



# Time, Effort, and Gender Disparities in Perceptions of Advancement among Research Faculty in U.S. Medical Schools

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## Abstract

Gender differences in distribution of effort across mission areas of medical schools and perceptions of collegial respect for efforts to balance work-life responsibilities were analyzed to see if they mediated gender differences in perceptions about opportunities for faculty advancement.

**Research Question:** To what extent do work life challenges explain gender disparities in satisfaction with career advancement independent of gender differences in time at work, and time and effort allocation across mission areas?

Results show that among medical school faculty not oriented toward patient care, women were more likely than men to report dissatisfaction with advancement. While small gender differences relating to time at work exist, they do not account for gender disparities in this satisfaction. Rather, a fair amount of this gender disparity is accounted for by gender disparities in perceptions of respect from colleagues regarding efforts to balance work life responsibilities.

These findings add to a framework of understanding of faculty work-life and gender differences in academic medicine.

## Study

### INTRODUCTION

Faculty face growing professional responsibilities and have changing expectations about their work.<sup>1</sup> This transformation is present in U.S. medical schools, where faculty comprise a sizable proportion (18%) of all full-time higher education faculty.<sup>2</sup> Academic medicine faculty face striking changes in work environments resulting in increased demands across mission areas, which may threaten faculty engagement.<sup>3</sup>

Further, research shows that gender differences exist in perceptions of application consistency of promotion criteria and in aspects of satisfaction.<sup>4</sup> These differences may be related to workplace unconscious gender bias and managing work-life balance, which disproportionately falls to women.<sup>5</sup>

We analyze whether gender differences in distribution of 1) percent effort across the core medical school mission areas, or 2) perceptions of collegial respect for balancing work-life responsibilities, mediate gender differences in perceptions of opportunities for advancement and professional development.

### METHODOLOGY

#### DATA

Source: 2011-2014 administrations of *AAMC Faculty Forward Engagement Survey*.<sup>6</sup>

- Institutions: 21 self-selected U.S. Medical Schools
- Overall survey population response: 12,869/20,958
- Study population: Full-time faculty with PhD or MD-PhD degrees devoting a maximum of 1/4 of their effort to patient care (n=2,462/3,181). Selected because they are the most akin to faculty in higher education (primary mission areas of research, education, and service).

#### VARIABLES

Dependent: Faculty satisfaction with advancement index.

- Satisfaction with opportunities for professional development (5 pt. agreement scale; 1=strongly disagree and 5=strongly agree)
- Satisfaction with pace of advancement (5 pt. agreement scale)
- Responses were additively combined into scale from 2-10 (strongly disagreeing to strongly agreeing with both statements).

#### ANALYSIS

The association of gender with satisfaction with advancement was captured through nested ordinal logistic regression models. The association between gender and satisfaction with advancement was compared across each model.

#### REFERENCES

<sup>1-6</sup> See handout for full reference list and additional information

### RESULTS

Significant Association with Gender

- Women less likely to report satisfaction with advancement
- Gender differences relative to time (Table 1)
  - Women work, on average, 1.2 fewer hours than men
  - Women report higher % of effort in teaching /education responsibilities; lower % in research, compared to men
  - Women more likely to report too little time for research and too much time spent teaching as compared to men
- Women more likely to disagree that colleagues respected efforts to balance work-life responsibilities. (Figure 1)

**Table 1: Reports of Total Hours, Distribution of Hours by Task, and Perceptions of Fit of Time to Mission, by Gender**

Interval Variables	Women n=843		Men n=1,619		Statistic
	(SE)	(SE)	(SE)	(SE)	
Time	Total Hours	55.6 (0.4)	56.8 (0.3)	2.16*	
Task Split	% Education	22.4 (0.6)	19.4 (0.4)	3.98**	
	% Research	58.4 (0.9)	62.2 (0.6)	3.44**	
	% Administration	17.2 (0.6)	16.4 (0.4)	1.06	
Binary Variables (Yes/No)	% Yes <sup>b</sup>	% Yes <sup>b</sup>	chi-sq. <sup>a</sup>		
Perceptions	Too little - Research	33.3	26.3	13.60**	
	Too Much - Teaching	15.0	10.9	8.27**	
	Too Much - Admin.	36.9	31.1	8.49**	

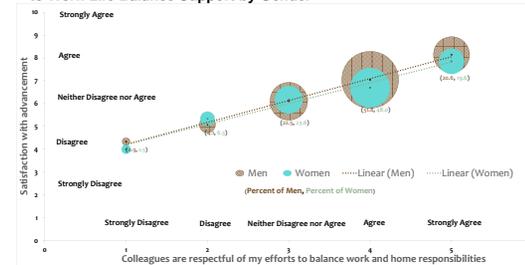
\* p<.05, \*\*p<.01

<sup>a</sup> Percentages reflect respondents who report having too little time spent on research, too much time spent on teaching, too much time spent on administration (respective to each item separately).

Mediating the association between gender and satisfaction with advancement:

- Women's higher likelihood of reporting dissatisfaction with advancement **remains strong** after controlling for race, rank, degree and department (Table 3, Model 2)
- Women's higher likelihood of reporting dissatisfaction with advancement **remains strong** after adding controls for time worked, task split, and perceptions about task split (Table 3, Model 3)
- Women's higher likelihood of reporting dissatisfaction with advancement weakens after adding a control for perceptions of colleague respect for work-life balance (Table 3, Model 4)

**Figure 1: Observed Average Satisfaction with Advancement in Relation to Work-Life Balance Support by Gender**



**Table 2: Ordinal Logistic Regression Models Estimating the Relationship of Gender, Time Factors, and Peer Perceptions about Work-Life Balance (n=2462)**

		Model 1	Model 2	Model 3	Model 4
		Odds Ratio <sup>†</sup>	Odds Ratio <sup>†</sup>	Odds Ratio <sup>†</sup>	Odds Ratio <sup>†</sup>
Sex	Female	0.76**	0.80**	0.80**	0.85*
Time	Total Hours			0.93*	1.00
Task Split	% Education			0.98	0.96
	% Research			0.96	0.94
	% Administration			1.07	1.03
Time	Too little - Research			0.81*	0.85
	Too Much - Teaching			0.68**	0.76*
	Too Much - Admin.			0.85	0.96
Work-Life	Respect for Balance				2.47**
Race/Eth	URM		1.05	1.00	1.08
Rank	Assistant		0.80*	0.90	0.86
	Associate		0.58**	0.62**	0.64**
Degree	MD/PHD		1.07	1.09	1.16
Dept	Anatomy		0.99	1.02	0.91
	Biochemistry		0.92	0.98	0.94
	Genetics		1.20	1.18	1.03
	Microbiology		0.98	1.06	0.92
	Molecular/Cellular Bio		0.96	1.03	1.06
	Neurology		1.06	1.11	1.02
	Pharmacology		0.71*	0.74*	0.76
Physiology		1.02	1.08	1.05	
	Other Basic Science		1.28	1.32	1.17
Log Likelihood		-4715.14	-4691.90	-4667.85	-4473.21

\* p<.05, \*\*p<.01

<sup>†</sup> Columns contain model derived exponentiated logistic regression coefficients that can be interpreted as odds ratios

### SIGNIFICANCE AND DISCUSSION

These findings add to our understanding of faculty work-life and gender differences in academic medicine.

- Previous research demonstrates that gender differences, not attributable to differences in commitment or productivity, exist with regard to rewards and advancement opportunities in academic medicine.
- Our findings, which point to perceptions of the respect of colleagues regarding efforts to balance work-life responsibilities as strongly related to satisfaction with advancement, help explain the role that workplace culture can play in a faculty member's experience.
- Given that men and women perceive differences in their faculty experience, institutions may consider mentoring programs or unconscious bias training as strategies for creating work environments that support job satisfaction.