Writing and Reviewing Proposals: Best Practices:

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Proposal Writing Tips

- Read the proposal preparation instructions. Don't get penalized for trivialities: e.g., formatting violations, DAPR violations
- Proposal needs to make the case that a problem is pertinent and that you offer a viable plan to solve it (or make tangible progress)
- Emphasize the big picture ties of the problem. Pitch it to a broad scientific audience, not just to small community of specialists.
- Get to the point; avoid lengthy introductions and extensive reference lists. Give a clear description of the problem and close with a ***concise summary statement***
- One or two carefully prepared graphics are extremely beneficial
- If possible, ask a colleague (other than a co-I) to read and critique a mature draft

Common Pitfalls

- Rambling and over-referenced introductions
- Niche problem pitched to the “specialist” rather than offering “big Picture” context
- “Laundry list” of objectives rather than focused problem with viable path for progress
- Data collecting to see what one may find rather than testing specific falsifiable hypothesis.
- Discussion lacking in clarity. Sloppy prepared (e.g. use of cut and pastes, rushed preparation evident)

Common Panel Critiques

- Needed measurements not achievable
- Or, exposure times to achieve needed sensitivities not clearly presented
- For observing time requests, failed to exhaustively explore existing data
- Analysis methods not clearly presented or rely on “black box” tools or algorithms
- Extensively observed target(s) What will additional observations add?

Consider Volunteering to Serve as a Panelist

- Serving as a peer-review panelist can be extremely beneficial in terms of improving your proposal writing skills
- Participants get to see first the evaluation and decision-making process
- It will also help you update your knowledge on a variety of subjects
- You can volunteer via a link our various mission websites *Proposal* pages

What You'll Learn

- Forces a "crash course" on current literature pertinent to your career and interaction with recognized experts
- See firsthand "how the sausage is made". You're likely to find few irrefutably excellent/must-select's or poor/must-reject's and instead a large "**gray area**".
  - Observing and participating in the difficult decisions to delineate the "**grays**" enhances proposal-writing skills
- Interacting directly with experts in the field is not only educational but can lead to valuable career contacts.

Be Prepared

- Before volunteering BE CERTAIN that you can honor the time commitment. It is HIGHLY disruptive when a panel volunteer reneges on their commitment near the time of the review.
- Start your pre-review preparation early. A typical workload entails evaluating ~25-30 proposals and being primary/secondary on ~4/4.
- Expect to spend ~1 full week, but its much easier and less impactful on you if you start early and employ effective time management.
- Follow the reviewer instructions. Submit preliminary scores and written evaluations prior to the review

Be Prepared *(con.)*

- Feel free to contact the review organizer prior to the event with any questions.
- Even within the context of the dual-anonymous process you may identify “hidden” conflicts of interest. Point these out to the organizer PRIOR to the review so that the proposal in question can be reassigned. Its much more disruptive to wait until the review.
- Be ready to present a detailed summary and critique of your primary and secondary assignments and engage in all deliberations.
- Have our notes on these proposals carefully organized. Avoid the need to shuffle through stacks of papers when a proposal ID is called up for discussion.

Be a Good Colleague

NASA strives for an inclusive and professional environment for all participants in its activities. As a panel member, **your expected to:**

1. Be prepared and contribute to the panel review
2. Be an active participant in the discussions
3. Don’t interrupt or talk over others
4. Keep comments succinct and to the point and thus give everyone the opportunity to contribute
5. Be mindful of bias in all contexts
6. Step in to help curtail abusive or over-bearing behavior
7. Be respectful of your colleagues regardless of differences (professional or otherwise)

Good Luck With Your Swift (or other) Proposals!

Extra Slides

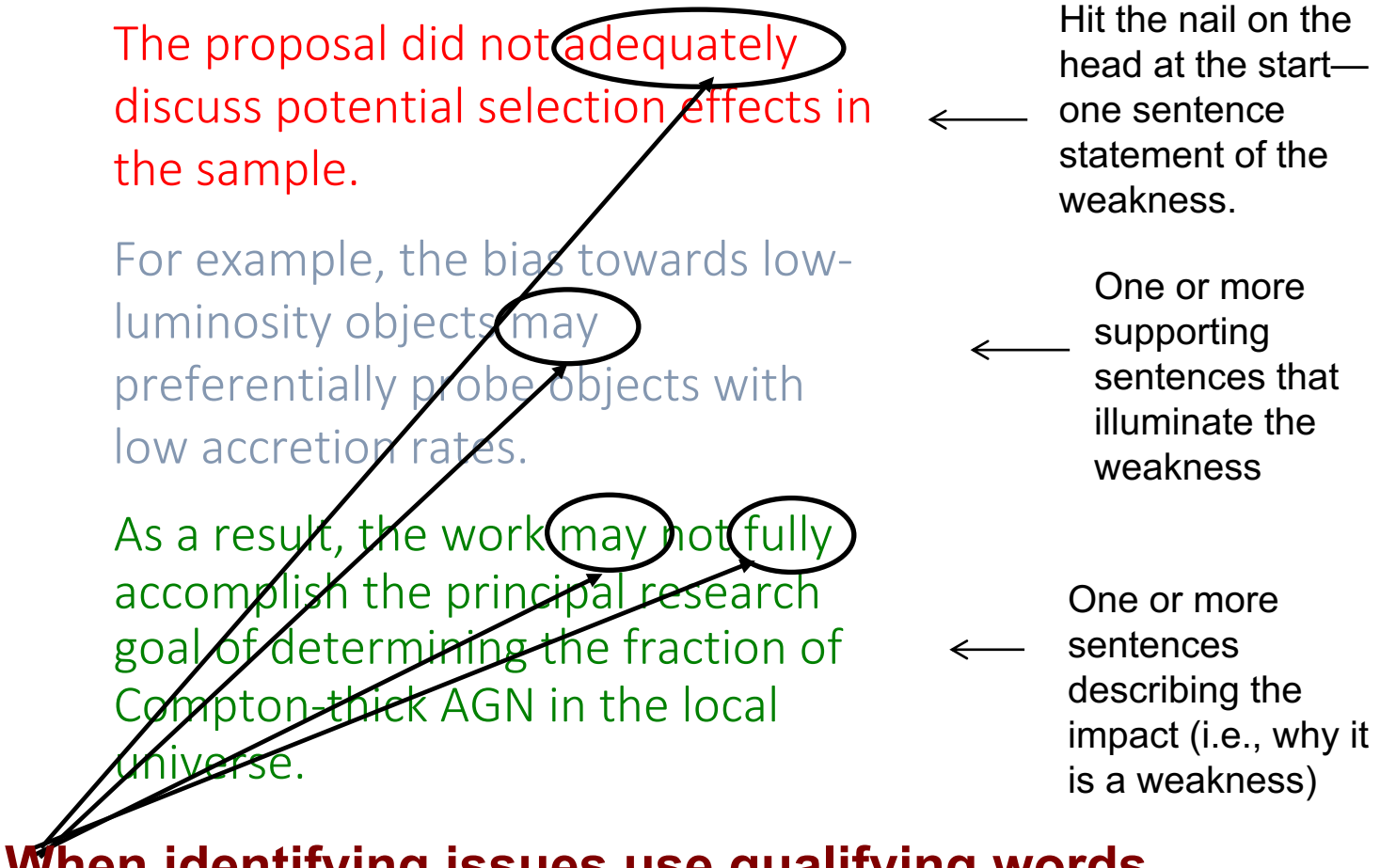
Proposal Evaluation Process

- Following the model of all NASA GI/GO programs each Swift proposal is evaluated by a NASA-convened, anonymous peer-review panel.
- The agency strives for fairness and equity in this process. Effort is made to optimize the collective expertise pool for participation in this process.
- Initiated in 2021 and continuing henceforth NASA has employed a **dual-anonymous peer review process** for all GI/GO programs**.**

Guidelines for Written Comments

- Use complete sentences. Each strength/weakness should be a separate ***paragraph***. Each paragraph should start with a ***topical sentence***.
- Keep write-ups concise, but not terse. Make points clearly, but not belabored. ***Don't be too brief, especially in proposals that may not get funded.***
- ***Keep write-ups impersonal;*** *we don't know what the proposers thought or intended; we only know what they wrote in their proposal*.
- Don't say, *"The panelists failed to understand issue X…"; instead say, "The proposal did not clearly articulate the significance of issue X…"*
- *Don't say "The proposal made no mention of issue X", instead say "The proposal did not satisfactorily address issue X"*
- Don't ask questions, e.g. *"Why didn't the proposal address…", or "Isn't it widely accepted that…"* Address issues directly.
- Ensure that the grade and comments can be defended by NASA officials.
- Check that your words really tell the PI why the proposal received the grade it did; that is, the written words fit the overall grade.

Evaluation Reports: Best Practices



When identifying issues use qualifying words rather than absolute statements

Cognitive Biases and Peer Review

- NASA performed a study of inferred genders of PIs in ROSES-2015 proposals.
- Essential result: The solicitation, evaluation, and selection processes used by NASA do not appear to be gender biased.
- But proposers don't reflect full diversity of the Nation.
  - As a learning organization, NASA should take every opportunity to apply best practices.
  - Gender bias is not the only type of cognitive that peer reviews need to guard against.
  - Cognitive biases, in general, reduce the rationality of decisions reducing the value of peer review.

Mitigating Cognitive Biases

- Since most cognitive biases arise as evolutionary short-cuts, making decision-making as explicit as possible helps to mitigate them:
  - *Use clear requirements/criteria/factors (Scientific merit, relevance to Fermi mission and agency goals)*
  - *Emphasize the use of these in your discussions.*
- Press people to present their reasoning behind their statements
- Keep the discussion focused on the **proposal** and not on the proposers.
- Identify proposals by NUMBER, not PI name or institution.

What is Dual-Anonymous Peer Review?

- In dual-anonymous peer review, the reviewers do not have explicit knowledge of the identities of the proposing team during the scientific evaluation of the proposal.
- The primary intent of dual-anonymous peer review is to eliminate “the team” as a topic during the scientific evaluation of a proposal.
- This creates a shift in the review-panel discussions, away from the individuals, and towards a discussion of the scientific merit of a proposal.
- The goal is to **eliminate or at least minimize Conscious and Subconscious Bias** in the selection process.

Dual Anonymous Proposal Preparation

- Stage-I proposal submission done as before via ARK/RPS
  - Include PI/co-I info but names are hidden from reviewers
  - Numerical references, no “first person” attributions
  - Panelists may not speculate PI, co-I identities
  - Include “team identity and expertise” page
  - Cite access to specific facilities as private communications or arrangements
- Relaxes certain types of panelist conflicts of interest
- **After** deliberation and grading names will be revealed
  - A proposal can then be disqualified, but not re-scored

Example of Anonymization

- *In Rogers et al. (2014), we concluded that the best explanation for the dynamics of the shockwave and the spectra from both the forward-shocked ISM and the reverse-shocked ejecta is that a Type Ia supernova exploded into a preexisting wind-blown cavity. This object is the only known example of such a phenomenon, and it thus provides a unique opportunity to illuminate the nature of Type Ia supernovae and the progenitors. If our model from Rogers et al. (2014) is correct, then the single-degenerate channel for SNe Ia production must exist. We propose here for a second epoch of observations which we will compare with our first epoch obtained in 2007 to measure the proper motion of the shock wave.*

- Here is the same text, again re-worked following the anonymizing guidelines:
- *Prior work [12] concluded that the best explanation for the dynamics of the shockwave and the spectra from both the forward-shocked ISM and the reverse-shocked ejecta is that a Type Ia supernova exploded into a preexisting wind-blown cavity. This object is the only known example of such a phenomenon, and it thus provides a unique opportunity to illuminate the nature of Type Ia supernovae and the progenitors. If the model from [12] is correct, then the single-degenerate channel for SNe Ia production must exist. We propose here for a second epoch of observations which we will compare with a first epoch obtained in 2007 to measure the proper motion of the shock wave.*

R&A Code of Conduct for Panelists

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1. Be prepared and contribute to the panel review
2. Be an active participant in the discussions
3. Don’t interrupt or talk over others
4. Keep comments succinct and to the point and thus give everyone the opportunity to contribute
5. Be mindful of bias in all contexts
6. Step in to address abusive or bullying behavior
7. Be respectful of your colleagues regardless of differences (professional or otherwise)

At any time during a review feel free to have candid conversation with the NASA staff if you have concerns.

Conflicts of Interest

- Ideally, under a dual-anonymous process conflicts-of-interest do not come into play. They have, *in principle,* been avoided by the NASA organizers. However, issues can occasionally elude us.
- Proposal-Level conflicts of interest come in three flavors: F*inancial, Professional,* and *Personal*
- *Financial* conflicts of interest are the most serious. Panelists with financial conflicts of interest must recuse themselves from the proposal discussion and subsequent discussion on the comparative ranking of that proposal.
- *Professional* and *personal* conflicts of interest run the gamut of significance from serious to inconsequential. There are a range of remedies—simply not participating in the discussion to full recusal.
- Panelists may recuse themselves from the discussion and or scoring of a proposal**, but the reason should not be revealed to fellow panelists**.

Confidentiality

- Contents of proposals must be kept confidential.
- The membership of review panels must be kept confidential.
- *Do not discuss panel business outside the panel "rooms".* Some proposers are also acting as panelists in this review.
- All Proposals and Review Material are the property of NASA and must be left in the Google Drive folders at the end of the review.

Delete