

U.S. Medical School Full-time Faculty Attrition

In the past several decades, U.S. medical schools experienced remarkable growth of full-time faculty members from 30,000 to more than 140,000.^{1,2} Throughout this growth, medical schools and the academic medicine community have maintained high interest in retaining faculty to effectively achieve their clinical, education, and research missions. Direct and hidden costs for faculty attrition are notable and drain the financial, personnel, and facility resources from institutions already under economic pressures.³

Previous studies related to attrition have focused on assessing long-term retention rates by taking snapshots of faculty members after a certain amount of time elapsed (e.g., five or 10 years)^{4,5} These snapshots facilitate institutional benchmarking against national norms because the method is straightforward and easy to replicate. However, such snapshots are not ideal for comparing change in retention rates over time or across distinct groups. Instead, labor market analysts interested in learning about change in retention over time, or differences across groups, employ

life table and survival analysis methods by observing time to departure (or attrition).⁶ Such methods facilitate a more complete picture of longitudinal outcomes and allow mediating factors to be controlled. As such, this *Analysis in Brief* presents updated faculty attrition statistics and operationalizes retention rates in terms of time from initial appointment to time of departure in order to draw inferences about factors associated with retention.

Methodology

Data for this analysis come from the AAMC Faculty Roster, a comprehensive national database on the employment

Table 1: Retention and Attrition Statistics for New Assistant Professors or Associate Professors Entering Faculty at Institution in 2000

Study Group	New Assistant Professors				New Associate Professors			
	Cohort Size	Average Years of Retention	Years Until 25% Attrition	Years Until 50% Attrition	Cohort Size	Average Years of Retention	Years until 25% Attrition	Years until 50% Attrition
All Faculty	6147	8.3	4.0	8.1	1062	9.4	5.2	10.7
Clinical Departments								
M.D. or Equivalent	3944	8.2	3.9	7.9	633	9.0	4.9	9.8
Ph.D. or Equivalent	932	8.2	4.5	8.0	175	9.8	6.2	12.3
M.D./ Ph.D. or Equivalent	468	8.3	4.4	8.4	98	9.4	5.0	11.2
Basic Science Departments								
M.D. or Equivalent	86	8.3	4.1	8.4	N/A ^b	N/A ^b	N/A ^b	N/A ^b
Ph.D. or Equivalent	509	8.9	5.8	9.3	104	10.9	7.6	N/A ^b
M.D./ Ph.D. or Equivalent	103	7.6	4.0	7.1	N/A ^b	N/A ^b	N/A ^b	N/A ^b
Men	3886	8.3	4.0	8.0	789	9.4	5.0	10.6
Women	2253	8.2	4.0	8.1	272	9.5	5.7	11.1
White (Non-Hispanic/Latino)	4067	8.4	4.0	8.5	804	9.6	5.6	11.2
Asian	1089	7.7	3.9	6.9	129	8.8	4.3	10.0
Black or African-American	230	7.4	3.0	6.7	N/A ^b	N/A ^b	N/A ^b	N/A ^b
Hispanic/Latino ^a	286	7.9	3.9	7.3	42	8.4	3.5	10.2
Tenure Track	1560	9.0	5.8	9.2	349	10.8	7.5	N/A ^b
Non-tenure Track	4587	8.0	3.8	7.5	713	8.7	4.3	9.0

a. This group includes those of Spanish origin.

b. Due to a small sample size of <30 or that less than half of cohort 2000 have left the institution, the statistics for this group is not available.

1 Bunton SA, Henderson MK. *Handbook of Academic Medicine: How Medical Schools and Teaching Hospitals Work*. Washington, DC: Association of American Medical Colleges, 2013.
 2 Liu C, Alexander H. The changing demographics of full-time U.S. medical school faculty, 1966–2009. *Analysis in Brief*. 2011;11(8):1–2.
 3 Schloss E, Flanagan D, Culler C, Wright A. Some hidden costs of faculty turnover in clinical departments in one academic medical center. *Academic Medicine*. 2009;84(1):32–36.
 4 Alexander H, Lang J. The long-term retention and attrition of U.S. medical school faculty. *Analysis in Brief*. 2008;8(4):1–2.
 5 Corrice AM, Fox S, Bunton SA. Retention of full-time clinical M.D. faculty at U.S. medical schools. *Analysis in Brief*. 2011;11(2):1–2.
 6 Blossfeld HP, Rohwer G. *Techniques of Event History Modeling. New Approaches to Causal Analysis*. 2nd ed. Mahwah, NJ: Lawrence Erlbaum Associates, 2002.

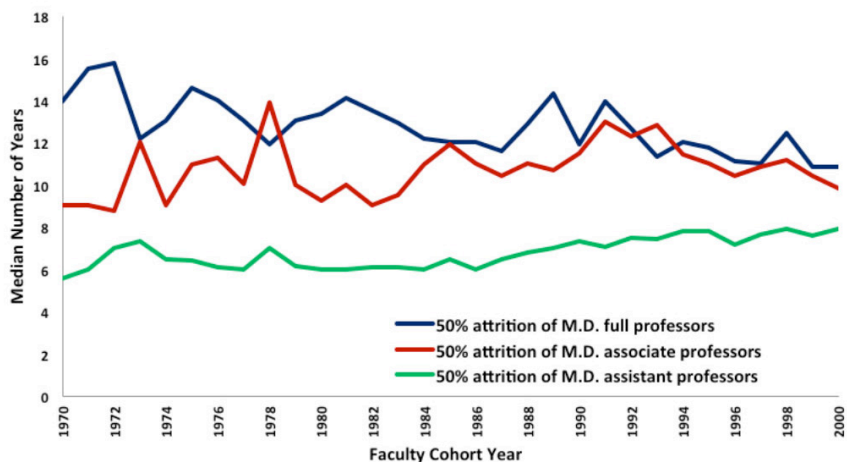
and demographic backgrounds of all individual medical school faculty members at U.S. medical schools accredited by the Liaison Committee on Medical Education. Every full-time assistant, associate, and full professor was tracked by academic year from their first appointment to their first departure from the institution, regardless of whether individuals had appointments in different departments.⁷ The yearly attrition rates for decennial cohorts, the average years until attrition occurred, and the 25th percentile and median years until attrition occurred (i.e., the number of years elapsed when 25 percent and 50 percent of the faculty from an original cohort had left their home institution) were all examined for cohorts from each year from 1970 to 2000. Demographic information such as race, sex, department, degree, and tenure track status were included in the analysis. The last cohort with results presented in this analysis was of faculty entering medical school in the year 2000, as that was the last year where half of the new full professors in the initial cohort had left their institution by the year 2013.

Results

Summary statistics for new assistant and associate professors who started their new appointment at an institution in 2000 show that assistant professors left more quickly than associate professors (Table 1).⁸ Results also show that that faculty with M.D. degrees left institutions more quickly than faculty with Ph.D. degrees, and that faculty in clinical departments left more quickly than their counterparts in basic science departments. Women left their institutions at similar rates as men at the assistant professor level, but at a slower pace at the associate professor level. Non-white faculty left more quickly than white faculty at both assistant and associate levels.

Next, results show that assistant professors left their institutions at the fastest rate, while attrition for full professors occurred

Figure 1: Median Number of Years Since First Appointment that U.S. Medical School Faculty with M.D. Degree Left Institution, By Rank



at a much slower rate (Figure 1). From the 1970 cohort to the 2000 cohort, attrition rates declined modestly (i.e., more faculty were retained) for assistant and associate professors, but increased modestly (i.e., more faculty left) for full professors. However, these trends fluctuated irregularly. (See the *Supplemental Material* for an alternate view of the modest declines in rates of attrition among assistant professors over time and for additional results.)

Discussion

These results highlight an alternate method for understanding faculty retention that compares attrition rates across time as well as across groups (defined by rank, gender, race/ethnicity, department of appointment, and degree type). Instead of observing five- or 10-year retention rates, the survival analysis (time to departure) that is common with clinical studies of health outcomes was applied. The department, degree, rank, and demographic breakouts presented in this analysis reflect similar findings to a 2008 analysis of faculty retention and attrition.⁴

While attrition rates vary among medical schools, what constitutes reasonable retention and attrition

depends on the specific context of a medical school, department, or faculty member. Nonetheless, this study may provide insight into various policy issues. Decreased retention for full professors, along with the increasing number of faculty members in medical schools, raise questions of how best to recruit and support junior faculty, as well as mid-career mentoring plans to advance associate professors.

Unlike previous findings that women faculty had lower retention rates,^{4,9} these results show that women are comparable in years of retention with men, and retained slightly longer in recent years. However, minority faculty depart sooner at both assistant and associate professor level, pointing to challenges for recruitment, promotion, and mentoring programs. Further research that investigates the contribution of various individual and school factors to faculty time to attrition is currently in progress.

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⁷ Here, departure is defined as an individual faculty who has a break longer than two years in their appointment histories at the institution.

⁸ Statistical significance test is not conducted for this analysis since the Faculty Roster database contains the entire population of U.S. full-time faculty. See: Steel R, Torrie J, Dickey D. *Principles and Procedures of Statistics: A Biometrical Approach*, New York: McGraw-Hill; 1996.

⁹ Yamagata H. Trends in faculty attrition at U.S. medical schools, 1980-1999. *Analysis in Brief*. 2002;2(2):1-2.