



Innovations in Grant Peer Review

Jessica M. Biddinger, National Senior Director
American Heart Association



Current Tactics

Distributed Peer Review

Double Blind LOI

Randomized Review Order

Verbal Preliminary Score Statement

Need for Distributed Peer Review

- Relies on scientific community to volunteer significant time
- Peer reviewer time is stretched as proposal volume increases and success rates decrease
- In traditional peer review, applicants cannot also serve as a peer reviewer in the same funding competition
- Perennial need to find qualified, motivated, and diverse reviewers
- Discourages rapid response opportunities

Distributed Peer Review

Piloted the [distributed peer review approach \(PDF\) \(Merrifield and Saari, Astronomy and Geophysics, 50, 4.2, 2009\)](#). This is also known as the [Mechanism Design Proposal Review Process](#).

[Successful 2013 NSF Pilot](#)

- [Positive results](#): Increased review quality, increased submissions, substantially faster peer review, reduced costs.
- [PEVALS: Participant-engaged EVALuation System](#) software platform was [designed around the NSF distributed peer review approach](#) and funded by an NIH SBIR grant.

Distributed Peer Review

As opposed to traditional peer review, distributed peer review capitalizes on the expertise of the applicant pool and incentivizes timely review in fairness to all applicants.

All applicants who submit a proposal are required to serve as a peer reviewer within the designated program and assigned several proposals for review (>3).

Distributed Peer Review

Principal investigators declare conflicts of interest and are only assigned proposals for which they and/or consultants and collaborators do not have an institutional or individual conflict.

Only peer reviewers who complete all assigned reviews and record their scores in a timely fashion (one month) in turn have their own proposal evaluated for advancement.

Written critiques were first optional then required based on survey feedback.

Pros and Cons

PROS	CONS
<p>Innovative - addresses a systemic problem for peer review in a new way.</p>	<p>Significant perceived change to the established peer review system.</p>
<p>Draws on expertise in a desired research area since ideally applicants submitting proposals will have the necessary expertise to peer review to review similar ideas.</p>	<p>Not applicable for programs designed to fund trainees or early career investigators, as they will not have the requisite reviewer expertise to evaluate the applicant pool.</p>
<p>No in-person or virtual meeting for reviews, saving time and money.</p>	<p>Discussion occurs in writing via bulleted lists of strengths and weakness, rather than during a virtual or in-person meeting.</p>

Pros and Cons

PROS	CONS
Exposes applicants to new ideas and could foster new potential collaborations.	An NSF Program Officer suggested this approach could be construed as encouraging applicants to 'play it safe' referring to how applicants might be reluctant to submit a disruptive idea that is likely to get a mixed reaction from reviewers.
Incentivizes timely review.	Could discourage multiple submissions if each PI knows they in turn will need to evaluate multiple proposals for each one they submit.

Distributed Peer Review

Mechanisms Underlying Cardiovascular Consequences Associated with COVID-19 and Long COVID

- \$1M over three years
- 11 proposals funded for a total of \$10.76M
- Any faculty rank, not intended for trainees
- Required a training component
 - Early Career
 - Fellow

AHA's Second Century Implementation Science Award

- \$400K over three years
- 19 proposals funded for a total of \$7.6M
- Focus on early and mid-career; full professors excluded

Distributed Peer Review – Long COVID

109 proposals received; only scores (1-9 whole number) were required (no written critiques), 35 self-identified female (32%) and 10 self-identified as underrepresented minorities (9%).

Staff conducted an administrative review of all proposals concurrently to check formatting and other program adherence specifically around incorporation of trainees and early career investigators.

Executive peer review with Research Committee members.

11 proposals funded for a total of \$10.76M.

Funding recommendations took into consideration:

- Original Score and Rank (average of all 8 scores)

- Removal of poorest and best score (truncated mean) and updated rank

- How each applicant scored their assigned proposals (range)

- Adherence to program requirements

Distributed Peer Review – Implementation Science

60 proposals received; scores (1-9 whole number) required and written critiques optional, 26 self-identified as female (43%) and 5 self-identified as underrepresented minorities (8%).

Staff conducted an administrative review of all proposals concurrently to check formatting and other program adherence.

Executive peer review with Research Committee members.

19 proposals funded for a total of \$7.6M.

Funding recommendations took into consideration:

- Original Score and Rank (average of all 8 scores)

- Removal of poorest and best score (truncated mean) and updated rank

- How each applicant scored their assigned proposals (range)

- Adherence to program requirements

Distributed Peer Review - Survey Questions

1. This program utilized a distributed peer review process; applicants agreed to serve as peer reviewers at the time of proposal submission. Was this process clear in the funding announcement?
Y/N
2. Did you or your research administration staff attend one of the informational webinars?
Y/N
3. From the reviewer perspective, how satisfied were you with the distributed peer review process?
Likert scale – extremely satisfied to extremely dissatisfied, 7 choices
4. Would you apply/participate in future research programs that utilize distributed peer review?
Likert scale – extremely likely to extremely unlikely, 7 choices
5. We welcome additional suggestions with respect to the distributed peer review process and future AHA research programming.

Survey Questions

1. This program utilized a distributed peer review process; applicants agreed to serve as peer reviewers at the time of proposal submission. Was this process clear in the funding announcement?

87.5%/95% Yes

8%/5% No

2. Did you or your research administration staff attend one of the informational webinars?

64% Yes

36% No

3. From the reviewer perspective, how satisfied were you with the distributed peer review process?

Extremely Satisfied: 20%/21%

Moderately Satisfied: 36%/48%

Slightly Satisfied: 14%/17%

Neither Satisfied nor Dissatisfied: 13%/7%

Slightly Dissatisfied: 9%/5%

Moderately Dissatisfied: 6%/2%

Extremely Dissatisfied: 2%/0%

Survey Questions

4. Would you apply/participate in future research programs that utilize distributed peer review?

Strongly Agree: 30%/38%

Agree: 31%/33%

Somewhat Agree: 17%/17%

Neither Agree nor Disagree: 8%/7%

Somewhat Disagree: 8%/0%

Disagree: 5%/2%

Strongly Disagree: 2%/2%



Survey Questions

We welcome additional suggestions with respect to the distributed peer review process and future AHA research programming.

- Most comments indicated that applicants wanted to see:
 - How their proposal was scored and/or percentile rank
 - How their score aligned with others for the proposals they were assigned
 - Written critiques (should be required)
- Other comments centered on bias reduction and better matching of scientific expertise to grants reviewed.
- Adherence to administrative requirements was also important and it was suggested proposals be screened for non-compliance/withdrawal prior to peer review.

Distributed Peer Review - Lessons Learned

- Be prescriptive and specific in the RFA.
 - Trainees
 - Early career investigators
 - Collaborators/Consultants/Co-Investigators
- Conduct training webinars to review program and peer review expectations.
- Provide specific guidance to reviewers and how to adjust scoring based on adherence to administrative requirements.
- Reiterate how to manage conflicts
 - Don't wait until the peer review deadline date to review assigned proposals.
 - Finding conflicts at that time puts an applicant at a disadvantage since proposals cannot be reassigned and they will have fewer scores to average.
- Prepare key survey questions for distribution during the peer review process.



Thank You
