



STScI | SPACE TELESCOPE
SCIENCE INSTITUTE

EXPANDING THE FRONTIERS OF SPACE ASTRONOMY

Dual-Anonymous Peer Review (DAPR)

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Why Dual Anonymous Proposal Review?

Primary objective of peer review process:

Best-Justified Science

Anonymising proposals:

Places focus directly on **Science**

Removes focus from **Team**



DAPR: What it is and what it isn't.

What it **is**:

- Proposing team identity ambiguous.
- Removes focus from team, encourages focus on **science**.

What it **isn't**:

- Completely anonymous (eliminating all possibly-identifiable information).
- A **challenge** or **test** for reviewers.



Why do this? Does it work?

Why do this?

Human brains are biased.

Does it work?

Yes!



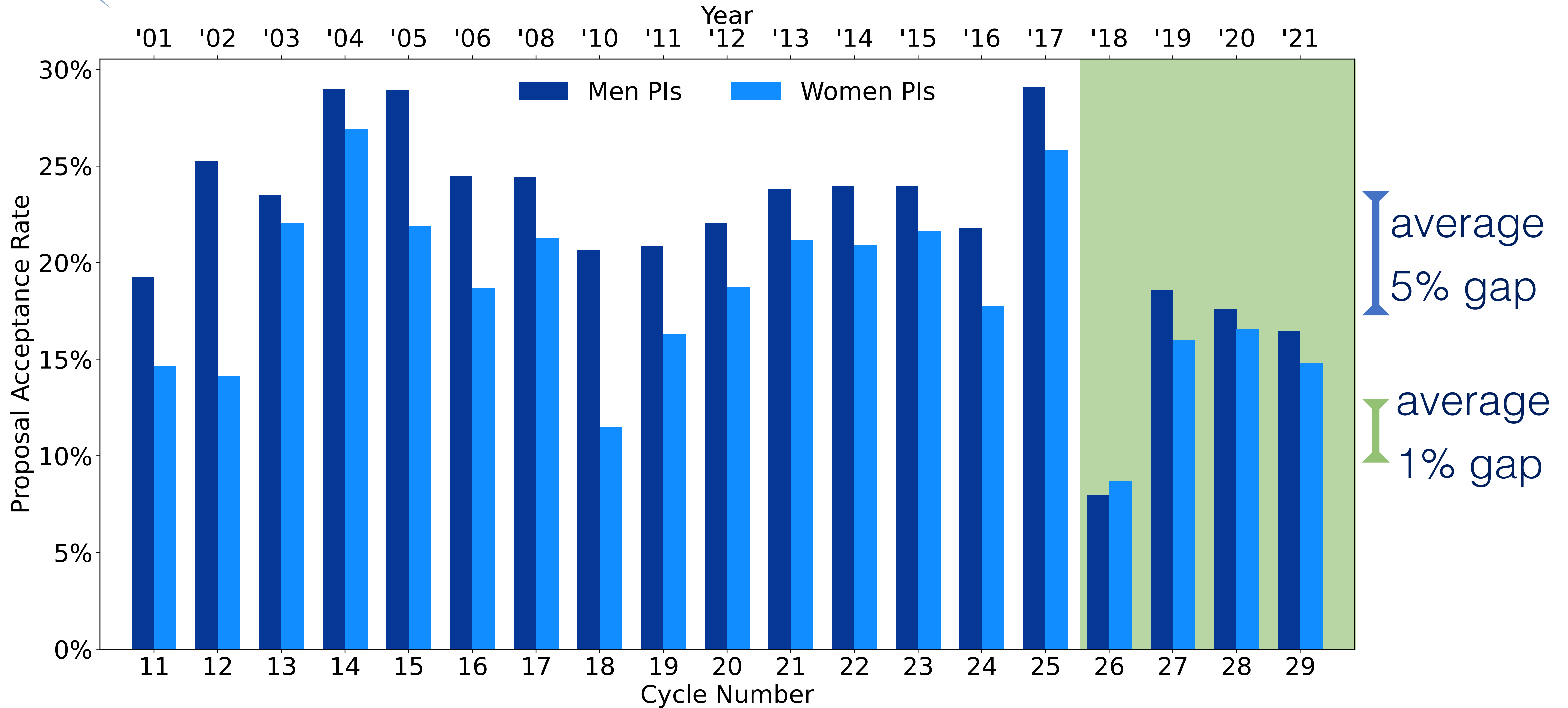
Unconscious Bias

- Human brains make shortcuts.
- When training data is biased, shortcuts are biased too.
- Leads to **unconscious** biases, even for people who are not **consciously** biased.
- Unintended consequences, e.g., ability to identify best scientific merit.
- **Lasting negative effects** on careers, particularly women and other underrepresented groups in STEM.

- DAPR is designed to help **mitigate** biases, it is **not *bias-free***.
- We encourage you to seek formal unconscious bias training.



Impact: Decreasing the Gap in Gender Bias





Impact: Enticing New Proposers

Cycle	New PIs
29	54
28	55
27	51
26	6
25	21
24	5



Caution



HST gender award gap

Various other inequities due to conscious and unconscious identity biases



DAPR for **Proposers**: The Do Nots

- ✗ Names of proposing team
- ✗ Affiliations of proposing team
- ✗ Links to personal websites, ADS libraries
- ✗ Claims of ownership:
 - *In **our** recent analysis, **we** showed ... (Cannon et al. 2015).*
 - *Combined with data from **our** JWST Cycle 1 program (GO-1234), we will....*
 - ***We** have discovered 5 new candidates (Tinsley et al., in prep)....*
 - *We will use **our** proprietary software tool MySuperPipeline to perform...*



DAPR for **Proposers**: The Dos

- ✓ Focus on work proposed.
 - *We propose to... This program will measure the effects of...*
- ✓ Provide all relevant information needed to assess scientific merit.
- ✓ **Fully and properly cite relevant work.** (DAPR is **not** an excuse to skip citations.)
 - *In a recent analysis, Cannon et al. (2015) showed....*
 - *We will supplement this with data from JWST Cycle 1 program GO-1234 to....*
 - *Recently, 5 new candidates were discovered (Tinsley, **private communication**)...*
 - **By prior agreement** with the developers, we will use *proprietary* MySuperPipeline to perform...
- ✓ Proprietary data and software should also be cited.
 - *private communication, by prior agreement, in prearranged collaboration*



DAPR for Reviewers: The Do Nots

- ✘ Do not try to guess the proposing PI or team!
- ✘ This is **not** a challenge or a test.
- ✘ Do not discuss, guess, imply or insinuate information about the identity of the proposing team.
 - *Oh gosh, who could have written this proposal.*
 - *Well I think we all know who wrote this.*
- ✘ Discuss the experience and expertise of the team. (There will be opportunities for this later.)

Guesses are
often **wrong!**



DAPR for Reviewers: The Dos

- ✓ Focus on the **scientific merit** of the work proposed.
- ✓ Refer to the **proposal** not the **proposers**.
- ✓ Assume the team can do the work (without discussion).
- ✓ *Private communication* is **not** code for “hey, we’re the team”. It can (and often does!) mean information was communicated privately.



Non-Compliant Proposals

- ⚠ Egregious breaches of anonymity or minor accidental slip-ups.
- ✅ **Report** any cases to your **PSS** and your **SPG manager**.
- ✅ Not sure? **Report** it anyway.

Major violations, we will probably:

- ❌ Remove from consideration. Disqualify.

Minor slip-ups, we will probably advise you to:

- ✅ Ignore the instance and proceed with your review of the **scientific merit**.
- ✅ Highlight anonymity concern in feedback comments.
- ⚠ If you find you can't ignore it, **report** again.



Levelers



- STScI staff members.
- Monitor panel discussions.
- Refocus discussion to keep focus on **science**.
- They have the **authority** to stop a discussion to refocus it, or halt it completely.



Team Members & Team Expertise Statements

- ⚠ **Not** anonymous.
- ✗ **Not** considered during scientific discussions and ranking.
- ✓ Only **recommended** proposals **after** ranking phase.
 - ~20 minutes to read expertise statements. You cannot opt out.
 - Raise clear, **compelling** deficiencies in expertise required to **meet science goals**.
 - By **consensus**, panel can recommend disqualification, and must provide a **detailed justification**.

✗ If a proposal is disqualified, **orbits cannot be re-allocated**.



“Compelling Deficiencies”

- ✓ Discretion of panelists:
 - Particularly difficult datasets.
 - Particularly difficult analyses.
 - Programs of exceptionally high risk.
- ✗ Inexperience with HST data.
- ✗ Failure to publish past datasets.
- ⚠ Comments to proposers should be based on the **scientific discussion**, not on the team or their expertise.



Conflicts of Interest

- Panelists **must leave the room** for a conflict of interest.
 - *PI or Col on proposal, competing proposal, close personal connection to PI or Col, close collaborator of PI or Col, former student/postdoc/advisor of PI or Col.*
- Most identified by automated checks and info provided by you.
- **Report** additional conflicts immediately.
 - If you **strongly** suspect you have a conflict with a given proposal, **you are conflicted.**
- When you have a conflict:
 - ✓ State that you are conflicted.
 - ✗ Do not announce the **reason** for your conflict.



Summary of Key DAPR Points

- ✓ **Focus on the scientific merit of the proposals.**
- ✗ **Do not try to guess the proposing team.**
 - Proposals should not include identifying information, but should cite relevant work.
 - **Report** non-compliant proposals to your PSS and SPG manager.
 - Levelers will be present to refocus discussions on **science**.
 - Do **not** declare the **reason** for conflicts of interest.
 - Team expertise review is done **after** ranking. Disqualified proposals **cannot** be replaced.
- ⚠ **DAPR mitigates** bias, but is **not bias-free**.