Published in final edited form as:

Acad Med. 2010 July ; 85(7): 1250–1257. doi:10.1097/ACM.0b013e3181e10159.

Variables Associated with Full-time Faculty Appointment among Contemporary U.S. Medical School Graduates: Implications for Academic Medicine Workforce Diversity

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Abstract

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Other disclosures: None

Ethical Approval: This project was determined to be exempt by the Michigan State University Human Research Protection Programs and the University of Michigan Medical School Institutional Review Board. This project was approved as a minimal risk after an expedited review by the Washington University Human Research Protection Office, the Springfield Committee for Research Involving Human Subjects, the University of Iowa Human Subjects Office, and the Ohio State University Office of Responsible Research Practices.

Disclaimer: The opinions expressed in this report are those of the authors alone and are not necessarily those of the Association of American Medical Colleges.

Previous presentations: The results of this report were previously presented in part as an oral abstract presentation at the Association of American Medical Colleges Central Group on Educational Affairs Spring Conference, held at Rochester, Minnesota, on March 26 – 28, 2009.

Purpose—The authors sought to identify variables independently associated with full-time faculty appointment among recent medical graduates.

Method—With institutional review board approval, the authors developed a database of individualized records for six midwestern medical schools' 1997–2002 graduates. Using multivariate logistic regression, they identified variables independently associated with full-time faculty appointment from among demographic, medical-school-related, and career-intention variables. They report adjusted odds ratios (OR) and 95% confidence intervals (CI).

Results—Of 1,965 graduates in the sample, 263 (13.4%) held full-time faculty appointments in 2007–2008, including 14.4% (123/853) of women graduates and 8.6% (17/198) of underrepresented minority (URM) graduates. Women (OR: 1.386, 95% CI: 1.023–1.878), MD/PhD program graduates (OR: 2.331, 95% CI: 1.160–4.683), and graduates who reported a career-setting preference for “full-time university faculty” on the Association of American Medical Colleges' Graduation Questionnaire (OR: 3.164, 95% CI: 2.231–4.486) were more likely to have a full-time faculty appointment. Graduates who chose family medicine (OR: 0.433, 95% CI: 0.231–0.811) and surgical specialties (OR: 0.497, 95% CI: 0.249–0.994) were less likely to have a full-time faculty appointment. URM race/ethnicity was not independently associated with full-time faculty appointment (OR: 0.788; 95% CI: 0.452–1.375).

Conclusions—Efforts to increase representation of women graduates in academic medicine seem to have met with greater success than efforts to increase representation of URM graduates. Greater participation of URM students in MD/PhD programs and in interventions *during* medical school that promote interest in academic-medicine careers may increase URM graduates' representation in academic medicine.

The U.S. physician workforce in academic medicine reflects neither the diversity of U.S. society at large nor the diversity of the medical student population. In 2007, women constituted 51% of the U.S. population and 50% of recent medical graduates, but only 34% of full-time medical faculty.¹ More pronounced was the disproportionately lower representation in academic medicine of individuals from historically underrepresented minority (URM) groups (i.e., African Americans, Hispanic/Latino Americans, and Native Americans/Alaska natives), who in 2007 constituted about 25% of the U.S. population and 15% of recent medical graduates, but only 7.5% of full-time medical faculty.¹

Numerous institutions and national organizations have implemented a range of strategies in the past 15 years to promote the development of a more diverse academic-medicine workforce. At the institutional level strategies to support and retain a diverse faculty workforce include mentoring programs for women and URM faculty as well as professional development programs that emphasize training in research methodology, teaching, and writing for URM residents and faculty.^{2–6} At the national level, the Association of American Medical Colleges (AAMC), private foundations, and the federal government have each implemented programs to promote greater academic workforce diversity. The mission of the AAMC Group on Women in Medicine and Science is “to advance the full and successful participation of women in all roles within academic medicine.”⁷ The annual AAMC Minority Career Development Seminar Program, which is cosponsored by the Harvard Medical School Department of Continuing Education, is specifically tailored to meet the needs and address the issues of URM faculty who aspire to academic-medicine leadership positions.⁸ The Harold Amos Medical Faculty Development Program (formerly known as the Minority Medical Faculty Development Program), which the Robert Wood Johnson Foundation has funded for over 20 years, provides financial support for research fellowships and for career-development mentoring throughout the U.S. for physicians from historically disadvantaged groups who pursue careers in academic medicine.⁹ The National Institutes of Health (NIH) as well as other federal organizations offer a wider range of programs to

promote faculty diversity in the health professions and to support the development of research careers among women and URM trainees and faculty.^{10,11}

Given these many initiatives undertaken to promote academic-medicine workforce diversity, we hypothesized that women and members of URM groups who have graduated from U.S. Liaison Committee on Medical Education (LCME)-accredited medical schools since the latter part of the 1990s would be more likely to pursue full-time careers in academic medicine than, respectively, men and white graduates. We report here the results of a study we conducted to determine if either gender or race/ethnicity, among other variables of interest, was independently associated with full-time faculty appointment in a cohort of recent medical graduates.

Method

With institutional review board approval from each of our six midwestern U.S. LCME-accredited medical schools,^{*} our group of collaborating investigators developed a longitudinal database of individualized records for our 1997–2002 graduates. The AAMC provided each investigator with linked records for individual responses of students' graduating from that investigator's school from 1997 to 2002 who had completed, with identifiers, both the AAMC's Matriculating Student Questionnaire (MSQ) and the AAMC's Graduation Questionnaire (GQ). The AAMC also provided individualized data from its Faculty Roster System for each school's graduates who had full-time faculty appointments at U.S. medical schools during the 2007–2008 academic year. For our study purposes, we considered graduates in the Faculty Roster System with full-time appointments, but not those with part-time or volunteer appointments, to be graduates in full-time faculty positions. We obtained the American Medical Association's (AMA) Physician Masterfile data for Graduate Medical Education (GME) "Completion year" (i.e., either the year the physician would end graduate training or, for physicians no longer in training, the year they ended their GME) from Medical Marketing Services, Inc., a licensed AMA Masterfile vendor. At each medical school, we linked these three sets of individualized student records (MSQ and GQ response records, AAMC Faculty Roster System data, and AMA Physician Masterfile data) to two additional variables for each graduate: (1) first-attempt, 3-digit United States Medical Licensing Examination (USMLE) Step 1 scores and (2) type of medical school attended (described below). We stripped the six school-specific databases of individual identifiers and merged them into one file for analysis.

We measured associations between full-time faculty appointment and each of the following ten variables of interest:

- gender,
- race/ethnicity,
- year of graduation,
- level of debt,
- expected extent (at matriculation) to which career will involve research,
- graduation from an MD/PhD program,
- attendance of a biomedical research-intensive school,

^{*}Participating institutions included Washington University School of Medicine (St. Louis, Missouri), University of Iowa Roy J. and Lucille A. Carver College of Medicine (Iowa City, Iowa), University of Michigan School of Medicine (Ann Arbor, Michigan), Michigan State University College of Human Medicine (East Lansing, Michigan), The Ohio State University College of Medicine (Columbus, Ohio), and Southern Illinois University School of Medicine (Springfield, Illinois).

- three-digit, first attempt USMLE Step 1 score,
- career-setting preference at graduation, and
- specialty choice at graduation.

Demographic variables included gender (women as compared to men [the reference group]), race and ethnicity (which we categorized as Asian/Pacific Islander, URM, and other/unknown—each compared to white [the reference group]), year of graduation, and level of debt at graduation. As previous research suggested that financial issues such as debt might deter pursuit of an academic-medicine career among medical graduates,^{12–14} we included total (both premedical and medical school) debt at graduation (\$150,000 or more; \$100,000–\$149,999; \$50,000–\$99,999; \$1–\$49,999—each compared to no debt, [the reference group]) as a variable in our model.

Because of the close relationship between interest in pursuing biomedical research and academic-medicine careers, we included two research-related variables: (1) expected extent (at matriculation) to which career will involve research, which was self-reported on the MSQ using a 5-point scale (responses to this item were reverse coded for analysis so that higher scores indicated higher levels of expected extent to which career will involve research, from 0 [“not involved”] to 4 [“exclusively involved”]), and (2) graduation from an MD/PhD program (compared to graduation from MD and MD/other degree programs [the reference group]), which was self-reported on the GQ. Because specific aspects of the medical school attended might be associated with graduates’ career-path decisions, we created a variable for “type of medical school” based on whether or not the medical school had a long-standing NIH-funded Medical Scientist Training Program (MSTP).¹⁵ We categorized the three medical schools (in our six-school collaboration) with long-standing MSTP funding as biomedical-research-intensive schools; we categorized the other three schools as other schools (the reference group).

We included first-attempt, 3-digit USMLE Step 1 scores in our analysis because performance on this standardized examination is associated with students’ success in gaining entry into their preferred GME programs, the next step in their advancement along the medical-education continuum.¹⁶ USMLE Step 1 performance was of particular interest for our study as research has shown differences in USMLE Step 1 performance on the basis of gender, race, and ethnicity: mean USMLE Step 1 scores are lower for women examinees compared to men examinees and for Hispanic and African-American examinees compared to white examinees.^{17,18}

For the career-setting-preference variable, we created four categories from all the career-setting preferences listed on the GQ: (1) “full-time university faculty” in basic or clinical science teaching/research, (2) “other” (including non-university research scientist and state/federal or medical/health care administration), and (3) “undecided”—each compared to (4) “full-time (non-university) clinical practice” (the reference group). For the specialty-choice variable, we created 14 specialty-choice categories based on graduates’ responses to GQ items pertaining to their intended specialty and intent to sub-specialize in that specialty. Specialty-choice categories were internal medicine subspecialties, pediatrics (excluding subspecialties), pediatrics subspecialties, obstetrics and gynecology, family medicine, psychiatry, ophthalmology, surgery (general), surgery specialties, neurology, facilities-based specialties (emergency medicine, radiology, pathology, and anesthesiology), all other specialties, and “no specialty chosen”—each compared to internal medicine, excluding subspecialties (the reference group).

We tested the significance of associations between each variable of interest and the outcome of interest, i.e., full-time faculty appointment, in a multivariable logistic regression model.

We have reported descriptive statistics for each variable as well as adjusted odds ratios (ORs) and 95% confidence intervals (CIs) from the multivariable model. We performed all tests using SPSS 16.0 (SPSS, Inc., Chicago, IL; 2007). We considered two-sided *P* values < .05 to be significant.

Results

Our database included 2,480 graduates with linked AAMC and AMA Masterfile data (53.0% of our schools' 4,678 graduates from 1997 to 2002). We excluded 408 graduates who, according to Physician Masterfile records, were still in GME as of 2007. We excluded an additional 107 graduates who either were missing USMLE Step 1 data or had not responded to every item of interest on the MSQ and GQ. Thus, we had complete data for all variables on 1,965 eligible graduates who had completed GME prior to 2007 to include in our regression analysis. The 1,965 usable records represented 42.0% (1,965/4,678) of all our six schools' graduates from 1997 to 2002. Of these 1,965 graduates, 263 (13.4%) held full-time faculty positions (67 instructors, 184 assistant professors and 12 with other full-time appointments), including 14.4% (123/853) of women graduates and 8.6% (17/198) of underrepresented minority (URM) graduates. The proportion of graduates in each graduating class who held full-time faculty appointments ranged from 9.7% to 18.5%, with no significant change over time ($P = .905$). The mean (standard deviation [SD]) USMLE Step 1 score was significantly higher for graduates with full-time faculty appointments than for graduates without full-time faculty appointments (223.5 [SD 17.9] vs. 216.7 [SD 19.4]; $P < .001$). The mean (SD) level of expected extent (at matriculation) to which career will involve research was significantly higher (higher scores representing a greater expected extent of career involvement in research) for graduates with full-time faculty appointments than for graduates without full-time faculty appointments (2.7 [SD 0.8] vs. 2.4 [SD 0.7]; $P < .001$).

As shown in Table 1, full-time faculty appointment did not differ significantly by gender. Of the 263 graduates who held full-time faculty positions, approximately 47% ($n=123$) were women. Race/ethnicity was associated with full-time faculty appointment: Asian/Pacific Islander graduates were relatively over-represented, and URM graduates were relatively under-represented compared to their proportional representations among all graduates in the sample. Level of debt at graduation was also associated with full-time faculty appointment. Graduates with no debt were relatively over-represented, and graduates with high levels of debt were relatively under-represented compared to their proportional representations among all graduates in the sample. Of 48 MD/PhD program graduates 22 (45.8%) held full-time faculty appointments. Among all graduates, each of the following was associated with full-time faculty appointment: type of medical school, career-setting preference, and specialty choice.

In the logistic regression model (Table 2), each of the following was independently associated with a greater likelihood of full-time faculty appointment: female gender, graduation from an MD/PhD program, higher USMLE Step 1 score, and the career-setting preference of either "undecided" or "full-time university faculty." The choice of either family medicine or surgical specialties was independently associated with a lower likelihood of full-time faculty appointment. Each of the following was not independently associated with full-time faculty appointment in the multivariable model: race/ethnicity, year of graduation, level of debt, expected extent (at matriculation) to which career will involve research, and type of medical school.

Discussion and Conclusions

Our results have implications for the ongoing attempts to achieve greater levels of gender and racial/ethnic diversity in the academic-medicine workforce. As female gender was independently associated with a greater likelihood of faculty appointment, progress towards gender parity in academic medicine should continue to increase, likely reflecting both increased levels of interest among women graduates in academic-medicine careers and increased institutional efforts not only to recruit women graduates for full-time faculty positions but also to support their professional development once recruited.¹⁹ However, similar progress toward greater racial/ethnic diversity in the academic-medicine workforce was not evident. The racial/ethnic differences in the proportion of graduates with full-time faculty appointments that we observed in our sample were similar to the findings of a national, population-based study of U.S. medical graduates, graduating in the year 1993, who held faculty positions in 1999: the proportion of Asian graduates entering academic careers was much higher than the proportion of URM graduates entering academic careers six years after graduation.²⁰ In our study sample, a lower proportion of all URM graduates (compared to white graduates) held full-time faculty positions relative to their representation among all medical graduates, and URM race/ethnicity was not independently associated with a greater likelihood of faculty appointment. These findings suggest that, despite the broad range of initiatives undertaken to recruit and support URM physicians in faculty positions, progress towards increased faculty diversity on the basis of race/ethnicity in the current medical education environment has been limited.^{5,8–10}

Recent explorations of debt and career plans, which have focused largely on graduates' specialty choice intentions, have yielded variable results regarding the relationship between debt and primary-care-specialty-choice career paths.^{21–24} Hauer and colleagues²¹ reported results of a survey administered to senior medical students in 2007. In this cross-sectional sample of 1,177 respondents, debt was not related to internal medicine specialty choice. Rosenblatt and Andrilla²² reported that higher debt was associated with a lower likelihood of primary care specialty choice in a national study sample of GQ respondents in the graduating class of 2002. In a comprehensive analysis of survey data collected from graduating medical students over the past 20 years and cross-sectional data about physicians' practice specialties, Phillips and colleagues²³ described the relationship between debt and primary care career paths as "complex"; they reported that students with no debt, and students with the very highest levels of debt (> \$250,000), were less likely than students with other levels of debt to later practice in primary care. Finally, McDonald and colleagues²⁴ reported results of a survey of internal medicine residents about their career plans and educational debt. In this cross-sectional sample of over 22,000 residents in their final year of categorical internal medicine training in 2003 – 2007, U.S. medical school graduates with high levels of debt (\$100,000 to \$150,000) were less likely than U.S. medical school graduates with no debt to plan to pursue a subspecialty career; in the same study, U.S. medical graduates with debt of \$50,000 or more were more likely than U.S. medical graduates with no debt to plan to pursue a hospitalist career. Our results suggest that, after controlling for specialty choice (as well as subspecialty plans among graduates who chose the primary care specialties of pediatrics or internal medicine), educational debt is not independently associated with pursuit of an academic medicine career path.

A national study on the relationship between debt and academic-medicine career choice among an older cohort of 1980–1993 AAMC GQ respondents tracked graduates through 2001.²⁵ Within each graduating class, debt levels among physicians who had held full-time faculty appointments were similar to the debt levels among physicians who had not held faculty appointments. MD/PhD program graduates were excluded from the analysis in this earlier study, since these graduates had received substantial financial support during medical

school. Also, graduates' specialty choices were not considered; graduates in all specialties were analyzed together.²⁵ Despite differences in study design, our findings regarding the relationship between debt and academic-medicine career choice among our more recent medical graduates were similar to the results of this previous study. While lower proportions of graduates in our study sample (which included both MD and MD/PhD graduates) with high levels of debt held faculty appointments, debt itself, in a model that controlled for MD/PhD program graduation and specialty choice among other variables of interest, was not independently associated with faculty appointment.

We included several research-related variables in our study because many physicians conduct biomedical research in academic-medicine settings. Our finding that MD/PhD program graduation was independently associated with a greater likelihood of full-time faculty appointment is consistent with a recent study of MD/PhD program students' attitudes and professional goals.²⁶ As URM students have been disproportionately under-represented among MD/PhD program participants, strategies to increase the numbers of URM students in MD/PhD programs may play an important role in increasing the levels of URM physician representation among full-time faculty; similar concerns exist regarding URM representation in the academic biomedical-research PhD workforce^{27,28}

Our observation regarding the relationship between USMLE Step 1 score and full-time faculty appointment is consistent with the thesis that graduates with higher USMLE Step 1 scores might enjoy greater success in matching to very competitive, academic GME-program positions, which in turn may serve as stepping stones to faculty positions in academic medicine. As a gap in USMLE mean Step 1 scores between white and URM graduates (including African-American graduates and Hispanic graduates) has been previously documented and as the use of USMLE Step 1 scores to screen applicants for residency interviews has been shown to disproportionately prevent African-American students from receiving interview offers, our observation regarding the relationship between USMLE Step 1 score and full-time faculty appointment may warrant further investigation.^{17,29}

That *reporting* a career-setting preference for full-time faculty position on the GQ was independently associated with *actually being appointed* to a full-time academic-medicine faculty position provides support for the predictive validity of this GQ item. As medical education researchers widely use programmatic GQ data from the national level to inform their understanding of the medical-education process and the characteristics of the emerging physician workforce, this is an important finding. While other research has previously confirmed the predictive validity of the GQ as it pertains to graduates' reported intentions to practice in underserved communities,³⁰ to our knowledge, our study is the first to report that graduates' career-setting preferences' for full-time faculty positions is independently associated with a greater likelihood of actually doing so.

This finding is a particularly relevant consideration in the context of the growth in proportions of women physicians, but persistently low proportions of URM physicians, among full-time faculty members.^{1,19} In an analysis of the evolution of career-setting preferences during medical school, 72% of all 1997–2004 GQ respondents in the sample who planned at graduation to pursue academic-medicine careers had *not* indicated this career-setting preference on the MSQ.³¹ Thus, experiences during medical school may play a critical role in shaping the “emerging” academic-medicine career intentions of most graduates. In this previously published study, women were more likely than men—and URM graduates were less likely than white graduates—to report “emerging” intent to pursue academic-medicine careers (i.e., reported career-setting preference for full-time faculty position respectively on, the GQ but not the MSQ); also, URM graduates were more likely

than white graduates to report “diminished” intent to pursue academic-medicine careers (i.e., reported career-setting preference for full-time faculty position on the MSQ but not the GQ).³¹ These findings suggest that medical school experiences may have a positive impact on women’s interest in academic-medicine careers but a negative impact on URM students’ interest in academic-medicine careers. Students’ exposure to and interactions with role models and mentors, along with their perceptions about the institutional climate for promoting cultural diversity, may, among other factors, contribute to their desire to pursue academic-medicine careers.^{20,32} As our study demonstrated that career-setting preference for full-time faculty position at the time of graduation was independently associated with actually holding a full-time faculty position at follow-up, a variety of interventions during medical school may be considered to promote and sustain URM medical students’ interest in academic-medicine careers.^{5,11,33} The formal mentorship program for minority students and faculty members involved in research at the University of New Mexico provides one potential model of a program that promotes institutional efforts to recruit and retain URM faculty.⁶

It was beyond the scope of our study to explore the possible underlying reasons for the associations between specialty choice and full-time faculty appointment that we observed. However, our observation that the specialty choice of family medicine was independently associated with a lower likelihood of full-time faculty appointment extends findings from a multi-institutional study in which medical school graduates’ plans for careers in academic medicine or research were negatively associated with the specialty choice of family medicine.³⁴ Our finding that surgical specialties’ choice was also independently associated with a lower likelihood of full-time faculty appointment may reflect, at least in part, perceptions that surgical specialists face particular difficulties in successfully pursuing academic careers as surgeon-scientists.^{35–38}

Our study had some strengths and some limitations. Particular strengths of this study were the inclusion of individualized records for graduates from multiple medical schools, the use of AMA Masterfile data to identify graduates’ GME status, and the use of primary-source AAMC Faculty Roster System data (rather than self-reported data) for the outcome of interest (i.e., full-time faculty appointment in academic medicine). Our study also had several limitations. Because it was an observational study, we cannot infer causation. Furthermore, including graduates of schools from only the midwestern region of the United States who completed both the MSQ and GQ with identifiers limited the generalization of our findings to all U.S. LCME-accredited medical school graduates. Our sample was similar to all U.S. LCME-accredited medical school graduates nationally from 1997 to 2002 regarding the percentage of women, but included a slightly higher percentage of white graduates, and slightly lower percentages of Asian/Pacific Islander and URM graduates than all U.S. medical graduates nationally from 1997 to 2002.^{39,40}

In summary, among our cohort of graduates from six midwestern medical schools, women graduates but not URM graduates were more likely to have full-time faculty appointments in academic medicine than, respectively, men and white graduates. Our results suggest that greater participation of URM students in MD/PhD programs and/or in interventions *during* medical school that can promote and sustain their interest in academic-medicine careers might increase the representation of URM graduates in academic medicine. As USMLE Step 1 score and specialty choice were also independently associated with full-time faculty appointment, these variables merit inclusion in future academic-workforce diversity studies.

Acknowledgments

The authors thank Jason Cantodw, MS, MBA, educational data analyst at the Association of American Medical Colleges for data provision and coding assistance; Irene Fischer, MPH, in the Health Behavior and Outreach Core of the Siteman Cancer Center (supported in part by National Cancer Institute Cancer Center Support Grant #P30 CA91842) for data management services; David P. Way, M.Ed. senior research associate at The Ohio State College of Medicine for administrative support with data collection; and Ms. Annette Griffin record analyst in the Office of Student Affairs and Curriculum at the University of Iowa Carver College of Medicine for data management services.

Funding/Support: Funding for this study was provided by a Collaborative Projects Grant from the Association of American Medical Colleges Central Group on Educational Affairs.

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Table 1

Descriptive Statistics of the Sample*

Characteristic	All graduates (% of 1,965)	No. of graduates in full-time faculty position (% of 263)	No. of graduates not in full-time faculty position (% of 1,702)	Chi-square <i>P</i> value
Gender				.238
Men	1,112 (56.6)	140 (53.2)	972 (57.1)	
Women	853 (43.4)	123 (46.8)	730 (42.9)	
Race/ethnicity				.007
White	1,473 (75.0)	193 (73.4)	1,280 (75.2)	
Asian/Pacific Islander	276 (14.0)	52 (19.8)	224 (13.2)	
Underrepresented minority	198 (10.1)	17 (6.5)	181 (10.6)	
Other/unknown	18 (0.9)	1 (0.4)	17 (1.0)	
Level of debt at graduation				.004
No debt	255 (13.0)	52 (19.8)	203 (11.9)	
\$1 to \$49,999	305 (15.5)	43 (16.3)	262 (15.4)	
\$50,000 to \$99,999	765 (38.9)	100 (38.0)	665 (39.1)	
\$100,000 to \$149,999	509 (25.9)	55 (20.9)	454 (26.7)	
\$150,000 or more	131 (6.7)	13 (4.9)	118 (6.9)	
Degree program				< .001
MD or MD/other	1,917 (97.6)	241 (91.6)	1,676 (98.5)	
MD/PhD	48 (2.4)	22 (8.4)	26 (1.5)	
Type of medical school				.002
Biomedical research intensive	960 (48.9)	152 (57.8)	808 (47.5)	
Other	1,005 (51.1)	111 (42.2)	894 (52.5)	
Career setting preference at graduation				< .001
Full-time clinical practice	1,100 (56.0)	78 (29.7)	1,022 (60.0)	
Full-time university faculty	482 (24.5)	132 (50.2)	350 (20.6)	
Other	115 (5.9)	12 (4.6)	103 (6.1)	
Undecided	268 (13.6)	41 (15.6)	227 (13.3)	
Specialty choice at graduation				< .001
Internal medicine	173 (8.8)	29 (11.0)	144 (8.5)	
Internal medicine subspecialties	124 (6.3)	27 (10.3)	97 (5.7)	
Pediatrics	187 (9.5)	26 (9.9)	161 (9.5)	
Pediatrics subspecialties	35 (1.8)	7 (2.7)	28 (1.6)	
Family medicine	414 (21.1)	20 (7.6)	394 (23.1)	
Obstetrics and gynecology	138 (7.0)	16 (6.1)	122 (7.2)	
Psychiatry	53 (2.7)	11 (4.2)	42 (2.5)	
Ophthalmology	60 (3.1)	7 (2.7)	53 (3.1)	
Surgery (General)	67 (3.4)	10 (3.8)	57 (3.3)	
Surgical specialties	164 (8.3)	15 (5.7)	149 (8.8)	

Characteristic	All graduates (% of 1,965)	No. of graduates in full-time faculty position (% of 263)	No. of graduates not in full-time faculty position (% of 1,702)	Chi-square <i>P</i> value
Neurology	35 (1.8)	12 (4.6)	23 (1.4)	
Facilities-based specialties [†]	317 (16.1)	52 (19.8)	265 (15.6)	
All other specialties	76 (3.9)	10 (3.8)	66 (3.9)	
No specialty selected	122 (6.2)	21 (8.0)	101 (5.9)	

* The sample comprises 1,965 graduates (1997 – 2005) of six midwestern medical schools for whom the authors had complete data. Data included Association of American Medical Colleges (AAMC) Matriculating Student Questionnaire and Graduation Questionnaire response records, AAMC Faculty Roster System data, and AMA Physician Masterfile data.

[†] Radiology, anesthesiology, emergency medicine, and pathology.

Table 2

Multivariate Logistic Regression Model of Variables Associated with Full-time Faculty Appointments Compared with All Other Graduates

Variable	Adjusted OR (95% CI)	P value
Gender		
Men	1.000 (Reference)	
Women	1.386 (1.023 – 1.878)	.035
Race/ethnicity		
White	1.000 (Reference)	
Asian/Pacific Islander	1.098 (0.758 – 1.591)	.621
Underrepresented minority	0.788 (0.452 – 1.375)	.402
Other/unknown	0.470 (0.059 – 3.709)	.473
Graduation year, per year	0.952 (0.865 – 1.048)	.313
Level of debt at graduation		
No debt	1.000 (Reference)	
\$1 to \$49,999	0.700 (0.433 – 1.133)	.146
\$50,000 to \$99,999	0.749 (0.499 – 1.127)	.165
\$100,000 to \$149,999	0.697 (0.443 – 1.096)	.118
\$150,000 or more	0.597 (0.296 – 1.202)	.149
Expected extent (at matriculation) of career involvement in research	1.187 (0.977 – 1.443)	.085
Degree program		
MD or MD/other degree	1.000 (Reference)	
MD/PhD	2.331 (1.160 – 4.683)	.017
Type of medical school		
Other	1.000 (Reference)	
Biomedical research intensive	1.126 (0.846 – 1.497)	.416
USMLE Step 1 score	1.012 (1.004 – 1.020)	.005
Career setting preference at graduation		
Full-time clinical practice	1.000 (Reference)	
Full-time university faculty	3.164 (2.231 – 4.486)	< .001
Other	1.383 (0.714 – 2.678)	.336
Undecided	1.968 (1.296 – 2.988)	.001
Specialty choice at graduation		
Internal medicine	1.000 (Reference)	
Internal medicine subspecialties	0.886 (0.472 – 1.663)	.707
Pediatrics	0.898 (0.492 – 1.640)	.727
Pediatrics subspecialties	0.780 (0.293 – 2.075)	.619
Family medicine	0.433 (0.231 – 0.811)	.009
Obstetrics and gynecology	0.713 (0.358 – 1.421)	.336
Psychiatry	1.080 (0.474 – 2.464)	.854

Variable	Adjusted OR (95% CI)	P value
Ophthalmology	0.505 (0.195 – 1.308)	.159
Surgery (General)	0.842 (0.371 – 1.912)	.681
Surgical specialties	0.497 (0.249 – 0.994)	.048
Neurology	1.406 (0.599 – 3.299)	.434
Facilities-based specialties *	1.070 (0.629 – 1.818)	.804
All other non-generalist specialties	0.565 (0.247 – 1.295)	.177
No specialty selected	1.223 (0.637 – 2.345)	.545

Abbreviations: Adjusted OR: adjusted odds ratio; CI: Confidence Interval; USMLE: United States Medical Licensing Examination

* Radiology, anesthesiology, emergency medicine and pathology.