

Career National Institutes of Health Funding and Scholarship of Chairpersons of Academic Departments of Anesthesiology and Surgery

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THE alarm has been sounded—again. Just as it is widely accepted that research is important for the development, advancement, and future of the medical specialty of anesthesiology, so too is it clear that we have a problem because there are not enough qualified and capable investigators. A recent article in ANESTHESIOLOGY¹ and an accompanying editorial² highlight the sad state of research in our specialty, noting that departments of anesthesiology receive less than 1% of National Institutes of Health (NIH) dollars. This is an amount essentially unchanged from 30 yr ago despite unprecedented recent growth in the NIH budget and increased size of academic departments of anesthesiology in university hospitals.¹ Likewise, over the past few years, there have been numerous forums and articles in newsletters sponsored by the American Society of Anesthesiologists,³ the Association of University Anesthesiologists,⁴ and the Foundation for Anesthesia Research and Education lamenting the fact that few trainees and young anesthesiology faculty choose to prepare themselves for a career as physician investigators and that fewer still succeed in

procuring and maintaining NIH funding over the long term.⁵ The reasons for this predicament are undoubtedly quite complicated. Workforce shortages and the economic attraction of private practice probably play a role, as do an increasing clinical workload and generational differences of work ethics and attitudes about lifestyle. However, this is not a new problem. In an editorial written more than 20 yr ago about this issue, a then-leader of our specialty and chairperson of a major academic department, reflecting on missed opportunities for scientific advancement of our specialty, called research in anesthesiology the “road not taken” and stated that “the potential of the trainees is greater than the expectations of the faculty” and that “we must examine ourselves to see if we are willing to take the responsibility for the tremendous intellectual growth that could await our specialty if we have the wisdom to encourage it.”⁶

One group ideally positioned to encourage such intellectual growth is academic department chairs. Arguably, department chairs are best positioned to raise the academic expectations of their trainees and faculty and to support and encourage their research and intellectual pursuits. Moreover, having risen to the highest positions within their departments and universities, department chairs provide a valuable index of the state of academic accomplishment within our specialty. This begs the question of whether academic anesthesia chairs, by virtue of their own research and scholarship experiences and accomplishments, are prepared to effectively guide trainees and faculty in their research and academic careers. This is relevant inasmuch as anecdotal reports and some data suggest business management skills are increasingly important for appointment as a chair of anesthesiology and that chairs themselves view research, scholarship, and federal funding as being less important credentials for the job than they were in 1990.⁷ Accordingly, in this study, we examined the career track record of current chairpersons of academic anesthesiology departments in the United States in obtaining funding from the NIH for clinical or basic research and in publishing in journals cited by PubMed. To control for institutional differences and benchmark anesthesiology chairs against another specialty, we compared the performance of anesthesiology chairpersons to their counterparts in surgery within the same institutions on these same measures.

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Materials and Methods

This was a survey conducted from March through December 2006 on data publicly available on the Web sites of the Society of Academic Anesthesia Chairs (SAAC),** the National Institutes of Health Computer Retrieval of Information on Scientific Projects (CRISP),†† and PubMed‡‡ databases. First, a list of current chairpersons of academic departments of anesthesiology was obtained from the SAAC Web site. Only members of SAAC were included; chairs listed only as members of the Association of Anesthesia Program Directors were excluded because such programs typically are not closely affiliated with a university or medical school and faculty may not have academic appointments. The name of each individual was entered into the CRISP database and into PubMed. CRISP lists grants funded between 1972 to the present and includes only the principal investigator; a person having a lesser role on the grant or listed as a coinvestigator would therefore not appear. Citations in PubMed include letters to the editor, review articles, and original work published between 1962 and March 31, 2006; we did not differentiate between the types of publications in this analysis. To reduce the likelihood of error, the data were verified independently by two individuals. In addition, a Google search§§ was performed for each department of anesthesiology to confirm that the SAAC database was accurate. As a concurrent control, we identified the chairperson of the department of surgery corresponding to each institution having a chair of anesthesiology listed in the SAAC database and searched for grants awarded to that individual in CRISP and for publications in PubMed. This individual was typically the chairperson of general surgery. The results were tabulated by institution, specialty (anesthesiology *vs.* surgery), number and type of NIH grant, years of funding, and number of publications cited in PubMed. Data on grant funding are presented as the percentage of chairs of anesthesia and surgery with grant funding and were analyzed with a Fisher exact test. Data on number of publications are expressed as mean \pm SD and were analyzed using a Student *t* test.

We also investigated departmental performance by examining the record of training grants awarded to departments of surgery and anesthesiology and by assessing the relation between a chair's personal record of NIH fund-

ing and the performance of his or her department in obtaining NIH grants. For the former, we reviewed each of the departments of surgery and anesthesiology for training grants awarded in 1995, 2000, and 2005. For the latter, we correlated inclusion of academic departments of anesthesiology||| and surgery## in the national rankings for NIH funding for the year 2005, the last year for which data are available, with whether the chair of the corresponding department had a successful record of competing for NIH-funded grants. Similarly, we compared the departmental ranking for NIH funding with the publication record of the chair of the corresponding department. We considered only whether a department was ranked by NIH in 2005, not its position on the list. In 2005, by virtue of having at least one NIH-funded grant (regardless of type or dollars awarded), 49 departments of anesthesiology and 88 departments of surgery made the NIH list. These data were analyzed with a Fisher exact test or Wilcoxon rank sum test.

Results

There were 107 chairs of anesthesiology listed as members of SAAC. One chair of anesthesiology could not be definitely identified, so both the chair of anesthesiology and the chair of surgery were removed from the analysis. Similarly, we were able to identify the chair of surgery at the same institutions in all but one case; the corresponding chair of anesthesiology at that institution was excluded from the analysis. Accordingly, we analyzed data for the chairs of surgery and anesthesiology in 105 academic institutions. A *post hoc* sensitivity analysis of the data revealed that the overall results did not change regardless of whether the missing chairs were arbitrarily assigned the maximum or the minimum number of publications for their respective specialty.

There was a significant difference in the number of anesthesiology chairpersons compared with surgical chairs that had any type of funding listed on the CRISP-NIH database between 1972 and 2006 (32 *vs.* 65; $P < 0.0001$, Fisher exact test; table 1). However, there were no differences in the average number of years of NIH funding among funded investigators between the groups (17 ± 18 yr for surgery chairs *vs.* 14 ± 15 yr for anesthesia chairs; $P > 0.05$, Student *t* test). Similarly, 22% ($n = 23$) of surgical chairs received an early career or career development award (R29, R23, R21, K08), whereas only 8% ($n = 9$) of anesthesia chairs had ever received one ($P \leq 0.01$, Fisher exact test; table 1). Likewise, more than twice the number of chairs of surgery had received RO1 (Research Project Grant Program) funding as compared with the number of chairs of anesthesia ($n = 39$ *vs.* 17, respectively; $P \leq 0.001$, Fisher exact test; table 1). However, the average number of years of career development funding per funded inves-

** Available at: <http://www.aapd-saac.org/membersgeog.php>. Accessed March 31, 2006.

†† Available at: <http://crisp.cit.nih.gov/>. Accessed June 22, 2006.

‡‡ Available at: <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?DB=pubmed>. Accessed June 22, 2006.

§§ Available at: <http://www.google.com/>. Accessed April 15, 2006.

||| Available at: http://grants1.nih.gov/grants/award/rank/MedSchool_Departments.cfm?Department=ANESTHESIOLOGY. Accessed December 18, 2006.

Available at: http://grants1.nih.gov/grants/award/rank/MedSchool_Departments.cfm?Department=SURGERY. Accessed December 18, 2006.

Table 1. Career NIH Funding History of Chairs of Anesthesiology and Surgery

	Anesthesiology Chairs (105)	Surgical Chairs (105)	P Value
Any National Institutes of Health Grant	30% (32)	62% (65)	<0.0001
Early Career/Career Development Award	8% (9)	22% (23)	<0.01
NIH Research Project Grant	16% (17)	37% (39)	<0.001
Program Project, Clinical Research Center, and Centers for Interdisciplinary Research Grants	11% (12)	23% (24)	<0.05
Training Grant	2% (2)	14% (15)	<0.01

Numbers in parentheses are the number of chairpersons in each group. Within each specialty, some chairs have received multiple types of grants and therefore appear in more than one subgroup.

NIH = National Institutes of Health.

tigator did not differ between the groups (4 ± 2 yr for surgery chairs *vs.* 4 ± 2 yr for anesthesia chairs; $P > 0.05$, Student *t* test), nor did the average number of years of RO1 funding per RO1-funded investigator (13 ± 11 yr for surgery chairs *vs.* 14 ± 9 yr for anesthesia chairs; $P > 0.05$, Student *t* test). Program project, clinical research center, and centers for interdisciplinary research grants (P01, P20, P50, P60) were analyzed together as large project grants. Eleven percent ($n = 12$) of chairs of anesthesia held one of these larger grants in their career, whereas 23% ($n = 24$) of surgical chairs had done so ($P \leq 0.05$, Fisher exact test; table 1). When we compared the number of chairs that had received T32 (Institutional Research Training Grants) grants, we found that only 2% of chairs of anesthesia ($n = 2$) had received a T32 training grant in their career, whereas 14% of surgical chairs ($n = 15$) had received one ($P < 0.01$, Fisher exact test; table 1). As before, the average number of years of T32 funding per T32-funded investigator did not differ (10 ± 8 yr for surgery chairs *vs.* 11 ± 8 yr for anesthesia chairs; $P > 0.05$, Student *t* test).

Publications cited in PubMed were analyzed as an independent measure of scholarly activity. Chairpersons of anesthesiology had significantly fewer PubMed citations than chairs of surgery (50 ± 51 *vs.* 133 ± 98 , respectively; $P < 0.001$; fig. 1). Among surgical chairs, 53% had more than 100 publications and only 1 (an interim chair) had 10 or fewer, whereas among aca-

demetic anesthesiology chairs 15 (14%) had more than 100 PubMed citations and 20 (19%) had 10 or fewer.

In terms of departmental performance, surgery departments had more NIH T32 training grants in 1995, 2000, and 2005 than the corresponding departments of anesthesiology ($P \leq 0.05$, Fisher exact test; fig. 2). For departments of anesthesiology but not surgery ($P \leq 0.001$ and $P = 0.32$, respectively, Fisher exact test; table 2), there was also a relation between funding history of the individual chair, as assessed by having ever been a principal investigator on any NIH grant, and whether the corresponding department was ranked in 2005 by the NIH. For both departments of anesthesiology and surgery ($P < 0.0001$ and $P < 0.05$, respectively, Wilcoxon rank sum test; table 3), there was also a relation between the chair's publication record and whether the corresponding department was ranked in 2005 by the NIH. Moreover, funded chairs of ranked anesthesiology departments had twice the number of publications as their ranked-department counterparts lacking an NIH funding history and triple the number of publications of non-funded chairs of unranked departments (table 4).

Discussion

This is the first study to examine the research and scholarship credentials of the leadership of academic

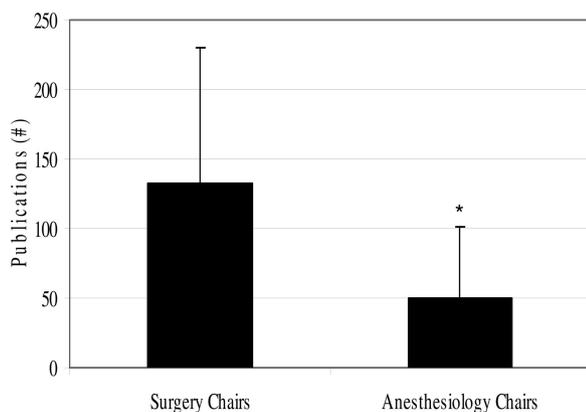


Fig. 1. Number of career PubMed citations for chairs of anesthesiology and surgery. Data are mean \pm SD for the group. * $P < 0.001$.

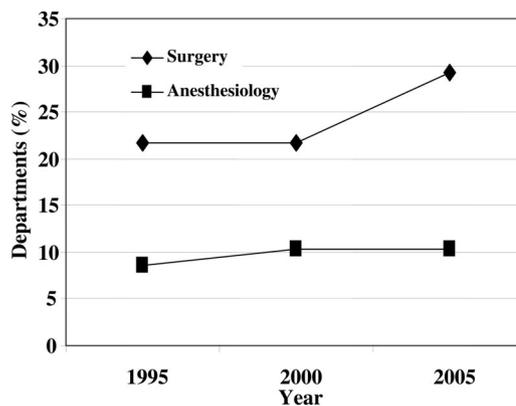


Fig. 2. Number of training grants awarded to the departments of anesthesiology and surgery in 1995, 2000, and 2005. Departments of surgery had more training grants than departments of anesthesiology in each of the 3 yr ($P \leq 0.05$, Fisher exact test).

Table 2. Relation between 2005 Departmental NIH Ranking and the Chair's Personal Funding History

	Funded Chair	Not Funded Chair
Anesthesiology (105)		
Ranked department	23 (22%)	26 (25%)
Unranked department	9 (8%)	47 (45%)
Surgery (105)		
Ranked department	50 (48%)	27 (26%)
Unranked department	16 (15%)	12 (11%)

Data are the number of chairpersons in each category by specialty. $P < 0.001$ for anesthesiology and 0.32 for surgery by Fisher exact test.

NIH = National Institutes of Health.

departments of anesthesiology, and the news is not good. In terms of their record of NIH research funding, current leaders of academic departments of anesthesiology underperform those of surgery on every measure we evaluated. Using publication record as another measure of scholarly activity, chairs of anesthesiology also fall short; on average, anesthesiology chairs have fewer than half the number of publications as chairs of surgery, and 19% have fewer than 10 PubMed citations. Departments of surgery also have been and continue to be more successful in competing for NIH-funded training grants as compared with departments of anesthesiology. Moreover, the personal funding and publication record of an anesthesiology chair correlates with departmental academic success, as measured by inclusion in the NIH rankings of grants awarded. We were surprised by these results because surgery, even in its own estimation,^{8,9} underperforms other academic clinical specialties in NIH funding, but on measures of federal funding and academic productivity used here, it decisively beats anesthesiology. Had we compared chairs of anesthesiology with traditionally more academic departments such as medicine, pediatrics, psychiatry, or neurology, the differences would undoubtedly be more marked.

Clearly, NIH funding is not the only measure of research or academic accomplishment and is not the only legitimate path to senior institutional leadership roles. There are many academically productive members of our specialty, and numerous chairs, that have made outstanding contributions to the scientific, educational, ad-

Table 3. Relation between 2005 Departmental NIH Institutes of Health Ranking and the Chair's Career Publication Record

	Anesthesiology (105)	Surgery (105)
Ranked department	68 ± 59 (55)	141 ± 91 (117)
Unranked department	35 ± 39 (18)	111 ± 114 (70)

Data are the mean ± SD publications; numbers in parentheses are the median for the group. $P < 0.001$ for departments of anesthesiology and $P < 0.05$ for surgery by Wilcoxon rank sum test. There were 49 ranked and 56 unranked departments of anesthesiology, and among surgery departments with an anesthesiology chair in the Society of Academic Anesthesia Chairs, there were 77 ranked and 28 unranked departments.

NIH = National Institutes of Health.

Table 4. Career Publications of Chairs of Anesthesiology and Surgery as a Function of Personal NIH Funding History and Departmental NIH Ranking

	Anesthesiology	Surgery
Funded chair of ranked department	92 ± 70 (82)	165 ± 99 (128)
Funded chair of unranked department	77 ± 64 (75)	125 ± 121 (94)
Unfunded chair of ranked department	46 ± 36 (39)	96 ± 52 (83)
Unfunded chair of unranked department	27 ± 26 (16)	92 ± 106 (43)

Data are mean ± SD; numbers in parentheses are the median number of publications for the group. The number of chairs of anesthesiology and surgery in each group are shown in table 2.

NIH = National Institutes of Health.

ministrative, and political fabric of academic anesthesiology without benefit of NIH funding. However, the importance of NIH funding in the academic medical center cannot be denied. The NIH, with an annual budget of approximately \$23 billion, is by far the largest source of funding for health sciences research, and NIH grant awards and dollars are widely used to rank and measure institutions and departments as well as to allocate institutional resources such as laboratory space. This is probably explained at least as much by economics as by prestige. NIH grants are highly competitive and provide large sums over 3–5 yr to directly support specific investigators, projects, or programs. Moreover, NIH grants such as individual investigator-initiated RO1s and program project grants provide significant monies directly to the institution in the form of indirect costs, which are then used to support the institutional research enterprise such as administrative overhead, capital equipment, and building maintenance and construction. Foundation- or industry-sponsored grants, in contrast, typically provide lesser sums of money for fewer years and contribute little or nothing for institutional overhead. Consequently, in the university-affiliated academic medical center, NIH funding is not just prestigious—it is valuable coin of the realm. Departments of anesthesiology are therefore at a serious competitive disadvantage in the university-affiliated academic medical center. As discussed recently,¹ academic departments of anesthesiology command fewer NIH research dollars and, as we show, the leaders of our academic departments are much less likely to have had NIH funding during their careers than their surgical (and, presumably to a greater degree, medical) counterparts. Combined with the fact that clinical anesthesiologists do not bring patients into the hospital, this is sobering information because it implies that any leverage academic anesthesiology chairs or departments have within their institutions comes primarily from providing clinical service.

The natural question is why so few anesthesiology chairs have a track record of successful NIH funding.

Part of the answer probably lies in the simple fact that there are few physician-scientists in our ranks who are able to compete successfully for and maintain NIH funding, a problem identified in recent studies.^{1,2} Therefore, the pool of professorial candidates with a track record as an NIH-funded investigator and otherwise qualified to be appointed chair of anesthesiology is small, and vacancies likely outnumber the available and interested research-oriented candidates. As such, it is possible that a productive, funded anesthesiology investigator may be selected for a chair position earlier in his or her career, thus reducing the likelihood of continued research productivity. We cannot definitively exclude this explanation for the disparity in academic achievement between chairs of surgery and anesthesiology, but it seems unlikely to account for it because, among chairs who have received NIH funding, the duration of funding—and, by inference, time as an active investigator—is almost identical for both groups. Another possibility for the shortage of anesthesiology chairs with a history of NIH funding is that NIH-funded investigators lack either the interest or the skills to be a chairperson. Interest is difficult to assess, but the situation regarding surgical chairs suggests that the skills required to perform NIH-funded research and those required to run an academic department are not mutually exclusive. In addition, there are and have been several well-funded academic anesthesiologists who have enjoyed long and successful careers as chair. Alternatively, it may be that deans, hospital leadership, and search committees view anesthesiology departments primarily as clinical service providers with few meaningful academic or research contributions to make and, as such, pass over qualified scholarly and research-oriented candidates for appointment as chairperson in favor of those with management or operational skills. Some recent data suggest this could be true,⁷ and our results on NIH funding and the publication record of current anesthesiology chairs supports this view. However, the same principles are clearly not applied when hiring a chair of surgery; in virtually every individual institution surveyed, the chair of surgery had substantially more NIH grants and more publications than the chair of anesthesiology. Whatever the reason, the current situation is consistent with an observation made more than 20 yr ago that most anesthesia faculty lack the vision, interest, or opportunity to aspire to a career of research and scholarship.⁶

There is general agreement that nurturing young physicians in research and scholarship requires skillful mentoring, protection of research and teaching time, financial and emotional support, and a dedicated and available role model. One troubling aspect of our study is that these data raise the prospect that many current chairs of academic anesthesiology departments lack the experience or skills to provide appropriate advice, guidance, and mentoring to aspiring physician-scholars and -investigators in their de-

partments. This is especially true for those increasingly rare young anesthesiologists aspiring to a career as an NIH-funded basic or clinical investigator, who are themselves in alarmingly short supply. The chair, however, is often the first person contacted by a medical student, resident, or junior faculty member to discuss future career plans and, by virtue of the chair's position, his or her advice is likely to have considerable impact and authority. Moreover, the chair controls departmental resources such as protected nonclinical time, laboratory space, and direct project support (e.g., seed money and bridge funds) that can make the difference between success and failure for the physician-investigator. In allocating such resources, a chair without a successful funding history and strong research credentials may have difficulty distinguishing a valuable and "fundable" project from one that is not or, in the case of a more senior faculty member struggling to maintain funding, may not appreciate fully the difficulty, rigor, and competitiveness of the NIH peer-review process. As a result, the limited departmental resources available to support academic activity may be used ineffectively. The relation between an anesthesiology department's NIH ranking and the chair's individual publication and funding record gives credence to this argument. While seeking guidance from a vice-chair of research, a Ph.D. researcher, or a departmental research committee is a common and useful model for guiding resource allocation decisions in academic departments, it is insufficient because, as a specialty, we continue to underperform other clinical departments in NIH grant submissions and awards.¹

This study has numerous important limitations. The data were gathered manually from publicly available databases. To minimize the risk of entry error, data were reviewed independently by two of the investigators. Information in the SAAC database was confirmed by a Google search of the respective department. Each listing in CRISP and PubMed was checked for information such as institution, specialty, field of expertise, and coauthors to confirm to the extent possible that it corresponded to the chair in question. Minor errors cannot be excluded but are unlikely to affect the results. In fact, when we performed a *post hoc* analysis to determine whether excluding the chairs we could not identify altered the results, assigning the surgical chairs zero publications and the corresponding anesthesiology chairs the maximum of any chair in the study (532), it had no impact on the overall findings. Each of the databases used has its own limitations and weaknesses. The NIH CRISP database, for example, lists only the principal investigator on a federal grant, which means persons acting as coinvestigators or consultants would not be captured in our survey. Likewise, trainees on T32 training grants are not listed, so the benefits of early career research training cannot be determined. PubMed is a comprehensive index of publications in nearly all medical and scientific journals, but it does not include books or book chapters, so those forms of scholarship are missed by our analysis. In addition,

PubMed cites anything published—original science, an editorial, a letter to the editor—in one of the indexed journals, and we counted each citation as equivalent to another. Likewise, authorship position (*i.e.*, first, last, middle author) was not evaluated. Nor did we assess publication quality, which is conventionally judged by a journal's impact factor and the number of times a published article is cited by other authors. Therefore, in our analysis, a chairperson listed as a middle author on numerous letters to the editor of a low-impact journal would look the same as another who had the same number of PubMed citations as a first or last author of original science in high-impact journals. Although this is a clear weakness of our methodology, it is unlikely to explain the discrepancy in publication numbers between surgery and anesthesiology chairs because the same criteria were applied to both groups. However, we cannot exclude the possibility that surgery has different systems, standards, and attitudes about authorship and publication than anesthesiology or that it has more receptive journals to which work can be submitted. There are also flaws in the national ranking system used by the NIH inasmuch as it includes only grants awarded to universities or medical schools. Therefore, grants awarded to investigators in hospitals affiliated with, but not owned or operated by, a university or medical school—such as Harvard-affiliated hospitals—are not included. For analyses involving NIH rankings, therefore, we included the Harvard-affiliated programs in anesthesiology and surgery in the “not ranked” group, effectively improving the performance of the “not ranked” group and biasing the study against finding a relation between departmental NIH rank and a chair's funding and publication record. Another major limitation is that our analysis did not include nonfederal sources of grant support such as funding from foundations (*e.g.*, Foundation for Anesthesia Research and Education) or industry. Once again, however, this is not likely to explain the differences observed in our study between the anesthesiology and surgical chairs. Foundation funding is generally earmarked for junior faculty, with the expectation that it will eventually lead to NIH funding. The fact that triple the number of surgical chairs than anesthesiology chairs have had or currently have NIH funding suggests either that the anesthesiology chairs had less foundation support in their careers or that they were less successful in converting it into NIH funding than surgical chairs. Industry funds offer another, increasingly common, path to research support and publication that was not captured in this analysis. We have no direct evidence regarding whether and how chairs of surgery and anesthesiology used this type of support in their own career development, but the substantially lower publication record of chairs of anesthesiology suggests that industry-sponsored research funding, to the extent it was used at all, served surgical chairs better.

We chose to examine the academic performance of current chairs because, having risen to the highest academic posts in their institutions, they are a good index of

the state of academics in our specialty and, along with leaders of our national scientific and educational foundations and specialty organizations, also are in the best position to influence it. Chairs of anesthesiology have an exceedingly difficult task of balancing the often competing demands of clinical service, education, and research in a time of diminished resources. They are a product of the state of research and scholarship in academic anesthesiology over the past 10, 20, or more years and cannot be held responsible for the academic malaise that has gripped our discipline for decades.^{1,6} The issue now, however, is whether they can lead us out of it. Many current chairs of academic anesthesiology departments would seem to lack the research and scholarship skills and accomplishments to effectively guide our current faculty, and the specialty at large, to a more respected position at the high table of academe. It is axiomatic that excellence begets excellence. From this, it follows that a chief who is a successful clinician-scientist is more likely to attract and cultivate like-minded faculty and trainees than if he or she is not so qualified, a point emphasized by the relation between the funding and publication record of the chair and departmental ranking by NIH. Unranked departments of anesthesiology are least likely to have a chair with some career NIH funding, and the publication record of such chairs is the lowest, whereas most previously funded chairs lead ranked departments. There are numerous exceptions to the rule, however, with more than half of ranked anesthesiology departments having a chair with no personal NIH funding history. What's more, cause and effect cannot be inferred from our data. Creating and sustaining an academically successful department takes decades and often spans the tenure of several chairs. Therefore, we cannot say whether a chair's personal academic productivity predicts that he or she will create an academically successful department—or simply predicts that he or she will take the helm of an existing one.

Although the current state of affairs in our specialty compared with surgery and other medical disciplines—fewer T32 training grants, a dwindling pool of qualified and NIH-funded physician investigators and mentors, and fewer physician leaders with indisputable research credentials—may reflect problems in our past, prospects for a brighter academic future are dim unless broad and deep change is enacted. With scholarship increasingly an afterthought in the progressively more business-oriented climate of the academic medical center and initiating and sustaining an NIH-funded career becoming more demanding and difficult because of a constrained NIH budget, a department chair with a strong and successful background in scholarship and research to bargain for research seed money, provide vision and critical analysis of ideas, and to mentor the young in career development, “grantsmanship,” and publication strategy is even more essential today than it was 20 yr ago. Academic anesthesiology has recently been challenged to

develop a plan and chart a course for improving research and competitiveness for federal funding in our specialty.⁴ We must ensure that those crafting the plan and leading the charge are themselves credible and successful physician-scientists, for time is short and we have much to do.

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