surgeons have difficulty obtaining National Institutes of Health (NIH) funding in a challenging climate. However, they conclude that they are actually doing well by most of their metrics. The question then becomes how can thoracic surgeons do better?

First, we ask what is the value of NIH funding aside from research money? Faster promotions, appreciation from academic leadership, respect from peers. Most importantly, though, for surgeons it is the opportunity to benefit patients by addressing the hypotheses that arise during clinical care.

What can we do to optimize the number of thoracic surgeons pursuing and obtaining NIH funding, and what are the best backup plans? The holy grail of funding is the R01 grant, but we shouldn't knock the increasing number of opportunities from professional and private foundations, the Department of Defense, and industry.

Narahari and colleagues found that only 16% (63 of 395) of the thoracic surgeons surveyed were funded at any point during their career. We do not know the applicant denominator, but regardless, 63 in 39 years is actually quite low. The barriers

Strategize to win!

CENTRAL MESSAGE

With collaboration, mentorship, and time to think, thoracic surgeons can win the National Institutes of Health funding game, and more will want to play.

to funding are familiar: clinical demands, protected research time, the gap between surgeon salaries and the NIH salary cap. The authors make suggestions, including implementation of transitional awards for clinicians similar to F99/K00 awards for basic scientists and modifying eligibility criteria for K99/R00 awards. But we don't want to rob from Peter to pay Paul: If scientists don't get funding, they're out of a job.

Academic medical institutions, department leaders, and the NIH all need to address these issues if surgeons are to be encouraged to play and be winners. No more blame game, though. Investigators must look within as well. How can they submit the best proposal so that it gets discussed and ranked well by the study section? Suggestions include (1) secure good mentorship; (2) dedicate a realistic amount of time to grant preparation; (3) commit the appropriate effort to the grant^{2,3} (a principal investigator [PI] requesting only 5% to 10% effort on a big study will be of concern to

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the reviewers); and (4) build collaborations with potential coinvestigators before writing the grant application. Time is of the essence for success, but surgeons with a strong desire to further the field of academic surgery should not have to sacrifice weekends or vacation time to do so.

Finally, it can be discouraging to be reminded that the majority of NIH-funded thoracic surgeons are at highly ranked academic institutions. Can you get NIH funding if you have a small division, little infrastructure, no mentorship, no research time, and no other advanced degree? Maybe, maybe, difficult, no, and apparently not (but consider a multiple-PI application with a PhD colleague). So don't knock the other funding avenues. Our societal organizations have robust and abundant funding

opportunities, and industry-sponsored research remains valuable despite conflict of interest challenges. But this is not a solo sport: strategize, collaborate, and we are all winners.

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Commentary: The National Institutes of Health and why we care

Paul Kurlansky, MD

With its 27 institutes and \$42 billion budget, the National Institutes of Health (NIH) is the largest source of funding of medical research in the world. NIH grants, with their high indirect institutional rewards, are the most prestigious awards in the academic community. Despite the large amounts of funding, competition is intense, with recent success rates consistently <20% (Figure 1, A).¹

Therefore, the analysis by Narahari and colleagues² of NIH funding for thoracic surgeons is encouraging. In the face of increasing competition, as well as the clinical and financial pressures of many departments for clinical productivity, the authors hypothesized that the NIH funding of thoracic surgeons would decline. After a remarkably

De novo research grant applications and awards that the National Institutes of Health received and issued since 1995.

CENTRAL MESSAGE

Despite limited physician participation, it is the educational enterprise that guarantees the vitality and progress of the profession.

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painstaking compilation of funding history for 395 thoracic surgeons in the top 140 NIH-funded institutions, they discovered that NIH funding had actually progressively increased, with 63 surgeons receiving 136 grants totaling \$228 million and resulting in 1772 publications generating more than 50,000 citations. We do not know the success rate for these surgeons during this period of increasing competition. However, the increase in thoracic surgical funding appears to exceed the general increase in NIH funding (Figure 1, A). The renewal rate of R01 grants (17%) was lower than the success rate for grant renewal nationally