# BASELINE ASSESSMENT OF DEMOGRAPHIC REPRESENTATION IN AAAS/*Science* FUNCTIONS

January 2021
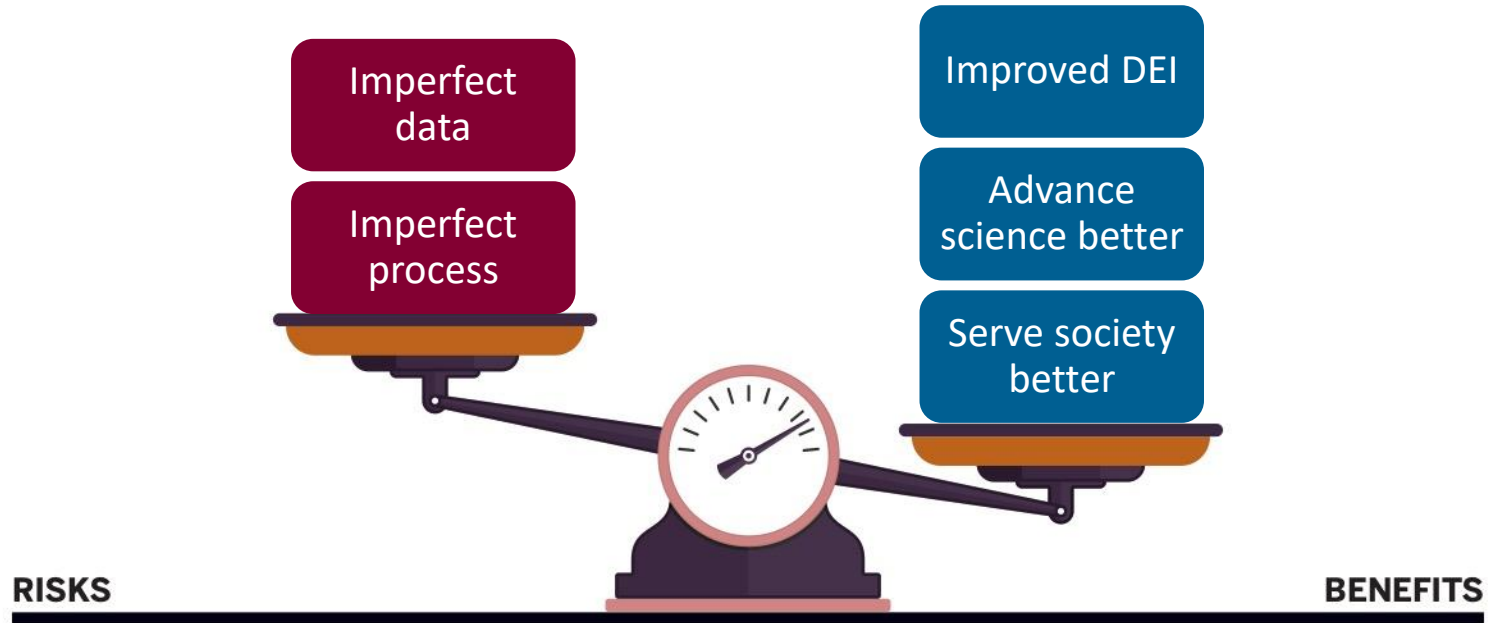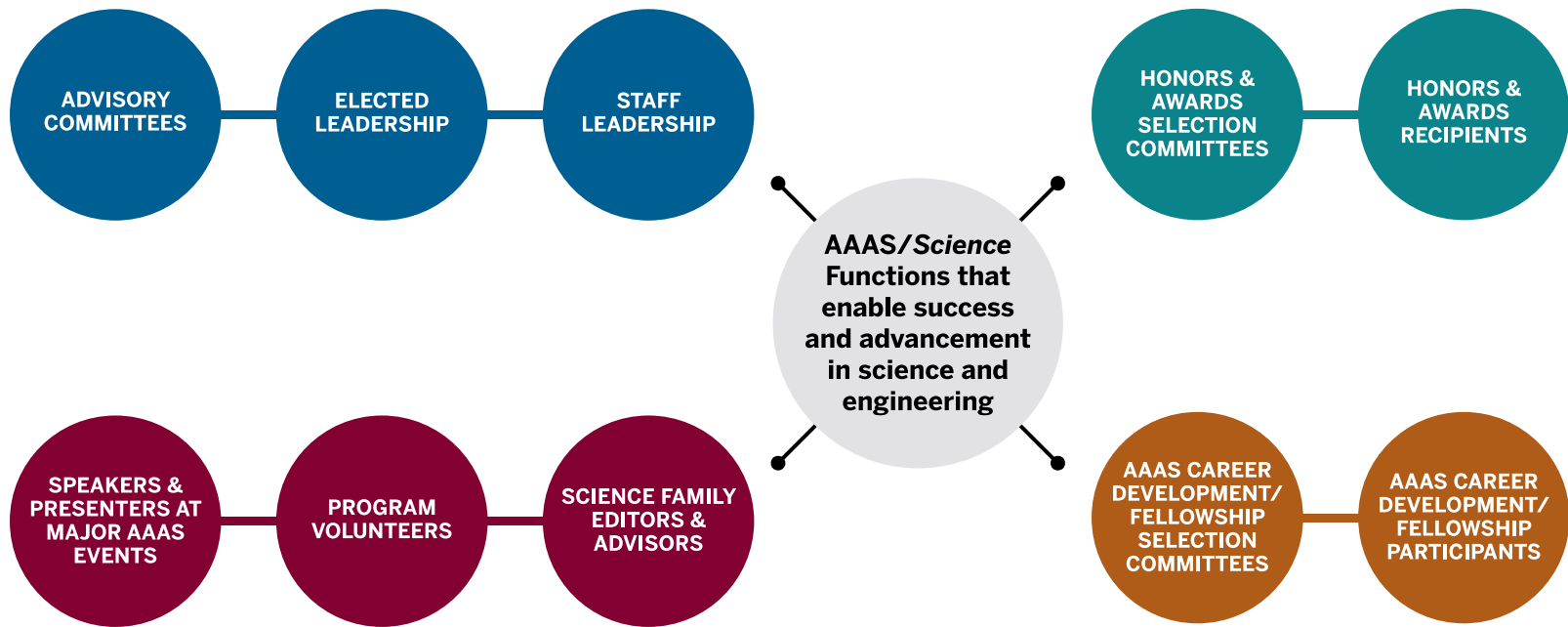
# Objective: Baseline Assessment

Examine the availability and quality of demographic data and present the current demographic representation for AAAS/*Science* Functions and *Science* Family Authors and Reviewers.

# The Benefits Outweigh the Risks



**RISKS**

Imperfect data

Imperfect process

**BENEFITS**

Improved DEI

Advance science better

Serve society better

# AAAS/*Science* Functions Included in This Report



**ADVISORY COMMITTEES** — **ELECTED LEADERSHIP** — **STAFF LEADERSHIP**

**HONORS & AWARDS SELECTION COMMITTEES** — **HONORS & AWARDS RECIPIENTS**

**AAAS/*Science* Functions that enable success and advancement in science and engineering**

**SPEAKERS & PRESENTERS AT MAJOR AAAS EVENTS** — **PROGRAM VOLUNTEERS** — **SCIENCE FAMILY EDITORS & ADVISORS**

**AAAS CAREER DEVELOPMENT/ FELLOWSHIP SELECTION COMMITTEES** — **AAAS CAREER DEVELOPMENT/ FELLOWSHIP PARTICIPANTS**

Notes: Based on Dr. Sudip Parikh's email and draft plan, 7/21/2020; refer to Appendix A for additional details.

# *Science* Family Authors and Reviewers
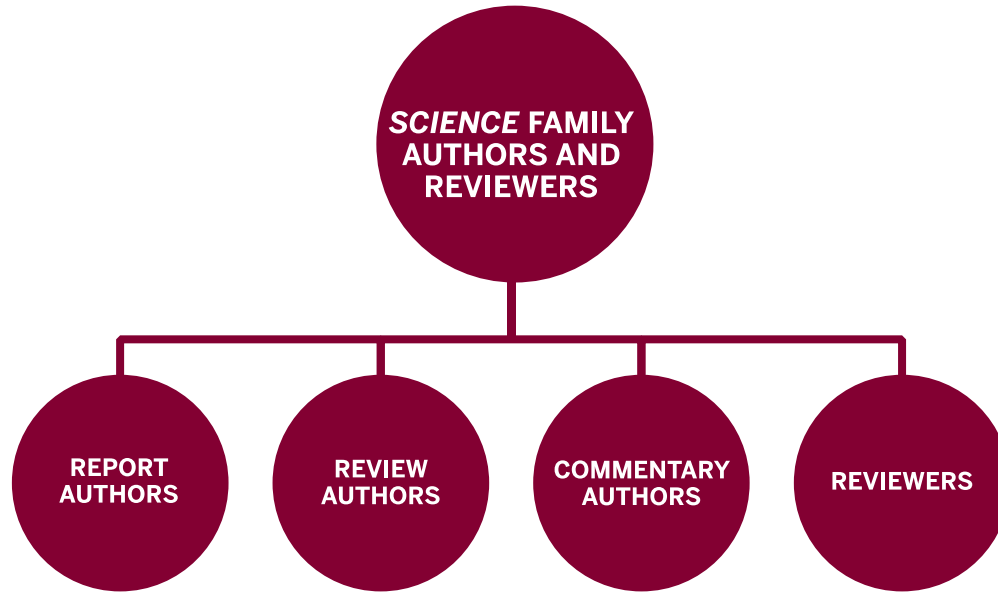


Note: Report and Research Article Authors are referred to as Report Authors throughout this report.

# Methodology: Overview

| Data Collection and Analysis Process Overview | |
|---|---|
| **1** | Assemble data for all AAAS/*Science* Functions and *Science* Family Authors and Reviewers. |
| **2** | Assess for consistency of demographic data. |
| **3** | Estimate gender*. |
| **4** | Decide categories for gender and race/ethnicity. |
| **5** | Decide how to count individuals within and across functions. |
| **6** | Present results. |

*Lincoln Mullen (2018). Gender: Predict Gender from Names Using Historical Data. R package version 0.5.2.
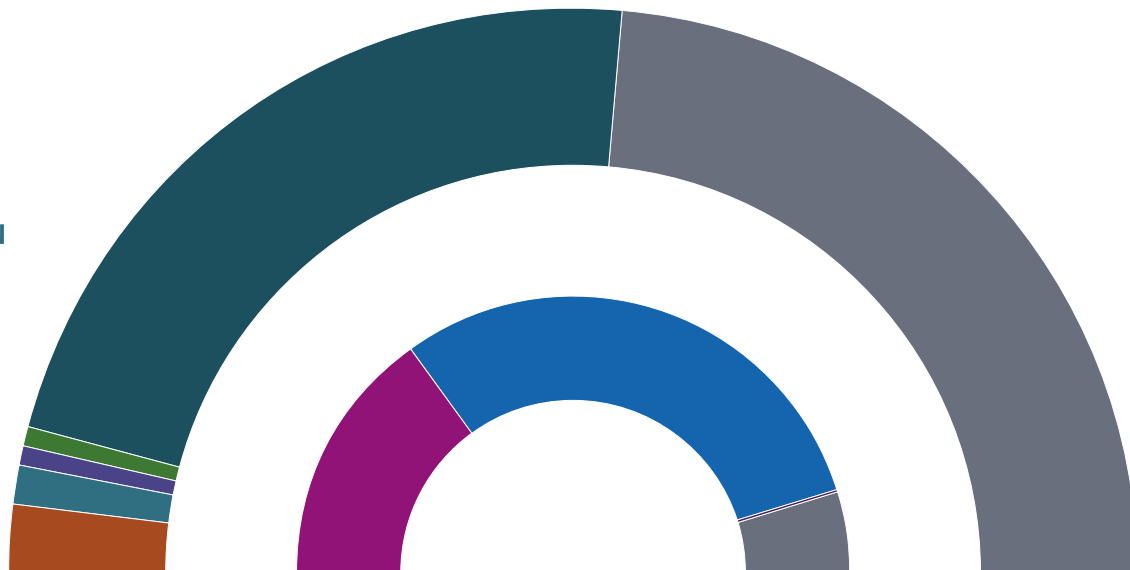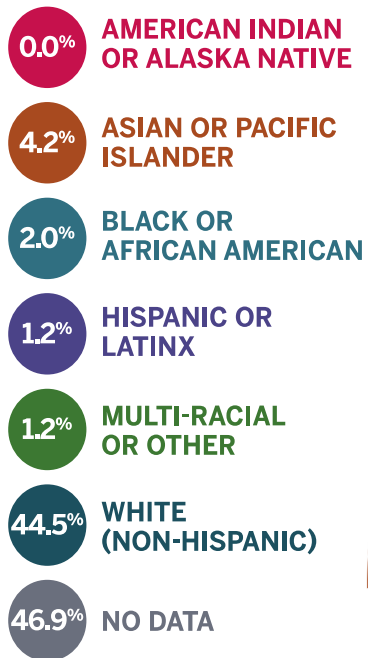
# Data Collection Form

# AAAS/*Science* Functions (N=13,480)



**RACE/ETHNICITY**

- **0.0%** AMERICAN INDIAN OR ALASKA NATIVE
- **4.2%** ASIAN OR PACIFIC ISLANDER
- **2.0%** BLACK OR AFRICAN AMERICAN
- **1.2%** HISPANIC OR LATINX
- **1.2%** MULTI-RACIAL OR OTHER
- **44.5%** WHITE (NON-HISPANIC)
- **46.9%** NO DATA

**GENDER**

- FEMALE **30.3%**
- MALE **60.0%**
- NONBINARY/-SELF-IDENTIFY **0.1%**
- NO DATA **9.7%**
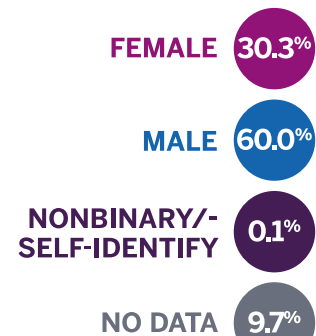
*Science* Family Authors and Reviewers (N=49,316)

**RACE/ETHNICITY**

- **< 0.1%** AMERICAN INDIAN OR ALASKA NATIVE
- **3.5%** ASIAN OR PACIFIC ISLANDER
- **0.1%** BLACK OR AFRICAN AMERICAN
- **0.5%** HISPANIC OR LATINX
- **0.5%** MULTI-RACIAL OR OTHER
- **7.7%** WHITE (NON-HISPANIC)
- **87.8%** NO DATA

**GENDER**

- **FEMALE** **20.3%**
- **MALE** **46.4%**
- **NONBINARY/-SELF-IDENTIFY** **< 0.1%**
- **NO DATA** **33.2%**
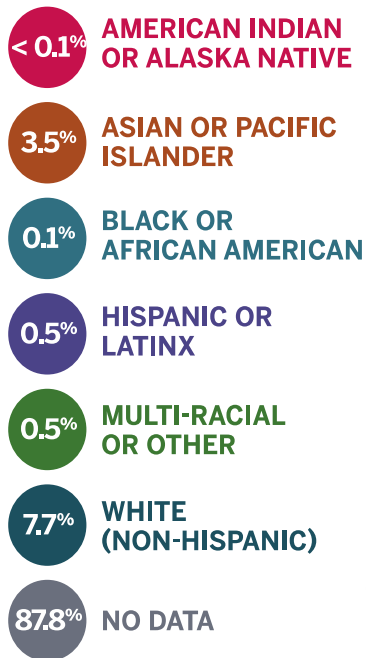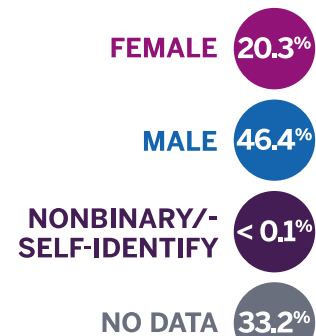
AAAS

# APPENDIX A:
# SUBGROUPS INCLUDED
# IN EACH FUNCTION

# Staff Leadership:

- AAAS Senior Management: Leadership Advisory Council
- AAAS Senior Management: Leadership Team

# Elected Leadership:

- Board of Directors
- AAAS Council
- Section Leadership: Steering Groups
- Section Leadership: Committee on Nominations
- Electorate Nominating Committee

# Advisory Committees:

- National Conference on Lawyers and Scientists (NCLS)
- Committee on Scientific Freedom and Responsibility (CSFR)
- Committee on Science & Technology Engagement with the Public (CoSTEP)
- Committee on Science, Engineering, and Public Policy (COSEPP)
- Committee on Opportunities in Science (COOS)
- Annual Meeting Scientific Program Committee

*Science* Family Editors and Advisors:

- Professional Editors
- Academic Editors
- Advisors

# Honors and Awards Recipients:

- Honorary Fellows, All Active Members
- Honorary Fellows, Class of 2019
- 2020 Award Winners (Award for Science Diplomacy; Award for Scientific Freedom and Responsibility; Early Career Award for Public Engagement with Science; Kavli Science Journalism Award; Mani L. Bhaumik Award for Engagement with Science; Mentor Awards; Newcomb Cleveland Prize; Philip Hauge Abelson Prize; AAAS/Subaru SB&F Prize for Excellence in Science Books)

AAAS

# Honors and Awards Selection Committees:

- Honorary Fellows Selection Committee
- Award for Science Diplomacy Selection Committee
- Award for Scientific Freedom and Responsibility Selection Committee
- Early Career Award for Public Engagement with Science Selection Committee
- Kavli Science Journalism Awards Selection Committee
- Mani L. Bhaumik Award for Public Engagement with Science Selection Committee
- Mentor Awards Selection Committee
- Newcomb Cleveland Prize Selection Committee
- Philip Hauge Abelson Prize Selection Committee
- AAAS/Subaru SB&F Prize for Excellence in Science Books Selection Committee

# Career Development/Fellowship Program Participants:

- S&T Policy Fellows
- Mass Media Fellows
- Leshner Leadership Fellows
- News from Science Internships
- Diverse Voices
- If/THEN Ambassadors
- Catalyzing Advocacy in Science and Engineering (CASE) Workshop Participants
- Lemelson Invention Ambassadors
- L'Oreal USA for Women in Science Fellowships

# Career Development/Fellowship Program Selection Committees:

- S&T Policy Fellows Selection Committee

- Mass Media Fellows Selection Committee

- Leshner Leadership Fellows Selection Committee

- If/THEN Ambassadors Selection Committee

- Lemelson Invention Ambassadors Selection Committee

- L'Oreal USA for Women in Science Fellowships Selection Committee

# Speakers and Presenters at Major AAAS Events:

- Annual Meeting Speakers

- S&T Policy Forum Speakers

- ERN Speakers

- Noyce Summit Keynote Speakers

# Volunteers:

- Scientists engaged by SciLine

- On-Call Scientists

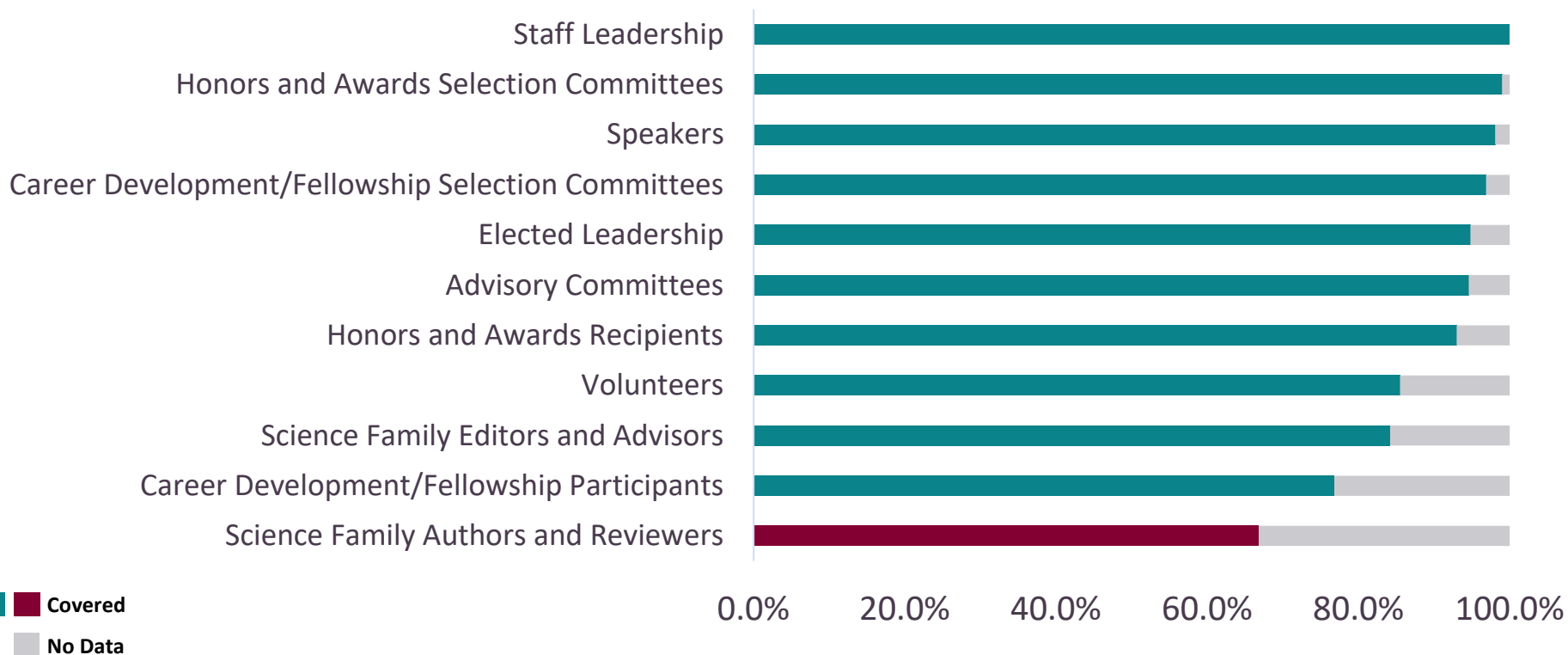- STEM Volunteers

*Science* Family Authors and Reviewers:

- Report Authors
- Review Authors
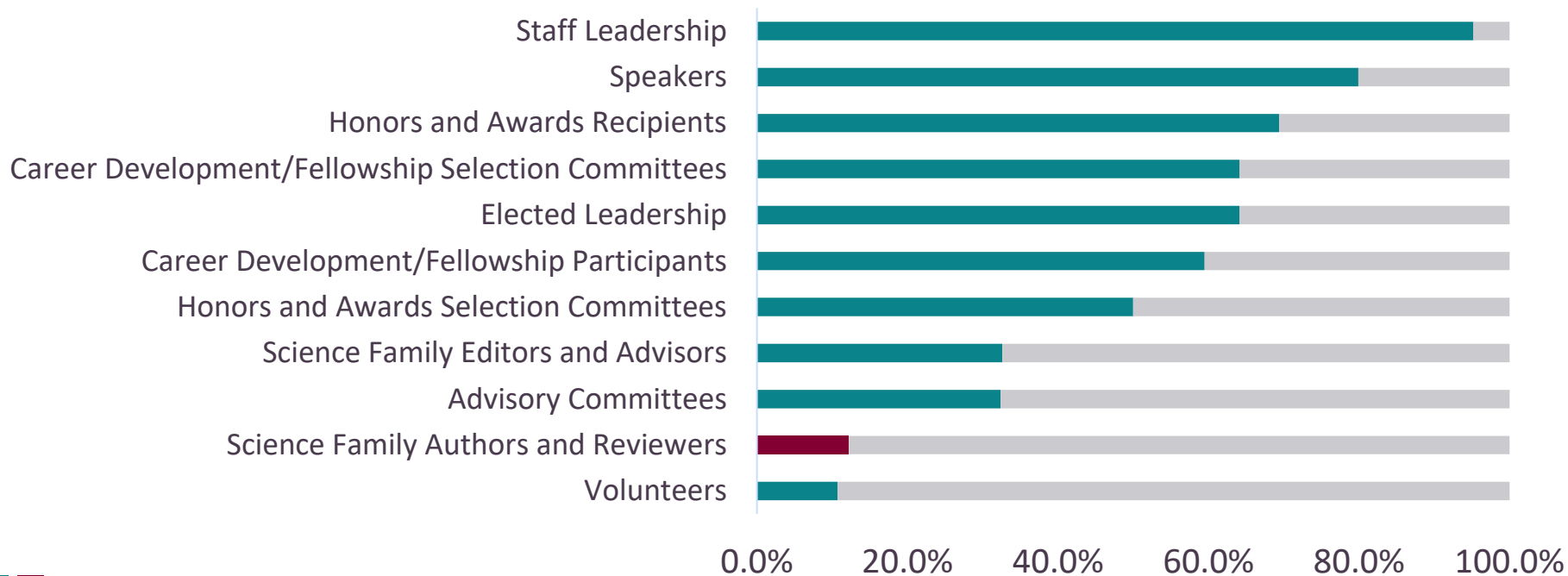- Commentary Authors
- Reviewers

# APPENDIX B: ADDITIONAL DATA COVERAGE INFORMATION

# Data Coverage: Gender AAAS/*Science* Functions and *Science* Family Authors and Reviewers



Chart showing percentage of Covered vs No Data by function:

| Function | |
|---|---|
| Staff Leadership | ~100% Covered |
| Honors and Awards Selection Committees | ~99% Covered |
| Speakers | ~98% Covered |
| Career Development/Fellowship Selection Committees | ~97% Covered |
| Elected Leadership | ~95% Covered |
| Advisory Committees | ~95% Covered |
| Honors and Awards Recipients | ~93% Covered |
| Volunteers | ~85% Covered |
| Science Family Editors and Advisors | ~84% Covered |
| Career Development/Fellowship Participants | ~77% Covered |
| Science Family Authors and Reviewers | ~66% Covered |

Legend: Covered, No Data

X-axis: 0.0% 20.0% 40.0% 60.0% 80.0% 100.0%

AAAS

# Data Coverage: Race/Ethnicity AAAS/*Science* Functions and *Science* Family Authors and Reviewers



Staff Leadership
Speakers
Honors and Awards Recipients
Career Development/Fellowship Selection Committees
Elected Leadership
Career Development/Fellowship Participants
Honors and Awards Selection Committees
Science Family Editors and Advisors
Advisory Committees
Science Family Authors and Reviewers
Volunteers

0.0%  20.0%  40.0%  60.0%  80.0%  100.0%

Covered
No Data

AAAS

# APPENDIX C: DEMOGRAPHIC REPRESENTATION IN EACH FUNCTION

# AAAS Staff Leadership (N=21)

**RACE/ETHNICITY**

- **0.0%** AMERICAN INDIAN OR ALASKA NATIVE
- **9.5%** ASIAN OR PACIFIC ISLANDER
- **9.5%** BLACK OR AFRICAN AMERICAN
- **0.0%** HISPANIC OR LATINX
- **0.0%** MULTI-RACIAL OR OTHER
- **76.2%** WHITE (NON-HISPANIC)
- **4.8%** NO DATA

**GENDER**

- FEMALE **57.1%**
- MALE **42.9%**
- NONBINARY/- SELF-IDENTIFY **0.0%**
- NO DATA **0.0%**
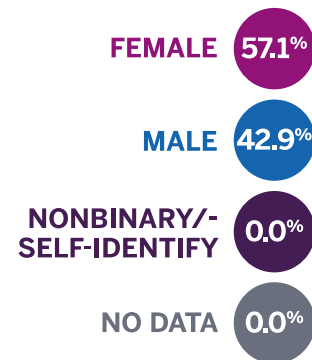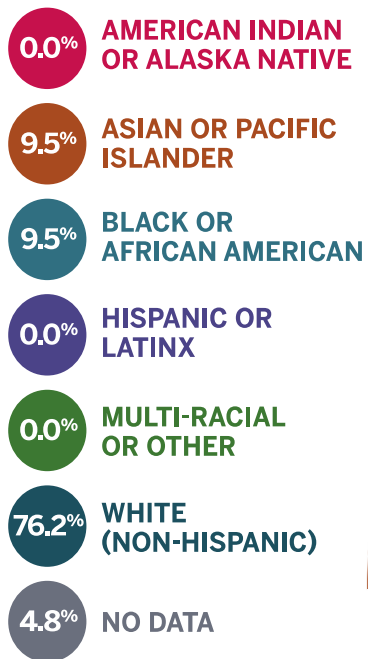
# AAAS Elected Leadership (N=404)

**RACE/ETHNICITY**

- **0.0%** AMERICAN INDIAN OR ALASKA NATIVE
- **5.4%** ASIAN OR PACIFIC ISLANDER
- **1.5%** BLACK OR AFRICAN AMERICAN
- **2.0%** HISPANIC OR LATINX
- **0.5%** MULTI-RACIAL OR OTHER
- **54.7%** WHITE (NON-HISPANIC)
- **35.9%** NO DATA

**GENDER**

- FEMALE **63.9%**
- MALE **30.9%**
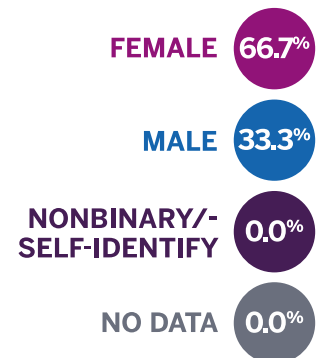- NONBINARY/-SELF-IDENTIFY **0.0%**
- NO DATA **5.2%**

1/25/2021
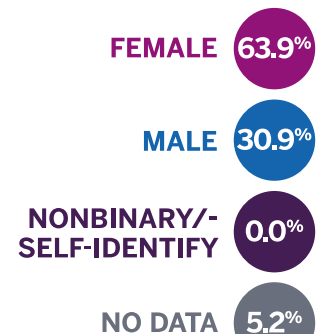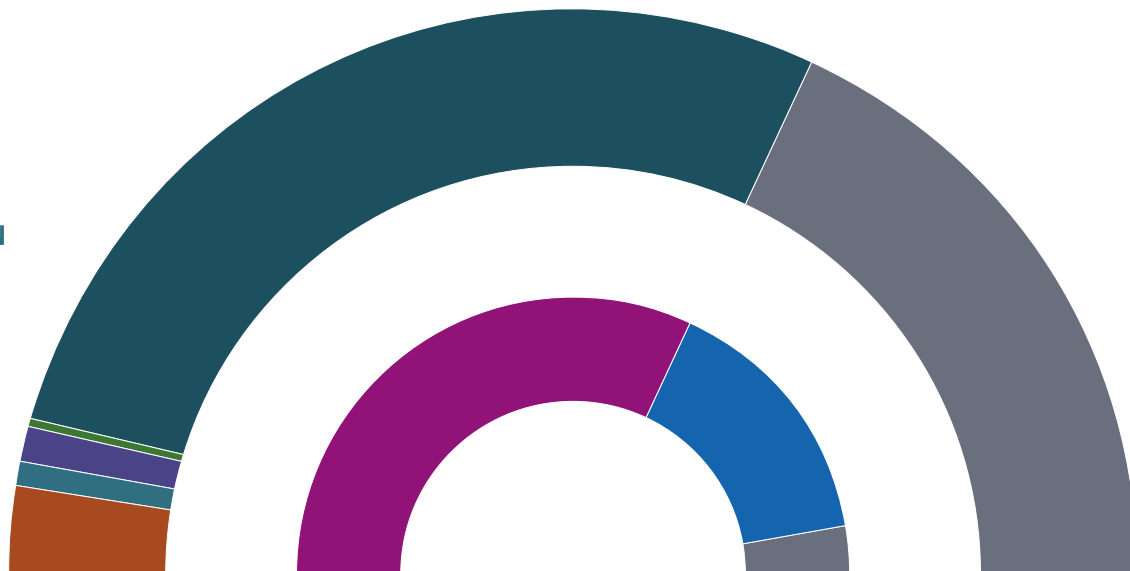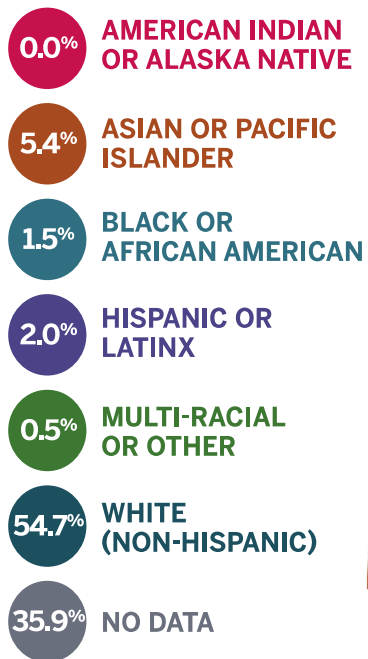
# Elected Leadership Subgroup: Board of Directors (N=15)

**RACE/ETHNICITY**

- **0.0%** AMERICAN INDIAN OR ALASKA NATIVE
- **6.7%** ASIAN OR PACIFIC ISLANDER
- **20.0%** BLACK OR AFRICAN AMERICAN
- **0.0%** HISPANIC OR LATINX
- **0.0%** MULTI-RACIAL OR OTHER
- **73.3%** WHITE (NON-HISPANIC)
- **0.0%** NO DATA

**GENDER**

- FEMALE **66.7%**
- MALE **33.3%**
- NONBINARY/-SELF-IDENTIFY **0.0%**
- NO DATA **0.0%**
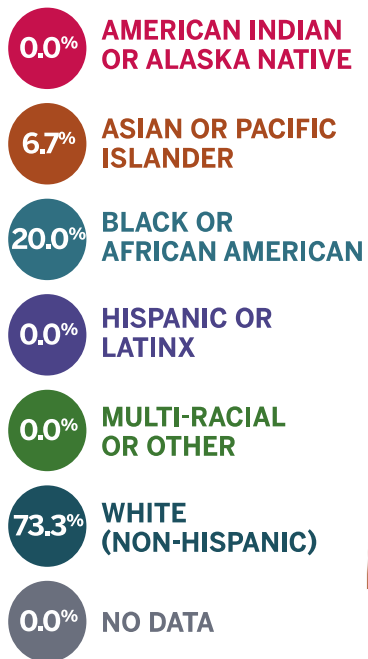
# Advisory Committees (N=74)

**RACE/ETHNICITY**

- **0.0%** AMERICAN INDIAN OR ALASKA NATIVE
- **1.4%** ASIAN OR PACIFIC ISLANDER
- **4.1%** BLACK OR AFRICAN AMERICAN
- **0.0%** HISPANIC OR LATINX
- **0.0%** MULTI-RACIAL OR OTHER
- **27.0%** WHITE (NON-HISPANIC)
- **67.6%** NO DATA

**GENDER**

- FEMALE **54.1%**
- MALE **40.5%**
- NONBINARY/-SELF-IDENTIFY **0.0%**
- NO DATA **5.4%**

AAAS
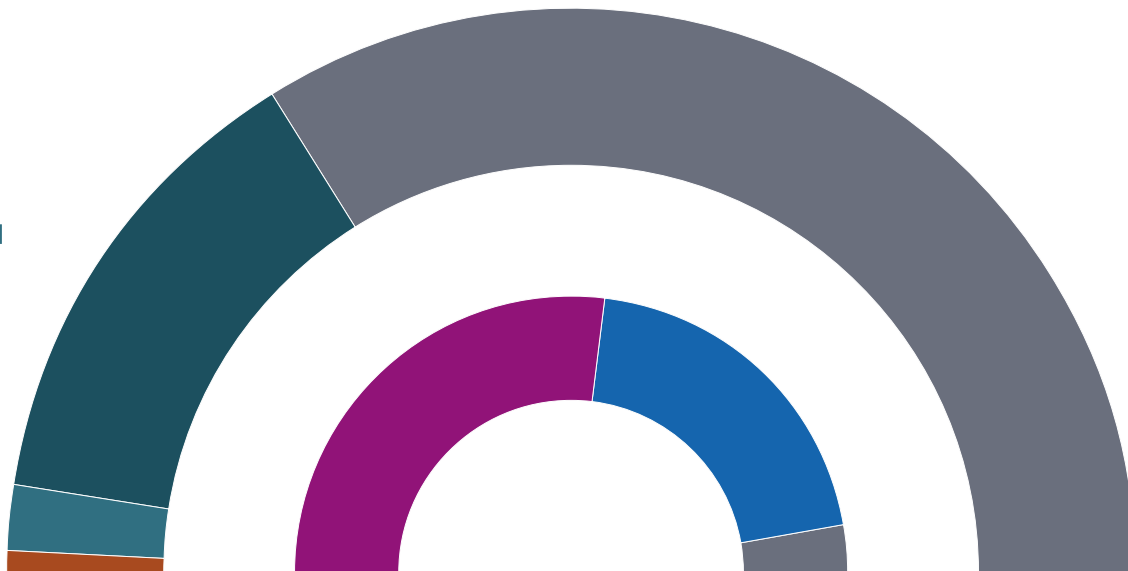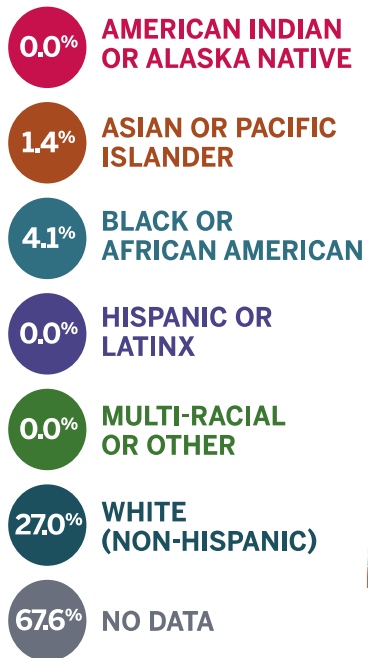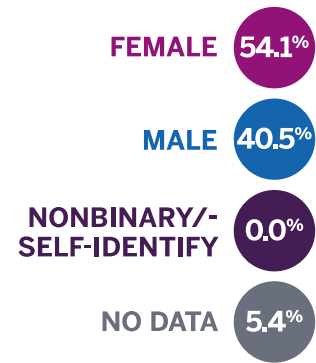
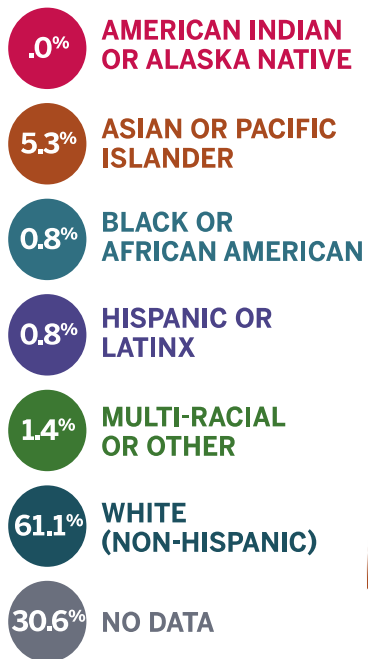# *Science* Family Editors and Advisors (N=720)

**RACE/ETHNICITY**

- **0.0%** AMERICAN INDIAN OR ALASKA NATIVE
- **3.9%** ASIAN OR PACIFIC ISLANDER
- **0.7%** BLACK OR AFRICAN AMERICAN
- **0.8%** HISPANIC OR LATINX
- **1.3%** MULTI-RACIAL OR OTHER
- **26.0%** WHITE (NON-HISPANIC)
- **67.4%** NO DATA

**GENDER**

- **FEMALE** **28.1%**
- **MALE** **56.1%**
- **NONBINARY/-SELF-IDENTIFY** **0.0%**
- **NO DATA** **15.8%**
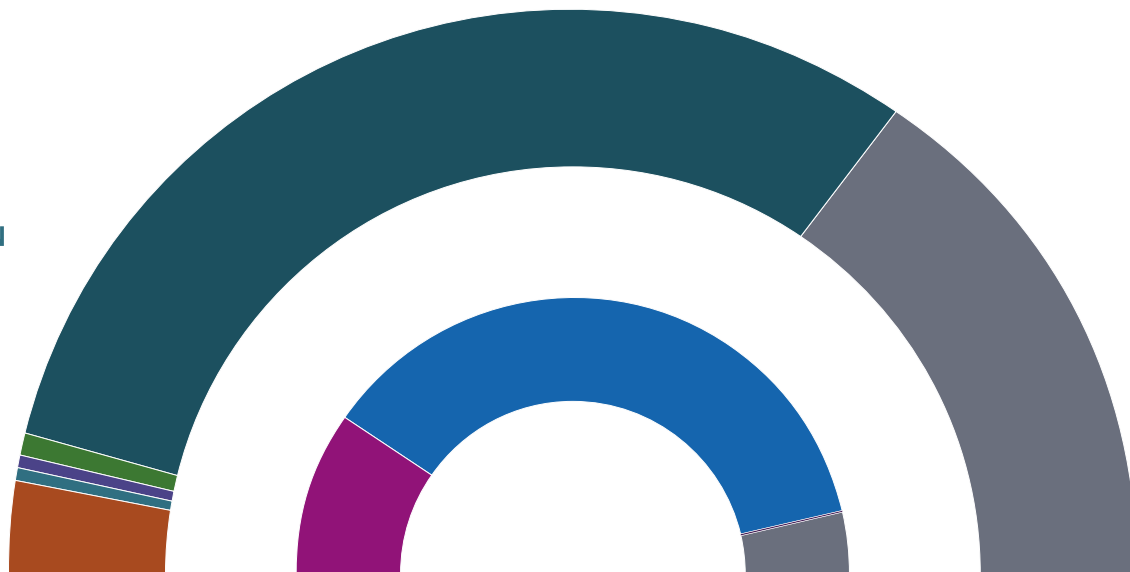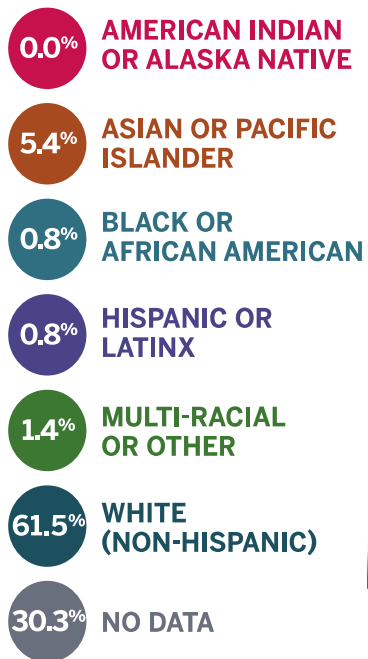
AAAS

# Honors and Awards Recipients (N=8,785)



**RACE/ETHNICITY**

- **.0%** AMERICAN INDIAN OR ALASKA NATIVE
- **5.3%** ASIAN OR PACIFIC ISLANDER
- **0.8%** BLACK OR AFRICAN AMERICAN
- **0.8%** HISPANIC OR LATINX
- **1.4%** MULTI-RACIAL OR OTHER
- **61.1%** WHITE (NON-HISPANIC)
- **30.6%** NO DATA

**GENDER**

- **FEMALE** **19.7%**
- **MALE** **73.3%**
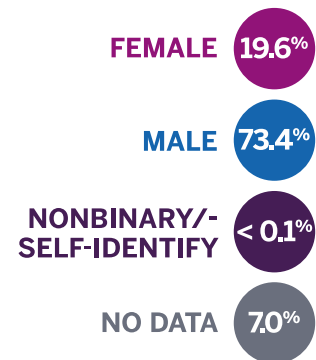- **NONBINARY/-SELF-IDENTIFY** **< 0.1%**
- **NO DATA** **7.0%**

AAAS
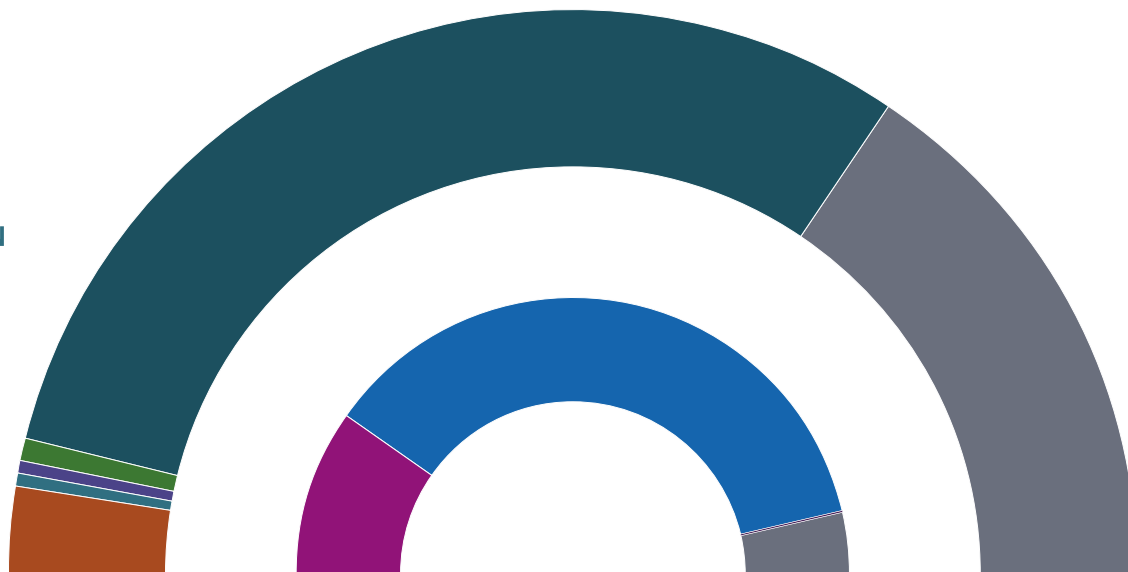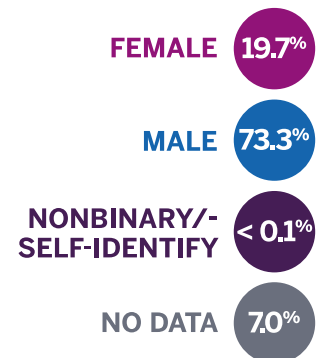
# Honors and Awards Recipients Subgroup: Honorary Fellows, All Active Members (N=8,734)

**RACE/ETHNICITY**

- **0.0%** AMERICAN INDIAN OR ALASKA NATIVE
- **5.4%** ASIAN OR PACIFIC ISLANDER
- **0.8%** BLACK OR AFRICAN AMERICAN
- **0.8%** HISPANIC OR LATINX
- **1.4%** MULTI-RACIAL OR OTHER
- **61.5%** WHITE (NON-HISPANIC)
- **30.3%** NO DATA

**GENDER**

- **FEMALE** **19.6%**
- **MALE** **73.4%**
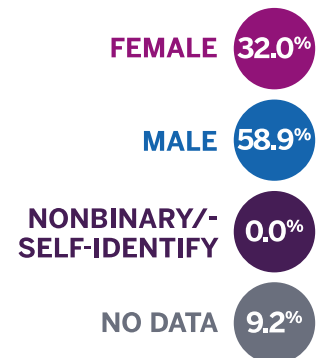- **NONBINARY/-SELF-IDENTIFY** **< 0.1%**
- **NO DATA** **7.0%**

Honors and Awards Recipients Subgroup:
Honorary Fellows, Class of 2019 (N=435)

**RACE/ETHNICITY**

- **0.0%** AMERICAN INDIAN OR ALASKA NATIVE
- **5.5%** ASIAN OR PACIFIC ISLANDER
- **1.1%** BLACK OR AFRICAN AMERICAN
- **1.1%** HISPANIC OR LATINX
- **0.7%** MULTI-RACIAL OR OTHER
- **42.5%** WHITE (NON-HISPANIC)
- **49.0%** NO DATA

**GENDER**

- FEMALE **32.0%**
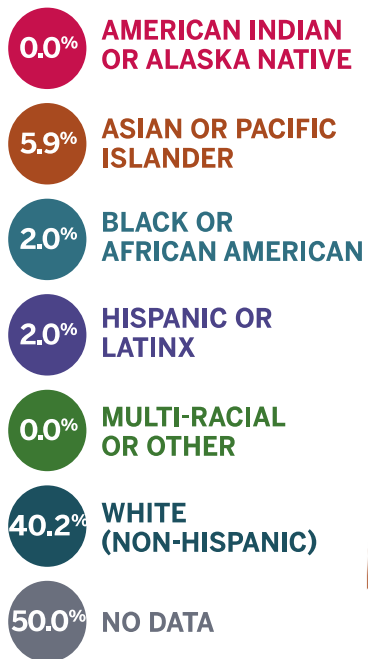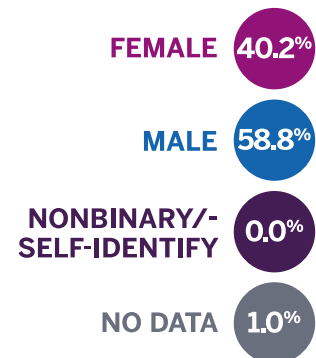- MALE **58.9%**
- NONBINARY/-SELF-IDENTIFY **0.0%**
- NO DATA **9.2%**

AAAS
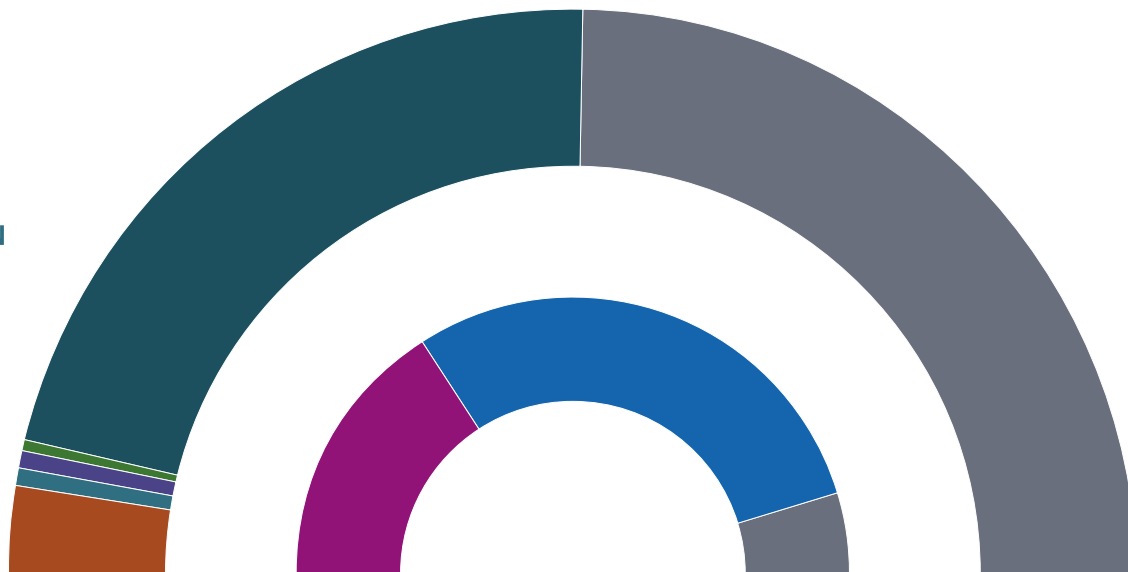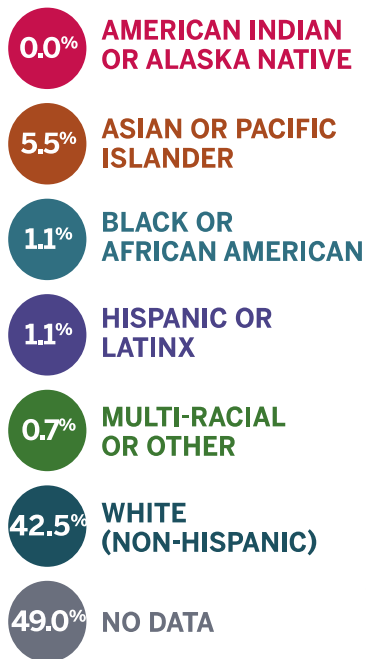
# Honors and Awards Selection Committees (N=102)



**RACE/ETHNICITY**

- **0.0%** AMERICAN INDIAN OR ALASKA NATIVE
- **5.9%** ASIAN OR PACIFIC ISLANDER
- **2.0%** BLACK OR AFRICAN AMERICAN
- **2.0%** HISPANIC OR LATINX
- **0.0%** MULTI-RACIAL OR OTHER
- **40.2%** WHITE (NON-HISPANIC)
- **50.0%** NO DATA

**GENDER**

- FEMALE **40.2%**
- MALE **58.8%**
- NONBINARY/-SELF-IDENTIFY **0.0%**
- NO DATA **1.0%**
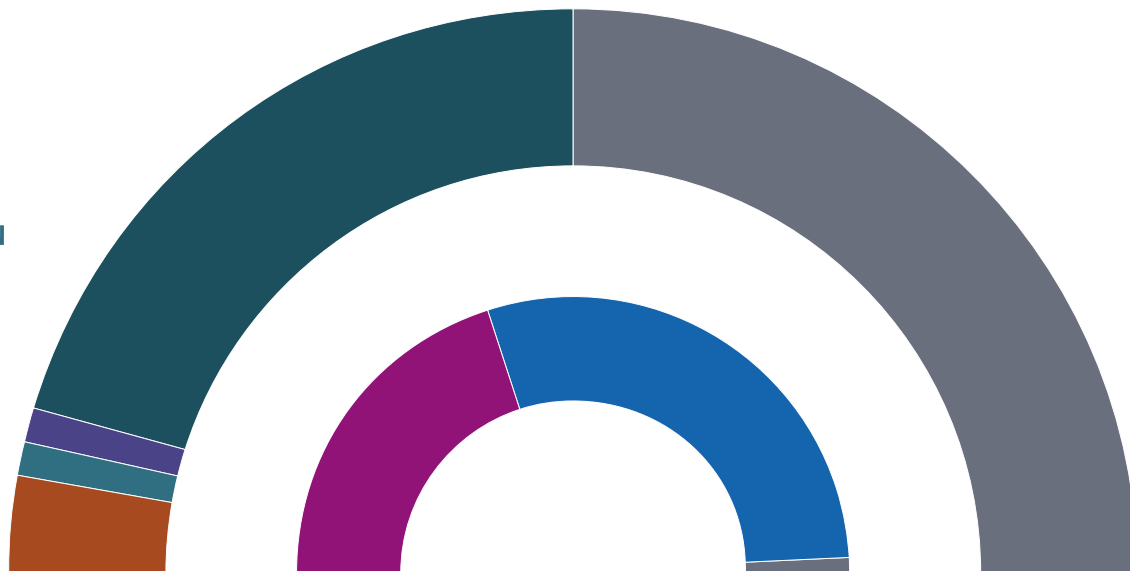
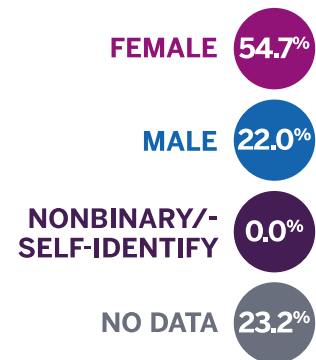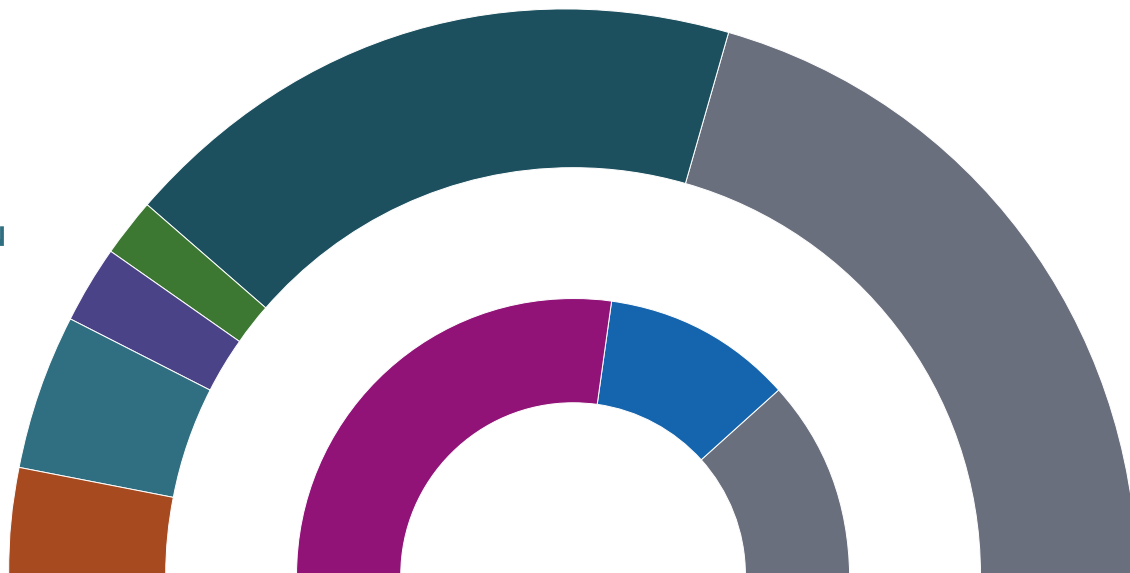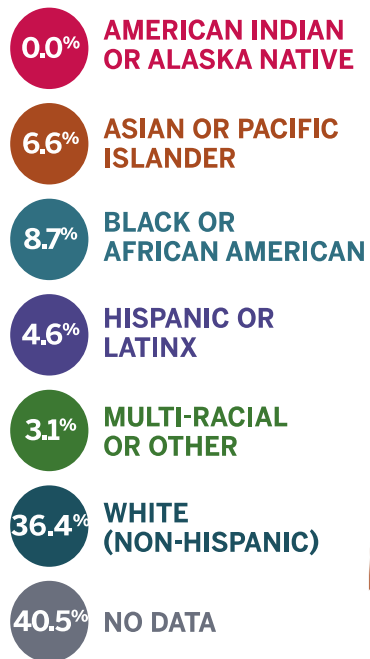# Career Development/Fellowship Participants (N=667)



**RACE/ETHNICITY**

- **0.0%** AMERICAN INDIAN OR ALASKA NATIVE
- **6.6%** ASIAN OR PACIFIC ISLANDER
- **8.7%** BLACK OR AFRICAN AMERICAN
- **4.6%** HISPANIC OR LATINX
- **3.1%** MULTI-RACIAL OR OTHER
- **36.4%** WHITE (NON-HISPANIC)
- **40.5%** NO DATA

**GENDER**

- FEMALE **54.7%**
- MALE **22.0%**
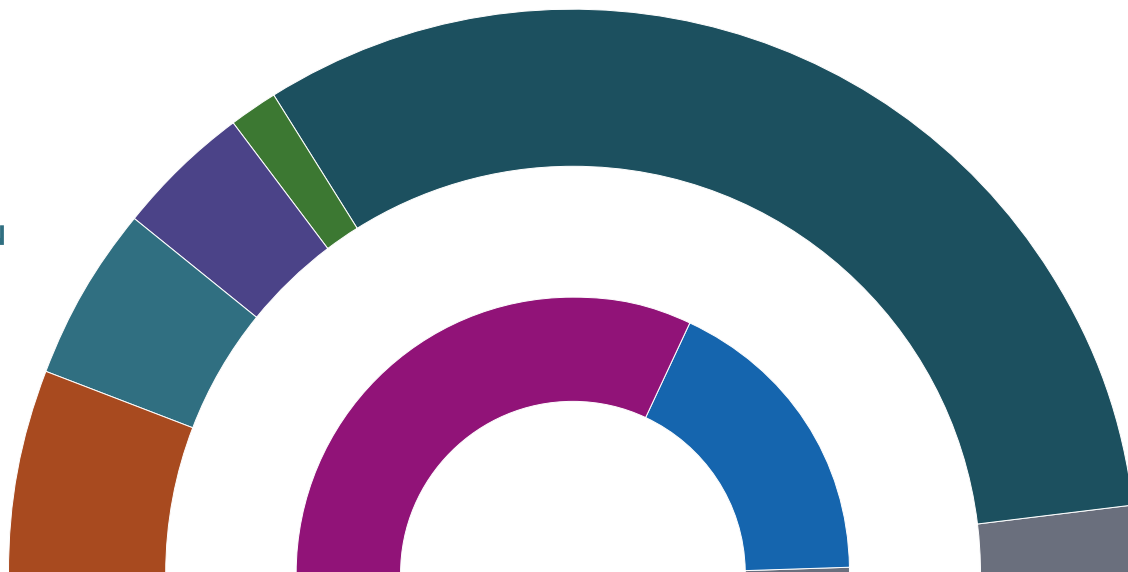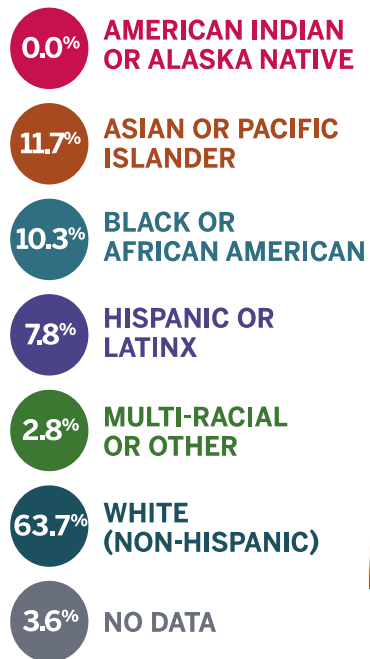- NONBINARY/-SELF-IDENTIFY **0.0%**
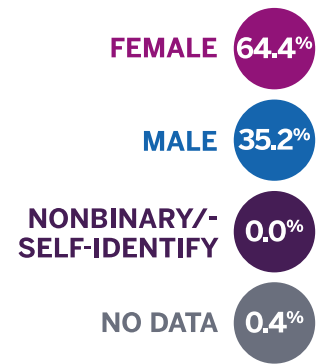- NO DATA **23.2%**

1/25/2021

AAAS

# Career Development/Fellowship Participants Subgroup: S&T Policy Fellows (N=281)



**RACE/ETHNICITY**

- 0.0% AMERICAN INDIAN OR ALASKA NATIVE
- 11.7% ASIAN OR PACIFIC ISLANDER
- 10.3% BLACK OR AFRICAN AMERICAN
- 7.8% HISPANIC OR LATINX
- 2.8% MULTI-RACIAL OR OTHER
- 63.7% WHITE (NON-HISPANIC)
- 3.6% NO DATA

**GENDER**

- FEMALE 64.4%
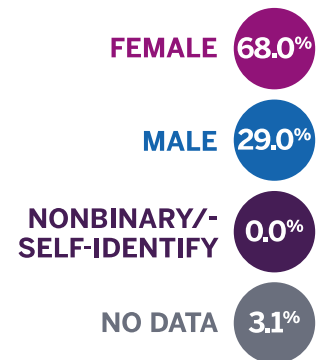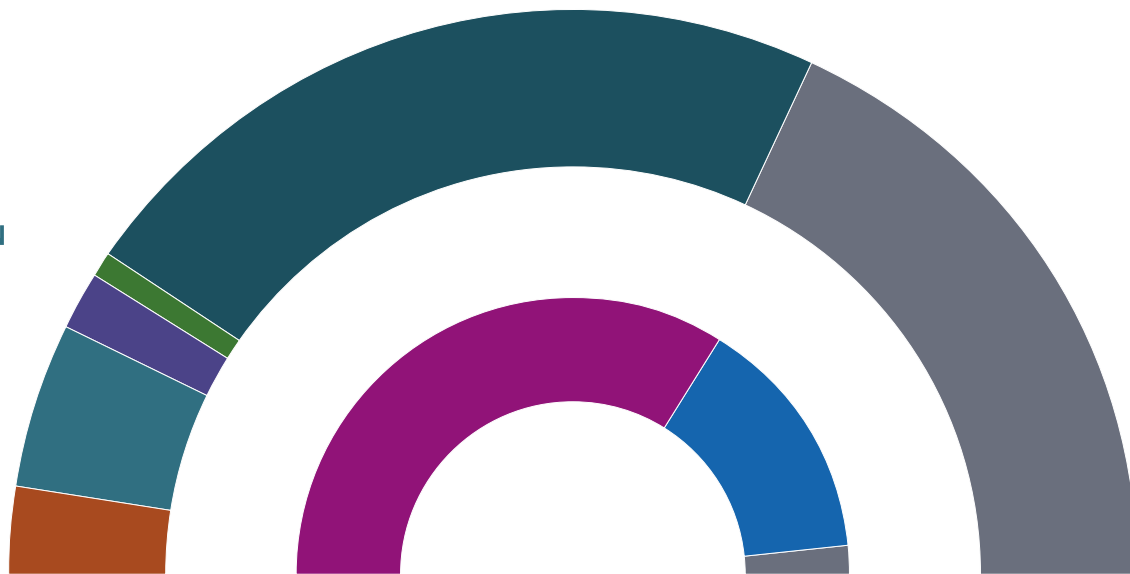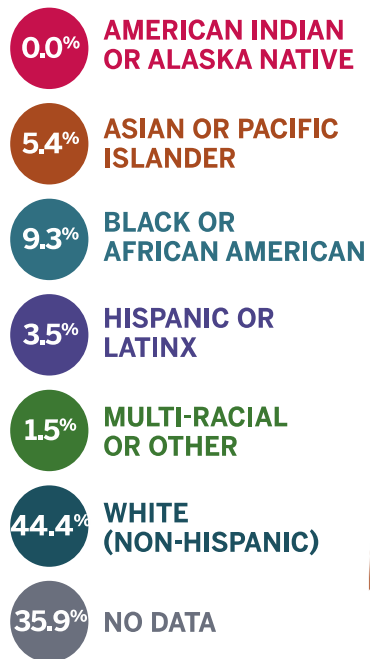- MALE 35.2%
- NONBINARY/-SELF-IDENTIFY 0.0%
- NO DATA 0.4%

# Career Development/Fellowship Selection Committees (N=259)

**RACE/ETHNICITY**

- **0.0%** AMERICAN INDIAN OR ALASKA NATIVE
- **5.4%** ASIAN OR PACIFIC ISLANDER
- **9.3%** BLACK OR AFRICAN AMERICAN
- **3.5%** HISPANIC OR LATINX
- **1.5%** MULTI-RACIAL OR OTHER
- **44.4%** WHITE (NON-HISPANIC)
- **35.9%** NO DATA

**FEMALE** **68.0%**

**MALE** **29.0%**

**NONBINARY/-SELF-IDENTIFY** **0.0%**
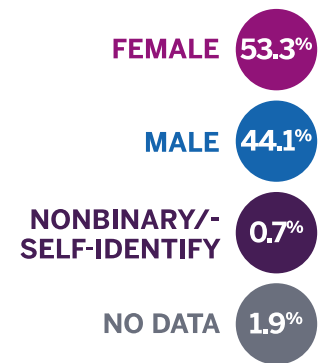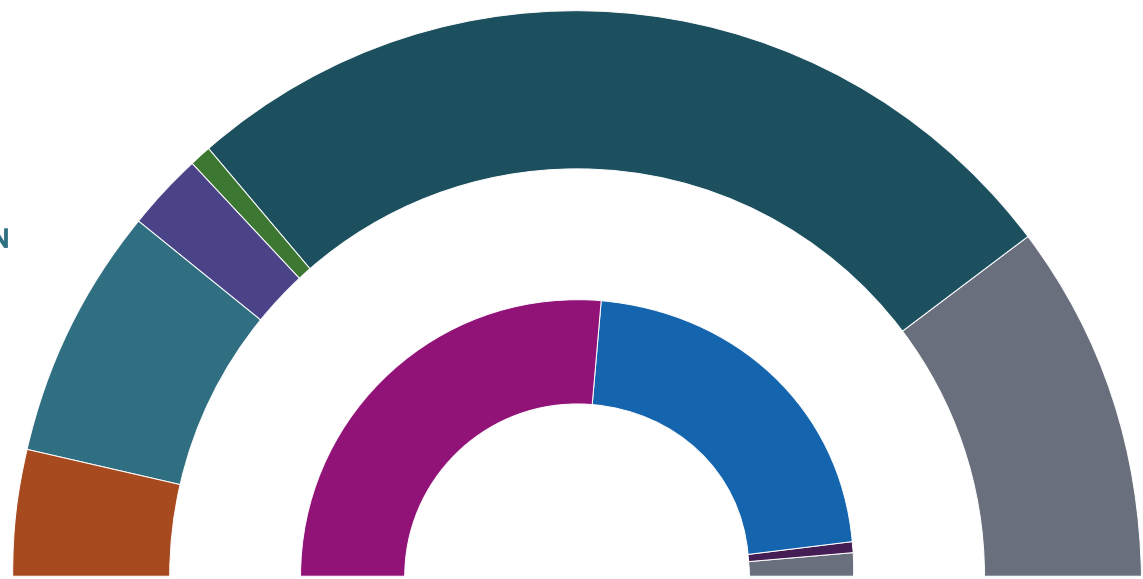
**NO DATA** **3.1%**

**GENDER**

# Speakers and Presenters at Major AAAS Events (N=844)



**RACE/ETHNICITY**

- **0.0%** AMERICAN INDIAN OR ALASKA NATIVE
- **7.6%** ASIAN OR PACIFIC ISLANDER
- **14.1%** BLACK OR AFRICAN AMERICAN
- **4.6%** HISPANIC OR LATINX
- **1.4%** MULTI-RACIAL OR OTHER
- **52.1%** WHITE (NON-HISPANIC)
- **20.1%** NO DATA

**GENDER**

- FEMALE **53.3%**
- MALE **44.1%**
- NONBINARY/-SELF-IDENTIFY **0.7%**
- NO DATA **1.9%**
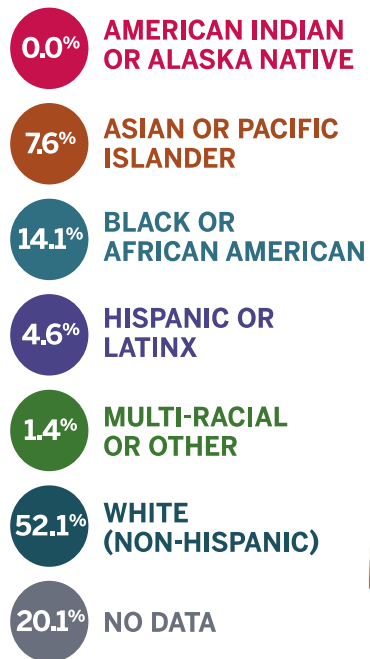
AAAS

# AAAS Program Volunteers (N=3,676)

## RACE/ETHNICITY

**0.0%** AMERICAN INDIAN OR ALASKA NATIVE

**1.0%** ASIAN OR PACIFIC ISLANDER

**0.2%** BLACK OR AFRICAN AMERICAN

**0.3%** HISPANIC OR LATINX

**0.4%** MULTI-RACIAL OR OTHER

**8.8%** WHITE (NON-HISPANIC)

**89.3%** NO DATA

**GENDER**

FEMALE **39.8%**

MALE **45.7%**

NONBINARY/-SELF-IDENTIFY **0.0%**

NO DATA **14.5%**
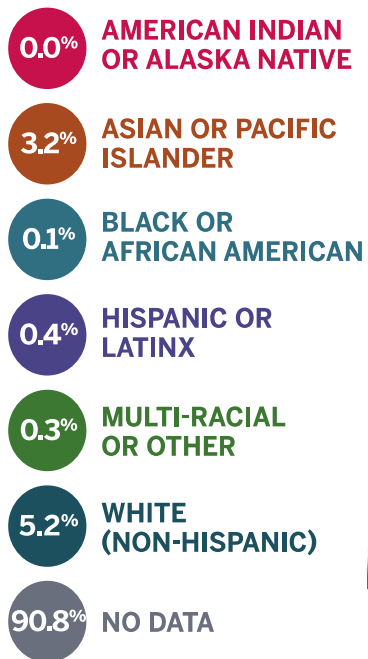
AAAS
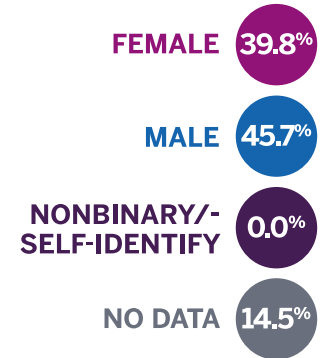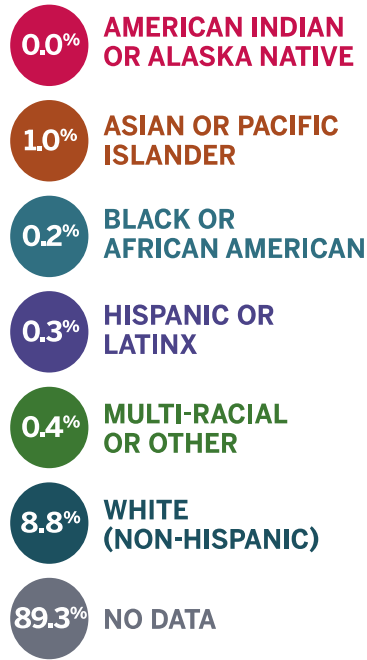
# *Science* Family Authors and Reviewers Subgroup: Report Authors (N=33,453)

**RACE/ETHNICITY**

- **0.0%** AMERICAN INDIAN OR ALASKA NATIVE
- **3.2%** ASIAN OR PACIFIC ISLANDER
- **0.1%** BLACK OR AFRICAN AMERICAN
- **0.4%** HISPANIC OR LATINX
- **0.3%** MULTI-RACIAL OR OTHER
- **5.2%** WHITE (NON-HISPANIC)
- **90.8%** NO DATA

**GENDER**

- FEMALE **20.0%**
- MALE **41.5%**
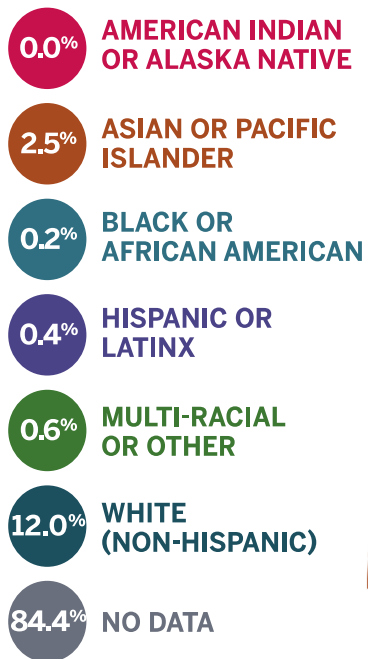- NONBINARY/-SELF-IDENTIFY **< 0.1%**
- NO DATA **38.5%**

AAAS
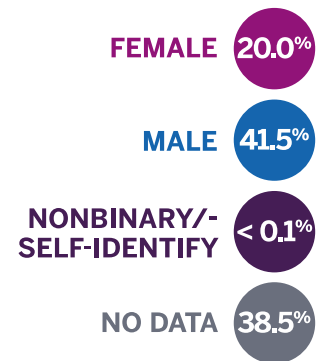
# *Science* Family Authors and Reviewers Subgroup: Review Authors (N=518)

**RACE/ETHNICITY**

- **0.0%** AMERICAN INDIAN OR ALASKA NATIVE
- **2.5%** ASIAN OR PACIFIC ISLANDER
- **0.2%** BLACK OR AFRICAN AMERICAN
- **0.4%** HISPANIC OR LATINX
- **0.6%** MULTI-RACIAL OR OTHER
- **12.0%** WHITE (NON-HISPANIC)
- **84.4%** NO DATA

**GENDER**

- FEMALE **27.4%**
- MALE **54.2%**
- NONBINARY/-SELF-IDENTIFY **0.0%**
- NO DATA **18.3%**
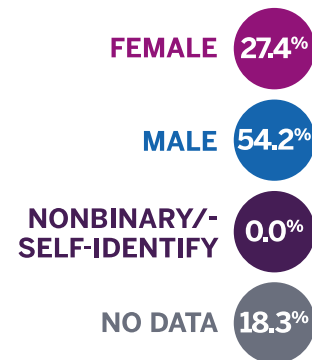
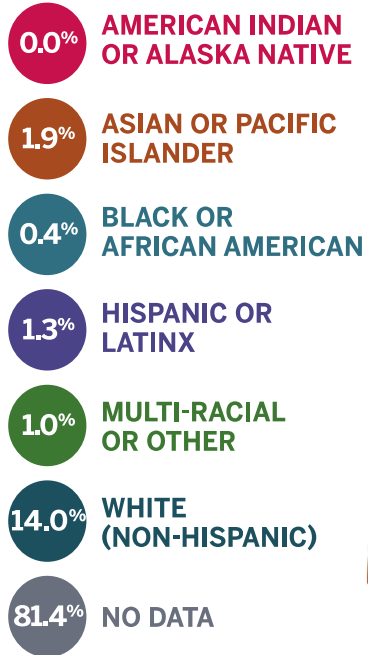# *Science* Family Authors and Reviewers Subgroup: Commentary Authors (N=1,133)



**RACE/ETHNICITY**

- **0.0%** AMERICAN INDIAN OR ALASKA NATIVE
- **1.9%** ASIAN OR PACIFIC ISLANDER
- **0.4%** BLACK OR AFRICAN AMERICAN
- **1.3%** HISPANIC OR LATINX
- **1.0%** MULTI-RACIAL OR OTHER
- **14.0%** WHITE (NON-HISPANIC)
- **81.4%** NO DATA

**GENDER**

- **FEMALE** 28.2%
- **MALE** 55.1%
- **NONBINARY/- SELF-IDENTIFY** 0.0%
- **NO DATA** 16.7%
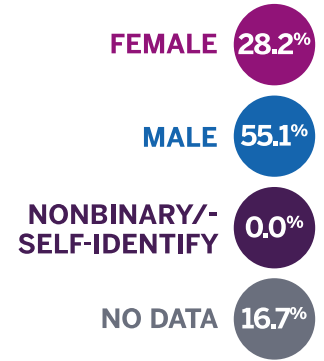
*Science* Family Authors and Reviewers Subgroup: Reviewers (N=16,734)

RACE/ETHNICITY

- < 0.1% AMERICAN INDIAN OR ALASKA NATIVE
- 4.6% ASIAN OR PACIFIC ISLANDER
- 0.1% BLACK OR AFRICAN AMERICAN
- 0.7% HISPANIC OR LATINX
- 0.7% MULTI-RACIAL OR OTHER
- 13.1% WHITE (NON-HISPANIC)
- 80.7% NO DATA

GENDER

- FEMALE 19.7%
- MALE 57.4%
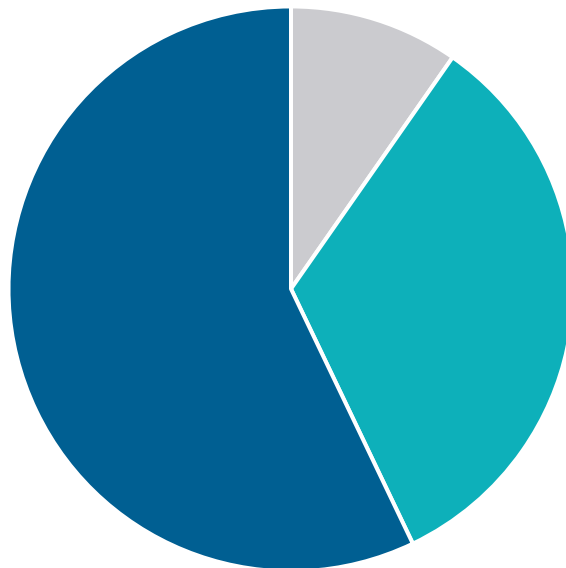- NONBINARY/-SELF-IDENTIFY < 0.1%
- NO DATA 22.8%
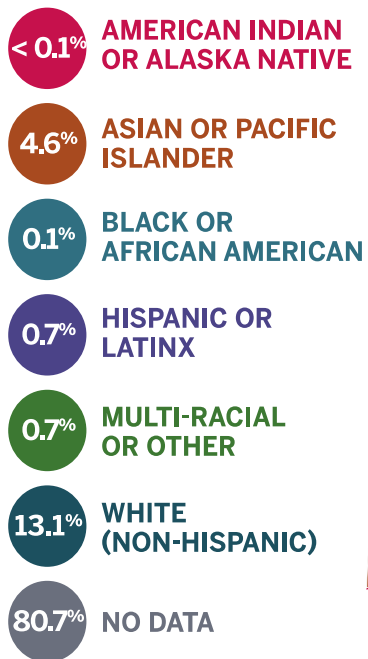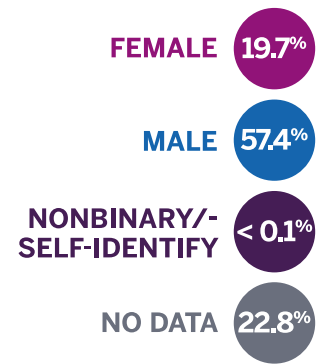
# APPENDIX D: GENDER ESTIMATES

AAAS

# AAAS/*Science* Functions (N=13,480)

**Gender Coverage and Estimates:**

- **No Data: 9.7%**
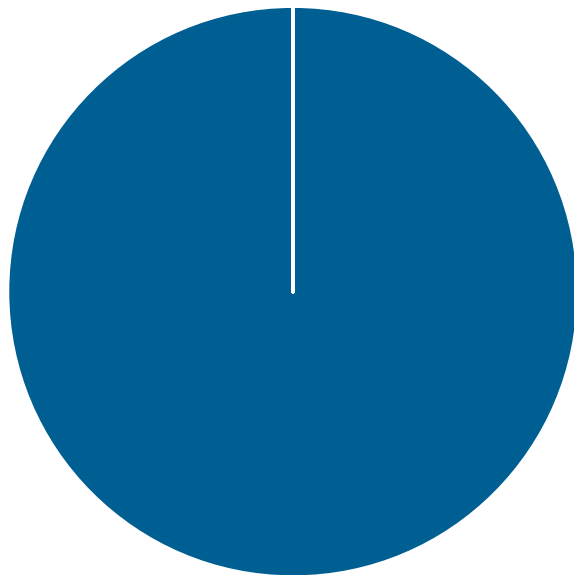- **Estimated: 33.2%**
- **Self-report: 57.1%**

# Staff Leadership (N=21)

**Gender Coverage and Estimates:**

- **No Data: 0.0%**
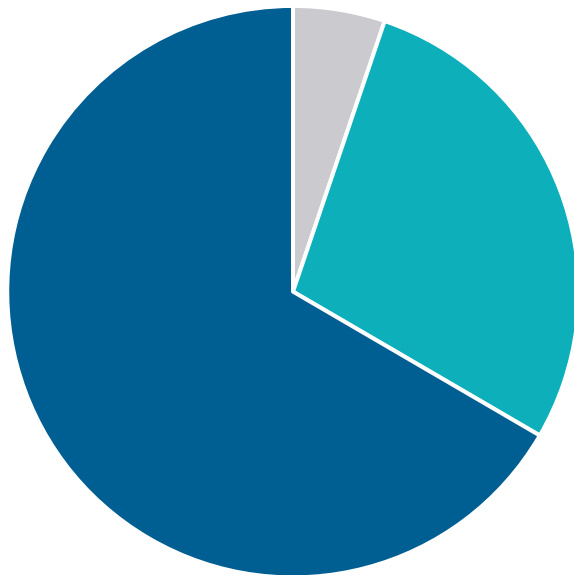- **Estimated: 0.0%**
- **Self-report: 100%**

# Elected Leadership (N=404)

**Gender Coverage and Estimates:**

- **No Data: 5.2%**
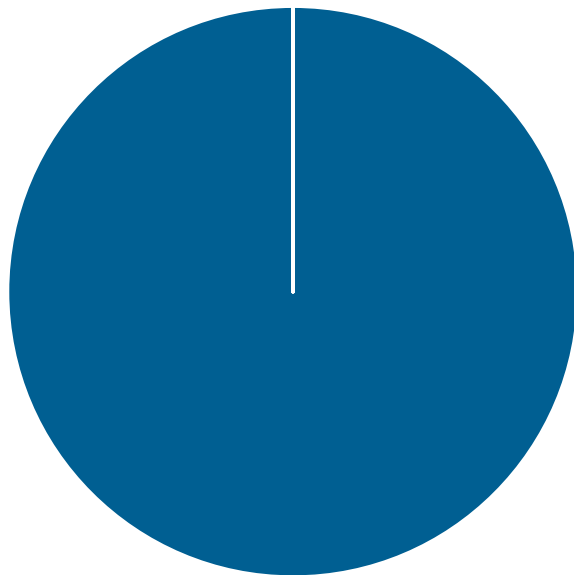- **Estimated: 28.2%**
- **Self-report: 66.6%**

# Elected Leaders Subgroup: Board of Directors (N=15)

**Gender Coverage and Estimates:**

- No Data: 0.0%
- Estimated: 0.0%
- Self-report: 100%

# Advisory Committees (N=74)

**Gender Coverage and Estimates:**

- ▪ **No Data: 5.4%**
- ▪ **Estimated: 56.8%**
- ▪ **Self-report: 37.8%**
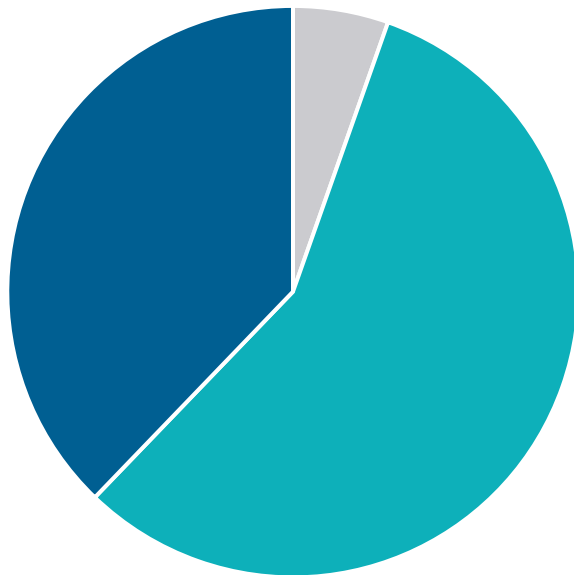
# Science Editors and Advisors (N=720)

**Gender Coverage and Estimates:**

- No Data: 15.8%
- Estimated: 51.2%
- Self-report: 32.9%
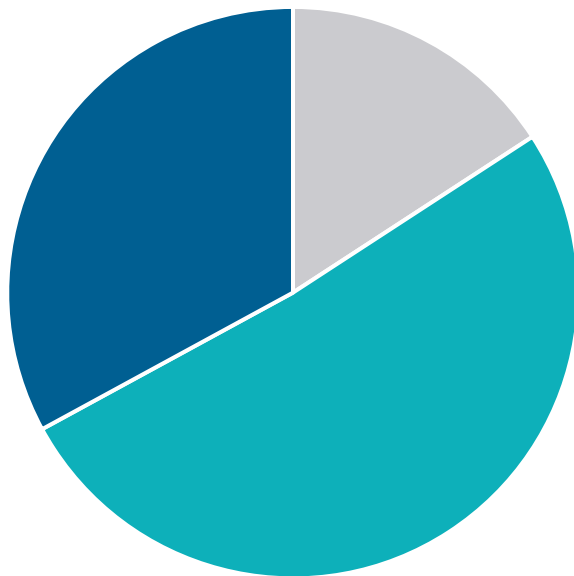
# Honors and Awards Recipients (N=8,875)

**Gender Coverage and Estimates:**

- ■ **No Data: 7.0%**
- ■ **Estimated: 21.7%**
- ■ **Self-report: 71.3%**
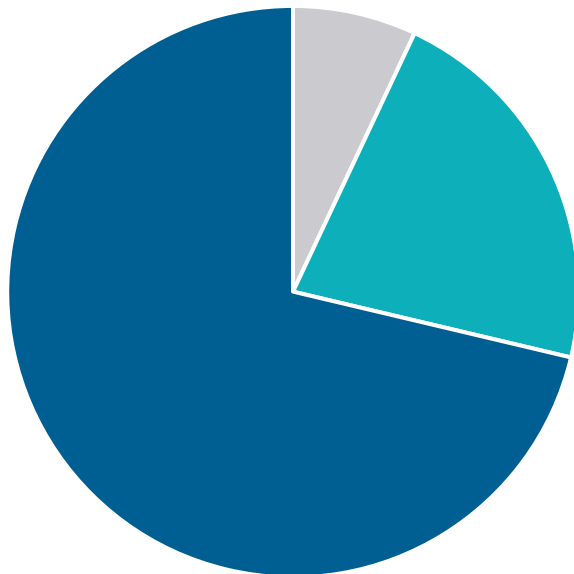
# Honors and Awards Recipients Subgroup: Honorary Fellows, All Active Members (N=8,734)

**Gender Coverage and Estimates:**

- No Data: 7.0%
- Estimated: 21.4%
- Self-report: 71.6%
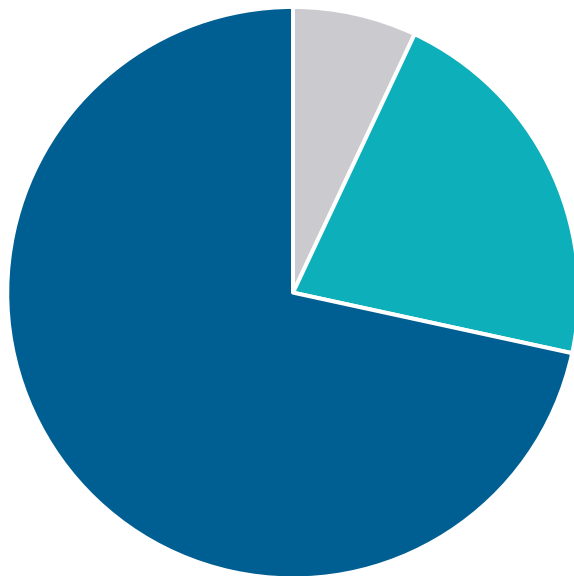
# Honors and Awards Recipients Subgroup: Honorary Fellows, Class of 2019 (N=435)

**Gender Coverage and Estimates:**

- No Data: 9.2%
- Estimated: 37.9%
- Self-report: 52.9%
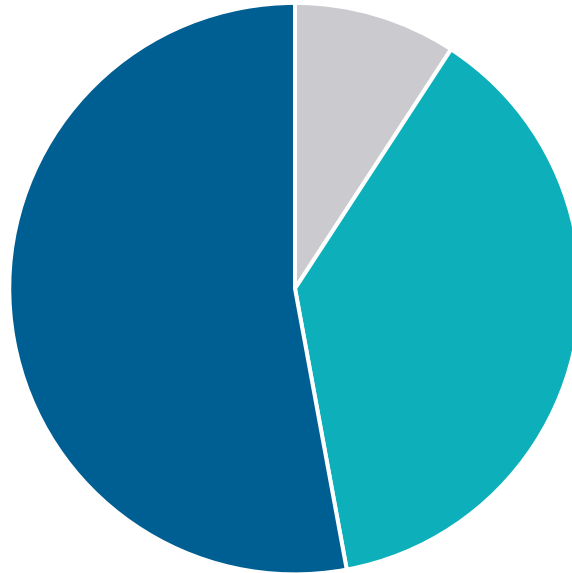
# Honors and Award Selection Committees (N=102)

**Gender Coverage and Estimates:**

- **No Data: 1.0%**
- **Estimated: 24.5%**
- **Self-report: 74.5%**
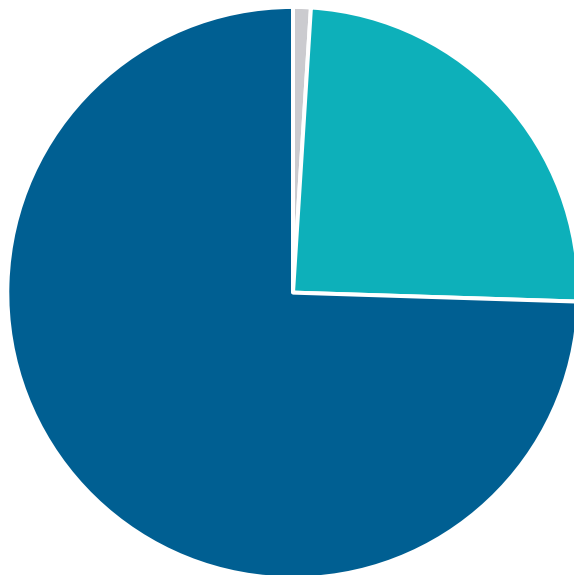
# Career/Development Fellowship Participants (N=667)

**Gender Coverage and Estimates:**

- **No Data: 23.1%**
- **Estimated: 2.5%**
- **Self-report: 74.4%**
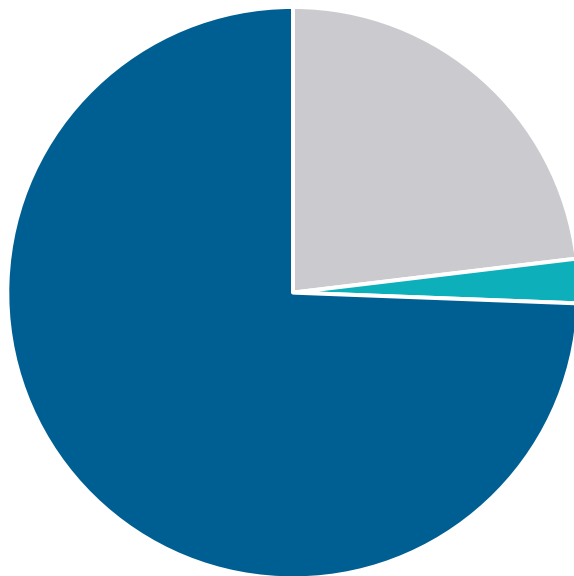
# Career Development/Fellowship Participants Subgroup: S&T Policy Fellows (N=281)

**Gender Coverage and Estimates:**

- No Data: 0.4%
- Estimated: 0.0%
- Self-report: 99.6%
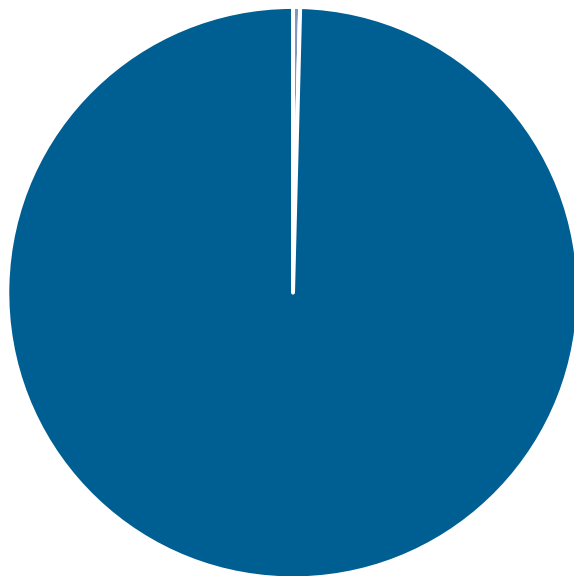
# Career/Development Fellowship Selection Committees (N=259)

**Gender Coverage and Estimates:**

- **No Data: 3.1%**
- **Estimated: 26.3%**
- **Self-report: 70.7%**
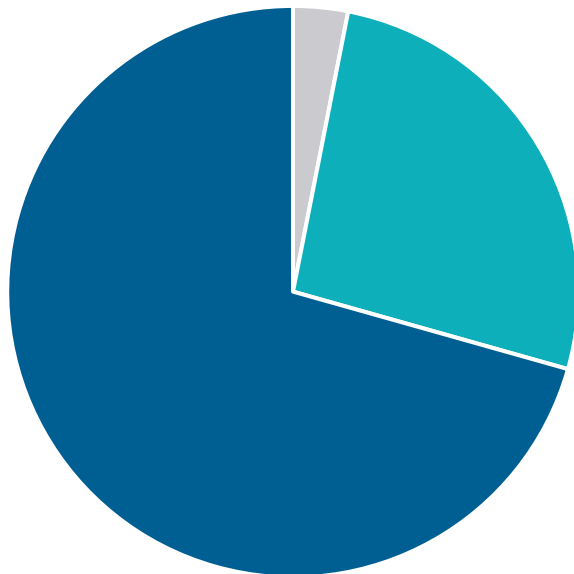
# Speakers and Presenters at Major AAAS Events (N=844)

**Gender Coverage and Estimates:**

- No Data: 1.9%
- Estimated: 13.3%
- Self-report: 84.8%
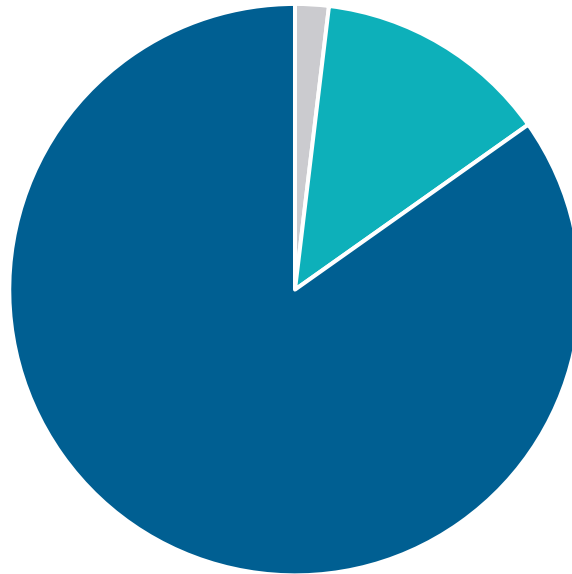
# Volunteers (N=3,676)

**Gender Coverage and Estimates:**

- No Data: 14.5%
- Estimated: 69.1%
- Self-report: 16.4%
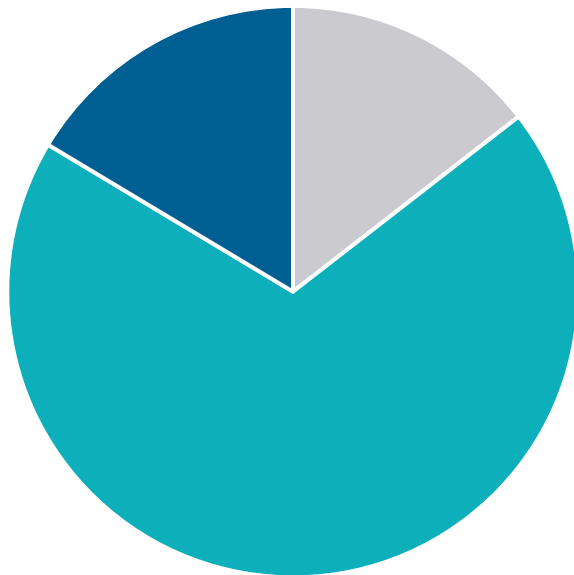
# *Science* Family Authors and Reviewers (N=49,316)

**Gender Coverage and Estimates:**

- **No Data: 33.2%**
- **Estimated: 53.6%**
- **Self-report: 13.2%**
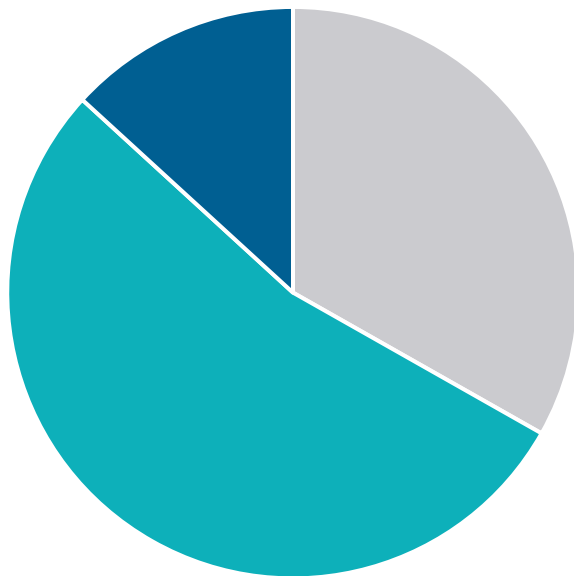
# *Science* Family Authors and Reviewers Subgroup: Report Authors (N=33,453)

**Gender Coverage and Estimates:**

- No Data: 38.5%
- Estimated: 51.2%
- Self-report: 10.3%
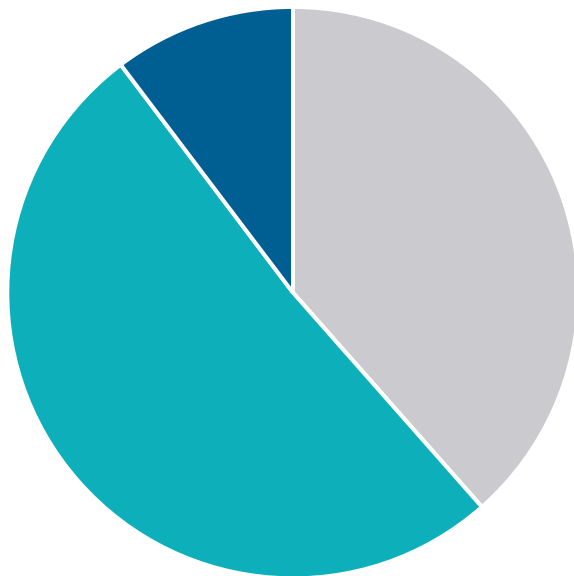
# *Science* Family Authors and Reviewers Subgroup: Review Authors (N=518)

**Gender Coverage and Estimates:**

- No Data: 18.3%
- Estimated: 65.3%
- Self-report: 16.4%
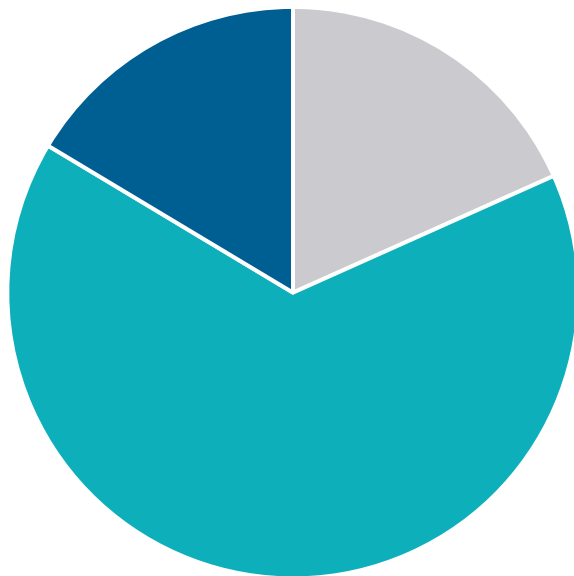
# *Science* Family Authors and Reviewers Subgroup: Commentary Authors (N=1,133)

**Gender Coverage and Estimates:**

- No Data: 16.7%
- Estimated: 64.2%
- Self-report: 19.2%
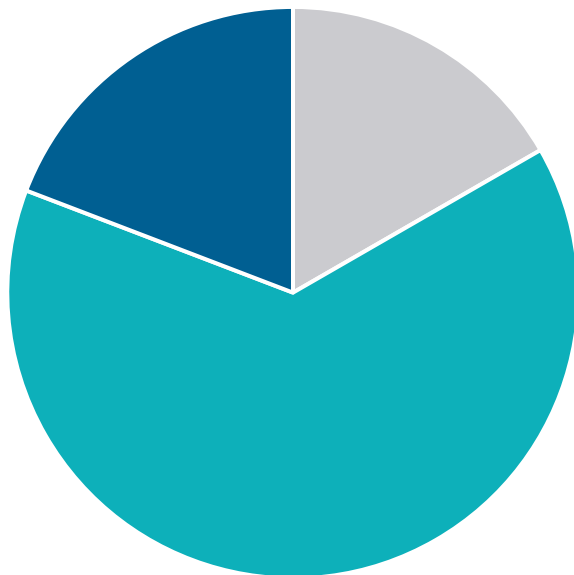
# *Science* Family Authors and Reviewers Subgroup: Reviewers (N=16,734)

**Gender Coverage and Estimates:**

- No Data: **22.8%**
- Estimated: **57.0%**
- Self-report: **20.2%**
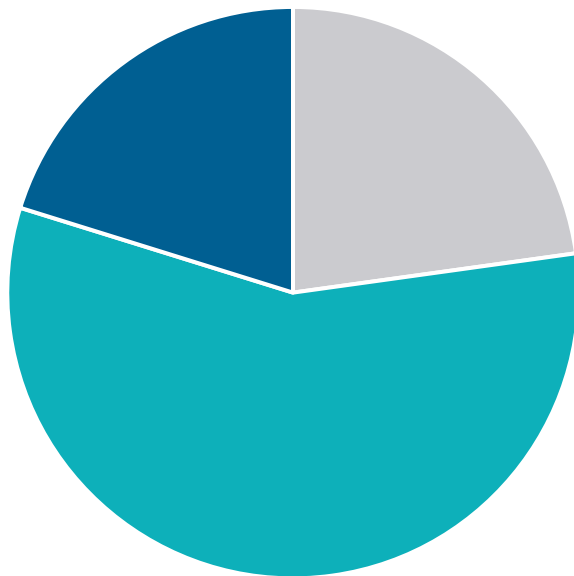
# APPENDIX D: METHODOLOGY DETAILS

# Step 1. Assemble Data for All AAAS/*Science* Functions and *Science* Family Authors and Reviewers

- Focus on AAAS and *Science* Family Functions that enable success and advancement in science and engineering.

- Obtained data for the "most recent" or "present" class of each AAAS and Science Family Function. **For example**:

  - 2020 Board of Directors.

  - 2020/21 class of S&T Policy Fellows.

  - 2019 class of Honorary Fellows.

  - *Science* Family Authors and Reviewers September 2019 through August 2020.

# Step 2. Assess Assembled Demographic Data for Consistency Across Sources

**A**

**B**

**C**

## OBTAIN DATA

All self-report
- Function or subgroup-provided
- Survey and membership data

## ASSESS FOR CONSISTENCY

Set to missing if not consistent

## MAXIMIZE COVERAGE

If not available from one source, is it available from another?

# Step 3. Estimate Gender



A
**GENDER DATA STILL MISSING?**

B
**APPLY STATISTICAL PACKAGE\***

C
**ACCEPT ESTIMATES WITH ≥95% CONFIDENCE**

\*Lincoln Mullen (2018). Gender: Predict Gender from Names Using Historical Data. R package version 0.5.2.

# Strengths and Weaknesses of "Gender R Package Version 0.5.2"

| Strengths | Weaknesses |
|-----------|------------|
| Has at least 98% accuracy rate for our population. | Can only infer gender likely to have been assigned at birth based on the name. |
| The name dictionary on which the packages relies is diverse and multiethnic. | Less accurate without birth-year data because some names change gender association over time, although this is minimized by selecting only those estimates with $\geq$95% confidence. |

For additional information: https://docs.ropensci.org/gender/

# Step 4. Decide Categories for Gender and Race/Ethnicity

| Issue | Decision |
|-------|----------|
| Inconsistent use of "decline to answer" for ethnicity and/or gender across functions and subgroups. | Included "no data" category. |
| Some groups have race and ethnicity broken out into two questions where ethnicity identifies "Hispanic or Latinx" and race does not include this as an option; most have one race/ethnicity question where Hispanic/Latinx and "Two or more races/ethnicities" are options. | In cases where race and ethnicity are asked separately, If Hispanic or Latinx is selected, this designation supersedes the response to the second race question. |

# Step 5. Decide How to Count Individuals Within and Across Functions

| Issue | Example | Decision |
|---|---|---|
| Individuals show up multiple times within a function. | In Staff Leadership, all Advisory Council members are also on the Leadership Team. | Counted once within the function |
| Individuals show up multiple times across functions. | An Elected Leader also is part of an award selection committee. | Counted in each function |
| Overall presentation of results. | Individuals show up in multiple functions and multiple subgroups. | Counted once for overall results |

# Step 6. Present Results

**RACE/ETHNICITY**

- **0.0%** AMERICAN INDIAN OR ALASKA NATIVE
- **4.2%** ASIAN OR PACIFIC ISLANDER
- **2.0%** BLACK OR AFRICAN AMERICAN
- **1.2%** HISPANIC OR LATINX
- **1.2%** MULTI-RACIAL OR OTHER
- **44.5%** WHITE (NON-HISPANIC)
- **46.9%** NO DATA

FEMALE **30.3%**

MALE **60.0%**

NONBINARY/-SELF-IDENTIFY **0.1%**

NO DATA **9.7%**
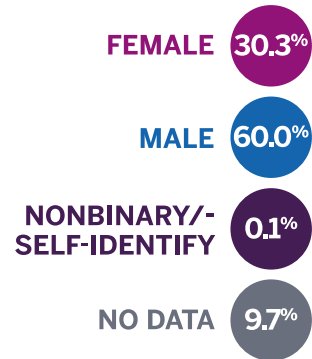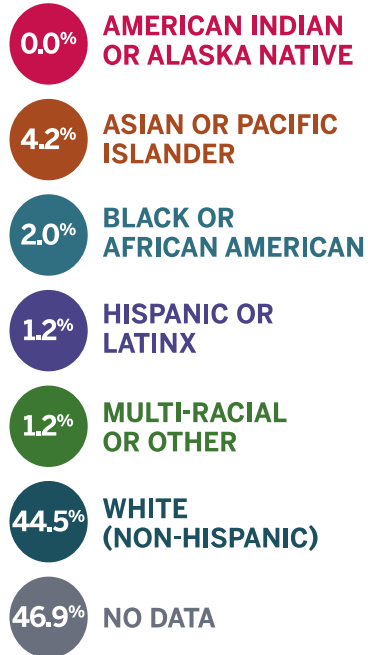
**GENDER**

# APPENDIX E: LIMITATIONS

# LIMITATIONS AND CONCERNS

# Limitations and Concerns

⚠️ **DATA COVERAGE**

⚠️ **DATA CONSISTENCY**

⚠️ **ESTIMATED GENDER DATA**

⚠️ **CONFIDENTIALITY**

⚠️ **ETHICAL CONCERNS**

# Assessment of Limitations and Concerns
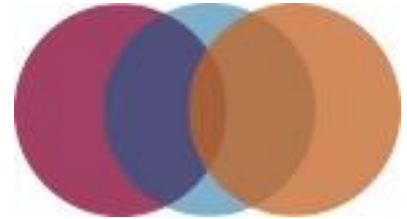
**EXPOSING DATA ISSUES NOW WILL LIKELY LEAD TO IMPROVED DATA OVER TIME.**

**THIS WILL BE AN IMPERFECT PROCESS.**

**TRANSPARENCY IS KEY.**

# APPENDIX F:
# RESULTS, SUMMARY, NEXT STEPS

# RESULTS

# Order of Results

- Reminder on Functions

- Executive Summary

- Data Coverage

- Results Overview

- Summary  and Next Steps

# RESULTS: REMINDER ON FUNCTIONS AND SUBGROUPS

# Reminder on AAAS/*Science* Functions

Functions are not limited to AAAS staff members but include elected leadership, award winners, program participants, award and program selection committees, etc.; *Science* Family Authors and Reviewers are examined separately.

Note: Refer to slides 5-7 and Appendix A for details.

# RESULTS: EXECUTIVE SUMMARY

# Executive Summary: Coverage of Demographic Variables

**Data coverage (usable data available, including estimated data) for gender is high for AAAS/*Science* Functions and moderate for *Science* Family Authors and Reviewers.**

**Race/ethnicity coverage is moderate for AAAS/*Science* Functions and low for *Science* Family Authors and Reviewers.**

Note: High coverage: > 80%; moderate coverage: 50-79%; low coverage: <50%

# Executive Summary: Gender Representation

**AAAS has some functions in which the ratio of males to females is balanced or favors females, but overall, males outnumber females 2:1.**

*Science* **Family Authors and Reviewers' ratio of males to females is 2:1 in favor of males.**

Note: These ratios exclude missing data.

# Executive Summary: Race/Ethnicity Representation

**12:1** — **People who are White (non-Hispanic) outnumber people of all other ethnicities 12:1 for Honors and Awards Recipients, a nomination-based AAAS/*Science* Function.**

**5:1** — **People who are White (non-Hispanic) outnumber people of all other ethnicities 5:1 for Career Development/Fellowship Participants, an application-based AAAS/*Science* Function.**

**2:1** — **It is difficult to assess ethnicity representation for *Science* Family Authors and Reviewers due to missing data, but what we have indicates that White (non-Hispanic) people outnumber people of all other ethnicities by at least 2:1.**

Note: These ratios exclude missing data.

# Executive Summary: Next Steps, Improve Data & Processes

**Improve/develop systems for collecting demographic data for all AAAS/*Science* Functions and *Science* Family Authors and Reviewers**

**Develop system for linking data AAAS/*Science* Functions and *Science* Family Authors and Reviewers**

**Identify reliable and ethical methods for estimating race/ethnicity**

**Improve coverage with self-report data**

**Improve consistency and facilitate analyses**

**Improve coverage**

# RESULTS: DATA COVERAGE

# Data Coverage: Overall Gender

**AAAS/*Science* Functions (N=13,480)**

■ **No Data: 9.7%**
■ **Covered: 90.3%**
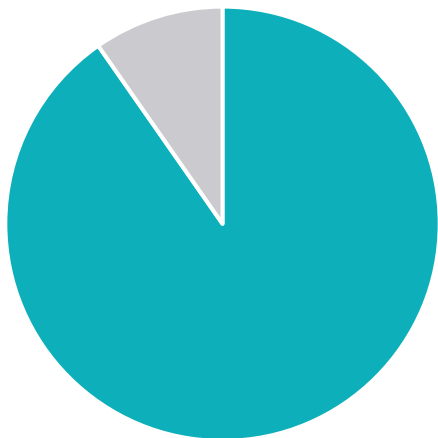


***Science* Family Authors and Reviewers (N=49,316)**

■ **No Data: 33.2%**
■ **Covered: 66.8%**
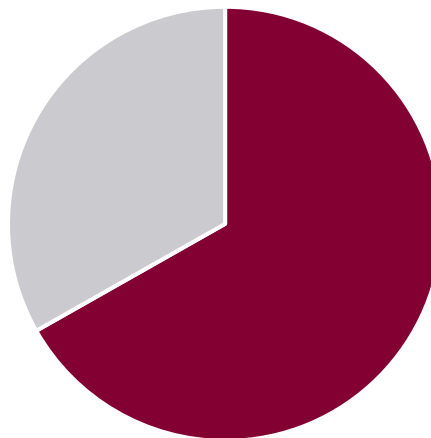


Note: "Covered" means usable gender data (including estimated data) are available; "no data" means gender data are missing.

# Data Coverage: Overall Race/Ethnicity

**AAAS/*Science* Functions (N=13,480)**

- No Data: 46.9%
- Covered: 53.1%



***Science* Family Authors and Reviewers (N=49,316)**

- No Data: 87.8%
- Covered: 12.2%
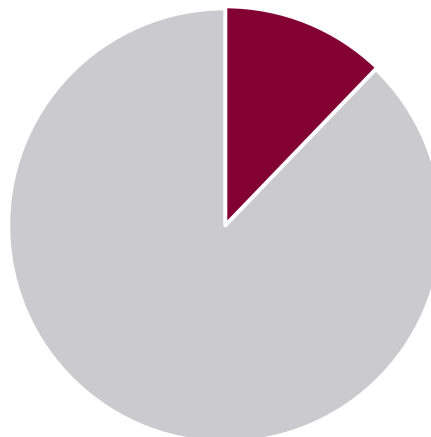


Note: "Covered" means usable race/ethnicity data are available; "no data" means race/ethnicity data are missing.

# RESULTS: OVERVIEW

# Overview: Gender Representation

## AAAS/*Science* Functions (N=13,480)

- No Data: 9.7%
- Female: 30.3%
- Male: 60.0%
- Non-binary/Self-identify: 0.1%
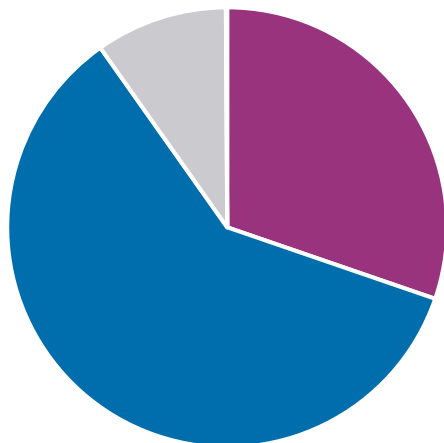
## *Science* Family Authors and Reviewers (N=49,316)

- No Data: 33.2%
- Female: 20.3%
- Male: 46.4%
- Non-binary/Self-identify: < 0.1%

# Overview: Gender Ratios



| | Female | Male |
|---|---|---|
| Career Development/Fellowship Participants | 2.5 | 1 |
| Career Development/Fellowship Selection Committees | 2.3 | 1 |
| Elected Leadership | 2.1 | 1 |
| Staff Leadership | 1.3 | 1 |
| Advisory Committees | 1.3 | 1 |
| Speakers | 1.2 | 1 |
| Volunteers | 1 | 1.2 |
| Honors and Awards Selection Committees | 1 | 1.5 |
| Science Family Editors and Advisors | 1 | 2 |
| Science Family Authors and Reviewers | 1 | 2.3 |
| Honors and Awards Recipients | 1 | 3.7 |

■ Female  ■ Male  ■ *Science* Family Authors and Reviewers, Female  ■ *Science* Family Authors and Reviewers, Male

Note: Each bar presents the ratio of males to females, excluding missing data. For example, the top bar shows that females outnumber males by nearly 3:1 among Career Development/Fellowship Participants. The bottom bar shows that males outnumber females nearly 4:1 among Honors and Awards Recipients.

# Overview: Race/Ethnicity Representation



**AAAS/*Science* Functions (N=13,480)**

| | |
|---|---|
| No Data | 46.9% |
| White (non-Hispanic) | 44.5% |
| Asian or Pacific Islander | 4.2% |
| Black or African American | 2.0% |
| Multi-racial or other | 1.2% |
| Hispanic or Latinx | 1.2% |
| American Indian or Alaska Native | 0.0% |

***Science* Family Authors and Reviewers (N=49,316)**

| | |
|---|---|
| No Data | 87.8% |
| White (non-Hispanic) | 7.7% |
| Asian or Pacific Islander | 3.5% |
| Multi-racial or other | 0.5% |
| Hispanic or Latinx | 0.5% |
| Black or African American | 0.1% |
| American Indian or Alaska Native* | 0.0% |

*Indicates<0.1%

# Overview: Race/Ethnicity Ratios



**Honors and Awards Recipients** — White (non-Hispanic): 12.2, Next most prevalent ethnicity: 1

**Elected Leadership** — White (non-Hispanic): 11, Next most prevalent ethnicity: 1

**Volunteers\*** — White (non-Hispanic): 8.8, Next most prevalent ethnicity: 1

**Staff Leadership** — White (non-Hispanic): 7.6, Next most prevalent ethnicity: 1

**Advisory Committees\*** — White (non-Hispanic): 6.8, Next most prevalent ethnicity: 1

**Honors and Awards Selection Committees** — White (non-Hispanic): 6.7, Next most prevalent ethnicity: 1

**Science Family Editors and Advisors\*** — White (non-Hispanic): 6.5, Next most prevalent ethnicity: 1

**Career Development/Fellowship Selection Committees** — White (non-Hispanic): 4.9, Next most prevalent ethnicity: 1

**Career Development/Fellowship Participants** — White (non-Hispanic): 4.6, Next most prevalent ethnicity: 1

**Speakers** — White (non-Hispanic): 3.7, Next most prevalent ethnicity: 1

**Science Family Authors and Reviewers\*** — Science Family Authors and Reviewers, White (non-Hispanic): 2, Science Family Authors and Reviewers, Next most prevalent ethnicity: 1

Legend:
- White (non-Hispanic)
- Next most prevalent ethnicity
- *Science* Family Authors and Reviewers, White (non-Hispanic)
- *Science* Family Authors and Reviewers, Next most prevalent ethnicity

Notes: Each bar presents the ratio of White (non-Hispanic) function members to the next most prominent race/ethnicity, excluding missing data. For example, the top bar shows that White (non-Hispanic) members outnumber any other race/ethnicity by at least 12:1 among Honors and Awards Recipients. *Interpret with caution; coverage for ethnicity was <50 percent.

# SUMMARY AND NEXT STEPS

# Summary

Data coverage for both gender and ethnicity has room for improvement.

Males outnumber females 2:1 across all AAAS/*Science* Functions (total) and *Science* Family Authors and Reviewers.

All AAAS/*Science* Functions and *Science* Family Authors and Reviewers are predominately White (non-Hispanic).

Nomination-based functions and subgroups are more lopsided toward males and White (non-Hispanic) people than application-based functions and subgroups.

AAAS

# Next Steps: AAAS will improve…

**Data for future reports of AAAS' demographics**

Data collection processes and storage systems

Coverage of demographic variables