SMD Policies and Practices

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Questions Asked by this Group

- What are the NASA and/or NASA/SMD policies and practices in place or planned intended to sustain, grow, and strengthen the community that makes the profession.
- How are those policies and practices reflected in research and announcements of opportunities, recognizing that some are legal in nature while others are internal (to SMD) policy and guidance.
- How is the effect and impact of those policies tracked and followed through?

Solicitation Text: ROSES NRA

"NASA recognizes and supports the benefits of having diverse and inclusive scientific, engineering, and technology communities and fully expects that such values will be reflected in the composition of all panels and teams including peer review panels (science, engineering, and technology), proposal teams, science definition teams, and mission and instrument teams." [ROSES-2021, SoS-14]

"Students, faculty or staff in programs receiving NASA financial assistance, such as grant awards from this solicitation, may raise allegations of discrimination, including harassment, by contacting the NASA Office of Diversity and Equal Opportunity. Information on filing a complaint through ODEO at https://missionstem.nasa.gov/filing-acomplaint.html." [ROSES-2021, SoS-41]

Solicitation Text: Standard AO Template I

Section 1.2 *NASA's Policies on Harassment and Discrimination*

NASA recognizes and supports the benefits of having diverse and inclusive scientific, engineering, and technology communities and fully expects that such values will be reflected in the composition of all proposal teams as well as peer review panels (science, engineering, and technology), science definition teams, and mission and instrument teams.

Discrimination and harassment, including sexual harassment, are not tolerated at NASA. Having a diverse, inclusive, and safe workplace is essential to achieving the excellence for which NASA strives. Proposers are reminded that contracts awarded under this AO will include conditions enforcing the civil rights acts that prohibit employment discrimination in all of its forms, including harassment. NASA enforces Federal equal employment opportunity obligations as directed by Executive Order 11246 and in accordance with Federal Acquisitions Regulations (FAR) Section 22.808…

Solicitation Text: Standard AO Template II

Section 1.3 *Training Future Mission Leaders*

Training the next generation of mission leaders is a priority for NASA, and science missions under the <<PROGRAM>> Program present tremendous opportunities for such training. Proposers are encouraged to include career development opportunities in science, engineering, and management areas of their proposed mission. For example, generous use of deputies for Key Management Team members allow individuals to gain experience and expertise, preparing them to assume the lead roles in future missions.

Evaluation Factor B-5

…The inclusion of career development opportunities to train the next generation science leaders will also be evaluated.

Current Programs Supporting the Community I

- *Student Airborne Research Program (SARP): The purpose of the Student Airborne Research Program is to provide students with hands-on research experience in all aspects of a major scientific campaign, from detailed planning on how to achieve mission objectives to formal presentation of results and conclusions to peers and others.*
- *Future Investigators in NASA's Earth and Space Science and Technology (FINESST):* Graduate student-led research program. Successor to the NESSF. Supports between 100 and 125 new Future Investigators each year.
- *NASA Postdoctoral Program:* SMD supports 125 post-docs across all NASA Centers plus some funded by SSERVI and the Astrobiology Program
- *Hubble Fellowship Program:* supports outstanding postdoctoral scientists to pursue independent research which contributes to NASA Astrophysics, using theory, observation, experimentation, or instrument development.

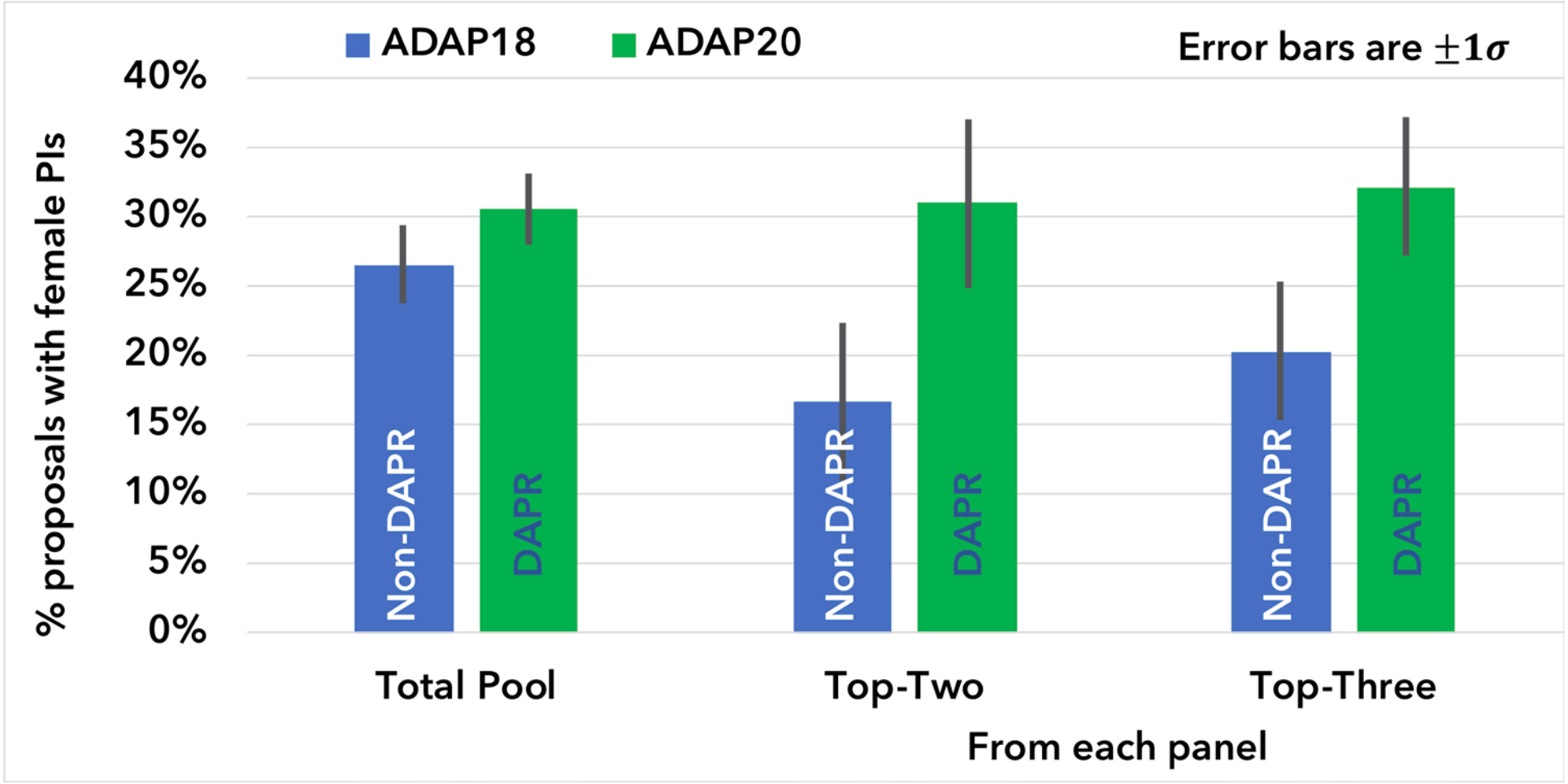
Current Programs Supporting the Community II

- Award programs specifically focused on Early Career Researchers
  - New (Early Career) Investigator Program in Earth Science (A.31)
  - Heliophysics Early Career Investigator Program (B.14)
  - Planetary Science Early Career Award (C.19)
  - Nancy Grace Roman Technology Fellowships in Space Astrophysics for Early Career Researchers (D.9)
- SMD has sponsored and continues to sponsor a series of Proposal-Writing Workshops at national conferences (*e.g.*, AGU, DPS, SACNAS)
  - Current series lead by Dr. Christina Richey (JPL)

Developing Programs Supporting the Community

- Dual-Anonymous Peer Review (DAPR): Mitigating the impacts of cognitive biases on grant proposal evaluations. Refocusing panel discussions on the science and away from the identities, institutions and reputations of the proposal team.
- No Due Dates (NoDD): PSD is planning on offering all of its ROSES-2021 "core" programs without due dates. NSF's work seems to indicate that the lack of a due date better allows proposal-writing to be coordinated with other life activities.
- "Just-in-Time" Budgets (JITB): One PSD program will only request approved budgets from those proposals judged to be "selectable" by the panel of peers. This should reduce workload and stress on proposers and institutions.

Sample of impact of DAPR



DAPR is expanding in ROSES-2021

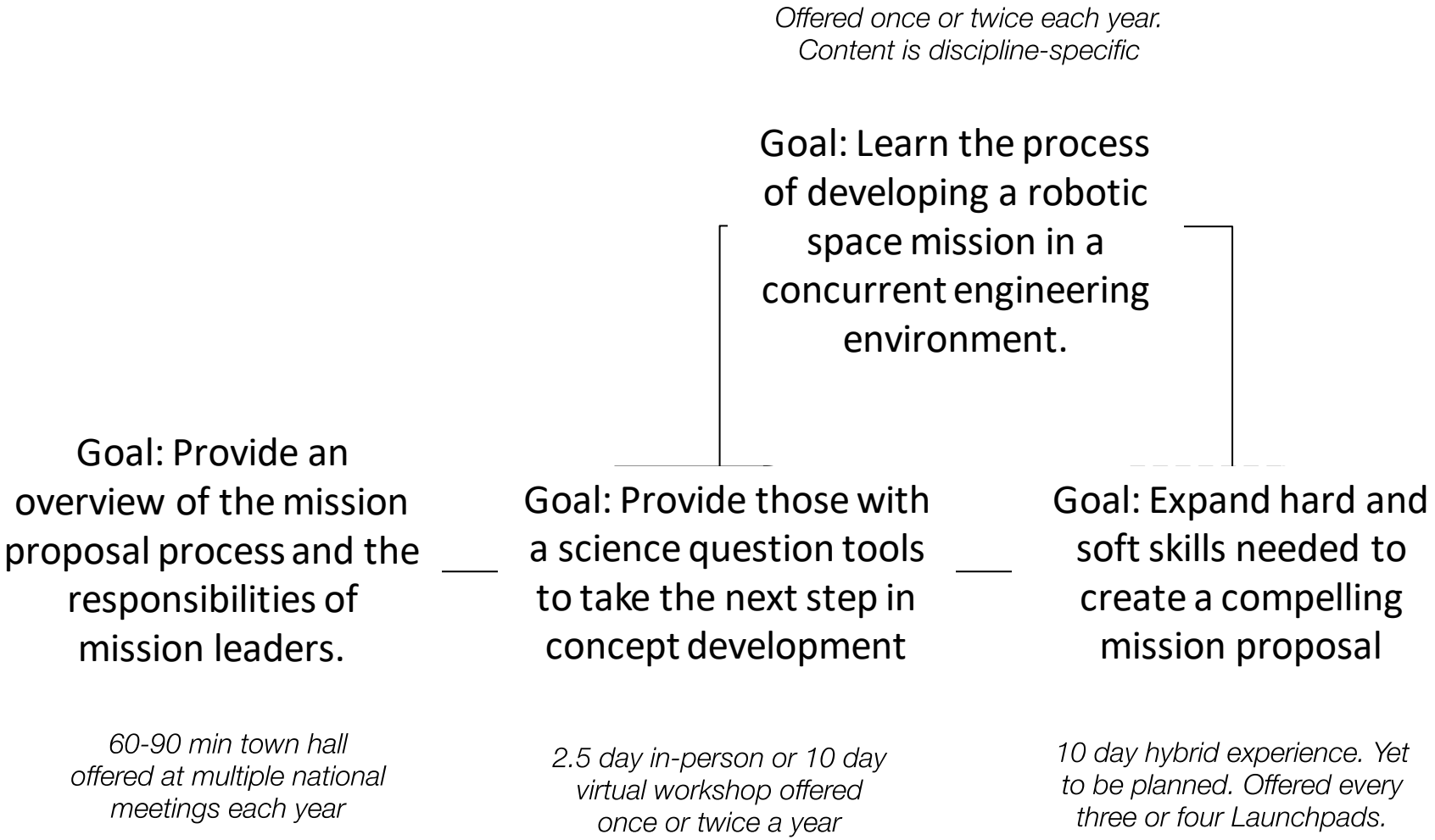
	ROSES-2020	ROSES-2021
APD	GO/GI:	GO/GI:
	Swift	Swift
	Fermi	Fermi
	NuSTAR	NuSTAR
	TESS	TESS
	NICER	NICER
	ADAP	Chandra
		Hubble
		SOFIA
		Webb
		XRISM
		ADAP
		ATP

	ROSES-2020	ROSES-2021
ESD	US PI	Cryosphere Science
HPD	HGIO	HGIO
PSD	Habitable Worlds	Cassini DAP
		Discovery DAP
		New Frontiers DAP
		Lunar DAP
		Mars DAP
Cross-Div		XRP

Helping to develop new mission leaders

- Spaceflight missions are a unique feature of SMD science.
- Developing new mission leaders is a key part of maintaining the vitality of SMD's research community.
- Sub-orbital science programs are a time-honored approach: stratospheric balloon payloads, sounding rocket payloads, airborne campaigns.
- CubeSat missions are a new opportunity:
  - Astrophysics Research Program (APRA)
  - Astrophysics Pioneers
  - Heliophysics Flight Opportunities Studies (HFOS)
  - Heliophysics Flight Opportunities for Research & Technology (HFORT)
  - In-space Validation of Earth Sciences Technologies (InVEST)

Creating a "Mission Leader University"



Other Efforts in Work

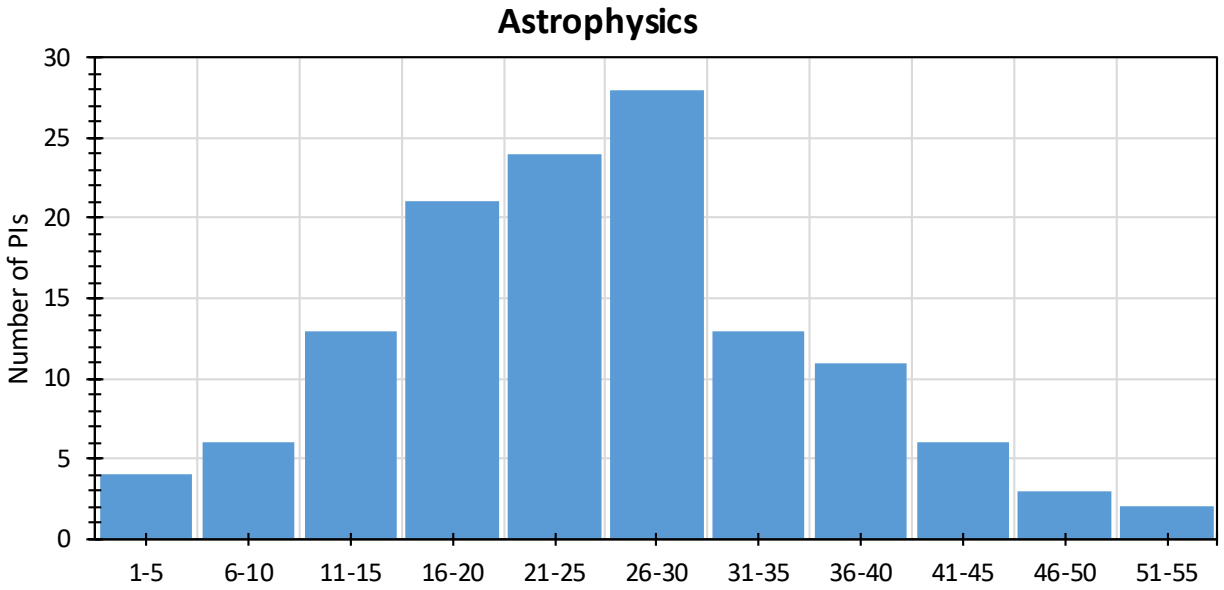
- The Anti-Racism Action Group has developed a set of "quick-win" actions that are being implemented right now.
  - Implementing a "Code of Conduct" for peer reviews.
  - Looking to become much more engaged with non-R1 universities, especially HBCUs and other MSIs.
- A team is developing a more direct set of requirements and evaluation criteria for the diversity and inclusivity of proposed mission teams.
- Program Officers will soon begin tracking some demographics associated with the pool of potential peer reviewers and those individuals who agree to serve on the panel.

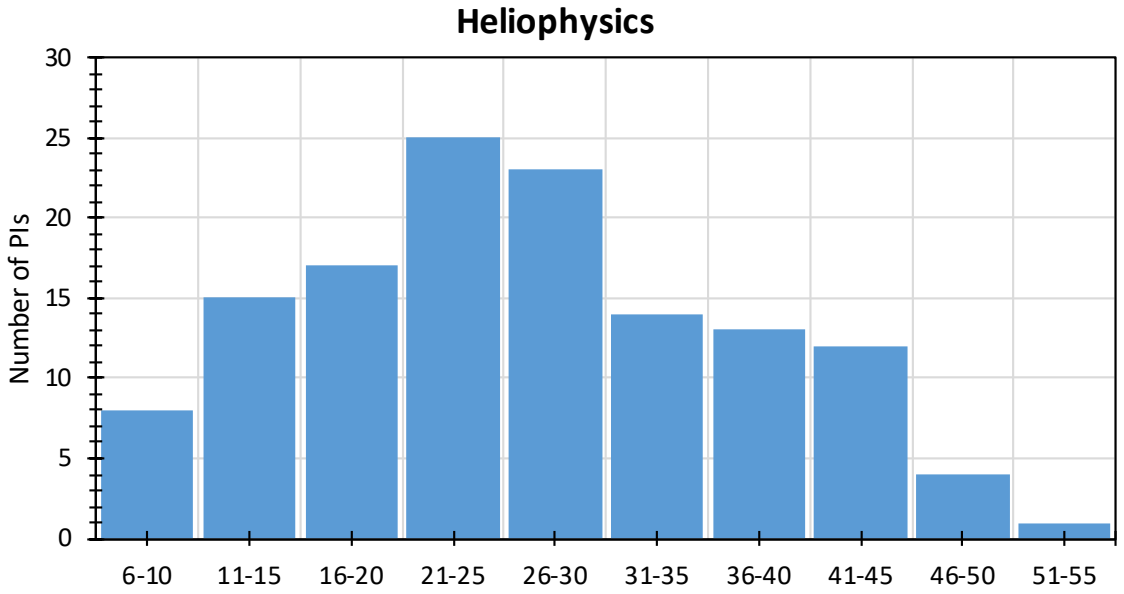
How are our efforts measured?

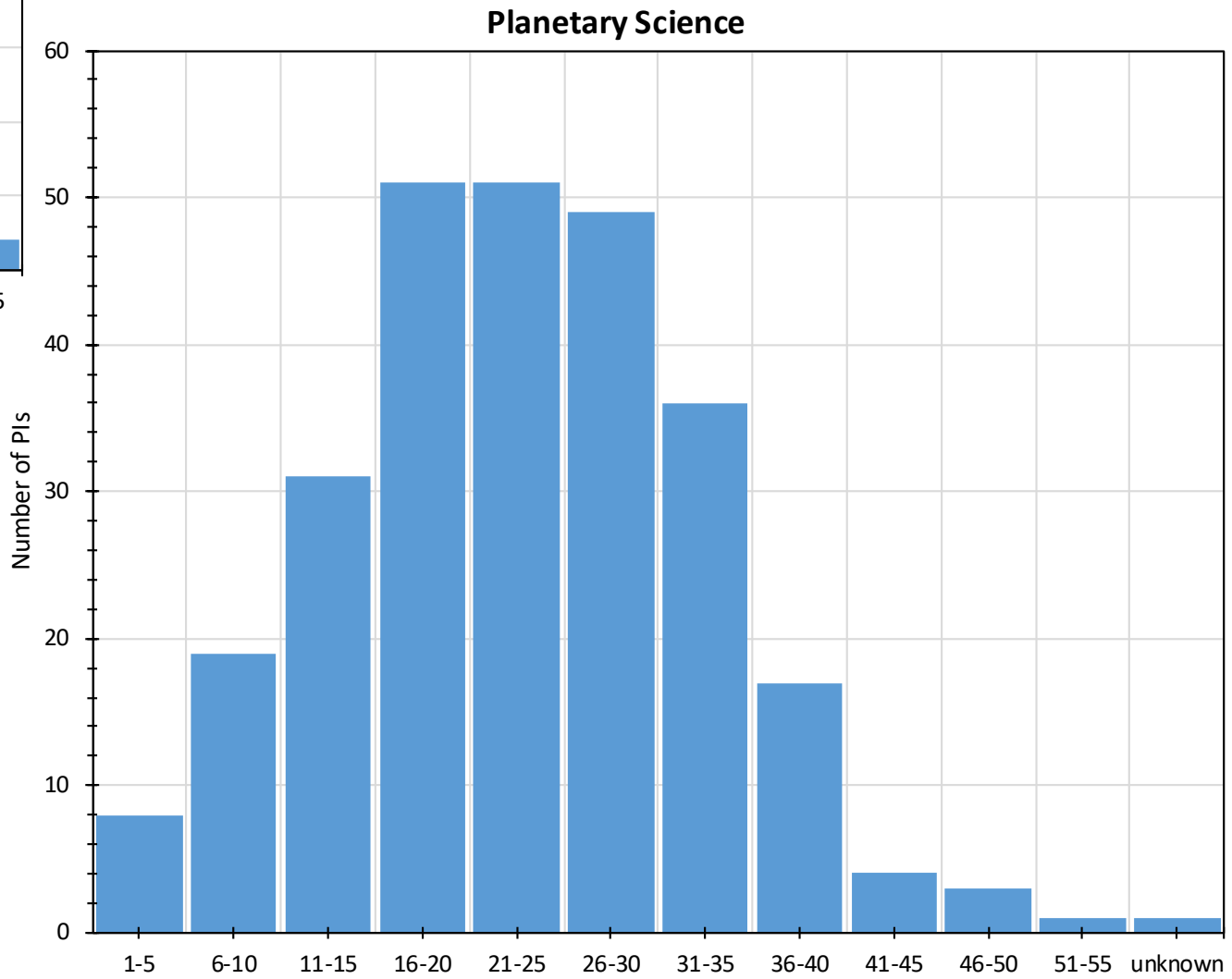
- My office has been developing statistics on the competed mission programs and the connections to between them and the R&A and Tech Dev grants programs. (see next slide)
- PI Launchpad has a STEM Equity Consultant integral to the planning who has performed pre- and post-event evaluations.
- R&A Programs are now reporting the number of "new" PIs selected in each competition. (see second next slide)
  - "New PI" = someone who has not been the PI of a selected proposals in that program within the last five years.
- Working with OCS to generate program-specific demographics analyses of proposers, awardees, potential panelists and serving panelists.

PI: Career stage

Years Since Final Degree at Submission







Histogram of "New PIs" for ROSES-18 and -19