Supplemental digital content for Ginther DK, Kahn S, Schaffer WT. Gender, race/ethnicity, and National Institutes of Health R01 research awards: Is there evidence of a double bind for women of color? Acad Med. 2016.

Supplemental Digital Appendix 1

Covariates Included in Probit Models

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Demographics					
Race/Ethnicity	X	X	X	X	X
Gender	X	X	X	X	X
Age, Age-Squared[a]	X	X	X	X	X
Naturalized Citizen	X	X	X	X	X
Non-Citizen	X	X	X	X	X
Race Unknown	X	X	X	X	X
Foreign PhD	X	X	X	X	X
Nativity/Citizenship Missing	X	X	X	X	X
Education and Training					
Degree Type (PhD, MD/PhD)		X	X	X	X
NIH Training: (F, T, K)		X	X	X	X
PhD Major Field:		X	X	X	X
(Biomedicine, Chemistry, Physics, Engineering, Psychology, Field Missing)					
NIH Funding Rank of PhD Institution:		X	X	X	X
(Top 30, 31-100, 100-200) [b]					
Employer Characteristics					
Employer NIH Funding Rank:			X	X	X
(Top 30, 31-100, 100-200, 200+, unranked) [b]					
Employer Organization Type:			X	X	X
(Research Institute, Hospital,					
Higher Education, Other)					
Higher Education Carnegie Class:			X	X	X
(Research Very High, Research High					
Research, Medicine, BA or MA Inst.,					
Other, Carnegie Rank missing)					
Region:			X	X	X
(Midwest, South, West)					
NIH Experience					
NIH Institute Code:				X	X
(21 Indicators for IC receiving proposal)					
Prior NIH Grant				X	X
NIH Review Committee Member				X	X
Grant uses Human Subjects				X	X
Human Subject Code Missing				X	X
Fiscal Year (2001 - 2006)				X	X
Research Productivity					

Publication Quartiles (4-7, 8-18, >18) [b]					**X**
Citation Quartiles (6-24, 25-84, >84) [b]					**X**
Maximum Impact Factor of Publications[a]					**X**
Median Impact Factor of Publications[a]					**X**
Ratio of First author/ Total Publications[a]					**X**
Ratio of Last author/ Total Publications[a]					**X**
Ratio of Single author/ Total Publications[a]					**X**
Publication information missing					**X**

Notes: Variables are indicator variables (0,1) unless otherwise indicated. [a]Continuous variables. [b]Categorical variable

Supplemental Digital Appendix 2

Counts of 2000-2006 R01 Awards by Race/Ethnicity, Gender and Degree Status

	PhD		MD		MD/PhD	
	No Award	R01 Award	No R01	R01 Award	No R01	R01 Award
Asian Female	1,605	583	229	82	343	140
Asian Male	6,191	1,969	678	250	1,912	738
Black Female	291	58	81	s	s	s
Black Male	500	81	125	s	131	s
Hispanic Female	483	164	114	s	103	s
Hispanic Male	1,005	390	343	142	320	155
White Female	10,541	4,250	1,298	556	1,169	545
White Male	23,682	9,558	5,430	2,320	5,715	2,664
Other Race Female	1,061	385	470	172	316	87
Other Race Male	3,229	1,090	1,708	604	1,168	441

Notes: s indicates suppressed because observations < 50. n/a indicates variable not applicable/available.
Source: NIH IMPAC II, NSF Survey of Doctorate Recipients, and AAMC Faculty Roster.

Supplemental Digital Appendix 3

Counts for Categorical Variables by Degree and R01 Award Status

	PhD	PhD	MD	MD	MD/PhD	MD/PhD
	No Award	R01 Award	No Award	R01 Award	No Award	R01 Award
Demographics:						
Female	13,981	5,440	2,192	866	1,973	815
Male	34,607	13,088	8,284	3,347	9,246	4,038
Asian	7,796	2,552	907	332	2,255	878
Black	791	139	206	s	173	s
Hispanic	1,488	554	457	180	423	192
White	34,223	13,808	6,728	2,876	6,884	3,209
Other Race	86	s	s	s	s	s
Missing Race	4,204	1,443	2,161	770	1,469	521
New Investigator	26,162	8,613	5,484	1,841	4,932	1,794
Experienced Investigator	22,426	9,915	4,992	2,372	6,287	3,059
New Investigators Receiving Awards 2000-06		2,881		718		820
US Native Born	28,291	11,208	n/a	n/a	4,219	2,048
US Naturalized	1,271	419	n/a	n/a	313	121
Non-Citizen	12,530	5,309	728	383	3,483	1,530
Citizenship Missing	6,496	1,592	9,748	3,830	3,204	1,154
Education and Training:						
PhD Biomedicine	23,129	9,055	n/a	n/a	5,024	2,299
PhD Chemistry	2,876	1,023	n/a	n/a	146	69
PhD Physics	670	278	n/a	n/a	109	s
PhD Engineering	2,553	882	n/a	n/a	303	115
PhD Social & Behavioral	6,293	2,716	n/a	n/a	372	197
PhD Other Field	1,732	443	n/a	n/a	175	74
Missing PhD Field	11,335	4,131	n/a	n/a	5,090	2,063
PhD Institution NIH Funding Rank Top 30	11,621	5,079	n/a	n/a	2,577	1,267
PhD Institution NIH Funding Rank 31-100	11,284	4,402	n/a	n/a	1,801	894
PhD Institution NIH Funding Rank 101-200	6,141	2,102	n/a	n/a	559	207
PhD Institution NIH Funding Rank 200+	3,543	1,137	n/a	n/a	458	145
PhD Institution NIH Funding Unranked	15,999	5,808	n/a	n/a	5,824	2,340
No NIH Training Funding	27,926	9,693	5,055	1,744	5,545	2,068
T Training	13,683	5,973	3,378	1,533	4,068	2,027
F Training	9,031	3,967	988	465	1,465	694
K Training	3,385	1,526	3,266	1,581	2,372	1,258
Employer Characteristics:						
Employer NIH Funding Rank Top 30	13,621	6,775	4,658	2,153	4,585	2,345

	PhD	PhD	MD	MD	MD/PhD	MD/PhD
	No Award	R01 Award	No Award	R01 Award	No Award	R01 Award
Employer NIH Funding Rank 31-100	17,481	6,614	3,590	1,368	4,015	1,690
Employer NIH Funding Rank 101-200	8,526	3,022	1,192	455	1,384	527
Employer NIH Funding Rank 200+	8,960	2,117	1,036	237	1,235	291
Carnegie Research Very High	23,316	10,078	4,996	2,200	5,349	2,547
Carnegie Research High	4,506	1,146	398	124	536	142
Carnegie Research	589	88	s	s	s	s
Carnegie Medical School	4,686	1,791	1,290	481	1,252	523
Carnegie Masters/Bachelors	770	138	s	s	s	s
Carnegie Other Institution	89	s	s	s	3	
Carnegie Unranked Higher Ed	6,674	2,386	1,115	360	1,366	499
Research Organization	4,028	1,613	781	272	1,019	407
Hospital	2,413	932	1,448	644	1,213	604
Other Organization	1,517	338	402	123	409	111
NIH Experience:						
Prior NIH Funding	34,048	14,817	8,165	3,768	8,981	4,347
NIH Review Committee Experience	21,613	9,991	5,170	2,482	5,999	2,963
NIAAA	723	378	137	72	132	71
NIA	2,427	789	408	181	551	192
NIAID	4,388	1,785	899	430	1,007	558
NIAMS	1,546	437	425	148	382	164
NCCAM	293	58	116	s	97	s
NCI	7,380	2,440	1,590	598	2,328	892
NIDA	2,223	959	297	139	366	179
NIDCD	711	465	82	s	79	56
NIDCR	991	386	70	s	123	54
NIDDK	3,304	1,123	1,408	558	1,136	434
NIBIB	1,008	317	90	s	144	s
NIEHS	1,027	323	106	s	175	78
NEI	1,070	564	141	57	206	98
NIGMS	5,802	2,434	192	79	469	224
NICHD	3,434	968	647	189	560	155
NHGRI	346	166	s	s	s	s
NHLBI	4,450	1,768	2,241	979	1,632	790
NLM	163	s	s	s	s	s
NIMH	2,903	1,296	756	313	609	261
NINR	553	288	s	s	s	s
NINDS	3,424	1,451	741	283	1,056	532
NCRR	257	56	s	s	s	s
FIC	165	s	s	s	s	s

	PhD	PhD	MD	MD	MD/PhD	MD/PhD
	No Award	R01 Award	No Award	R01 Award	No Award	R01 Award
Fiscal Year and Region:						
Fiscal Year 2000	5,462	2,720	1,206	654	1,193	698
Fiscal Year 2001	5,354	2,763	1,227	652	1,170	701
Fiscal Year 2002	5,178	2,613	1,198	620	1,195	688
Fiscal Year 2003	6,077	2,842	1,284	613	1,385	735
Fiscal Year 2004	6,876	2,712	1,554	602	1,622	798
Fiscal Year 2005	7,585	2,430	1,608	577	1,746	658
Fiscal Year 2006	12,056	2,448	2,399	495	2,908	575
North Region	13,093	5,380	3,351	1,485	3,566	1,701
Midwest Region	10,355	3,979	2,148	820	2,067	910
South Region	15,189	5,171	2,781	1,049	3,322	1,172
West Region	9,951	3,998	2,196	859	2,264	1,070
Productivity:						
<=3 Publications	12,763	5,251	2,498	1,045	2,499	1,248
4-7 Publications	8,961	3,572	1,955	803	1,927	834
8-18 Publications	9,368	3,545	2,232	930	2,445	1,034
18+ Publications	9,227	3,429	2,336	963	2,943	1,233
Publications Not Matched	8,269	2,731	1,455	472	1,405	504
<=5 Citations	11,590	4,457	1,944	817	1,926	884
6-24 Citations	10,064	3,542	2,188	790	1,984	830
25-84 Citations	10,102	3,834	2,465	998	2,576	1,074
>84 Citations	8,563	3,964	2,424	1,136	3,328	1,561
Citations Not Matched	8,269	2,731	1,455	472	1,405	504
Submitted Once	33,426	8,513	7,560	1,952	7,931	2,338
Submitted Twice	11,143	6,641	2,198	1,539	2,470	1,700
Submitted Three Times	3,914	3,289	695	711	794	800
Submitted Four + Times	105	85	s	s	s	s
Scored Grants	20,057	18,528	4,721	4,213	5,002	4,853
Age	48.20	46.58	49.70	48.48	48.92	47.45
	[8.98]	[8.55]	[8.77]	[8.16]	[8.41]	[7.75]
Maximum Impact Factor	8.15	9.55	9.89	11.47	11.06	12.46
	[9.73]	[10.58]	[11.86]	[12.66]	[11.74]	[12.28]
Median Impact Factor	3.27	3.99	3.47	4.03	3.95	4.69
	[3.38]	[4.10]	[3.07]	[3.53]	[3.46]	[4.34]
Ratio of First Authored/Total Publications	0.32	0.32	0.34	0.33	0.30	0.30
	[0.34]	[0.34]	[0.33]	[0.33]	[0.31]	[0.31]
Ratio of Last Authored/Total Publications	0.25	0.27	0.22	0.26	0.27	0.29
	[0.30]	[0.31]	[0.26]	[0.28]	[0.29]	[0.29]

	PhD	PhD	MD	MD	MD/PhD	MD/PhD
	No Award	R01 Award	No Award	R01 Award	No Award	R01 Award
Ratio of Single Authored/Total Publications	0.72	0.09	0.09	0.10	0.08	0.09
	[0.18]	[0.20]	[0.19]	[0.20]	[0.18]	[0.19]
Priority Score	241.03	164.12	244.7	166.94	240.54	166.7
	[48.56]	[24.94]	[51.15]	[25.75]	[49.25]	[25.69]

Notes: s indicates suppressed because observations < 50. n/a indicates variable not applicable/available.
Source: NIH IMPAC II, NSF Survey of Doctorate Recipients, and AAMC Faculty Roster.

Supplemental Digital Appendix 4

Probit Models of Effect of Male Race/Ethnicity on National Institutes of Health R01 Type 1 Award Probability, Fiscal Years 2000-2006.

PhD Sample	Model 1	Model 2	Model 3	Model 4	Model 5
Asian	-0.059***	-0.059***	-0.057***	-0.048***	-0.049***
	[0.007]	[0.007]	[0.007]	[0.007]	[0.007]
Black	-0.145***	-0.146***	-0.138***	-0.125***	-0.120***
	[0.014]	[0.014]	[0.014]	[0.015]	[0.015]
Hispanic	-0.023	-0.025	-0.025	-0.017	-0.016
	[0.014]	[0.014]	[0.014]	[0.013]	[0.013]
Observations	47,695	47,695	47,695	47,695	47,695
MD Sample					
Asian	-0.062***	-0.048***	-0.042***	-0.019	-0.021*
	[0.010]	[0.011]	[0.011]	[0.011]	[0.011]
Black	-0.104***	-0.105***	-0.086**	-0.085**	-0.074**
	[0.025]	[0.025]	[0.027]	[0.026]	[0.027]
Hispanic	-0.015	-0.015	-0.007	0.008	0.010
	[0.017]	[0.017]	[0.017]	[0.018]	[0.018]
Observations	24,915	24,915	24,915	24,913	24,913

Models include controls for demographic characteristics, education and training, employer characteristics, NIH experience, and researcher productivity. Estimates are marginal effects that report the change in probability of receiving an R01 award given an infinitesimal change in continuous independent variables. Marginal effects on dummy variables report change in probability of receiving an R01 award given a change in the dummy from 0 to 1. Multiply marginal effects by 100 to obtain percentage points. Robust standard errors clustered on individual applicant are given in brackets. Sample sizes decrease when observations were dropped because they predict outcomes perfectly. Source: NIH IMPAC II, NSF Survey of Doctorate Recipients, and AAMC Faculty Roster. * P < .05. ** P < .01. P < .001.

Supplemental Digital Appendix 5

The Probability by Gender, Race/Ethnicity, and Degree of an Investigator Under the Age of 50 Submitting Only One, Unfunded Proposal for an R01 Grant from the National Institutes of Health