

Presentation to the Heliophysics Decadal Survey State of the Profession Panel

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What I was asked to present

- ◆ Status updates on changes within NASA regarding data taking, NRA/AO requirements (e.g., ORCID, IDEA plans) and ROSES (e.g., dual anonymous review) as well as any other initiatives implemented NASA or SMD wide in response to previous decadal surveys or academy reports on Health/Vitality/DEI. Essentially, what has been or being rolled out relevant to the SoP?
 - “Data taking” is with regards to any new efforts with respect to collecting demographic data, climate/culture data, and data from proposal reviews, grant awards etc. (e.g., how are data with regards to DAPR being used, shared?)
 - Regarding "Divisions experiment" you had mentioned earlier, the panel is specifically interested in plans within heliophysics with respect to rolling out DAPR, AO IDEA plan requirements, other DEI initiatives or grant, reporting or data collecting efforts. Also, are there are differences in approaches that could be impactful across the various disciplines and implemented in heliophysics? What has been the success of AO IDEA plans? Since STEM organizations usually are not as regimented in how it measures that product validity, milestones, impact, and success--what are the metrics for those proposed plans and measurements of success during their implementation?

Demographic Data: What's collected?

- ◆ Since my last presentation, there has been no change to the demographic questions being asked of new NSPIRES registrants.
 - Updating the gender question to a more modern and inclusive form is a top priority
- ◆ Demographic variables requested from each registrant
 - Gender (M/F/Neither/PNA), Race (5 classic values), Ethnicity (Hispanic or not), Disability Status, Year of last degree, Institution
 - ❖ From the Institution, NASA can determine the Carnegie (Research Activity) Classification and status as an MSI.
 - ❖ From year of last degree, NASA can estimate a career stage (early, mid, late)
- ◆ Registrants include PIs, Co-Is, Collaborators, AORs, and reviewers.

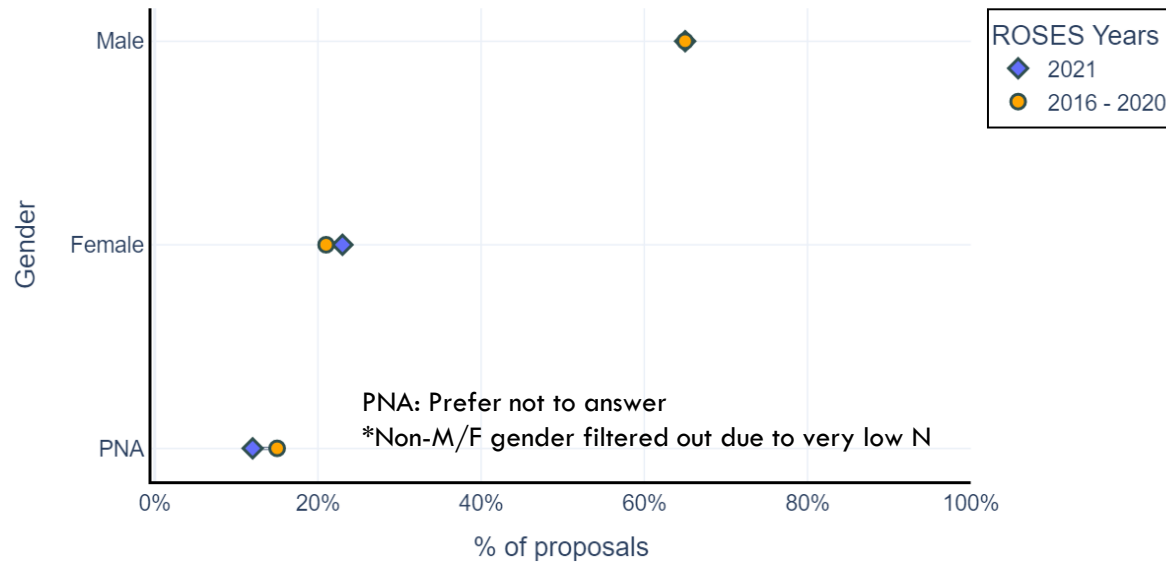
Demographic Data: Analysis

- ◆ SMD will soon be releasing to the public the first “Research Program Yearbook.” This web site will include analyses of demographic and other data for SMD as a whole and for each Division in aggregate. Data from ROSES-2021 will be compared to the aggregate from the five previous ROSES.
 - This will be a living web resource: as new analyses are performed the results will be added to the website.
 - Targeted analyses, such as the impacts of DAPR and reviewers, will also be published here.
 - SMD is especially interested in community feedback on the data analyses, particularly suggestions for what new analyses should be performed
 - The URL has not been determined.

Research Program Yearbook Example

HPD 2016 - 2020 vs. 2021: Submitted PIs

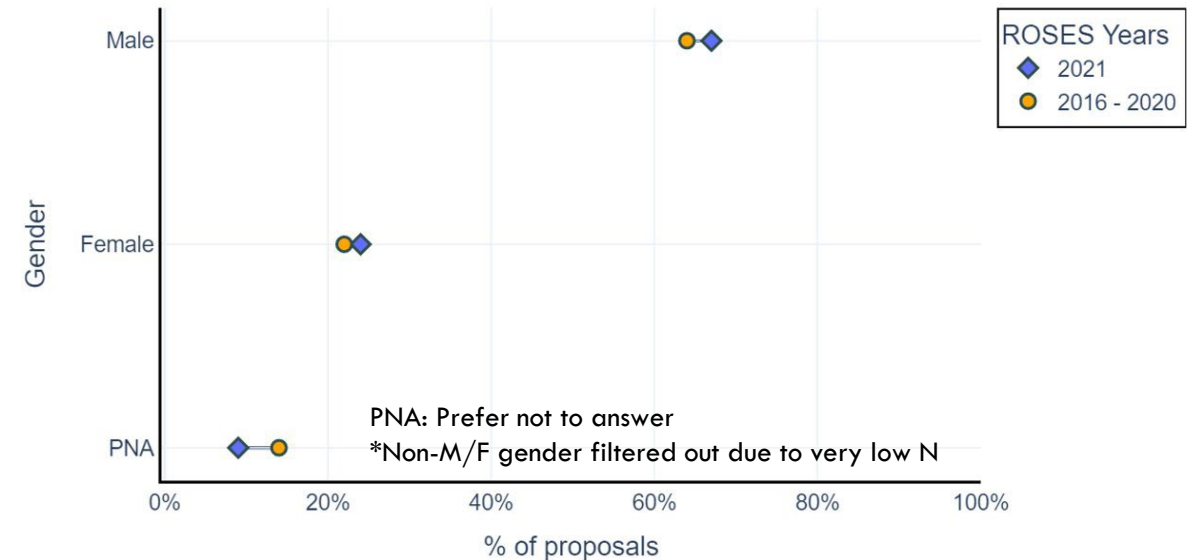
2016 - 2020 N: 2945 | 2021 N: 396



It appears that the fraction of proposals and awards with self-identified female PIs increased in ROSES-2021 compared with the average of ROSES-2016 to ROSES-2020.

HPD 2016 - 2020 vs. 2021: Selected PIs

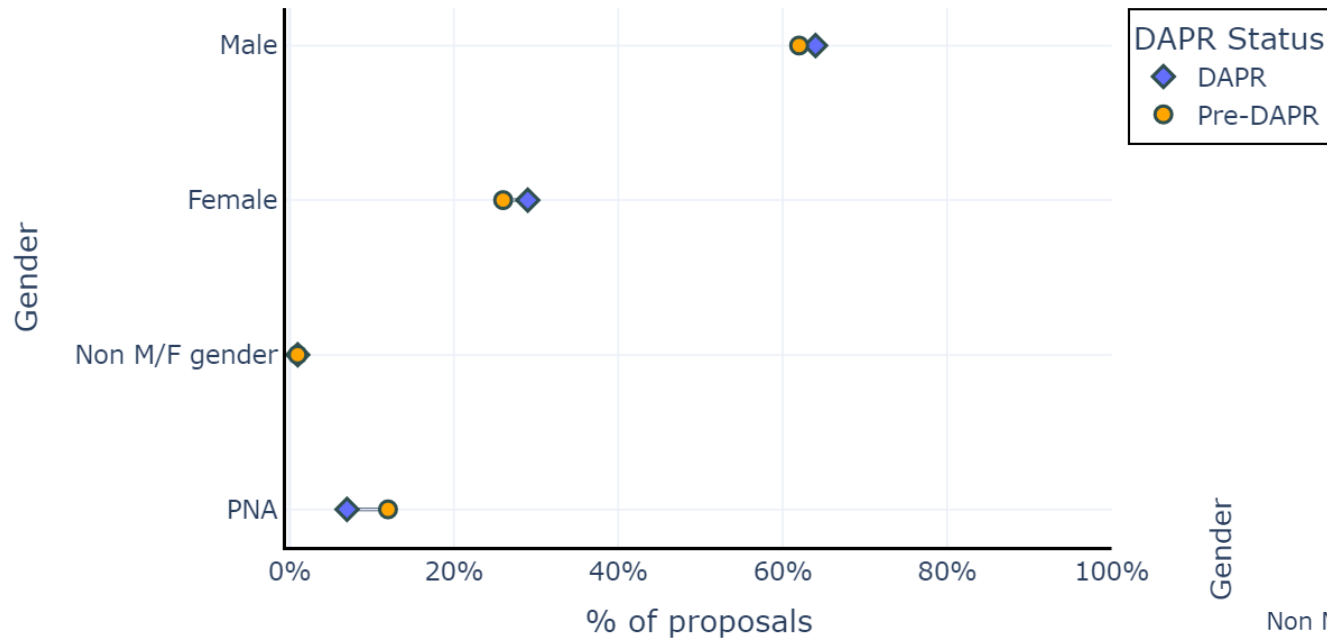
2016 - 2020 N: 849 | 2021 N: 127



Preliminary Analysis of DAPR

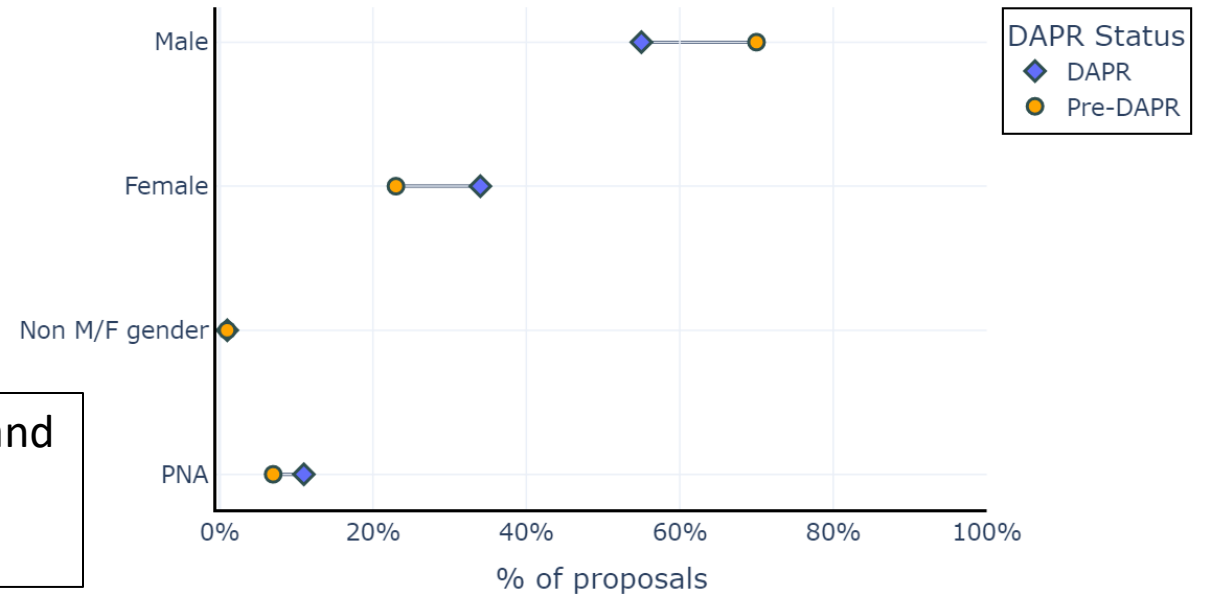
ADAP 2018 - 2019 vs. 2020 - 2021: Submitted PIs

Pre-DAPR N: 482 | DAPR N: 520



ADAP 2018 - 2019 vs. 2020 - 2021: Selected PIs

Pre-DAPR N: 99 | DAPR N: 97



A complete analysis will be performed, shared within SMD, and then shared with the community through the Yearbook and public presentations.

Demographic Data: Other data sources

- ◆ We have not attempted any analyses of the *contents* of reviews. The Yearbook will contain “Max-o-Grams”, plots showing the fraction of proposals at each merit score that were selected. Essentially $P(\text{selection} \mid \text{score})$.
- ◆ SMD has run two internal culture/psychological safety surveys. The first was for CSs only and the second was for both CSs and HQ contractors.
 - There are currently no plans to perform similar surveys of the community (PRA issues).
 - ❖ However, such surveys may be proposed as part of an Inclusion Plan.

New NRA Requirements

- ◆ SMD will be requiring all proposal team members to have a “Persistent Digital Identifier”. Currently, the only PDI offered to the world that meets all specifications is ORCID (<https://orcid.org/>).
 - Note that this requirement is *not* NASA’s creation; it is a part of the national plan for ensuring research integrity across the Nation.
- ◆ To reduce cognitive biases in reviews, moving towards making DAPR the default review process by ROSES-2025.
- ◆ To support Administration’s open science goals, revised SMD’s policy on data-, code-, and publications-sharing. All proposals are now required to contain an “Open Science and Data Management Plan”.

New NRA Requirements: Inclusion Plans

- ◆ Inclusion Plans (IPs) are intended to improve the inclusiveness and psychological safety of our science teams.
- ◆ The requirement started as grassroots-driven efforts in Astrophysics and Earth Science Divisions.
- ◆ For ROSES-2023, there is a uniform description of what is required for inclusion plans as well as a uniform evaluation process for all program elements. A uniform evaluation rubric is being developed.
- ◆ IPs are intended to be tightly focused on the barriers likely to be experienced by the proposing team and is expected to scale with the size of the effort.

New AO Requirements

- ◆ There is a forklift upgrade under way of the Standard AO Template. Its major goal is to reduce the number of requirements and clarify those that remain. Should be completed in a few months.
 - Other changes include:
 - ❖ Altered Data Management and Archiving Plan requirements to move towards open science.
 - ❖ Added optional language requiring Team Management Plans which would include an “Agreement on Acceptable Behavior”, “Inclusion Plan”, “Collaboration Management Plan.”
 - ❖ Clarified alternative access to space
 - ❖ Added new requirements (to Step 2) on cybersecurity and space asset protection.
- ◆ Plan to circulate it widely within NASA for preliminary approval and to solicit community comments before it becomes “official”.

DEIA Efforts

- ◆ Third PI Launchpad on schedule for this summer @U Mich
- ◆ SMD Bridge Program Workshop Report coming out soon.
 - Bridge Program Seed Funding Solicitation being released later this month.
 - Bridge Program solicitation to be issued late Fall.
 - A series of networking events, workshops, and “office hours” will be held between the release of the two solicitations.
- ◆ Also releasing solicitation for “Research Initiation Awards” for those who have never received an SMD award.
 - Simplified proposal structure; short length.
 - Explicitly calls for budgets to include summer salary, teaching buyouts, conference travel for PI and undergrads, and living wages for undergraduate researchers.

HPD-Specific Items: ROSES

◆ R&A “experiments” in HPD’s section of ROSES:

Inclusion Plans Required

- B.22 Space Weather Centers of Excellence (2022)
- B.21 H-CSI (2023)

Results will be evaluated along with all other similar programs in 1 or 2 years.

Dual-Anonymous Peer Review

- B.2 H-SR (2023)
- B.4 H-GI (2022 and 2023)
- B.16 H-ARD (2022 and 2023)

Impacts will be evaluated for all programs by this Fall.

Quarterly Reviews

- B.12 H-DEE (2022)
- B.15 HITS (2022 and 2023)
- B.20 H-TM (2022)

Impacts will be evaluated after three years of experiments.

HPD-Specific Items: DEIA

- ◆ Established a Heliophysics Division IDEA Working Group
 - Selected Co-chairs: Kelly Korreck and Denise Hill
- ◆ Sponsoring and incentivizing enhanced and innovative outreach activities with IDEA as a major focus
 - PUNCH, IMAP, GLIDE, EZIE
 - Newly selected Drive Centers
- ◆ Establishing a community-wide early- and mid-career support network pilot in partnership with other SMD Divisions, professional and scientific societies with a focus on providing mentors and mentees training and resources that consider the “whole” STEM individual
- ◆ Developing targeted and innovative R&A solicitations with an IDEA emphasis for FY22
- ◆ “Deepening the Pool” RockOn! and RockSat additional contributions
- ◆ Continue listening sessions with early career students and faculty to identify barriers for underrepresented groups

HPD-Specific Items: Other Activities

- ◆ Members of HPD participating in various trainings and working groups across SMD to identify potential near-, mid-, and long-term Division IDEA actions
- ◆ Identifying Division and SMD leadership opportunities for staff
- ◆ Employing best practices for IDEA recruitment efforts, including hiring panels, reviewer panels and advisory boards
- ◆ Adopted inclusive R&A practices (e.g., code of conduct, dual-anonymous reviews)
- ◆ Coordinate with SMD Science Activation and Office of STEM Engagement to expand engagement opportunities
- ◆ Advertise and solicit regular community input at meetings: AGU, GEM, CEDAR, SHINE *etc.*
- ◆ Implement some of the lessons learned from EC listening sessions and SMD led HBCU listening sessions

Questions? Comments?
Anecdotes?