Comment

Supplementary information to:

Women from some minorities get too few talks

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Supplementary Materials

Women from under-represented minorities are given too few talks at world's largest earth science conference

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Table of Contents

1. Materials and Methods

The analysis plan and hypotheses were pre-registered at the Open Science Framework: https://osf.io/eqwj2/

The American Geophysical Union (AGU) is the world's largest geoscience conference with over 22,000 abstract submissions each year. Since 2013, AGU has collected demographic data from conference participants (authors and primary conveners) including gender, year of birth, race/ethnicity (for U.S.-based individuals), and country.

To protect membership privacy, the AGU membership database is not publicly available. The abstract database without demographic information is publicly available at https://meetings.agu.org/abstract_db/. Our analyses are based on the 2014-2017 AGU abstract database and this represents those AGU members that are active in research.

1a. AGU Fall Meeting Organization

Topical sessions at the AGU Fall Meeting are self-organized by a group of conveners within a given Section/Focus Group. Section and Focus Groups are a collection of members with a particular interest such as atmospheric sciences, volcanology, or space physics.

The primary convener and co-convener(s) may invite authors (up to four in 2014 and 2015, up to two in 2016 and 2017) to submit abstracts. We call these Invited Authors. At the time of submission, authors request "Assigned by Program Committee (Oral or Poster)" or "Poster Only." The author that submits an abstract (invited or otherwise) we call the First Author.

Based on the number of submissions, a topical session is scheduled as oral and/or poster presentations. The primary convener and co-convener(s) allocate the oral and poster presentations for the authors within their topical sessions.

1b. Variables

For these analyses, the data was accessed in May 2018.

Our variables are:

1. **Gender:** Male, Female
2. **Ethnicity:** Underrepresented Minorities, White, Asian American, Other
3. **Career Stage:** Student, Early Career, Mid-Career, Experienced, and Retired

AGU members are asked to self-identify their gender and race/ethnicity (SI Figure 1). For gender, members may choose male, female, or prefer not to answer. Prefer not to answer was excluded from our gender analyses as it represents a small portion of the data (<1%). Here we report the historical AGU demographic categories for race and ethnicity. The categories used to collect AGU demographic information are under review at the date of this publication. For race/ethnicity, U.S.-based members may choose *African American, Asian American, Caucasian, Hispanic/Latino*, *Native American*, *Pacific Islander*, *Other* or *Prefer not to Answer*. These categories were informed by the US Census Categories for **race**[1] (https://www.census.gov/topics/population/race/about.html)

> *White* – A person having origins in any of the original peoples of Europe, the Middle East, or North Africa.
> *Black or African American* – A person having origins in any of the Black racial groups of Africa.
> *American Indian or Alaska Native* – A person having origins in any of the original peoples of North and South America (including Central America) and who maintains tribal affiliation or community attachment.
> *Asian* – A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam.
> *Native Hawaiian or Other Pacific Islander* – A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

and **ethnicity** https://www.census.gov/mso/www/training/pdf/race-ethnicity-onepager.pdf[2]

> Ethnicity determines whether a person is of Hispanic origin or not. For this reason, ethnicity is broken out in two categories, Hispanic or Latino and Not Hispanic or Latino. Hispanics may report as any race.

Throughout the text and supplemental we refer to Caucasian as White. For members that self-identify as *Native American*, tribal affiliation is not investigated or documented. *Other* may refer to individuals that are multiracial, do not identify with the provided ethnicity/race categories, international scholars that are working at U.S.-based institutions that do not identify with the provided ethnicity/race categories, and/or other reasons.

African American, *Hispanic/Latino*, *Native American*, and *Pacific Islander* were grouped as Underrepresented Minorities (URM). *Asian Americans* and *Whites* were grouped as Non-Underrepresented Minorities (Non-URM). The National Science Foundation does not consider Asian Americans an underrepresented minority because given their proportion in the population, they are well-represented in many STEM fields. Below we explore ***Asian Americans as a Separate Group***.

Career Stage for First Author is self-identified as Student (and verified by an academic advisor) or calculated based on number of years since highest degree obtained: Early Career (0 to <10 years), Mid-Career (10 to <25 years), Experienced (>25 years). This career stage calculation does not consider career breaks. Retired members were excluded from our analyses due to relatively low numbers.

2. Statistics

Personally Identifying Information: To avoid personal identifying information, if a category has fewer than 50 abstracts in a category for the First Author Poster Only/First Author Invite/First Author Oral hypotheses results are not presented for that subgroup. Additionally, some results are shown as approximated. This precludes some of the interactions (e.g., whether URM women request poster presentations at a higher rate than other groups across their career stages). These conservative thresholds were chosen by looking at previous literature on protecting identifiable participants, and by considering that individual Primary Conveners sometimes handle many abstracts.

FA = First Author, PC = Primary Convener, URM = Underrepresented Minority

Each analysis below will be completed separately for the three outcomes: (1) Invited by Conveners, (2) Abstract Submission Option, and (3) Presentation Assigned by the Conveners. These outcomes are collectively referred to below as having worse/better outcomes.

URM and Gender Hypotheses (estimated # of contrast tests for each of the three outcomes)

1. URM FA have worse outcomes than non-URM FA. (1)
2. URM FA women have worse outcomes than:
    a. URM FA men (1)
    b. non-URM FA women (1)

We used chi-squared tests (χ^2) to test the *hypotheses* below. χ^2 is used throughout to determine whether there is significant difference between the expected and observed

frequencies. Because nearly the entire population of data is available, these inferential tests are not necessary to see the outcomes of these AGU authors for these time periods.

The symbols used below are μ (mean), σ (standard deviation) and *n* (number of individuals). Results are reported as: χ_2 (degrees of freedom, sample size) = the χ_2 value, and the associated *p*-value. The results are plotted in SI Figure 2.

2a. Hypotheses
Some results are shown as approximated to avoid potentially personal identifying information.

1. *URM are invited to submit abstracts at a lower rate than non-URM.*
$\chi_2(1, 38767) = 87.5$, $p < 0.001$
$\mu_{URM} = 7.9\%$, $\sigma = 0.27$, $n_{URM} = 2981$
$\mu_{Non\text{-}URM} = 14.0\%$, $\sigma = 0.35$, $n_{Non\text{-}URM} = 35787$

Total Ethnicity	URM	Non-URM	Total
Not Invited	2746	30784	33530
Invited	235	5003	5238
Total	2981	35787	38768

2. *URM are invited to submit abstracts at a lower rate than non-URM at all career stages.*
URM are invited to present at a lower rate in the Early Career stage.

Data for **Student** career stage not provided due to personally identifying information.

Early Career - results are shown as approximated
$\chi_2(1, 12559) = 19.6$, $p < 0.001$
$\mu_{URM} = 7.9\%$, $\sigma = 0.08$, $n_{URM} = 1050$
$\mu_{Non\text{-}URM} = 12.5\%$, $\sigma = 0.13$, $n_{Non\text{-}URM} = 11510$

Early Career	URM	Non-URM	Total
Not Invited	970	10070	11040
Invited	80	1440	1520
Total	1050	11510	12560

Mid-Career - results are shown as approximated
$\chi_2(1, 9414) = 0.40$, $p = 0.529$
$\mu_{URM} = 19.9\%$, $\sigma = 0.20$, $n_{URM} = 470$
$\mu_{Non\text{-}URM} = 21.1\%$, $\sigma = 0.21$, $n_{Non\text{-}URM} = 8950$

Mid-Career	URM	Non-URM	Total
Not Invited	380	7060	7440
Invited	90	1890	1980
Total	470	8950	9420

Data for **Experienced** career stage not provided due to personally identifying information.

3. *URM are less likely to be assigned an oral presentation than non-URM after requesting "Assigned by Program Committee (Oral or Poster)."*
$\chi_2(1, 29122) = 45.4$, $p < 0.001$
$\mu_{URM} = 42.9\%$, $\sigma = 0.50$, $n_{URM} = 1926$
$\mu_{Non\text{-}URM} = 50.8\%$, $\sigma = 0.50$, $n_{Non\text{-}URM} = 27197$

Total Ethnicity	URM	Non-URM	Total
Assigned Poster	1100	13373	14473
Assigned Oral	826	13824	14650
Total	1926	27197	29123

4. *URM are less likely to be assigned an oral presentation than non-URM at all career stages after requesting "Assigned by Program Committee (Oral or Poster)."*
URM are assigned oral presentations at a lower rate in the Early Career stage.

Student - results are shown as approximated
$\chi_2(1, 6142) = 0.96$, $p = 0.328$
$\mu_{URM} = 35\%$, $\sigma = 0.65$, $n_{URM} = 610$
$\mu_{Non\text{-}URM} = 37\%$, $\sigma = 0.63$, $n_{Non\text{-}URM} = 5540$

Student	URM	Non-URM	Total
Assigned Poster	400	3490	3890
Assigned Oral	210	2050	2260
Total	610	5540	6150

Early Career - results are shown as approximated
$\chi_2(1, 9917) = 16.1$, $p < 0.001$
$\mu_{URM} = 42.6\%$, $\sigma = 0.57$, $n_{URM} = 800$
$\mu_{Non\text{-}URM} = 50.0\%$, $\sigma = 0.50$, $n_{Non\text{-}URM} = 9110$

Early Career	URM	Non-URM	Total
Assigned Poster	460	4560	5020
Assigned Oral	340	4550	4890
Total	800	9110	9910

Mid-Career - results are shown as approximated
$\chi_2(1, 7866) = 3.6$, $p = 0.058$
$\mu_{URM} = 50.0\%$, $\sigma = 0.50$, $n_{URM} = 380$
$\mu_{Non\text{-}URM} = 55.0\%$, $\sigma = 0.45$, $n_{Non\text{-}URM} = 7490$

Mid-Career	URM	Non-URM	Total
Assigned Poster	190	3370	3560
Assigned Oral	190	4120	4310
Total	380	7490	7870

Data for **Experienced** career stage not provided due to personally identifying information.

5. *URM request poster presentations at a higher rate than non-URM.*
$\chi_2(1, 38757) = 191$, $p < 0.001$
$\mu_{URM} = 24.0\%$, $\sigma = 0.48$, $n_{URM} = 2979$
$\mu_{Non\text{-}URM} = 35.4\%$, $\sigma = 0.43$, $n_{Non\text{-}URM} = 35779$

Total Ethnicity	URM	Non-URM	Total
Assigned by Committee	1924	27189	29113
Opt for poster-only	1055	8590	9645
Total	2979	35779	38758

6. *URM request poster presentations at a higher rate than non-URM at all career stages.*
URM request poster-only presentations at a higher rate in the Student, Early Career and Experienced stages.

Student - results are shown as approximated
$\chi_2(1, 10746) = 55$, $p < 0.001$
$\mu_{URM} = 52\%$, $\sigma = 0.48$, $n_{URM} = 1280$
$\mu_{Non\text{-}URM} = 42\%$, $\sigma = 0.58$, $n_{Non\text{-}URM} = 9460$

Student	URM	Non-URM	Total
Assigned by Committee	610	5530	6140
Opt for poster-only	670	3930	4600
Total	1280	9460	10740

Early Career - results are shown as approximated
$\chi_2(1, 12555) = 4.2$, $p = 0.039$
$\mu_{URM} = 24\%$, $\sigma = 0.76$, $n_{URM} = 1050$
$\mu_{Non\text{-}URM} = 21\%$, $\sigma = 0.79$, $n_{Non\text{-}URM} = 11500$

Early Career	URM	Non-URM	Total
Assigned by Committee	800	9110	9910
Opt for poster-only	250	2390	2640
Total	1050	11500	12550

Mid-Career - results are shown as approximated
$\chi_2(1, 9412) = 4.9$, $p = 0.028$
$\mu_{URM} = 20\%$, $\sigma = 0.80$, $n_{URM} = 460$
$\mu_{Non\text{-}URM} = 16\%$, $\sigma = 0.84$, $n_{Non\text{-}URM} = 8940$

Mid-Career	URM	Non-URM	Total
Assigned by Committee	370	7490	7860
Opt for poster-only	90	1450	1540
Total	460	8940	9400

Data for **Experienced** career stage not provided due to personally identifying information.

7. *URM women are invited to submit abstracts at a lower rate than URM men.*
$\chi_2(1, 2976) = 5.4$, $p < 0.02$
$\mu_{\text{URM Women}} = 6.5\%$, $\sigma = 0.246$, $n_{\text{URM Women}} = 1188$
$\mu_{\text{URM Men}} = 8.8\%$, $\sigma = 0.28$, $n_{\text{URM Men}} = 1790$

	URM women	URM men	Total
Not Invited	1111	1632	2743
Invited	77	158	235
Total	1188	1790	2978

8. *URM women are less likely to be assigned an oral presentation than URM men.*
$\chi_2(1, 1922) = 0.50$, $p = 0.482$
$\mu_{\text{URM Women}} = 41.8\%$, $\sigma = 0.50$, $n_{\text{URM Women}} = 677$
$\mu_{\text{URM Men}} = 43.5\%$, $\sigma = 0.50$, $n_{\text{URM Men}} = 1247$

	URM women	URM men	Total
Assigned Poster	394	705	1099
Assigned Oral	283	542	825
Total	677	1247	1924

9. *URM women request poster presentations at a higher rate than URM men.*
$\chi_2(1, 2974) = 49.9$, $p < 0.001$
$\mu_{\text{URM Women}} = 43.0\%$, $\sigma = 0.50$, $n_{\text{URM Women}} = 1188$
$\mu_{\text{URM Men}} = 30.4\%$, $\sigma = 0.46$, $n_{\text{URM Men}} = 1788$

	URM women	URM men	Total
Assigned by Committee	677	1245	1922
Opt for poster-only	511	543	1054
Total	1188	1788	2976

10. *URM women are invited to submit abstracts at a lower rate than Non-URM women.*
$\chi_2(1, 13784) = 36.2$, $p < 0.001$
$\mu_{\text{URM Women}} = 6.5\%$, $\sigma = 0.246$, $n_{\text{URM Women}} = 1188$
$\mu_{\text{Non-URM Women}} = 12.4\%$, $\sigma = 0.33$, $n_{\text{Non-URM Women}} = 12598$

	URM women	non-URM women	Total
Not Invited	1111	11037	12148
Invited	77	1561	1638
Total	1188	12598	13786

11. *URM women are less likely to be assigned an oral presentation than Non-URM women.*
$\chi_2(1, 9769) = 13.9$, $p < 0.001$
$\mu_{\text{URM Women}} = 41.8\%$, $\sigma = 0.50$, $n_{\text{URM Women}} = 677$
$\mu_{\text{Non-URM Women}} = 49.2\%$, $\sigma = 0.50$, $n_{\text{Non-URM Women}} = 9094$

	URM women	non-URM women	Total
Assigned Poster	394	4617	5011
Assigned Oral	283	4477	4760
Total	677	9094	9771

12. *URM women request poster presentations at a higher rate than Non-URM women.*
$\chi_2(1, 13781) = 121$, $p < 0.001$
$\mu_{\text{URM Women}} = 43.0\%$, $\sigma = 0.50$, $n_{\text{URM Women}} = 1188$
$\mu_{\text{Non-URM Women}} = 27.8\%$, $\sigma = 0.45$, $n_{\text{Non-URM Women}} = 12595$

	URM women	non-URM women	Total
Assigned by Committee	677	9091	9768
Opt for poster-only	511	3504	4015
Total	1188	12595	13783

13. *URM women are invited to submit abstracts at a lower rate than Non-URM men.*
$\chi_2(1, 24375) = 64.4$, $p < 0.001$
$\mu_{\text{URM Women}} = 6.5\%$, $\sigma = 0.25$, $n_{\text{URM Women}} = 1188$
$\mu_{\text{Non-URM Men}} = 14.8\%$, $\sigma = 0.36$, $n_{\text{Non-URM Men}} = 20428$

	URM women	non-URM men	Total
Not Invited	1111	19747	20858
Invited	77	3442	3519
Total	1188	23189	24377

14. *URM women are less likely to be assigned an oral presentation than Non-URM men.*
$\chi_2(1, 18778) = 25.2$, $p < 0.001$
$\mu_{\text{URM Women}} = 41.8\%$, $\sigma = 0.50$, $n_{\text{URM Women}} = 677$
$\mu_{\text{Non-URM Men}} = 51.6\%$, $\sigma = 0.50$, $n_{\text{Non-URM Men}} = 18103$

	URM women	non-URM men	Total
Assigned Poster	394	8756	9150
Assigned Oral	283	9347	9630
Total	677	18103	18780

15. *URM women request poster presentations at a higher rate than Non-URM men.*
$\chi_2(1, 24370) = 284$, $p < 0.001$
$\mu_{\text{URM Women}} = 43.0\%$, $\sigma = 0.50$, $n_{\text{URM Women}} = 1188$
$\mu_{\text{Non-URM Men}} = 21.9\%$, $\sigma = 0.41$, $n_{\text{Non-URM Men}} = 23184$

	URM women	non-URM men	Total
Assigned by Committee	677	18098	18775
Opt for poster-only	511	5086	5597
Total	1188	23184	24372

2c. Asian Americans as a Separate Group

For the pre-registered analyses, Asian Americans were combined with Whites. The United States National Science Foundation does not categorize Asian Americans as underrepresented in STEM. However, if we consider the recent trends PhD completion in geoscience, Asian American representation is complex. Asian Americans represent 4% of PhD graduates since 2001 versus 6% of the population[3]. Furthermore, Asian Americans likely have different experiences than White in conference settings, for example in formal networking or other social interactions.

For completeness, we also examined Asian Americans separate from Whites here (see hypotheses below, Supplementary Figure 2 and 3). All analyses separating Asian Americans from Whites were exploratory (non-pre-registered). We performed statistical tests on URM, Asian Americans, and White as three separate groups. We did not perform statistical tests on URM, Asian Americans, and White by career stage. We present descriptive results for Asian Americans as a separate category as we do not always have the statistical power to detect differences, are at risk of non-pre-registered multiple comparisons generating false positives, and are avoiding potentially personally identifying information in small cells.

Overall, 1) Asian Americans were invited less often than White but more than URM [12%, 14%, and 8% respectively, Supplementary Figure 2, χ^2 (2, 38766) = 107, $p < 0.001$], 2) Asian Americans were assigned oral presentations less than White and more than URM [45%, 52%, and 43% respectively, Supplementary Figure 2, χ^2 (2, 29121) = 95, $p < 0.001$] and 3) Asian Americans opted for poster presentations at a lower rate than URM and White [21%, 35%, and 24% respectively, Supplementary Figure 2, χ^2 (2, 38756) = 210, $p < 0.001$]. These results highlight Asian Americans were at a disadvantage in comparison to their White peers and at an advantage in comparison to URM with respect to author invitations and assigned oral presentations.

When we consider URM, Asian Americans and White by career stage the results are more complex. When controlling for career stage, Asian Americans were invited less often than White. Asian Americans were invited more often than URM at the student and early career stages and less often at the mid-career and experienced career stages (SI Figure 3a). When controlling for career stage, Asian Americans were generally assigned oral presentations less often than URM and White (SI Figure 3b). An exception is the early career stage where URM were invited less than Asian Americans and White. Overall, Asian Americans had more oral presentations than URM because Asian Americans were concentrated in more senior roles that were more likely to be allocated an oral presentation, in comparison to the student career stage where URM were concentrated. Asian Americans opted for poster presentations less often than URM and Whites across most career stages (SI Figure 3c). These results highlight the unique experience Asian Americans have in the geoscience community.

All analyses separating Asian Americans from Whites were exploratory (non-pre-registered).

1. *URM are invited to submit abstracts at a lower rate than Asian Americans and Whites.*
$\chi^2(2, 38766) = 107.1$, $p < 0.001$
$\mu_{URM} = 7.9\%$, $\sigma = 0.27$, $n_{URM} = 2981$
$\mu_{AsianAmerican} = 11.7\%$, $\sigma = 0.32$, $n_{AsianAmerican} = 3984$
$\mu_{White} = 14.3\%$, $\sigma = 0.35$, $n_{White} = 31803$

Total Ethnicity	URM	Asian American	White	Total
Not Invited	2746	3517	27267	33530
Invited	235	467	4536	5238
Total	2981	3984	31803	38768

Data for **Student** career stage not provided due to personally identifying information.

Early Career - results are shown as approximated

Early Career	URM	Asian American	White	Total
Not Invited	970	1080	8990	11040
Invited	80	110	1330	1520
Total	1050	1190	10320	12560

Mid-Career - results are shown as approximated

Mid-Career	URM	Asian American	White	Total
Not Invited	380	1180	5880	7440
Invited	90	220	1660	1970
Total	470	1400	7540	9410

Data for **Experienced** career stage not provided due to personally identifying information.

2. URM are less likely to be assigned an oral presentation than Asian Americans and Whites after requesting "Assigned by Program Committee (Oral or Poster)."

$\chi_2(1, 29121) = 95$, $p < 0.001$
$\mu_{URM} = 42.9\%$, $\sigma = 0.50$, $n_{URM} = 1926$
$\mu_{AsianAmerican}$ 44.9= %, $\sigma = 0.50$, $n_{AsianAmerican} = 3140$
$\mu_{White} = 51.6\%$, $\sigma = 0.50$, $n_{White} = 24057$

Total Ethnicity	URM	Asian American	White	Total
Assigned Poster	1100	1730	11643	14473
Assigned Oral	826	1410	12414	14650
Total	1926	3140	24057	29123

Student - results are shown as approximated

Student	URM	Asian American	White	Total
Assigned Poster	400	330	3150	3880
Assigned Oral	210	150	1900	2260
Total	610	480	5050	6140

Early Career - results are shown as approximated

Early Career	URM	Asian American	White	Total
Assigned Poster	460	550	4010	5020
Assigned Oral	340	430	4130	4900
Total	800	980	8140	9920

Mid-Career - results are shown as approximated

Mid-Career	URM	Asian American	White	Total
Assigned Poster	190	620	2760	3570
Assigned Oral	190	570	3550	4310
Total	380	1190	6310	7880

Data for **Experienced** career stage not provided due to personally identifying information.

3. URM request poster presentations at a higher rate than Asian Americans and Whites.
$\chi_2(1, 38756) = 210$, $p < 0.001$
$\mu_{URM} = 35.4\%$, $\sigma = 0.48$, $n_{URM} = 2979$
$\mu_{AsianAmerican} = 21.1\ \%$, $\sigma = 0.41$, $n_{AsianAmerican} = 3984$
$\mu_{White} = 24.4\%$, $\sigma = 0.43$, $n_{White} = 31795$

Total Ethnicity	URM	Asian American	White	Total
Assigned by Committee	1924	3140	24049	29113
Opt for poster-only	1055	844	7746	9645
Total	2979	3984	31795	38758

Student - results are shown as approximated

Student	URM	Asian American	White	Total
Assigned by Committee	610	480	5050	6140
Opt for poster-only	670	330	3600	4600
Total	1280	810	8650	10740

Early Career - results are shown as approximated

Early Career	URM	Asian American	White	Total
Assigned by Committee	800	970	8140	9910
Opt for poster-only	250	220	2180	2650
Total	1050	1190	10320	12560

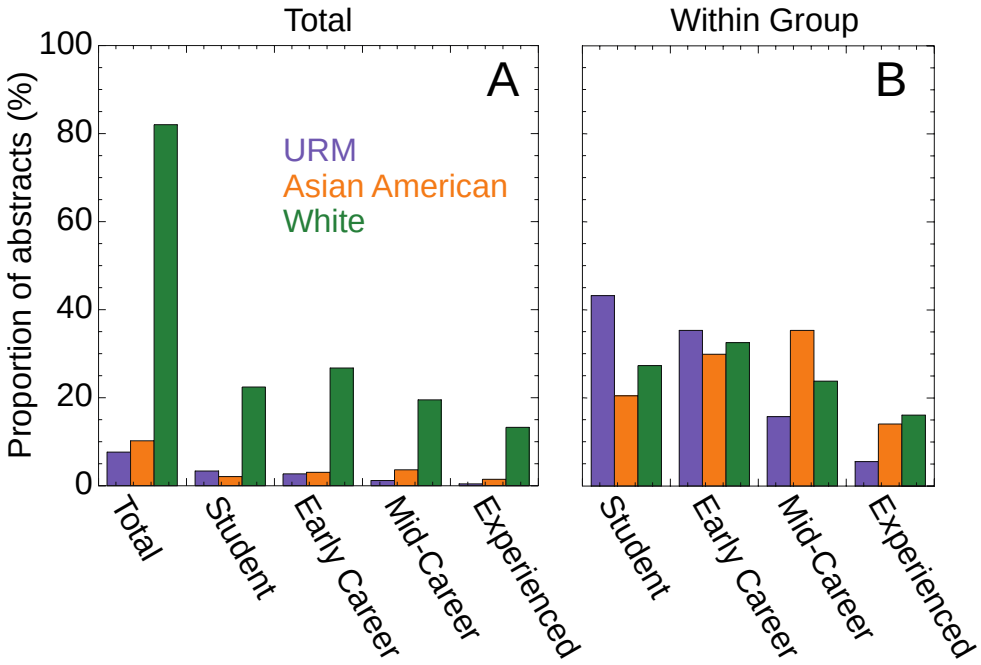
Mid-Career - results are shown as approximated

Mid-Career	URM	Asian American	White	Total
Assigned by Committee	370	1190	6310	7870
Opt for poster-only	90	220	1240	1550
Total	460	1410	7550	9420

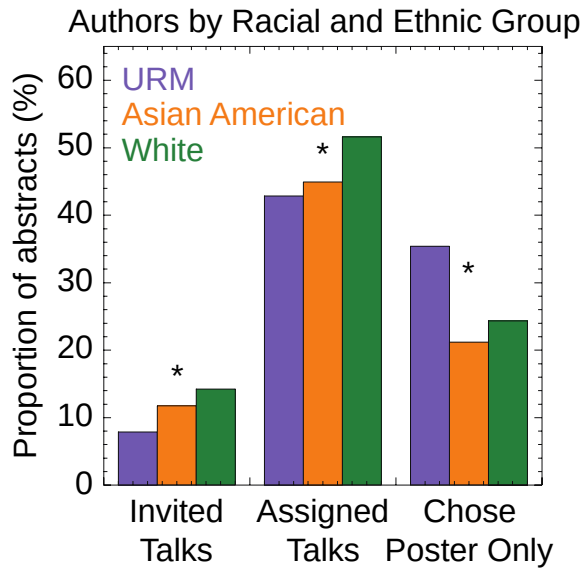
Data for **Experienced** career stage not provided due to personally identifying information.

3. Figures

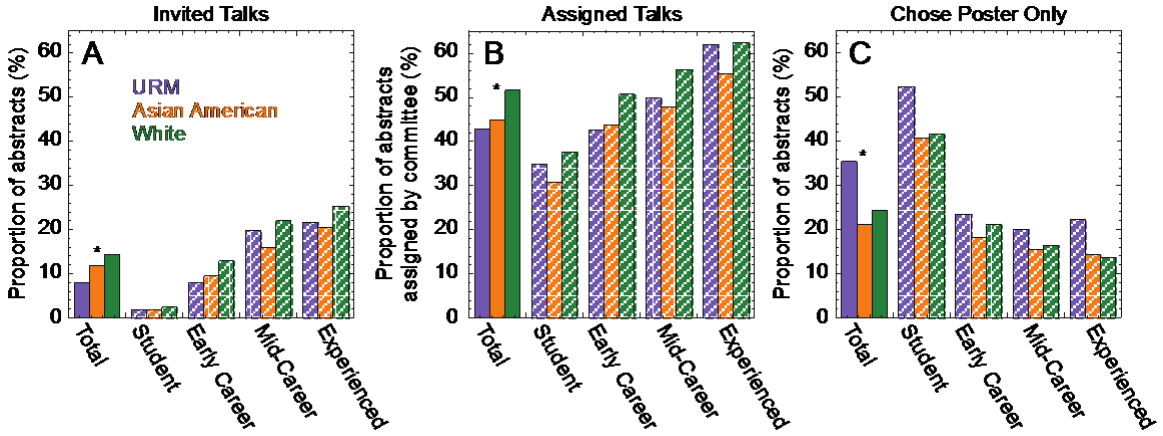
Supplementary Materials Figure 1. Demographics of the American Geophysical Union Fall Meeting authors based on career stage and ethnicity. Demographics as a proportion of all ethnicities (a) and within a given ethnicity (b). URM were concentrated in the student and early career stages. The modal Asian American author was mid-career stage while the modal White author was early career and the modal for URM was student and early career.



Supplementary Materials Figure 2. Author submissions to the American Geophysical Fall Meeting by ethnicity. In descending order, authors being separately invited, and authors being selected for oral presentations: Whites > Asian American > URM. In descending order of authors opting for posters, URM > Whites > Asian American. The "invited" and "opted for poster" values are shown as the proportion of total abstracts. The "assigned oral" is shown as the proportion of abstracts assigned by committee.



Supplementary Materials Figure 3. Author submissions to the American Geophysical Fall Meeting by race/ethnicity and career stage. When controlling for career stage, Asian Americans were invited less often than Whites. Asian Americans were invited more often than URM at the student and early career stages and less often at the mid-career and experienced career stages (a). When controlling for career stage, Asian Americans were assigned oral presentations less often than URM and Whites (b). In total, Asian Americans have more oral presentations than URM because they are concentrated in more senior roles where they are more likely to be allocated an oral presentation in comparison to students where URM are concentrated. When controlling for career stage, Asian Americans mostly opted for poster presentations less often than URM and Whites (c). The "invited" and "opted for poster" values are shown as the proportion of total abstracts. The "assigned oral" is shown as the proportion of abstracts assigned by committee. An asterisk indicates a significant result at $p < 0.05$ for the totals only. We did not perform statistical tests based on career stage (hashed bars) because we did not always have the statistical power to detect differences, are at risk of non-pre-registered multiple comparisons generating false positives, and are avoiding potentially personally identifying information in small cells.



4. Acknowledgements

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