

Pioneer Award Gender Discussion

Council of Councils
January 26, 2018

Elizabeth L. Wilder, PhD
Director, Office of Strategic Coordination



FY 2017 PIONEER AWARDS

Only 1 of the 12 Awardees is a woman.

What factors contributed to this outcome?

How can we ensure gender equity in this program?

What was the expected number of female awardees?

If we expect the awardee pool to mirror the applicant pool, 22% of the awardees would be female.

$$22\% \times 12 = 2.64$$

Do we have a problem in the selection process?

Overview of Review Process for Pioneer Awards

Overall review process has been the same since 2005.

Review locus transferred to CSR from NIGMS in 2013.

Phase I (electronic review)

Electronic review of all Applications –
Scores and comments provided to Phase II panel

Phase II (interview panel)

Informed by Phase 1 results and additional assessment of applications, Phase II panel identifies finalists for interview

Phase II panel Interviews
Finalists identified in above step.
Provides final overall priority scores.

- Council concurrence
- Pay list generated

Awardees notified

What has this process yielded since it began in 2005?

Percent women at each step of review

Pioneer	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total
Applicants	30%	25	22	25	24	23	18	25	20	21	23	24	22	23
Finalists	45	28	40	28	40	25	16	30	16	22	25	23	7	24
Awardees	46	31	33	25	39	18	15	40	25	50	23	33	8	28
NIH RPG Awardees	25%	26%	26%	29%	29%	29%	30%	30%	31%	31%	31%	32%	-	-

What happened in 2017?
Was there anything different?

We reviewed:

- Language in FOA
- Review Criteria
- Reviewer Instructions
- Percentage of women on Pioneer Award interview panel

FY	% women on interview panel
2012	33
2013	36
2014	40
2015	36
2016	22
2017	40

(In 2016, two panelists dropped out late in the review process.)

We noticed no difference in the 2017 review process.

We conclude that there is no systematic bias introduced by the Pioneer review process.

We conclude that the 2017 review outcome is a statistical fluctuation but that we should continue to monitor diversity of applicants, finalists, and awardees in future years to confirm that 2017 was an anomaly.

A more persistent issue is the low number of women in the applicant pool compared to the NIH-wide RPG awardee pool (23% vs 32%).

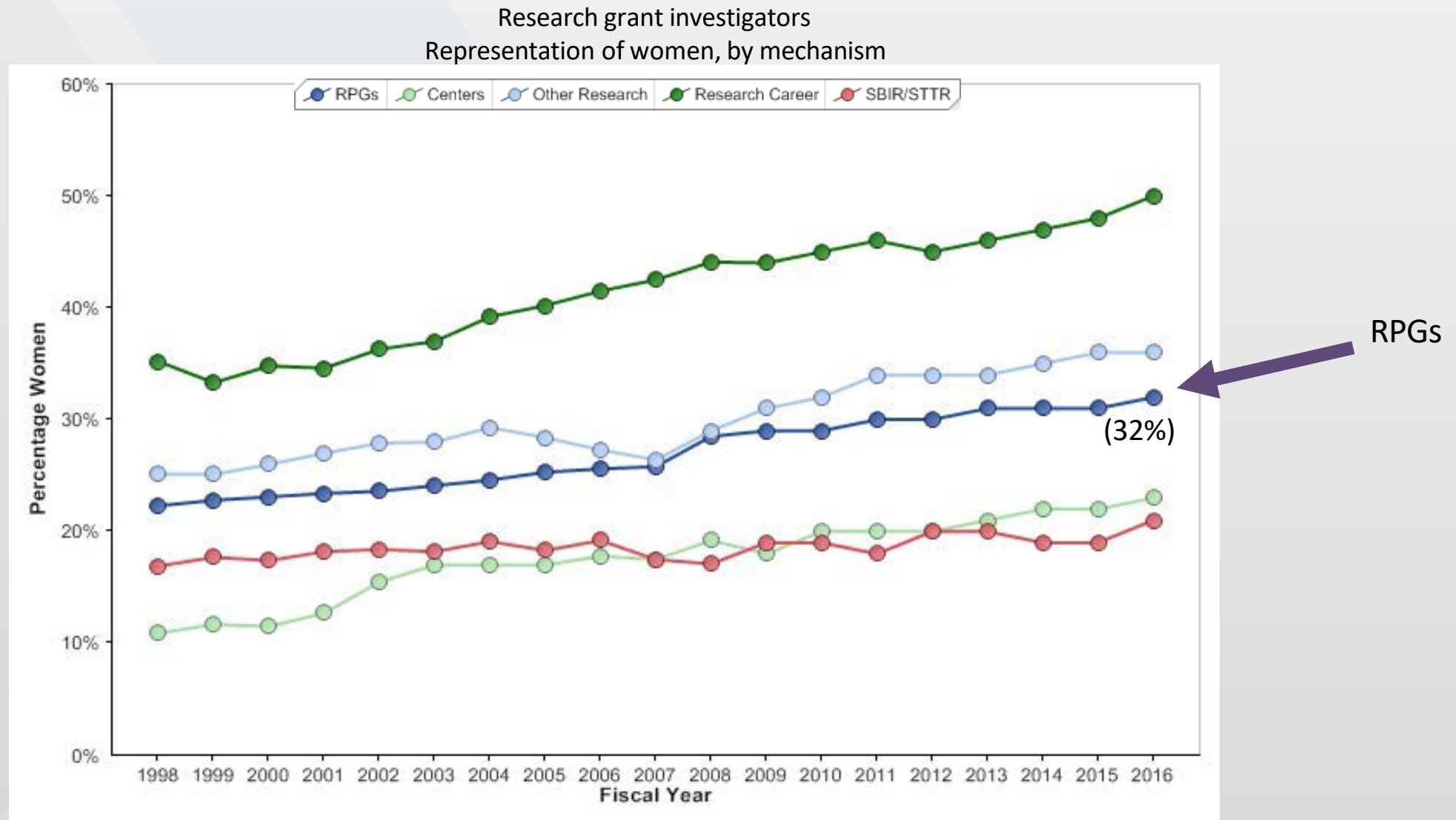
What is the basis for this?

Some suggested reasons:

- Women may not self-identify as pursuing high risk/innovative research as frequently as men may be less likely to apply for a Pioneer Award.
- Women may not be encouraged to submit applications to prestigious award programs as frequently as men so may be less likely to apply for a Pioneer Award.

BUT WHAT NUMBERS WOULD WE EXPECT?

If Pioneer Applicants are expected to mirror the NIH Research Project Grant demographics, we would expect 32%



From NIH RePORT Data Book

However: Given nature of Pioneer Award, most applicants are Associate or Full Professors:

For years 2013 – 2017, applicant faculty rank was determined by “position title” given in application

Faculty rank	Number	% of total
Full	603	68.2
Associate	228	25.8
Assistant	53	6.0

What is the gender distribution of full professors or full/associate professors in academia?

If we consider all 4-year educational institutions:

Characteristics of doctoral scientists in biological/agricultural/environmental/life/medical sciences at 4-year educational institutions by faculty rank and gender: 2013

Academic Position	Women	Men	% Women
Assistant Professor	7,800	9,300	45.6
Associate Professor	5,300	10,800	32.9
Full Professor	6,900	19,300	26.3
Total	34,000	54,800	38.3

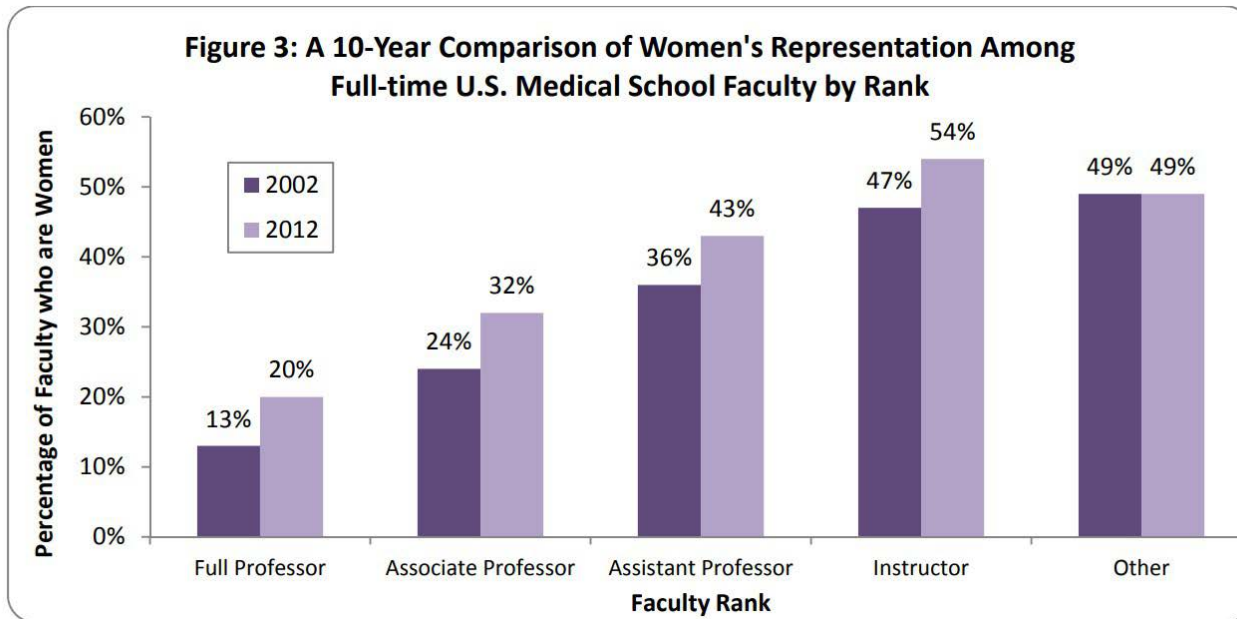
Four-year educational institutions include 4-year colleges or universities, medical schools (including university-affiliated hospitals or medical centers), and university-affiliated research institutes.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Doctorate Recipients, 2013.



We might expect closer to 26% of the Pioneer applicants to be women

If we consider U.S. Medical Schools:



Women in U.S. Academic Medicine and Science: Statistics and Benchmarking Report 2011-2012, AAMC

Faculty rank	% women
Full professor	17.3
Associate professor	30.3
Assistant professor	41.5

Data from Jena A, Khullar D, Ho O, Olenski, AR, Blumenthal DM. Sex Differences in Academic Rank in US Medical Schools in 2014. *JAMA* 2015 314: 1149-1158.

➡ We might expect closer to 20% of the Pioneer applicants to be women

Or if we consider highest ranking research institutions:

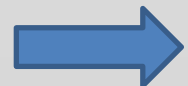
[Proc Natl Acad Sci U S A.](#) 2014 Jul 15;111(28):10107-12.

Elite male faculty in the life sciences employ fewer women.

[Sheltzer JM](#)¹, [Smith JC](#)².

Category	Male	Women	% women
Faculty	1,557	505	24.4
Full professor	1,023	276	21.2
Associate professor	269	121	31.0
Assistant professor	265	108	28.9

Faculty employed in 39 departments at 24 of the highest-ranked research institutions in the United States , focusing on departments that study molecular biology, cell biology, biochemistry, and/or genetics.



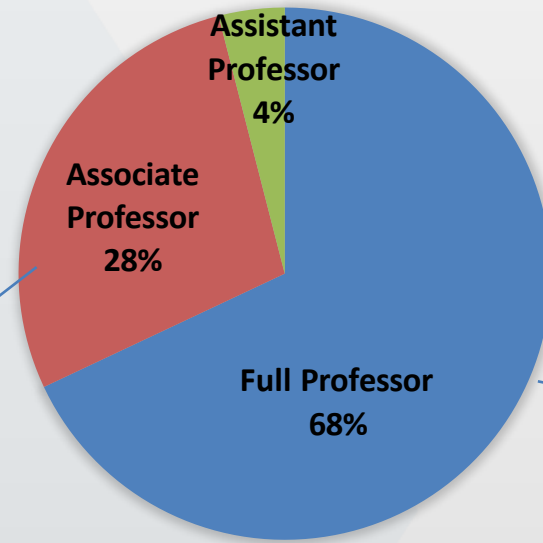
We might expect closer to 21% of the Pioneer applicants to be women

Pioneer applications tend to originate from highly funded research institutions

Top 19 applicant institutions for Pioneer Award 2013 – 2017

Institution	# apps	% apps
STANFORD UNIVERSITY	78	7.5
UNIVERSITY OF CALIFORNIA, SAN FRANCISCO	45	4.3
UNIVERSITY OF CALIFORNIA SAN DIEGO	35	3.4
UNIVERSITY OF CALIFORNIA LOS ANGELES	32	3.1
JOHNS HOPKINS UNIVERSITY	32	3.1
UNIVERSITY OF PENNSYLVANIA	23	2.2
COLUMBIA UNIVERSITY HEALTH SCIENCES	22	2.1
MASSACHUSETTS GENERAL HOSPITAL	22	2.1
YALE UNIVERSITY	21	2.0
UNIVERSITY OF MICHIGAN	20	1.9
HARVARD UNIVERSITY	20	1.9
BRIGHAM AND WOMEN'S HOSPITAL	19	1.8
MASSACHUSETTS INSTITUTE OF TECHNOLOGY	17	1.6
ROCKEFELLER UNIVERSITY	15	1.4
UT SOUTHWESTERN MEDICAL CENTER	13	1.2
HARVARD MEDICAL SCHOOL	13	1.2
UNIVERSITY OF MINNESOTA	13	1.2
PRINCETON UNIVERSITY	12	1.1
UNIVERSITY OF WASHINGTON	12	1.1
Total	464	44.4

DISTRIBUTION OF FACULTY BY RANK



~30-33% of
associate professors
are women

~17 – 26% of full
professors are
women

~22% of Pioneer Award
applicants are women

Conclusions:

- We do not see a systematic problem with the Pioneer Award review process.
 - Overall, the awardee demographics mirror the applicant demographics fairly closely.
 - However, NIH will continue to monitor outcomes to detect bias.
- The representation of women in the Pioneer applicant pool mirrors their representation among senior faculty at major research institutions.
 - The low representation of women among senior research faculty remains a problem.
- Additional analyses are required to determine whether other factors contribute to skewed representation of women in HRHR research more generally.

Discussion points:

- As the Advisory Council charged with ensuring that the Pioneer review process is fair and unbiased, are you confident in the existing process? What additional analyses might be needed?
- What can we, both NIH and institutions, do to equalize gender representation?