APAC
Presentation on Demographic Data

Louis Barbier, NASA Associate Chief Scientist
March 17, 2021

Demographics Data Collection

Submission of the requested information is voluntary and will not affect an organization's eligibility for an award. However, withholding this information will undermine the usefulness of information provided by others. Any individual who would prefer not to submit some or all the information requested should check the box(es) provided.

1. Gender * (choose one):

- ○ Male
- ○ Female
- ● I prefer not to report my gender

2. Ethnicity * (choose one):

- ○ Hispanic or Latin ⓘ
- ○ Not Hispanic or Latin
- ● I prefer not to report my ethnicity

3. Race * (select one or more):

- ☐ American Indian or Alaska Native ⓘ
- ☐ Asian ⓘ
- ☐ Black or African American ⓘ
- ☐ Native Hawaiian or Other Pacific Islander ⓘ
- ☐ White ⓘ
- ☐ Other
- ☑ I prefer not to report my race

4. Do you have any of the following disabilities/serious health conditions? Consider your answers without the use of medication and aids (except eyeglasses) or the help of another person. (Check all boxes that apply to you.) *

- ☐ Hearing Impairment
- ☐ Visual Impairment
- ☐ Mobility/Orthopedic Impairment
- ☐ Other
- ☐ None
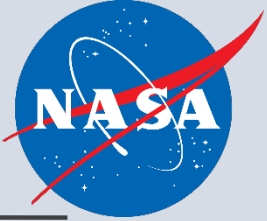- ☑ I prefer not to reveal my disabilities/health conditions

5. Are you currently serving (or have previously served) as PI, PD, Co-PI, or Co-PD on any federally funded project? *

- ○ Yes
- ● No

Demographic Data Collection - Career data

What is your highest degree earned? * (choose one):

- o Bachelors
- o Masters
- o Doctorate
- o Other
- o I prefer not to answer

What is the year you received your highest degree? *

[▾]

Career Classification Sector * (choose one):

- o Academia
- o Government
- o For-profit
- o Nonprofit
- o Other
- o I prefer not to answer

Career Type * (choose one):

- o Primarily Research
- o Primarily Teaching
- o Science-related
- o Engineering/Technology-related
- o Further Training or Education
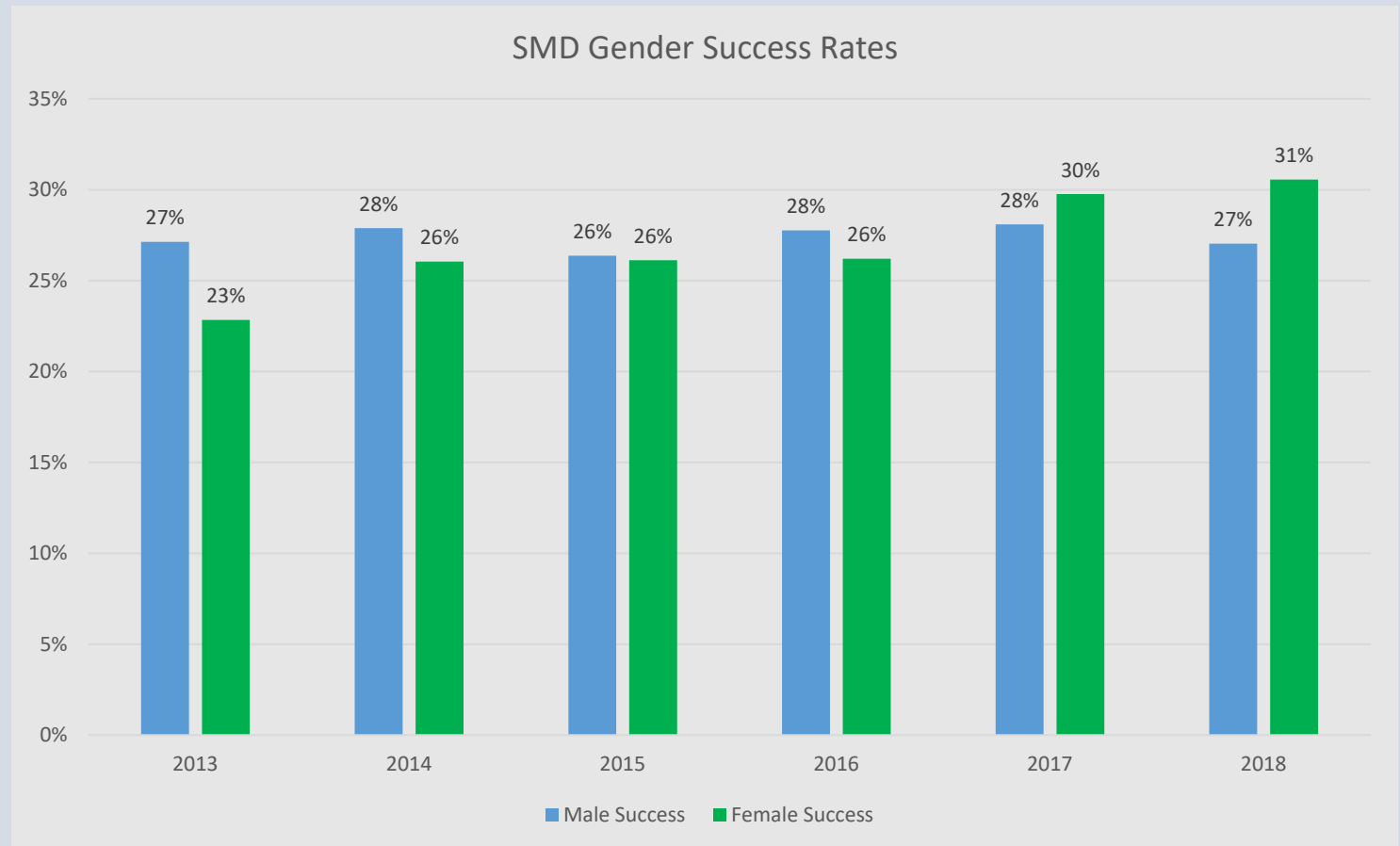- o Other
- o I prefer not to answer

The Data

- Who "owns" the data (controls it)? Office of the Chief Scientist
- Types of data: (a) proposers; (b) reviewers; (c) students
  - Student data is trickier (proposal usually submitted by advisor)
  - Anyone who accesses NSPIRES is asked to provide this data – no obligation to do so
  - Data can be broken down by Solicitation, Status: Selected, Declined, Selectable, Year
- Protecting PII is paramount – so we never release names, proposal numbers, proposal titles, …. Disability data is often very difficult to "anonymize" and may not be sharable in some cases.
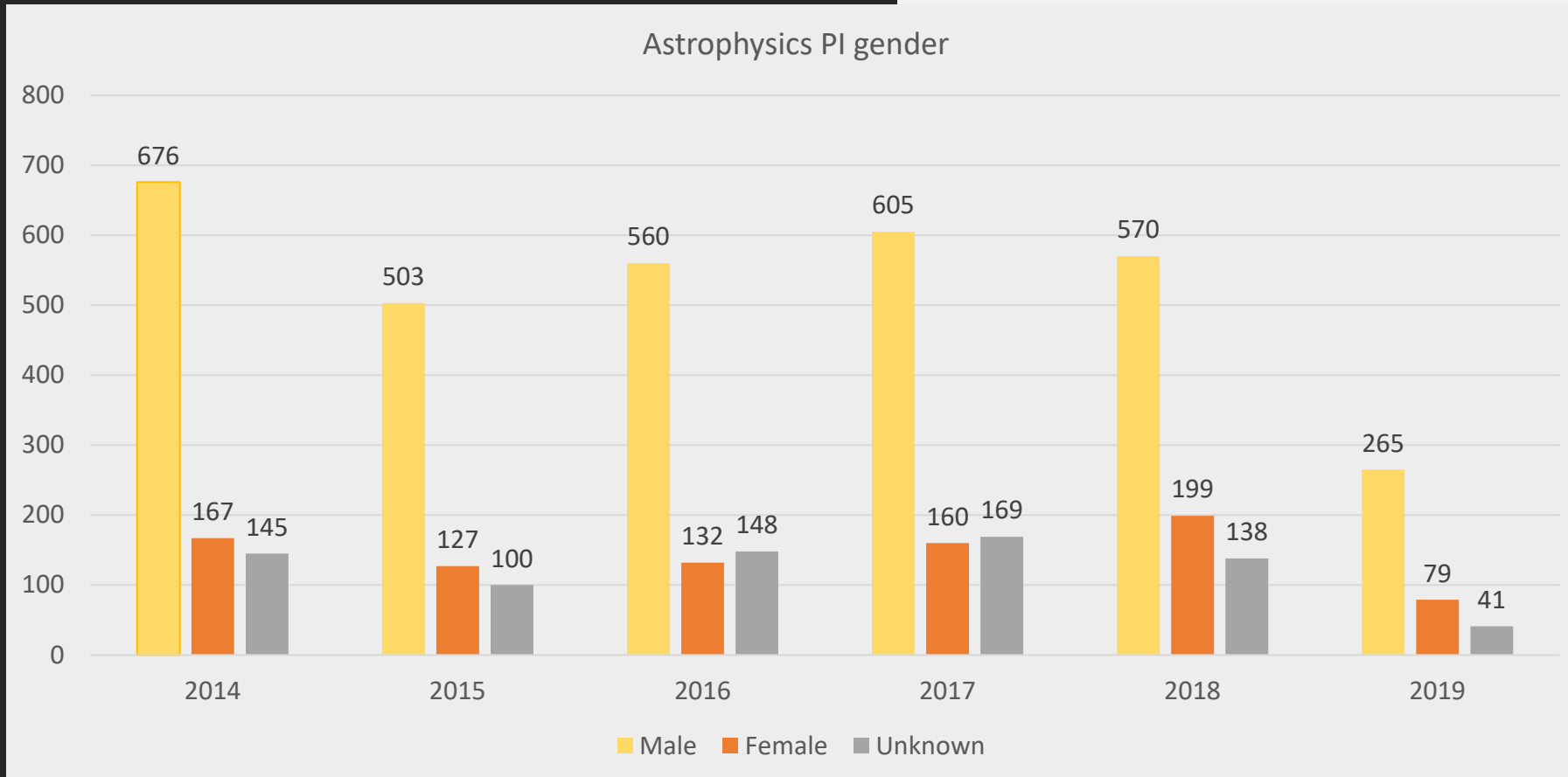- Data collection began in February 2016

Gender analysis: SMD combined

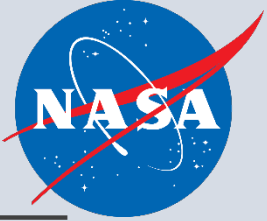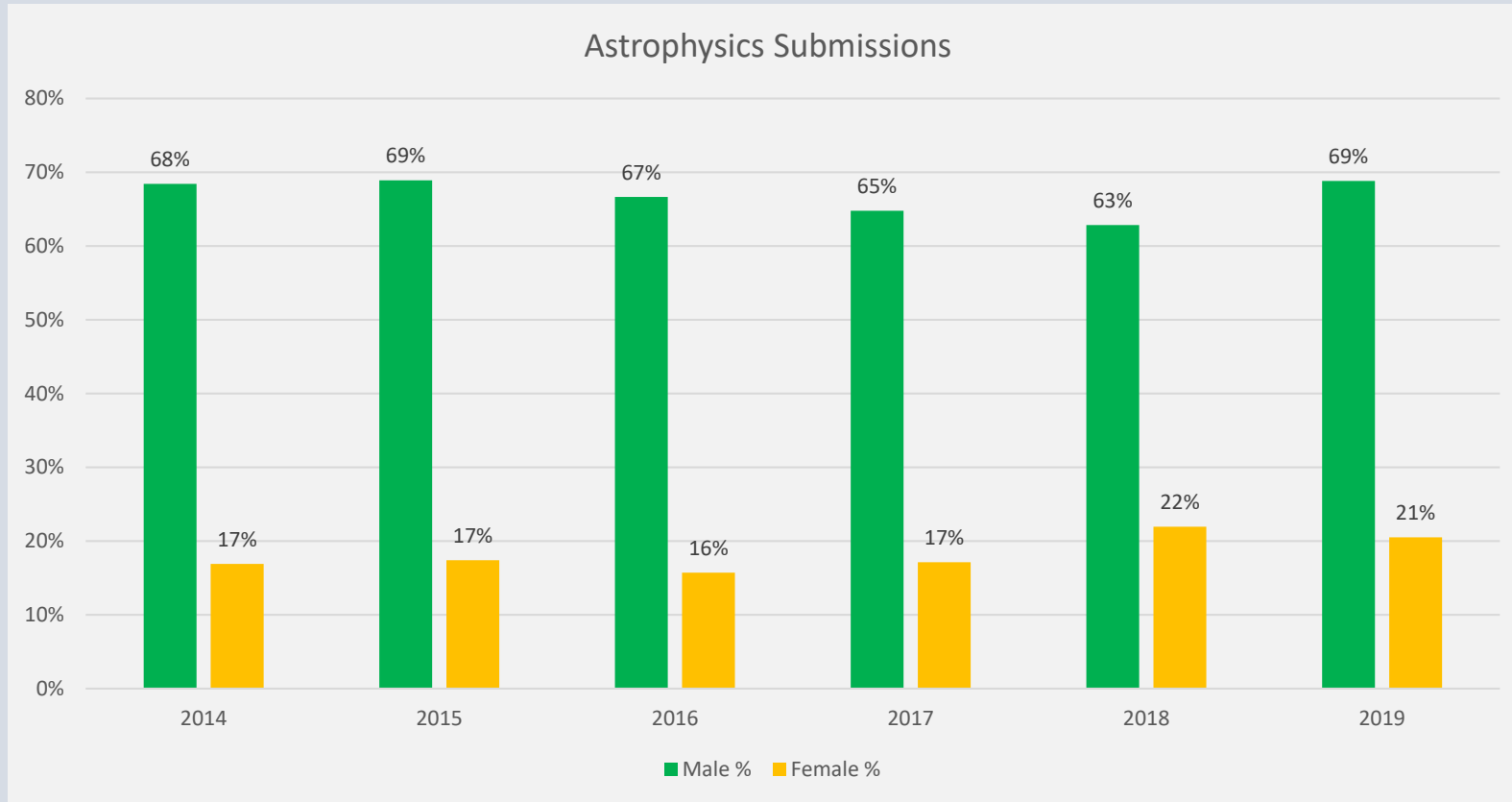Astrophysics, Earth Science, Heliophysics, and Planetary Science

SMD Gender Success Rates

Astrophysics
Gender - Submissions

PRELIMINARY DATA

Astrophysics PI gender

Year	Male	Female	Unknown
2014	676	167	145
2015	503	127	100
2016	560	132	148
2017	605	160	169
2018	570	199	138
2019	265	79	41

■ Male ■ Female ■ Unknown

Male

Female

PRELIMINARY DATA

Astrophysics Submissions

Astrophysics Gender Success

PRELIMINARY DATA

Male

Female
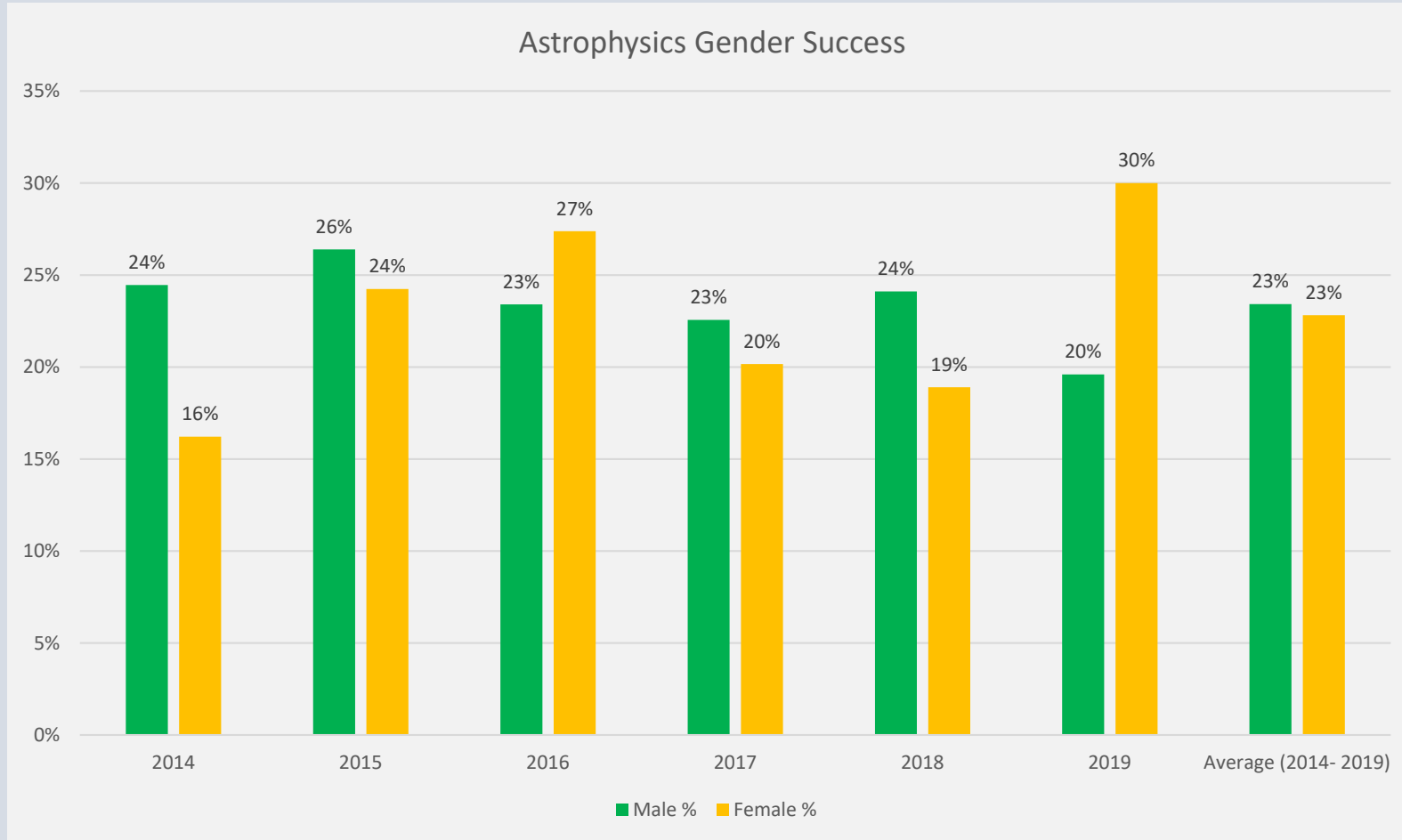
Astrophysics Ethnicity data
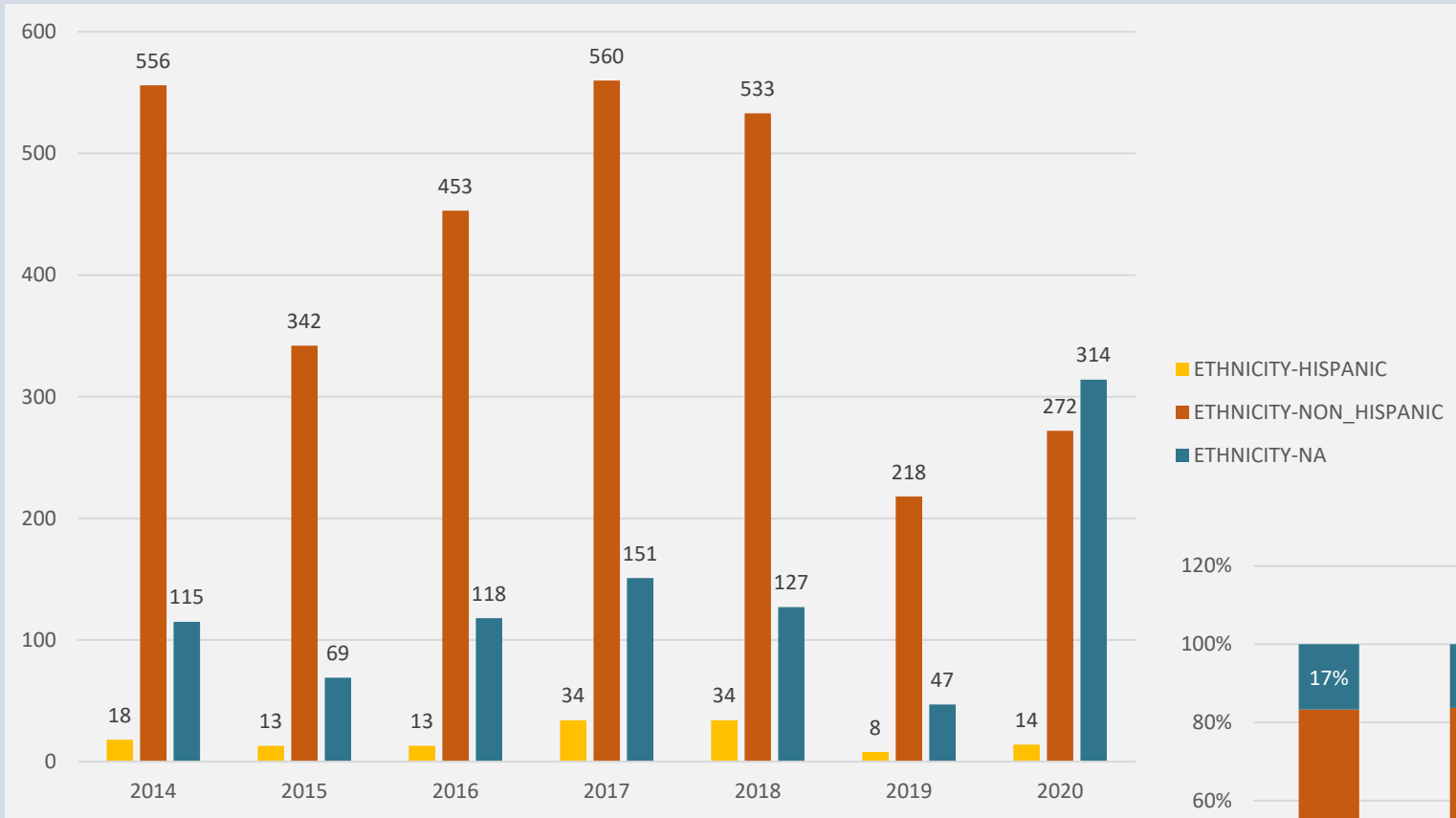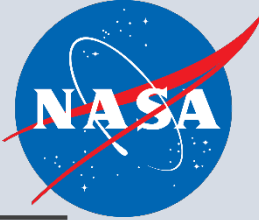
PRELIMINARY DATA
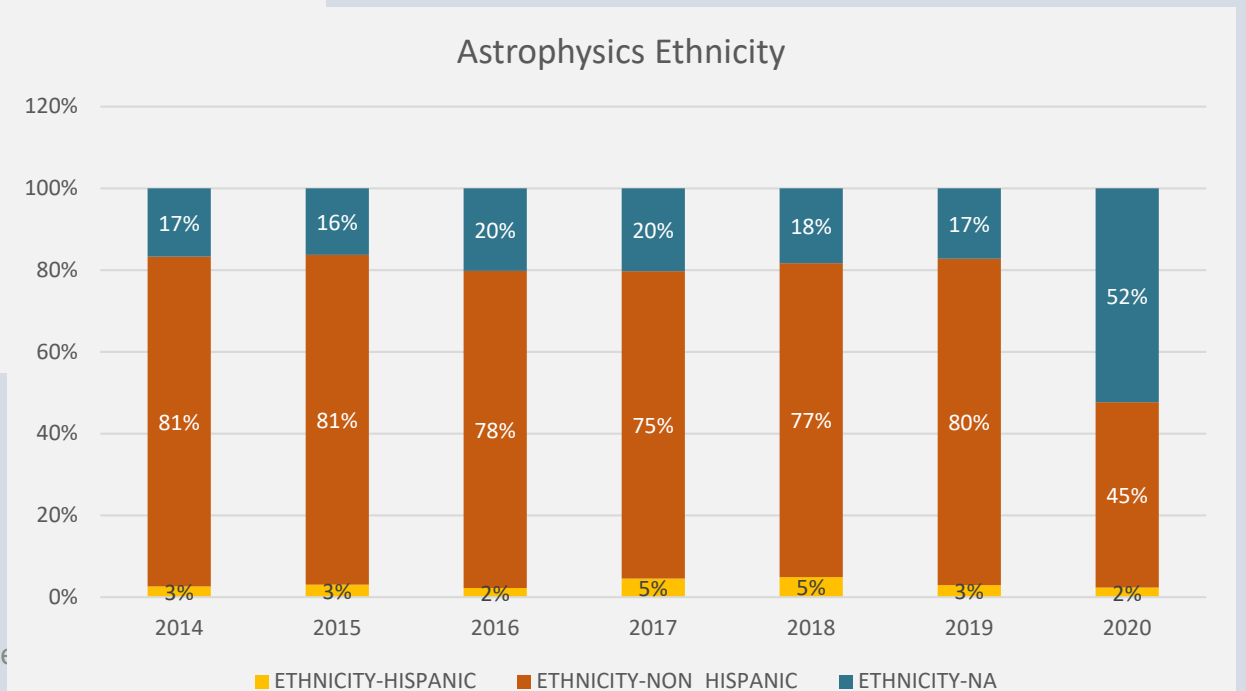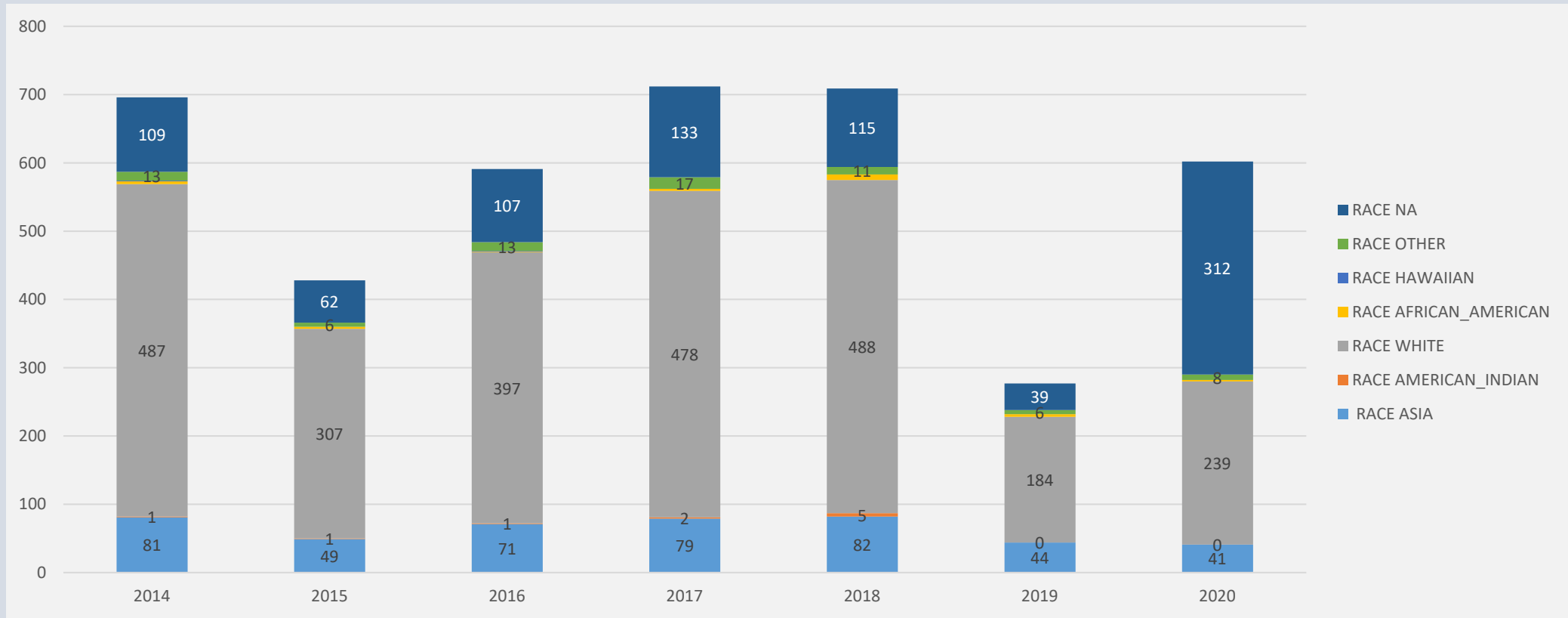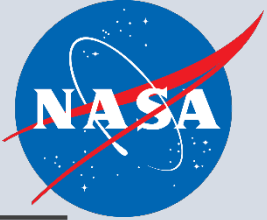
Astrophysics Race data

PRELIMINARY DATA

Astrophysics Race data

Astrophysics Race Percent data
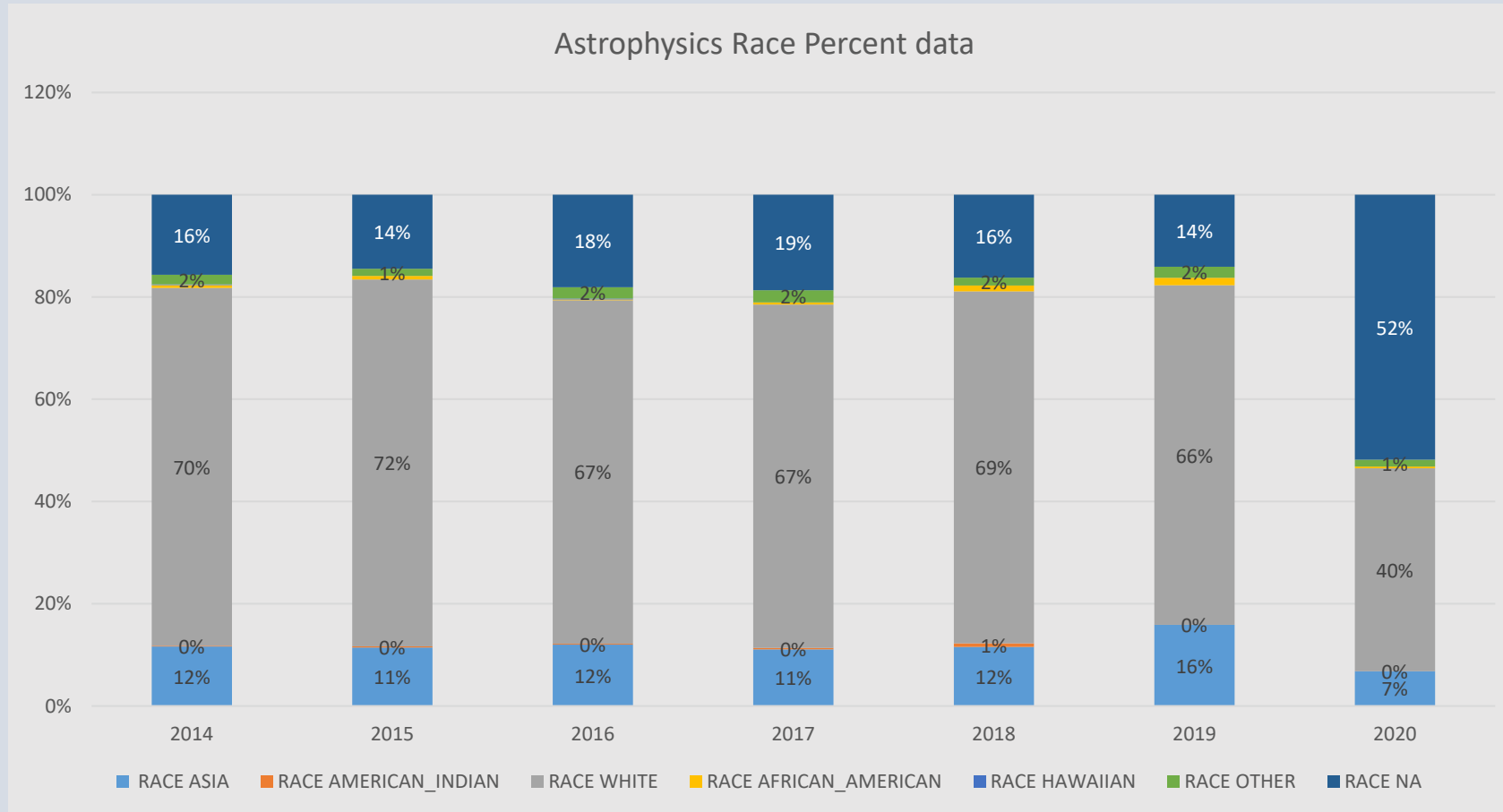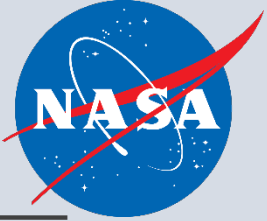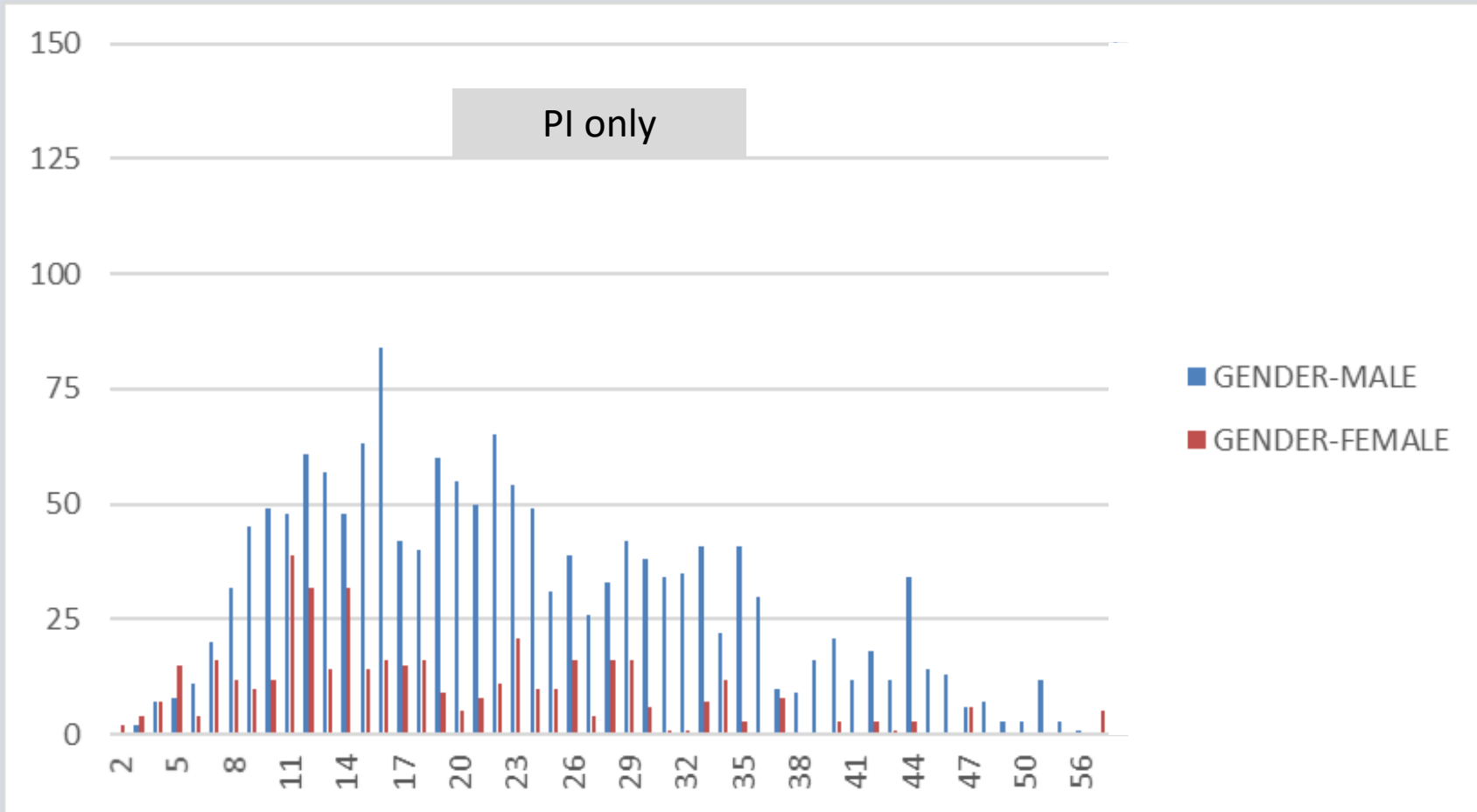
PRELIMINARY DATA

PRELIMINARY DATA

Gender: NASA Science Hires

NASA Science Hires

	2016	2017	2018	2019	2020
Gender Male	66.7	65.6	51.9	59.5	52.9
Gender Female	33.3	34.5	48.1	40.5	47.1
US Female Percentage	51%				
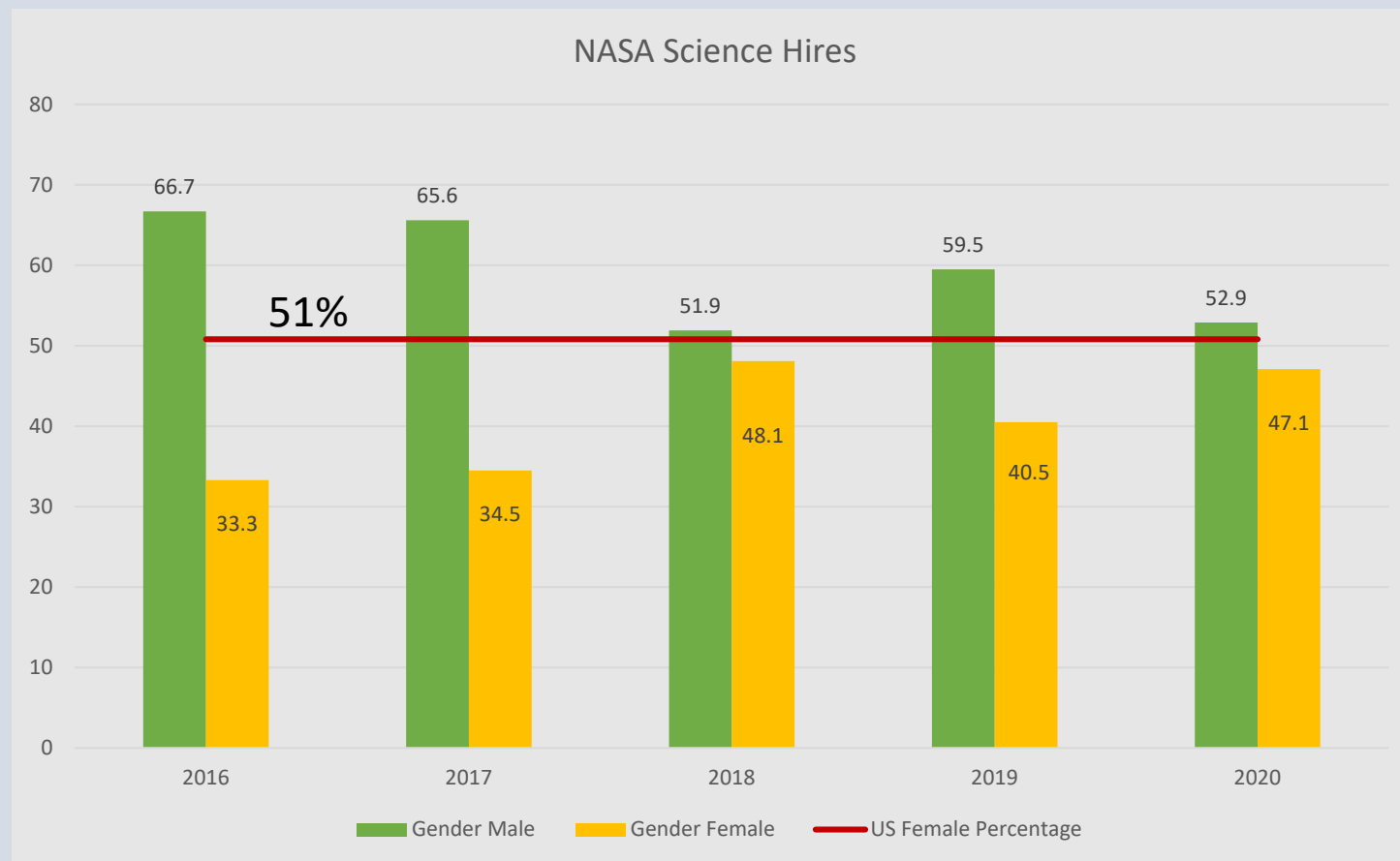
Issues with data
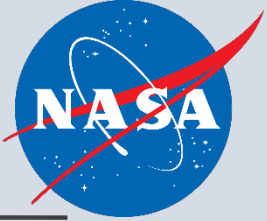
- Timing of data request -
  - ROSES programs do not coincide with calendar year boundaries - data can be missing because submission deadlines fall outside the data range
  - Not all selections may have been made, even for programs that made some selections during the requested time period (rolling deadlines)
- Data structure
  - Questions allowing for multiple selections are counted as multiple individuals, not as one individual with multiple selections
  - Removing PII when it is accidentally included
  - Data gaps (missing data) – seems to be more common for reviewer data
  - Student data vs. advisor data
- NSPIRES maintenance – initial loss of some data (early on)
- Early data are incomplete due to a programming bug: we have reason to believe that the "NA" category might be over-represented due to initial data loss (for 2016 – 2018)

Overall response rates are good –

- Gender – generally around 90%
- For Ethnicity – around 80%
- For Race – around 82%

We saw a "healthy" uptick in responses in 2019 which is encouraging, but 2020 saw a rise in N/A responses for Race and Ethnicity.

Forward work

- **Are we asking the questions the "right way" (e.g. binary gender)?**
  - **We stuck with the 2020 census per OMB guidance**
  - **Should we be using the ADA categories?**
- **Capturing the GO cohort data**
- **Analysis / comparison with external research community (university cohort, early career, etc.)**
- **Provide standard reporting to the NASA and the community**

Processing the data

- Process for access to the data –
  - A somewhat manual process
  - NRESS provides data; OCS does data scrubbing (*) and analysis (canned scripts eventually)
  - OCS has hired a statistician to work the analysis
  - Future: automatically analyze the data for the past year and produce a public report (in process)
- Current Process:
  - Contact NASA OIC / Associate Administrator
  - Contact: Louis Barbier and/or Maria Santos (OCS)
  - Louis.M.Barbier@nasa.gov, Maria.M.Santos@nasa.gov

Conclusions
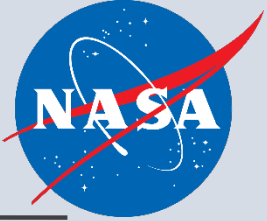
- SMD is doing okay with female representation in proposing PI's and, in most cases, selections match submissions

- SMD as a whole is not receiving proposals from marginalized racial and ethnic groups. Selection rates are generally in line with submission rates, but submission rates are low

- Data can help NASA improve outreach to other groups

Backup charts

Keyword or Report #

Advanced Search

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WOMEN IN STEM RESEARCH:

Better Data and Information Sharing Could Improve Oversight of Federal Grant-making and Title IX Compliance

GAO-16-14: Published: Dec 3, 2015. Publicly Released: Dec 14, 2015.

HIGHLIGHTS | **RECOMMENDATIONS** | VIEW REPORT (PDF, 104 PAGES) 🔧

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What GAO Found

GAO's analysis of Science, Technology, Engineering, and Mathematics (STEM) research grant awards made between fiscal years 2009 and 2013 identified no disparities in success rates between women and men at three agencies selected for review, but data limitations provided limited insight into success rates at three other agencies selected for review. At two of the agencies with data limitations—the Departments of Defense (DOD) and Energy (DOE)—GAO found evidence of disparities in success rates for women and men within certain agency components. Data limitations at the National Aeronautics and Space Administration (NASA) prevented GAO's analysis of success rates altogether. This lack of complete, linked electronic proposal and award data at NASA and some components at DOD and DOE impacts their ability to fully evaluate their programs' performance against their stated goals of funding the most qualified scientists, irrespective of gender. Adhering to federal internal control standards regarding data collection of an entire process can ensure that these agencies have the data needed for effective program management and monitoring.

Success Rates between Women and Men at Federal STEM Grant-making Agencies

No evidence of disparities in success rates

Evidence of disparities varied or insufficient data to analyze success rates

Office of the Chief Scientist

NIH (HHS) | NSF | NIFA (USDA) | DOD | DOE | NASA

Additional Materials:

🔧 **Highlights Page:**
  (PDF, 1 page)

🔧 **Full Report:**
  (PDF, 104 pages)

🔧 **Accessible Version:**
  (PDF, 124 pages)

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