

The Redistribution of Tenure Tracks for U.S. Medical School Faculty: Basic Science PhD Faculty (Part II)

Over the past decades, U.S. medical schools and their faculty have seen dramatic changes. For faculty in basic science departments, there remains an extremely competitive environment for federal research funding¹ as well as decreased resources for education.² These environmental changes have prompted institutions to adapt and to re-examine faculty policies as one way to mitigate institutions' financial vulnerabilities.

Full-time faculty in basic science departments face increased pressure to gain and sustain extramural support and recover higher percentages of their salaries than in the past. These changes stand in opposition to the policies for basic science faculty that were common at medical schools several decades ago, where tenure-eligible appointments typically had some financial guarantee once tenure was achieved.³

In the context of significant shifts in the faculty work environment for all medical school faculty, Part I of this *Analysis in Brief (AIB)*⁴ presented a current snapshot of trends in the number and percentage of full-time clinical MD faculty—those most likely to be in a healthcare driven environment—in tenure-eligible appointments. This AIB presents a similar analysis for PhD faculty with appointments in basic science departments at U.S. medical schools.

Methods

The data in this AIB come from the Association of American Medical Colleges Faculty Roster. The Faculty Roster is a national database that tracks characteristics of virtually all full-time U.S. medical school faculty at all

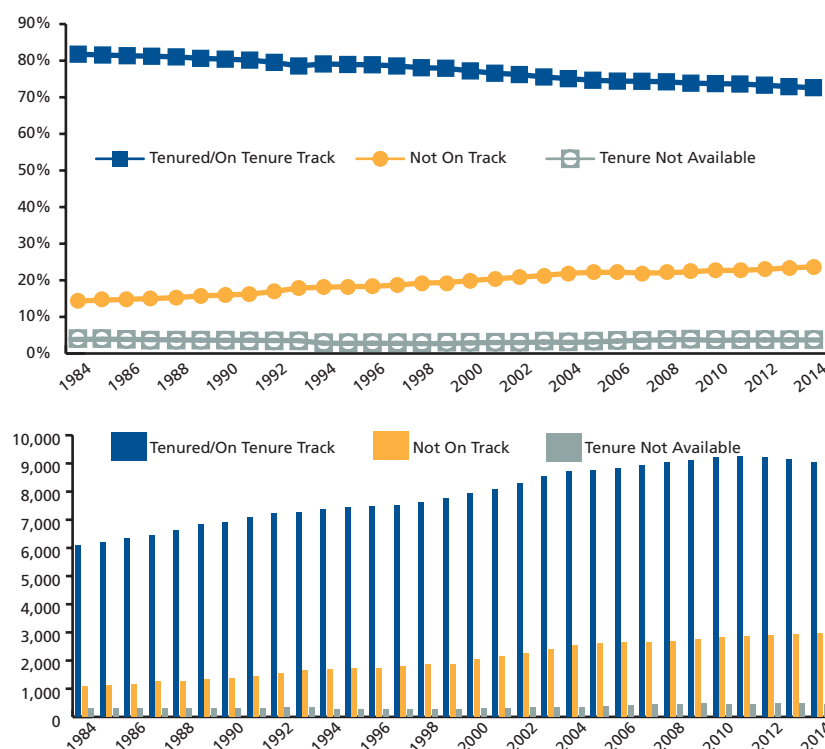
institutions accredited by the Liaison Committee on Medical Education. Trends in the number and percentage of full-time basic science PhD faculty (assistant, associate, and full professor ranks) by track type (tenure-eligible vs. nontenure-eligible) are examined from 1984 to 2014 using data snapshots taken on December 31 of each year. Trends in tenure tracks for newly hired

faculty—those who are at the rank of assistant professor and above and whose first full-time faculty appointment began between January 1 and December 31 of the snapshot year—also are examined.

Results

For full-time basic science PhD faculty at the rank of assistant professor and above, there has been a slow but steady decrease in the proportion of

Figure 1: Tenure status for full-time PhD faculty in basic science departments at U.S. medical schools in percentage (top panel) and absolute numbers (bottom panel), 1984–2014



* Data reflect December 31 snapshots; missing data are excluded.
**Tenure Not Available refers to faculty from institutions that do not offer tenure.

1. National Institutes of Health. Research and training grants: Success rates by mechanism and selected activity codes. NIH Data Book website. Accessed March 29, 2015 at: <http://report.nih.gov/nihdatabook/>.
2. DaRosa DA, Skeff K, Friedland JA, et al. Barriers to effective teaching. *Acad Med.* 2011;86:453–459.
3. Bunton SA. The relationship between tenure and guaranteed salary for U.S. medical school faculty. *Analysis in Brief.* 2010;9(6):1–2. Association of American Medical Colleges: Washington, DC.
4. Bunton SA, Sloane RA. The redistribution of tenure tracks for U.S. medical school faculty: Clinical MD faculty (Part I). *Analysis in Brief.* 2015;5:1–2. Washington DC: Association of American Medical Colleges.

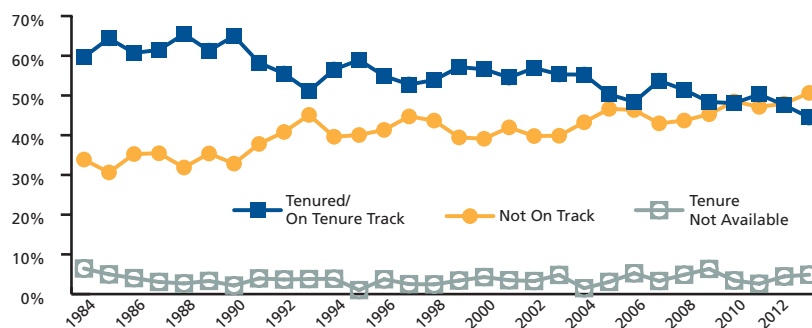
tenure-eligible appointments over the past three decades. In 1984, 82 percent of full-time basic science PhD faculty were on tenure-eligible tracks, and in 2014, that figure dropped to 73 percent (Figure 1, top panel). The absolute numbers of tenure-eligible faculty actually increased steadily until 2011, and since then, there has been a slight yearly decline (Figure 1, bottom panel). During the same time, the numbers of nontenure-eligible faculty have also been steadily increasing, although at a higher rate than the tenure-eligible faculty. The higher rate of increase among faculty on nontenure-eligible tracks accounts for, in part, the decline in the proportion of tenure-eligible faculty relative to the entire faculty over time.

Results show that the decline in the proportion of tenure-eligible basic science faculty over time likely is largely a result of an ongoing shift wherein most newly hired faculty are being placed on tracks that are not eligible for tenure. In 1984, 60 percent of newly hired full-time basic science PhD faculty were on tenure-eligible tracks; in 2013, that percentage declined to 44 percent (Figure 2).

Discussion

Results show that there has been a decrease in the proportion of tenure-eligible appointments for full-time basic science PhD faculty over the past three decades. This downward trend is similar to the downward trend seen among full-time clinical MD faculty,⁴ though it has been much less dramatic. The more gradual decline among basic science PhD faculty can be explained by the fact that there have been only modest increases in the overall numbers of basic science faculty, as opposed to the explosive growth of the clinical enterprise over the past two decades. These trends also are similar to a decline in tenure-track appointments throughout higher education: In the 1993–94 academic year 56 percent of full-time faculty had tenure whereas in the 2011–12 academic year, 49 percent of all full-time faculty had tenure.⁵

Figure 2: Tenure status for full-time newly hired PhD faculty in basic science departments at U.S. medical schools in percentage, 1984–2013



* Data reflect December 31 snapshots; missing data are excluded.

** 2013 is the most recent year for which comprehensive data on new hires are available.

That said, Part I of this AIB⁴ suggested that tenure-eligible positions for clinical MD faculty were neither being created nor eliminated, as evidenced by a 20-year plateau in numbers of tenure-eligible faculty. For basic science PhD faculty, there is not yet any evidence that the absolute numbers of tenure-eligible faculty have plateaued. There has been a very slight decrease in numbers of tenure-eligible faculty since 2011, and in 2012 the proportion of nontenure-eligible new hires exceeded the proportion of tenure-eligible new hires for the first time. These recent changes actually may indicate that medical schools might be decreasing the number of tenure-eligible positions that are available for basic science PhD faculty, though it is much too soon to draw these conclusions with any degree of certainty.⁶

Driving the decline in the proportion of faculty in tenure-eligible appointments is new faculty increasingly being hired in nontenure-eligible appointments. In the late 1990s, medical schools began hiring large numbers of new faculty on complete grant funding (i.e., on nontenure-eligible tracks) in order to preserve the ability to terminate the appointments if/when funding sources ended or disappeared. Moreover, schools began increasingly allowing faculty to

switch tracks or appointment types (e.g., from nontenure-eligible to tenure-eligible).⁷ As these changes have occurred, there has been a shift in the meaning of tenure for basic science PhD faculty. Tenure previously implied some degree of economic security,⁸ but as medical schools have continued to revise faculty policies and faculty reward structures to reflect tightened budgets, they increasingly provide little or no financial guarantee to tenured faculty.⁹ Future research should continue to monitor these faculty appointment trends as medical schools continue to adapt to environmental changes. Future research could also explore these issues in the broader context of faculty workforce restructuring.

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5. National Center for Education Statistics. Digest of Education Statistics, Table 305. Accessed March 30, 2015 at: http://nces.ed.gov/programs/digest/d12/tables/dt12_305.asp.
6. It seems unlikely that new medical schools are having a meaningful impact on the overall trends in tenure status for basic science PhD faculty. Seventeen new medical schools have been accredited since 2002 (12 offering tenure to all faculty, 2 offering tenure to just basic science faculty, and 3 not offering tenure to any faculty). The distribution of basic science PhD faculty on tenured vs. non-tenured tracks varies widely among these new schools. Further, faculty at new medical schools account for a very small portion of all basic science PhD faculty (0.1 percent in 2002 and 3 percent in 2014).
7. Liu M, Mallon WT. Tenure in transition: Trends in basic science faculty appointment policies at US medical schools. *Acad Med.* 2004;79:205–13.
8. American Association of University Professors. 1940 statement of principles on academic freedom and tenure with 1970 interpretive comments. In: *AAUP Policy Documents and Reports*. 9th ed. Washington, DC: American Association of University Professors; 2001.
9. Bunton SA. The relationship between tenure and guaranteed salary for U.S. medical school faculty. *Analysis in Brief.* 2010;9(6):1–2; and Bunton SA, Mallon WT. The continued evolution of faculty appointment and tenure policies at U.S. medical schools. *Acad Med.* 2007;82(3): 281–289.