

Supporting Information for “Gender Diversity Among Tenured and Tenure-Track Geoscience Faculty”

Meghana Ranganathan¹, Ellen Lalk^{1,2}, Lyssa Freese¹, Mara Freilich^{1,2}, Julia Wilcots¹, Margaret Duffy¹, Rohini Shivamoggi¹

¹Department of Earth, Atmospheric and Planetary Sciences, Massachusetts Institute of Technology, Cambridge, MA, USA

²Woods Hole Oceanographic Institution, Woods Hole, MA, USA

Contents of this file

1. Text S1
2. Figure S1
3. Table S1
4. Table S2
5. Table S3

Introduction

Text S1: Institutional Factors. We consider the effect that gender proportions at one level of the academic hierarchy may have on the gender proportions of another level. We compare the gender composition of the faculty during the 2019-2020 academic year to the gender composition of graduate students obtained from the NSF graduate student survey for 2018 and 2019. At a given institution, there is a weak correlation between the percent

of faculty who are female and the percent of graduate students who are female (Figure S1). While no causative statements can be made based on this correlation, it appears that institutions with a higher percentage of female professors are not more likely to have a higher percentage of female graduate students at an instant in time. This may be either because the assumption that diversity attracts diversity is not always applicable or may be because the typical percentages of female faculty are not high enough to attract more female students.

For nearly every institution we considered, there are more women at the graduate student level than at the faculty level. The percentage of graduate students ranges from $\sim 30\%$ to $\sim 60\%$, while the percentage of female professors ranges from $\sim 0\%$ to $\sim 40\%$. The proportions of female faculty do not differ significantly between private and public institutions.

There are also more women graduate students at a given institution than women postdocs. Additionally, there are more women postdocs than women faculty at any given institution on average. This suggests a systematic attrition of women at each stage of the academic process (from graduate student to postdoctoral associate to tenure-track faculty member). There is a strong correlation between the number of women postdocs and the number of women graduate students at a given institution. This may result from graduate students becoming postdocs at the same institution or with other institutional factors related to support for early career women.

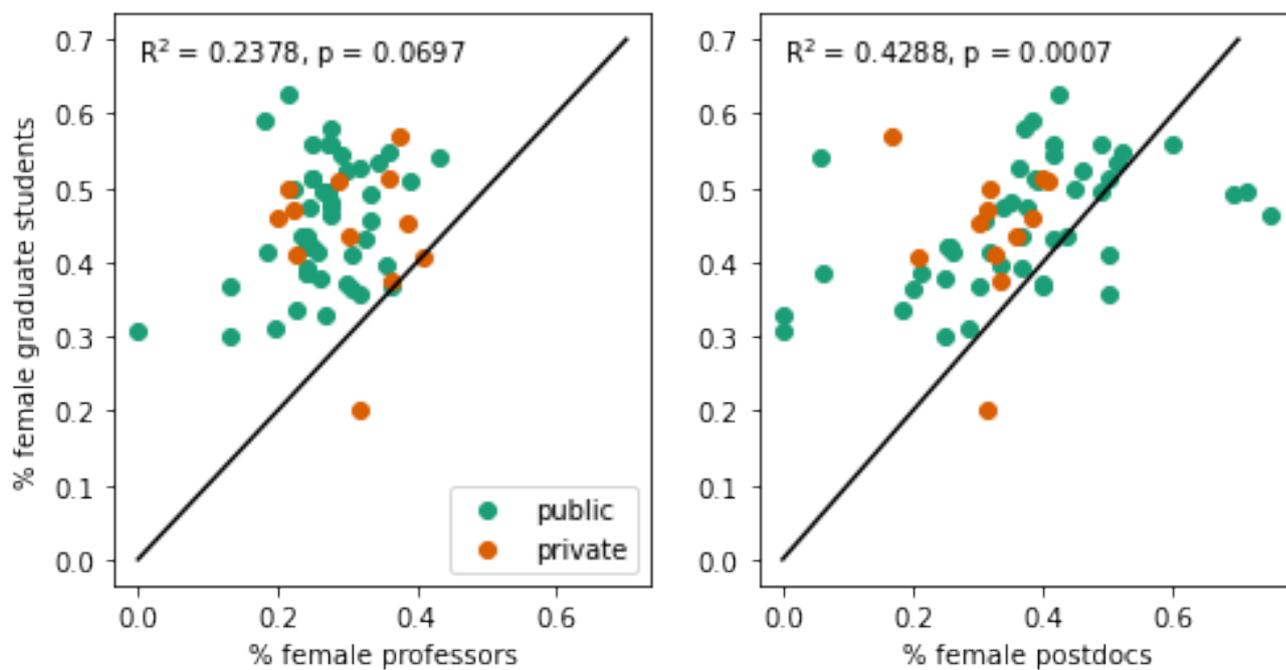


Figure S1. Correlations between academic ranks Comparison of percent female faculty in 2020 with percent female graduate students in 2017 and 2018 from the graduate student survey at each institution we consider. The color of the data point shows whether an institution is public or private.

Table S1. Universities and Departments Studied

University	Department
Arizona State University	School of Earth and Space Exploration
Brown University	Department of Earth, Environmental, and Planetary Sciences
California Institute of Technology	Division of Geological and Planetary Sciences
College of William & Mary	Department of Geology
Colorado School of Mines	Department of Geology and Geological Engineering
	Department of Geophysics
Colorado State University	Department of Atmospheric Science
	Department of Geosciences
Columbia University	Department of Earth and Environmental Sciences
Cornell University	Department of Earth and Atmospheric Sciences
Florida State University	Department of Earth, Ocean, and Atmospheric Science
Georgia Institute of Technology	School of Earth and Atmospheric Sciences
Harvard University	Department of Earth and Planetary Sciences
Indiana University, Bloomington	Department of Earth and Atmospheric Sciences
Johns Hopkins University	Department of Earth and Planetary Sciences
Louisiana State University	Department of Geology and Geophysics
	Department of Oceanography & Coastal Sciences
Massachusetts Institute of Technology	Department of Earth, Atmospheric and Planetary Sciences
North Carolina State University	Department of Marine, Earth, and Atmospheric Sciences
Ohio State University	School of Earth Sciences
	Department of Geography
Oregon State University	College of Earth, Ocean, and Atmospheric Sciences
Pennsylvania State University	Department of Meteorology and Atmospheric Science
	Department of Geosciences
Princeton University	Program in Atmospheric and Oceanic Sciences
	Department of Geosciences
Purdue University	Department of Earth, Atmospheric, and Planetary Sciences
Rice University	Department of Earth, Environmental and Planetary Sciences
Rutgers University	Department of Earth and Planetary Sciences
Stanford University	Department of Earth System Science
	Department of Geological Sciences
	Department of Geophysics
Stony Brook University	Department of Geosciences
	School of Marine and Atmospheric Sciences
Texas A&M University	Department of Atmospheric Sciences
	Department of Geography
	Department of Geology and Geophysics
	Department of Oceanography

Table S1. Universities and Departments Studied

University	Department
University of Alaska, Fairbanks	Department of Geosciences
University of Albany, SUNY	Department of Atmospheric and Environmental Sciences
University of Arizona	Department of Geosciences
University of California, Berkeley	Department of Hydrology and Atmospheric Sciences
University of California, Davis	Department of Earth and Planetary Science
	Department Of Earth And Planetary Sciences
	Department of Land, Air, Water Resources
University of California, Los Angeles	Department of Atmospheric and Oceanic Sciences
University of California, Santa Barbara	Department of Earth, Planetary, and Space Sciences
	Department of Earth Science
	Department of Geography
University of California, Santa Cruz	Earth and Planetary Sciences
University of California, San Diego	Scripps Institution of Oceanography
University of Chicago	Department of the Geophysical Sciences
University of Colorado, Boulder	Department of Atmospheric and Oceanic Sciences
	Department of Geological Sciences
University of Delaware	Department of Earth Sciences
	Department of Geography and Spatial Sciences
	School of Marine Science & Policy
University of Hawaii, Manoa	Department of Earth Sciences
	Department of Oceanography
University of Houston	Department of Earth and Atmospheric Sciences
University of Illinois, Urbana-Champaign	Department of Atmospheric Science
	Department of Geography and Geographic Information Science
	Department of Geology
University of Iowa	Department of Earth and Environmental Sciences
University of Kansas	Department of Geography & Atmospheric Science
	Department of Geology
University of Maryland, College Park	Department of Atmospheric and Oceanic Science
	Department of Geology
University of Miami	Rosenstiel School of Marine and Atmospheric Science
University of Michigan	Department of Climate and Space Sciences and Engineering
	Department of Earth and Environmental Sciences
University of Minnesota, Twin Cities	Department of Earth and Environmental Sciences
	Department of Soil, Water, and Climate
University of Nevada, Reno	Department of Geography
University of North Carolina, Chapel Hill	Department of Geological Sciences and Engineering
	Department of Geography
	Department of Geological Sciences
University of Oklahoma, Norman	School of Geosciences
	School of Meteorology
University of Rhode Island	Department of Geosciences
	Graduate School of Oceanography

Table S1. Universities and Departments Studied

University	Department
University of Southern California	Department of Earth Sciences
University of South Carolina	School of Earth, Ocean, and Environment
University of South Florida	School of Geosciences
University of Texas, Austin	Jackson School of Geosciences
University of Texas, Dallas	Department of Geosciences
University of Utah	Department of Atmospheric Sciences
	Department of Geology and Geophysics
University of Washington	Department of Atmospheric Sciences
	Department of Earth and Space Sciences
	Department of Oceanography
University of Wisconsin, Madison	Department of Atmospheric and Oceanic Sciences
	Department of Geosciences University of Wyoming
	Department of Geology and Geophysics
Virginia Polytechnic Institute and State University	Department of Geography
	Department of Geosciences
Yale University	Department of Earth and Planetary Sciences

Table S2. Percentage of Women by Rank and Subdiscipline

Subdiscipline	Assistant Professor	Associate Professor	Full Professor
Geobiology	54	50	27
Biogeochemistry	59	45	25
Geochemistry	58	40	22
Glaciology	40	42	20
Marine Geology	0	66	27
Geology	46	30	19
Geophysics	37	30	18
Geomorphology	33	31	11
<i>Total Earth Science</i>	<i>51</i>	<i>38</i>	<i>21</i>
Paleoceanography	71	12	38
Chemical Oceanography	55	45	25
Biological Oceanography	48	55	26
Physical Oceanography	37	29	15
Marine Biology	75	0	22
<i>Total Ocean Science</i>	<i>50</i>	<i>40</i>	<i>22</i>
Atmospheric Chemistry	25	41	22
Atmospheric Dynamics	40	30	14
<i>Total Atmospheric Science</i>	<i>38</i>	<i>33</i>	<i>17</i>
<i>Planetary Science</i>	<i>46</i>	<i>40</i>	<i>17</i>

Table S3. Percentage of Women by Rank and Subdiscipline for Subdisciplines Not Presented

in the Main Text

Subdiscipline (# Faculty)	Assistant Professor	Associate Professor	Full Professor
Climate Dynamics (172)	48	27	13
Ecology (191)	52	51	25
Education (15)	100	100	10
GIS/Engineering (61)	37	30	14
Hydrology (167)	48	31	20
Impacts (108)	51	37	30
Land Surface Processes (12)	33	0	25
Paleobiology (20)	33	33	27
Paleontology (51)	60	12	13
Resource Management (34)	71	27	25
Sustainability (35)	50	14	25