

# Race/Ethnicity and Success in Academic Medicine: Findings From a Longitudinal Multi-Institutional Study

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## Abstract

### Purpose

To understand differences in productivity, advancement, retention, satisfaction, and compensation comparing underrepresented medical (URM) faculty with other faculty at multiple institutions.

### Method

A 17-year follow-up was conducted of the National Faculty Survey, a random sample from 24 U.S. medical schools, oversampled for URM faculty. The authors examined academic productivity, advancement, retention, satisfaction, and compensation, comparing white, URM, and non-URM faculty. Retention, productivity, and advancement data were obtained from public sources for nonrespondents. Covariates included

gender, specialty, time distribution, and years in academia. Negative binomial regression was used for count data, logistic regression for binary outcomes, and linear regression for continuous outcomes.

### Results

In productivity analyses, advancement, and retention, 1,270 participants were included; 604 participants responded to the compensation and satisfaction survey. Response rates were lower for African American (26%) and Hispanic faculty (39%) than white faculty (52%,  $P < .0001$ ). URM faculty had lower rates of peer-reviewed publications (relative number 0.64; 95% CI: 0.51, 0.79), promotion to professor (OR = 0.53; CI:

0.30, 0.93), and retention in academic medicine (OR = 0.49; CI: 0.32, 0.75). No differences were identified in federal grant acquisition, senior leadership roles, career satisfaction, or compensation between URM and white faculty.

### Conclusions

URM and white faculty had similar career satisfaction, grant support, leadership, and compensation; URM faculty had fewer publications and were less likely to be promoted and retained in academic careers. Successful retention of URM faculty requires comprehensive institutional commitment to changing the academic climate and deliberative programming to support productivity and advancement.

**R**acial/ethnic faculty underrepresented in medicine (URM) include black or African American, Hispanic or Latino, Alaska Native, American Indian, and Native Hawaiian and other Pacific Island populations. As of 2015, they represented 32% of U.S. residents<sup>1</sup> but only 8% of medical faculty.<sup>2</sup> Efforts to increase medical student diversity increased enrollment of students underrepresented in medicine to 17% in 2015–2016,<sup>3</sup> still short of population representation and of goals set two decades previously.<sup>4</sup> Similarly, there has been minimal success in building and sustaining a diverse medical faculty.<sup>2</sup> Beyond the moral imperative, a diverse

faculty is essential to mentor and educate a diverse and culturally competent physician workforce,<sup>5–7</sup> for role models and curricular breadth,<sup>8,9</sup> to address health disparities,<sup>10</sup> to improve the quality of biomedical research,<sup>11</sup> and to expand boundaries of excellence in medical education and patient care.<sup>12</sup>

Efforts have explored limitations to the recruitment, retention, and promotion of URM faculty, to better understand the individual and collective climate in academic medicine for URM faculty.<sup>13–16</sup> Much of this work has been at individual institutions, in specific specialties, through cross-sectional studies. However, few studies have investigated multiple factors affecting satisfaction, retention, and promotion in this population at more than one institution, and there is little longitudinal research on the experience of URM faculty as they navigate medical academe. This follow-up survey presents a perspective on the academic productivity, advancement, retention, satisfaction, and compensation among URM relative to white medical faculty at multiple institutions, and

adjusts for factors and patterns present in an earlier career stage.

## Method

### Data collection

In 2012–2013, we collected data from participants in the National Faculty Survey, initiated with medical faculty from 24 medical schools in 1995, who agreed to be contacted for follow-up. In 1995, 24 medical schools were randomly selected for initial participation in the National Faculty Survey, balanced for the Association of American Medical Colleges geographic regions and private/public status among schools in the continental United States with at least 200 faculty, 50 women, and 10 URM minority faculty. Within each selected medical school, 6 full-time faculty members were randomly sampled within each of 24 cells: permutations of four areas of medical specialization (generalist, medical specialty, surgical specialty, and basic sciences); three graduation cohorts (before 1970, 1970–1980, after 1980); and gender. To oversample for URM and senior women faculty, all URM

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Acad Med. XXXX;XX:00–00.

First published online

doi: 10.1097/ACM.0000000000001968

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faculty and all women who graduated before 1970 were sampled. The initial survey response rate was 60%, with 1,790 full-time faculty responding. A subset of 1,335 subjects in the 1995 cohort agreed to be contacted for follow-up studies.

Using name, academic specialty and background, and prior institution in 1995, we conducted a Web-based search to obtain the current location and contact information for potential follow-up participants. Where valid e-mail addresses were identified, we provided an e-mail invitation to the survey and four follow-up reminder e-mails. When no e-mail address was available, we attempted contact by telephone or mailing address. Subjects were invited to complete a follow-up survey either online, or by mail. To ensure matches between the original and follow-up surveys, the follow-up survey asked for gender, year of birth, and race/ethnicity. Subjects received a modest remuneration.

For those who did not respond to the follow-up survey, we developed a methodology to access publicly available databases to assess outcome measures of productivity, advancement, and retention.<sup>17</sup> Using the name, departmental affiliation, year of birth, and academic institution in 1995 as personal identifiers, we searched for data on the subject's career, including either the academic institution or other location where they were employed, their academic rank, and what leadership positions they held. We searched the National Institutes of Health (NIH) Research Portfolio Online Reporting Tools for federal funding in the years 2010–2012 and the bibliographic database SCOPUS for the total number of peer-reviewed publications through 2012. We conducted a validity assessment of this methodology by reviewing the SCOPUS publications with self-report and found good agreement without systematic differences by race/ethnicity.<sup>17,18</sup>

Institutional review board approval for the study was received from Boston University and Tufts Medical Center, and for Massachusetts General Hospital through a reliance agreement with Tufts Medical Center.

### Outcome measures

All outcome measures were collected from 2012 to 2013 and included

academic productivity, advancement, retention, satisfaction, and compensation. Productivity, advancement, and retention include both survey data and publicly accessed data. We measured productivity by the number of career peer-reviewed publications and by role as principal investigator on any federal grants in the years 2010–2012. Advancement was measured by senior leadership roles including dean, associate dean, provost, department chair, and center directors versus all others, and academic rank categorized as professor versus all other ranks. We defined *retention* as working in academic medicine, in a foundation or government setting, or being retired from one of those settings through 2012–2013. Faculty who moved to private practice, industry, or other nonacademic settings were categorized as not retained. Satisfaction and compensation included data from survey respondents only. We calculated satisfaction using the global professional career satisfaction scale developed by McGlynn,<sup>19</sup> which ranges from 1 to 20 where 20 is the highest level of satisfaction. Compensation was reported for the academic year 2012–2013. For those who were retired, we converted last annual compensation into 2013 dollars based on the year of retirement.

### Primary independent variable

Race/ethnicity was the primary independent variable of interest; it was self-reported and was categorized as white, URM (which included African American, Hispanic, Native American, Alaskan Native, and Native Hawaiian faculty), and non-underrepresented in medicine (non-URM) (which included Asian and South Asian faculty).

### Covariates

Variables collected in 1995 and considered as possible covariates in all analyses were gender; medical specialization separated into four categories (generalist, medical specialist, surgical specialist, and basic science faculty); distribution of time spent in teaching, clinical, administrative, and research activities; and years in academia (which excluded years in industry or private practice). Setting was defined as being in an academic setting in 2012–2013 versus all others (private practice, industry, and other). We used the number of refereed articles as a covariate for three outcomes: retention, advancement, and leadership.

### Analysis plan

We calculated descriptive statistics for subject characteristics. To assess differences between race/ethnicity groups, we calculated unadjusted differences and then developed multivariable regression models to adjust for covariates. Negative binomial regression was used for count data, logistic regression for binary outcomes, and linear regression for continuous outcomes. Race/ethnicity and gender were forced into all models. We considered all other covariates for all models; number of publications was also considered a covariate for the rank, retention, and leadership outcomes. Variables significant at  $P < .10$  in each bivariate analysis were retained if the association reached the  $P < .05$  level in backward selection process. Therefore, each outcome had a different set of adjusted covariates. We performed all analyses using SAS statistical software, version 9.3 (SAS Inc., Cary, North Carolina).

### Results

Of 1,335 participants who agreed to be followed for future studies, 60 died prior to the follow-up survey, and 5 respondents did not provide information about their gender or race/ethnicity, resulting in an analytic sample of 1,270 participants. Table 1 provides the demographic characteristics of the sample in 1995. Participants were predominantly white (1,019; 80%). Marital and parental status did not differ by race/ethnicity. The majority were married or partnered (1,014; 80%) and had children (963; 76%). URM faculty were significantly less likely in 1995 to have time allocated to research (mean percent effort 23%, compared with 30% for white faculty and 35% for non-URM faculty,  $P = .004$ ) and significantly more likely to have time allocated to clinical endeavors (mean percent effort 38% versus 31% for both white and non-URM faculty;  $P = .009$ ).

Of the potential 1,270 responders in the initial analytic sample, 604 (48%) participated in the 2012–2013 follow-up survey; they form the subset for analyses on satisfaction and compensation. For the analyses of productivity, advancement, and retention, we used survey data from the 604 respondents and supplemented this with publicly available data for the 666 nonrespondents. Response rates

Table 1

**Demographic Characteristics of Academic Medical Faculty in the National Faculty Survey, 1995 to 2012–2013, From a Multi-Institutional Study of Race/Ethnicity and Success in Academic Medicine**

Characteristic and value	No.	White (n = 1,019)	Non-URM (n = 88)	URM (n = 163)	P value
<b>Gender in 1995, no. (%)</b>	1,270				.002
Female		520/1,019 (51)	50/88 (57)	61/163 (37)	
<b>Department in 1995, no. (%)</b>	1,215				.08
Basic sciences		241/978 (25)	18/83 (22)	21/154 (14)	
Generalists		267/978 (27)	23/83 (22)	42/154 (27)	
Medical specialty		297/978 (30)	28/83 (34)	62/154 (40)	
Surgical specialty		173/978 (18)	14/83 (17)	29/154 (19)	
<b>Years in academia in 2012–2013, mean (SD)<sup>a</sup></b>	914	26.4 (9.4)	25.5 (9.8)	24.1 (7.7)	.06
<b>Marital status in 1995, no. (%)<sup>a</sup></b>	1,258	824/1,010 (82)	67/88 (76)	123/160 (77)	.21
Married or partnered					
<b>Parental status in 1995, no. (%)</b>	1,262	773/1,013 (76)	63/88 (72)	127/161 (79)	.43
1 or more children					
<b>Effort distribution in 1995, mean (SD)</b>	1,262				
% Administrative <sup>b</sup>		19.0 (17)	15.0 (17)	18.7 (20)	.14
% Research <sup>c</sup>	1,263	30.1 (29)	35.2 (36)	23.1 (27)	.004
% Clinical <sup>d</sup>	1,267	30.7 (29)	30.5 (30)	38.2 (27)	.009
% Teaching <sup>e</sup>	1,265	20.1 (14)	19.3 (13)	20.0 (14)	.86

Abbreviation: URM indicates underrepresented in medicine.

<sup>a</sup>Respondents for this category were: 757 white, 60 non-URM, 97 URM.

<sup>b</sup>Respondents for this category were: 1,012 white, 88 non-URM, 162 URM.

<sup>c</sup>Respondents for this category were: 1,013 white, 88 non-URM, 162 URM.

<sup>d</sup>Respondents for this category were: 1,017 white, 88 non-URM, 162 URM.

<sup>e</sup>Respondents for this category were: 1,015 white, 88 non-URM, 162 URM.

for the survey were similar for women (309/631; 49%) and men (295/639; 46%). URM faculty were less likely to respond to the survey: Rates of response were 52% (529/1,019) for white respondents compared with 32% (28/88) for non-URM and 29% (47/163) for URM faculty ( $P < .0001$ ).

### Productivity: publications

Race/ethnicity was significantly associated with number of peer-reviewed articles published, with white faculty publishing a mean of 62 papers compared with 54 papers for non-URM faculty and 41 papers for URM faculty ( $P = .0003$ ) (Table 2). In the adjusted model, race/ethnicity continued to be associated with fewer peer-reviewed publications. URM faculty published 0.64 (95% CI: 0.51, 0.79) times the number of papers published by white faculty, whereas the number for non-URM faculty was 0.93 relative to white faculty (95% CI: 0.71, 1.22) (Table 3).

### Productivity: grants

Unadjusted analyses found that URM faculty were less likely to serve as principal investigator on at least one federal grant in the years 2010–2012 ( $P = .03$ ), with 30% (294) of white faculty, 28% (24) of non-URM, and 19% (31) of URM faculty reporting such grant funding (Table 2). However, in the adjusted model, there were no significant differences by race/ethnicity in federal grant acquisition (Table 3).

### Advancement: promotion

Unadjusted analysis showed that white faculty and non-URM faculty achieved the rank of professor at greater numbers, 68% (602) and 66% (43), than URM faculty, 49% (63,  $P = .0002$ ) (Table 2). In adjusted analysis, the odds of achieving the rank of professor was 0.53 (95% CI: 0.30, 0.93) for URM compared with white faculty, with no difference between non-

URM and white faculty (OR = 0.98; 95% CI: 0.46, 2.10) (Table 3).

### Advancement: leadership

Analysis of senior leadership demonstrated no statistically significant association between race/ethnicity and leadership, with 17% (170) of white faculty in senior leadership compared with 10% (9) of non-URM faculty and 13% (21) of URM faculty ( $P = .17$ ) (Table 2). The adjusted model also did not find significant differences among the three race/ethnicity categories (Table 3).

### Retention

Data on retention revealed significant racial/ethnic differences, with 86% (844) of white faculty, 78% (65) of non-URM faculty, and 72% (108) of URM faculty ( $P < .0001$ ) retained in academia over the 17 years of follow-up (Table 2). In the adjusted analysis, the odds of retention in academia compared with white faculty continued to be significantly lower for URM faculty at 0.49 (95% CI: 0.32, 0.75), but not for non-URM faculty (OR = 0.69; 95% CI: 0.37, 1.27) (Table 3).

### Satisfaction

There were no significant differences in career satisfaction by race/ethnicity. Mean satisfaction scores were 15.20, 14.90, and 14.50 for white, non-URM, and URM respondents, respectively ( $P = .52$ ) (Table 2). Multivariable linear regression controlling for covariates did not reveal differences in satisfaction scores between the race/ethnicity groups (Table 3).

### Compensation

There was no significant difference in mean compensation among white, non-URM, and URM faculty, with mean compensation for white faculty \$191,280 (SD \$104,440) and \$163,210 (SD \$139,040) and \$192,850 (SD \$97,160) for non-URM and URM, respectively ( $P = .46$ ) (Table 2). In adjusted models, there remained no significant difference in compensation among white, non-URM, and URM faculty (Table 3).

### Discussion

Findings in our 17-year follow-up, nationally representative study demonstrate significant differences in productivity, rank, and retention over the 17 years, with URM faculty having fewer publications and lower rates of

Table 2

**Unadjusted Associations Between Race/Ethnicity and Productivity, Advancement, Retention, Satisfaction, and Compensation in 2012–2013 in the National Faculty Survey, From a Multi-Institutional Study of Race/Ethnicity and Success in Academic Medicine**

Characteristic	Mean (SD) total publications (n = 1,135) <sup>a</sup>	No. (%) grants/past two years (n = 1,233)	No. (%) rank of professor 2012–2013 (n = 1,077)	No. (%) senior leadership (n = 1,268)	No. (%) retention in academia in 2012–2013 (n = 1,212)	Mean (SD) satisfaction 2012–2013 (n = 566) <sup>b</sup>	Mean (SD) compensation 2012–2013 (n = 490) <sup>c</sup>
White	62 (65)	294/986 (30)	602/884 (68)	170/1,019 (17)	844/978 (86)	15.2 (3.7)	\$191,280 (\$104,440)
Non-URM	54 (61)	24/87 (28)	43/65 (66)	9/87 (10)	65/83 (78)	14.9 (3.6)	\$163,210 (\$139,040)
URM	41 (59)	31/160 (19)	63/128 (49)	21/162 (13)	108/151 (72)	14.5 (3.2)	\$192,850 (\$97,160)
P value	.0003	.03	.0002	.17	< .0001	.52	.46

Abbreviation: URM indicates underrepresented in medicine.  
<sup>a</sup>Respondents for this category were: 925 white, 77 non-URM, 133 URM.  
<sup>b</sup>Respondents for this category were: 494 white, 28 non-URM, 44 URM.  
<sup>c</sup>Respondents for this category were: 476 white, 23 non-URM, 38 URM.

promotion to the rank of professor, and being more likely to leave academic careers. URM faculty were retained at a significantly lower rate of 72% compared with 86% of white faculty, and, when adjusted for publications, gender, and field of practice, URM faculty were half as likely to be retained. Our data support prior cross-sectional analyses demonstrating a higher attrition rate among URM faculty.

Previous studies have indicated that satisfaction is a significant predictor of faculty attrition.<sup>13</sup> Yet in our study, satisfaction was not significantly

different for URM faculty even when controlling for rank, gender, and distribution of clinical, teaching, and research time. Similarly, Crosey et al<sup>20</sup> found that compensation was a determinant in retention for all faculty, and slightly more important for URM faculty. But according to our data, there was no significant difference in the compensation for faculty of different racial and ethnic groups, nor was there a significant difference relative to white faculty in the rate of change in compensation, suggesting that it is not undercompensation driving the URM faculty in our study population

away from academia. Though one study of physicians in both private practice and academia indicated significant differences in compensation by race among male physicians,<sup>21</sup> other studies have indicated minimal disparities in compensation and support parity in salaries in both genders.<sup>22</sup> Research has suggested that historical alignment of low socioeconomic status with race and ethnicity in the United States creates a disproportional financial burden for URM faculty,<sup>13,23,24</sup> who might have lesser wealth, greater familial financial responsibilities, and substantially less comfort with high levels of debt, leading

Table 3

**Adjusted Associations Between Race/Ethnicity and Productivity, Advancement, Retention, Satisfaction, and Compensation in 2012–2013 in the National Faculty Survey, From a Multi-Institutional Study of Race/Ethnicity and Success in Academic Medicine<sup>a</sup>**

Characteristic	Publications <sup>b</sup> (n = 872)		Grant/past two years <sup>c</sup> (n = 1,169)		Rank of professor <sup>d</sup> (n = 835)		Senior leadership <sup>e</sup> (n = 1,201)		Retention in academia <sup>f</sup> (n = 1,138)		Satisfaction <sup>g</sup> (n = 547)		Compensation <sup>h</sup> (n = 466)	
	Ratio	CI	OR	CI	OR	CI	OR	CI	OR	CI	Difference	CI	Difference	CI
White (reference)														
Non-URM	0.93	0.71, 1.2	1.01	0.59, 1.7	0.98	0.46, 2.1	0.59	0.28, 1.28	0.69	0.37, 1.3	-0.16	-1.59, 1.26	\$1,120	-\$36,700, 38,900
URM	0.64	0.51, 0.79	0.74	0.48, 1.2	0.53	0.3, 0.93	0.78	0.46, 1.32	0.49	0.32, 0.75	-0.41	-1.55, 0.73	-\$2,440	-\$32,000, \$27,100

Abbreviation: CI indicates confidence interval; OR, odds ratio; URM underrepresented in medicine.  
<sup>a</sup>Ratio: relative number compared with whites; OR: odds ratio compared with whites; difference: mean difference compared with whites; CI: 95% confidence interval. All models included gender as a covariate.  
<sup>b</sup>Model for publications adjusted for medical specialization and years in academia.  
<sup>c</sup>Model for grants adjusted for setting and medical specialization.  
<sup>d</sup>Model for rank adjusted for setting, total number of refereed articles in 1995, and years in academia.  
<sup>e</sup>Model for senior leadership adjusted for total number of refereed articles in 1995.  
<sup>f</sup>Model for retention adjusted for medical specialization and total number of refereed articles in 1995.  
<sup>g</sup>Model for satisfaction adjusted for rank and effort distribution in teaching, clinical, and research activities.  
<sup>h</sup>Model for compensation adjusted for setting, rank, and effort distribution in teaching, clinical, and research activities.

to less tolerance or less ability to stay at the relatively lower salaries in academic medicine when compared with private practice. In our study, the greatest attrition for all faculty, regardless of race/ethnicity, was to private practice settings.

Greater aspirations for leadership,<sup>25</sup> along with perceived lack of opportunity by URM faculty, have been cited as factors in attrition.<sup>26</sup> In our study population, there was no significant difference in senior leadership roles for faculty of different race/ethnicity. Despite the lack of difference in senior leadership positions, our data indicated significant differences in promotion to the rank of professor. Though leadership might represent career advancement, it can present without the formal recognition granted by promotion, the gold standard for success in academia. This is supported by our data, which, similar to national data,<sup>2</sup> demonstrate a significant difference in academic rank for URM faculty when compared with white faculty. A disproportionate rate of promotion has consistently been demonstrated by other studies.<sup>15,16,27</sup> Previously, it has been linked to a lack of clarity around promotion criteria,<sup>28</sup> lack of mentorship, and lack of formal faculty development programs at academic medical institutions.<sup>29</sup>

Productivity is essential to promotion in academic medicine, as measured by grants and publications. Although publication as a measure of productivity has been criticized for being too limiting, it remains the major currency of academic promotion. Our study supports prior work indicating that URM faculty are less likely to be a primary investigator and less likely to author papers.<sup>13</sup> URM faculty had fewer grants and publications compared with white faculty. Though the difference in the number of grants did not remain significant, when controlling for gender and time in academia, URM faculty had 74% the odds of having one or more grants and were significantly less likely to have a robust bibliography, publishing 36% fewer papers compared with their white peers when controlling for both medical specialization and years in academia. Lack of productivity is possibly related to lack of structured mentorship and targeted development for URM faculty, as has been cited in other studies.<sup>30</sup> Additionally, URM faculty often serve in many capacities as the required representatives of their race/ethnicity on

committees and within programs, often leading to decreased time for productivity and increased burnout, which can in turn lead to attrition.<sup>31</sup> Compensation, satisfaction, and attainment of leadership positions are traditional motivators for remaining in academia. It is therefore noteworthy that we saw no differences in these three outcomes, yet saw significant attrition from academic careers. This suggests that URM faculty may not be driven by these traditional indicators of professional success or may value factors differently when determining whether to remain in academic medicine.<sup>20,25</sup>

It may be that retention for URM faculty is linked to a more complex set of factors associated with support and professional development opportunities. A survey of mentoring and development programs targeting URM faculty indicate a limited number of formal, institutionally supported programs available, yet well-established programs are effective at increasing productivity and improving retention.<sup>32</sup> Programs specifically directing support to URM faculty improve both retention and representation in administrative leadership positions.<sup>33,34</sup> Even programs targeting junior faculty have significant success improving URM faculty retention.<sup>28</sup> National endeavors are attempting to address this mentoring and support gap. The Office of the Director of the NIH has named a new permanent position, chief scientific officer for diversity, and the proposed metrics of the training programs of the 62 Clinical Translational Science Institutes now include evidence of programs specific to supporting the career development of URM trainees and faculty.<sup>35</sup>

More difficult to assess is the independent contribution to retention of factors such as bias, climate, and inclusivity. A number of cross-sectional, field-specific surveys of retention indicate that perceived discrimination,<sup>36,37</sup> the absence of a community, and a sense of isolation all contribute to attrition.<sup>23,37</sup> These factors are often cited as personal reasons for leaving and are not part of career satisfaction indices. These factors were also not part of the satisfaction index in our study. It could be theorized that formal programming, including concordant mentorship, community building, and networking, might overcome these more personal

contributors to attrition.<sup>38</sup> A recent longitudinal study identified that the size of one's academic network is a predictor of attrition and promotion, and points to how programming to develop faculty connectivity might be beneficial.<sup>39</sup>

Limitations of our study include the response rate, although achieving a 48% response among physicians after 17 years is higher than many reporting cohort or cross-sectional studies among medical school faculty.<sup>40,41</sup> Women were not equally represented across the race groups in this sample, and given that gender is related to compensation and advancement, the unadjusted comparisons could be misleading. Therefore, we addressed confounding between race and gender in the adjusted analyses. Additionally, there was a lower response rate of URM faculty to the follow-up survey that could affect data on satisfaction and compensation by reflecting the positive engagement of the URM subjects who responded. We addressed this response rate by retrieving outcome data on leadership, productivity, rank, and retention through public data sources. Strengths of our study include information on several parameters of academic success over time in the same cohort within the same 24 institutions, thus eliminating some potential confounders. Our study is unique as a cohort study reflecting the multi-institutional, multispecialty experiences of faculty over 17 years. Instead of traditional cross-sectional snapshots of data, this study allows for the analysis of professional metrics previously determined to be significant factors in retention of faculty in academic medicine, adjusted for important information collected at an earlier career stage. Although our study did not adjust for type of terminal degree, we did control for whether faculty were in basic versus clinical departments, as this does predict compensation, productivity, and advancement.<sup>42</sup>

## Conclusions

Our longitudinal, multi-institution-based study confirms a continued lack of retention of URM faculty. Several institutions have implemented programs, resulting in improved advancement and in some cases retention,<sup>43,44</sup> suggesting that targeted programming could improve the success of URM faculty

in academic productivity, rank, and retention. However, the current state of URM faculty development programs that focus on skill acquisition, role modeling, and mentorship at the individual level is not sufficient.<sup>32</sup> Successful retention of URM faculty requires comprehensive institutional commitment to create a more inclusive environment with programs that address the specific indicators of productivity and advancement that lead to success and ultimately retention in academic medicine.

**Acknowledgments:** The authors would like to thank Carolyn Luk, BA, Tufts Medical Center, for administrative work on the project; Subash Pathak, MS, Fred Hutchinson Cancer Research Center, for assistance with analyses; and Sharon Tennstedt, PhD, Heather Cochran, Julie Barenholtz, and Olga Dain, New England Research Institutes (NERI), for survey data collection.

**Funding/Support:** The project described was supported by award number R01 GM088470 from the National Institute of General Medical Sciences and Office of Research in Women's Health, National Institutes of Health.

**Other disclosures:** None reported.

**Ethical approval:** This study was approved by the institutional review boards (IRBs) of Boston University School of Medicine (protocol no. 1.769575) on April 24, 2009 through April 1, 2015 and Tufts Health Sciences Campus (IRB no. 10372) on May 15, 2012 through May 14, 2015; Tufts IRB reviewed on behalf of Massachusetts General Hospital through the master common reciprocal agreement approved on October 1, 2013.

**Disclaimer:** The opinions expressed in this article are those of the authors alone and do not reflect the views of the National Institutes of Health, the funders of this study. None of the funders were involved in the design of the study; the collection, analysis, and interpretation of the data; or the decision to approve publication of the finished manuscript.

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