

August 2001, CMS indicated that it would exclude residents in the Indirect Medical Education count “to the extent that the residents are not involved in furnishing patient care but are instead engaged exclusively in research.” Further, CMS policy allows a resident to be counted for Direct Graduate Medical Education *only if the resident is engaged in research that occurs in the hospital* (but not in the nonhospital setting). The points were explicitly stated in section 5505 of the 2010 Patient Protection and Affordable Care Act (Public Law 111–148, Section 5505).

Thus, as residency positions are explicitly funded by CMS for clinical training, the lack of association between applicants’ prior scholarly production and a successful residency match, as observed by the authors, is not surprising. Residencies are not funded or intended for research. Similarly, one would not expect clinical experience to count as much as research productivity for positions explicitly funded for research (*e.g.*, research fellowships).

As pressure for reform of Graduate Medical Education financing mounts, both departments and teaching hospitals may find it increasingly difficult to provide residents with protected time for research.<sup>3,4</sup> Several departments have developed programs designed to support residents interested in an academic career. As implied in the Editorial, many of these programs specifically have National Institutes of Health (Bethesda, MD) Funding (often as part of a T32 research training grant). Unfortunately, the vast majority of residency training programs do not have these opportunities available. As the future of anesthesiology is dependent upon our ability to recruit and train not only talented clinicians but also tomorrow’s independent investigators, I hope that more departments work to expand the number of funded research positions.

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## Ensuring Future Academic Anesthesiologists: A Matter of Recruiting “The Best” Residents?

*To the Editor:*

In their Editorial View regarding the selection among applicants for U.S. anesthesia residencies, Fleisher *et al.*<sup>1</sup> raise the question “are we recruiting the wrong applicants if we desire the training of more physician scientists for the future?” They briefly acknowledge that all programs want foremost to train applicants who will become competent clinicians, demonstrate professionalism, and reflect well on the specialty. Beyond that, however, they focus on a concern that we are *failing to recruit* candidates destined to become academic anesthesiologists. They conclude, “If there is a flaw in the recruitment of research-oriented residents, it lies in our ability to attract the best applicants, not in our selection process.” Recent troubles in medical academia, however, could suggest an alternative view: that the failure to produce academically oriented anesthesiologists, has less to do with the aptitude and character of selected applicants, and more to do with unsavory aspects of the current culture within U.S. academic medicine.

A contemporary survey of established medical faculty found 21% considering leaving academics.<sup>2</sup> Relevant predictors of such intent were “feeling unconnected to colleagues, moral distress, perception of the culture being at times unethical, and feelings of being adversely changed by the culture.” Could it be that our residents, perceiving an ethically challenged environment, choose not to pursue creative impulses toward research or teaching, which might have flourished under a different model?

Arguably, recent changes in the goals and reward system of U.S. academic medicine have degraded its culture, and thus its appeal to idealistic potential future scholars. Among these changes are (1) the corporatization of U.S. academic medical centers, (2) the marketization of academic and clinical performance recognition, and (3) the increasing privatization of funding for clinical research. Accordingly, the mission of U.S. academic hospitals has shifted from providing care for all comers, to a morally questionable health-care-for-profit motivated endeavor.<sup>3</sup> Similarly, academic physicians, previously motivated by a culture placing highest value on clinical skill, masterful teaching, and scientific curiosity, are now accustomed to an intradepartmentally competitive “relative value units” system whereby each grant award, publication, patent, or clinical effort is driven by financial remuneration and increments of professional status.<sup>4</sup> Finally, a plurality of clinical research, historically funded publicly or by intramural sources, is now funded more often by industry, and thus is tainted by perceived, and often real, conflicts of interest.<sup>5</sup>

Traditionally medicine has been conceived of as “a calling” and the noblest of professions. Its most revered figures, like Virchow and Osler, were superior scholars, clinicians, and bedside teachers. The perversion of our academic reward system from one at its best altruistic, to one focused unprofessionally on the economic bottom line undoubtedly has led some clinician-scientists astray. Many authors have worried about a burgeoning epidemic of academic misconduct that seems coincidental with these adjustments in academic “recognition” and pressures.<sup>4</sup> Unfortunately, anesthesiologists (Scott Reuben and Joachim Boldt, as two recent examples) have figured prominently in notorious, scientifically and clinically damaging, instances of such conduct and may serve as warning beacons of an academic culture, even in anesthesiology, whose integrity deserves scrutiny.

When pondering failures to grow our academic workforce, we need to look beyond the trainee recruitment process, and the hypothetical implication of deficits among our (in fact, talented, fresh, and mainly unselfish) recruits, although that element deserves attention. We need also to consider the possibility that witnessing a degraded culture and a tarnished sense of “professionalism” in the academy may also drive *nonacademic* career choices among otherwise *appropriately selected*, but academically discouraged, residents.

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## In Reply:

We wish to thank Dr. Nemergut for his informative comments regarding the financial pressures surrounding research funding and graduate medical education. Dr. Pryde's suggestion that “the failure to produce academically-oriented anesthesiologists has less to do with the aptitude and character of selected applicants and more to do with the unsavory aspects of the current

culture within US academic medicine” may be more of a tangential comment than an alternative view. Both De Oliveira's article<sup>1</sup> and our Editorial<sup>2</sup> focused on the criteria used to select residents, with emphasis on whether research training and publications were predictive of successful match. Neither the article nor the Editorial addressed whether our training programs are encouraging or discouraging residents from embarking on academic careers. Indeed, we are unaware of data indicating that there has been a negative change or failure to attract young anesthesiologists to University faculties.

Although we appreciate Dr. Pryde's view of academic anesthesiology as an “ethically challenged” and “morally questionable healthcare-for-profit motivated endeavor,” we do offer an alternative view. The 21% incidence of dissatisfaction and a desire to leave the academy cited by the author is a statistic from a survey related to all of academic medicine, not primarily to academic anesthesiology. Further, the survey provides neither a comparator of dissatisfaction with community practice nor historical controls for rates of dissatisfaction with academic practice in prior years. We clearly recollect the events of the late 1990s when most academic anesthesia departments were severely understaffed due to substantial departures of faculty members toward community practice coupled with inability to attract graduating residents to faculty positions; this is decidedly not the situation today.

There are undoubtedly financial and regulatory strains on academic anesthesiology, but we believe that the burdens on academic anesthesiology are currently no different than on medicine as a whole. Medicine is changing dramatically, in part because of public awareness and demands for greater accountability with increasing concerns for safety and better outcomes. There is a greatly increased awareness of variability in medical performance and the incredible cost of medical care is impinging on other public mandates, including education and research. The public is demanding that resident and attending physicians perform at higher standards because they are paying for their training through Medicare dollars. The training of physicians is becoming more regulated and rigorous, and future clinicians will be more tested, more reliable, and perhaps more capable. There are unintended consequences of these new demands, including reduced time and resource for faculty and resident scholarship, which may have negative impact on academic culture.

Dr. Pryde's comments do not speak to the issues regarding the training of future researchers in anesthesia, which remains vital to our specialty and requires an understanding of the demands of research funding, mentoring, and access to research support. Anesthesiology must change to provide greater value to the health of the public, and academic anesthesiology will need to remain a leader in this transformation. Advances in anesthesiology are considered among the biggest improvements in patient care and safety in the past century, and our role in patient safety has been lauded by many. Attracting academically talented residents into anesthesiology and helping them to develop into successful