

**SCIENCE MISSION DIRECTORATE POLICY**  
**STANDARDS FOR DUAL-ANONYMOUS PEER REVIEW**

SMD POLICY DOCUMENT SPD-40A

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Responsible SMD Official: Deputy Associate Administrator for Research

## **1. Overview**

SMD is strongly committed to ensuring that the review of proposals is performed with competence and quality and in an equitable and fair manner. To this end, numerous SMD research programs are performed using the technique of dual-anonymous peer review (DAPR). Under DAPR, not only are proposers unaware of the identity of the reviewers, but the reviewers are not provided with explicit knowledge of the identities of the proposing team during the scientific evaluation of the proposal (see Section 4). By hiding the identities, the intent of dual-anonymous peer review is to reduce implicit or explicit biases that peer review panelists may have, creating a shift in the tenor of discussions away from the proposing investigators and towards a discussion of the scientific merit of a proposal.

This document describes roles, responsibilities, and standards for implementing dual-anonymous peer review for SMD research programs.

The standards in this document are binding on DAPR-reviewed SMD-solicited research programs. The standards in this document are strongly recommended for DAPR-reviewed SMD research programs solicited separately by NASA science centers (e.g., Space Telescope Science Institute, Chandra X-ray Center).

## **2. Solicitation, Submission, and Screening of Proposals**

- 2.1. In DAPR programs, proposers are required to submit at least two documents: (1) an anonymized science proposal, and (2) a *not*-anonymized “Expertise and Resources” document that describes the qualifications, capabilities, and resources of the team proposed to execute the investigation. Additional documents, such as a not-anonymized High-End Computing time request or not-anonymized Total Budget File, may also be required according to the solicitation and the nature of the proposed investigation.
- 2.2. Each DAPR solicitation (or individual program element, in the case of ROSES) must include a table that succinctly summarizes the requirements for anonymous proposals

(e.g., format of references, page limits, contents of “Expertise and Resources” document) and link to <https://science.nasa.gov/researchers/dual-anonymous-peer-review>.

- 2.3. Prior to or simultaneous with the solicitation of proposals for DAPR programs, Program Officers shall ensure that the proposing community is aware of the requirements for anonymous proposals by posting a guidelines document on the NSPIRES page of the program element. First-time DAPR programs must host or participate in one or more teleconferences for potential proposers. For programs which have already been operating under DAPR, such informational sessions are advised but not required.
- 2.4. It is a best practice for Program Officers to remind the submitters of NOIs or Step-1 proposals of the requirements for writing compliant anonymized full proposals.
- 2.5. Program Officers may screen the submitted anonymized proposal documents and their associated metadata for any identifying information. In rare instances, Program Officers may redact or remove such information, provided all the following criteria are satisfied: (i) the proposers are judged to have made a good-faith effort to follow all the guidelines provided for anonymizing their proposal; (ii) any errors in anonymization are not so numerous that they amount to an egregious violation of the DAPR guidelines (see Section 2.7); (iii) no more than ~10% of proposals require remedial actions (see Section 2.6); (iv) the overall scope of any redactions or alterations is approved by the Selection Official and documented in the Selection Recommendation Package; and (v) the Program Officer has provided a copy of the modified anonymized proposal document to the proposer (PI or AOR) and obtained their concurrence in writing that the redactions or alterations did not corrupt the proposal. The responsibility for undertaking modifications to a submitted proposal resides with the Program Officer and may not be delegated to NRESS.
- 2.6. In rare instances, especially for programs new to DAPR, there may be numerous violations in so many proposals that either the spirit of the anonymous review would be compromised, or an unacceptable number or proportion of proposals would need to be redacted and/or rejected. In these instances, and with concurrence from the selection official, Program Officers may elect to take the following steps: (i) reopen the response structure; (ii) extend the proposal deadline; and (iii) request that a ROSES amendment be issued. When such actions are taken, proposers should be notified and instructed how to respond.
- 2.7. As appropriate, and with concurrence from the selection official, Program Officers may reject prior to, at, or after review any proposals that violate DAPR rules. Proposals containing egregious violations of DAPR rules shall be rejected by the Program Officer, with concurrence from the selecting official. Egregious violations include, for example, instances where it is judged that the authors did not make a good-faith effort to follow all the guidelines provided for anonymizing their proposal or cases where the violations are so numerous and/or substantial that a reasonable person would believe that they irreparably compromise the fairness and integrity of the entire review. If a proposal is found to be in egregious violation of DAPR rules during the panel review meeting, any

discussion or consideration of that proposal by the panel should stop and the proposal should be withdrawn from the panel.

### **3. Conflicts-of-Interest in Dual-Anonymous Peer Reviews**

- 3.1. SMD applies three principal types of conflicts-of-interest (c.f., SPD-01A, “Handling Conflicts-of-Interest for Peer Reviews” and Conflicts-of-Interest for NASA Peer Reviewers, as described in the NASA Grant and Cooperative Agreement Manual):
  - (i) Scientific Ethics conflicts-of-interest (e.g., same-institution relationship, spousal relationship, advisor-advisee relationship), which SMD *elects* to apply as a community standard when evaluating proposals from the external community.
  - (ii) Statutory conflicts-of-interest, as described by 18 USC § 208, and impartiality regulations, which apply to civil-servant employees and IPAs.
  - (iii) Organizational conflicts-of-interest, as described by NFS 1809.5, which apply to NASA contractors.
- 3.2. Under the system of dual-anonymous peer review, reviewers are not provided with the identities of the proposing team and their institutional affiliations during the evaluation of the anonymized science proposal. Accordingly, §(2)(b)(ii) of SPD-01A, concerning proposal-level Scientific Ethics conflicts-of-interest for reviewers from the same institution as the proposing organization, as the PI, or as any Co-I, does not automatically apply to the review of anonymized proposals in the DAPR framework. This also applies to non-panel (i.e., "external" or "mail-in") reviewers.
- 3.3. Notwithstanding §3.2 above, Program Officers must avoid assigning as primary or secondary reviewer panelists from the same institution as the PI, unless a waiver for a specific reviewer is granted following the process outlined in SPD-01A. However, these individuals may continue to serve on the panel unless they have additional conflicts-of-interest.
- 3.4. Notwithstanding §3.2 above, Program Officers must continue to mark as conflicted a reviewer for whom they happen to know may not be able to deliver an objective review of a given proposal (e.g., due to a well-known adversarial professional rivalry as evidenced in professional publications and subsequently verified by another Program Officer or the Selection Official). A flow chart that describes the process is provided in Appendix A.
- 3.5. With the exception of §3.2-§3.4 above, all other Scientific Ethics, Statutory, Regulatory, and Organizational conflicts-of-interest described in SPD-01A continue to apply and should continue to be adjudicated well in advance of the panel. In particular, civil-servants and IPAs must continue to certify against financial conflicts-of-interest and regulatory impartiality concerns, as described in SPD-16, “Certification Against Financial Conflicts-of-Interest for Civil Servants Working on SMD Peer Reviews.” Accordingly, a listing of the identities of proposers and proposing organizations of all the proposals assigned to a panel are still made available to civil-servant reviewers for

self-certification purposes, albeit without direct attribution to any specific proposal in the panel.

- 3.6. Should a reviewer realize that they may know the identity of one or more investigators or their institutional affiliations, and suspect that they may have a conflict, the reviewer must privately inform the Program Officer as soon as possible (e.g., as they read the proposal before the panel, or during the panel deliberations). If the reviewer's guess is correct, and either they are from the same institution as the PI or Co-Is, or otherwise cannot deliver an objective review, the Program Officer must mark the reviewer as conflicted. If the reviewer's guess is incorrect, and they state that they can deliver an objective review, the reviewer may proceed to review the proposal. At no time shall the Program Officer confirm the identity of the proposing investigator(s) to the reviewer. A flow chart that describes the process is provided in Appendix A. In addition, the reviewer should be instructed not to share their suspicions about the identity of the proposers with their fellow panelists or the panel Executive Secretary (if applicable) at any point in the process.

#### **4. Structure of Dual-Anonymous Panel Meetings**

4.1. Dual-Anonymous Peer Review panel meetings take place in two distinct phases:

- (i) The Anonymized Review, during which the review panel evaluates proposals based on their intrinsic scientific/technical merit, relevance to NASA, and cost reasonableness without taking into account the identity of the proposers. During this phase, all written panel evaluations and adjectival ratings are completed and finalized.
- (ii) Following the completion of the anonymized review, the panel is provided with the "Expertise and Resources" documents for a subset of the panel proposals (see Sec. 4.4.1/4.5.1 below). In this second phase, the panel assesses the qualifications, capabilities, and related expertise of the team as well as the facilities, instruments, equipment, and other resources or support systems that they have access to for the execution of the proposed investigation. This phase may be executed by one of two distinct processes according to the nature of the program:
  - a) The "Expertise and Resources" Validation process (see Section 4.4)
  - b) The enhanced "Expertise and Resources" Evaluation process (see Section 4.5)

Each program must follow one of the above processes for all the proposals for which the "Expertise and Resources" documents are reviewed. The "Expertise and Resources" documents from different proposals shall not be subjected to different levels of scrutiny within the same program review.

- 4.2. The Program Officer shall ensure that a NASA-appointed Panel Monitor is present at all times during the review. The Program Officer may also fill this role themselves. This individual is sometimes referred to as a “Leveler” in the parlance of non-NASA dual-anonymous peer reviews. The role of the Panel Monitor in the anonymized review is to ensure that the panel deliberations focus on the strengths and weaknesses of the proposal and do not deviate into a discussion of the identity, qualifications and experience of the PI and team. The Panel Monitor has the authority to stop any discussion of the identity, qualifications and experience of the PI and team during the Anonymized Review Phase.
- 4.3. During the Anonymized Review phase, all rules described in SPD-22 (“Management of ROSES Peer Review and Selection Processes”) shall be followed.
- 4.4. The “Expertise and Resources” Validation process. For most programs, the ability of a team to write a highly-meritorious anonymized proposal establishes the likelihood that they possess the necessary expertise to successfully execute their proposed investigation. Accordingly, the process of validating the associated “Expertise and Resources” document involves simply confirming that the documentation provided supports that expectation. This “Expertise and Resources” Validation process shall be conducted as follows:
  - 4.4.1. The Program Officer shall provide the review panel with the “Expertise and Resources” documents for only those proposals that may reasonably be considered for selection under the program (depending on the grades and projected selection rates). The reviewers should not be provided with the “Expertise and Resources” documents for all proposals to avoid tainting the review of resubmitted proposals under future calls.
  - 4.4.2. During this phase, the identities of the proposing team and their institutional affiliations are made known to the panel. Accordingly, panel members shall not assess an “Expertise and Resources” document should they have any conflicts-of-interest (see §3.1).
  - 4.4.3. The intent of this phase is to validate that the proposing team possesses suitable expertise and has access to any necessary resources (e.g., facilities, equipment, partnerships, institutional support, data access, etc.) required to successfully achieve the goals of the proposed investigation. The review panel shall assign grades using a three-point scale, the definitions of which are provided below:

**Uniquely Qualified:** The “Expertise and Resources” document demonstrates that the team is both exceptionally capable of executing the proposed work and has singular access to expertise or resources upon which the success of the investigation critically depends. Appropriate allocations of team members’ time are included. A comment from the panel must be written that clearly justifies the choice of this grade.

**Qualified:** The team has appropriate and complete expertise to perform the work, and appropriate allocations of their time are included. Any facilities, equipment and other resources needed to execute the work are available. SMD expects that the vast majority of proposals will fall into this category.

**Not Qualified:** The “Expertise and Resources” document demonstrates severe deficiencies in the necessary expertise and/or resources to execute the proposed investigation. A comment from the panel must be written that clearly justifies the choice of this grade.

- 4.4.4. The “Expertise and Resources” review phase may not be used by the panel to re-evaluate the anonymized proposal documents or to change the assigned adjectival grade.
  - 4.4.5. A copy of the form used to document the results of the “Expertise and Resources” Validation process must be appended to the panel evaluation form for all proposals reviewed by the panel. If the associated Expertise and Resources document for a proposal was not revealed to the panel, the form should simply be marked “*Not Assessed*”.
- 4.5. The enhanced “Expertise and Resources” Evaluation process. For some programs, the knowledge and expertise demonstrated by the proposing team in writing their anonymized proposal may not be sufficient to establish the likelihood that a proposed investigation can be executed successfully. For example, this may be the case for programs where the tools, specialized facilities, and institutional support to which proposing teams have access play an unusually crucial role in the overall success of the investigation. In those cases, the Program Officer may elect to adopt a more rigorous approach to the “Expertise and Resources” assessment phase of the review. Even in this case, however, the emphasis of the enhanced scrutiny is expected to be on the “Resources” aspect of the documents rather than on the “Expertise” of the team which, as above, is almost certainly established by the team’s ability to write a highly-meritorious anonymized proposal.

The decision to implement the enhanced “Expertise and Resources” Evaluation process for a program review should be taken strategically and sparingly, and only with the written concurrence of the SMD Deputy Associate Administrator for Research or his/her designee. The enhanced “Expertise and Resources” Evaluation process shall be conducted as follows:

- 4.5.1. The Program Officer shall provide the review panel with the "Expertise and Resources Not Anonymized" documents for only those proposals that may reasonably be considered for selection under the program (depending on the grades and projected selection rates).
- 4.5.2. During this phase, the identities of the proposing team and their institutional affiliations are made known to the panel. Accordingly, panel members shall not

assess an “Expertise and Resources” document should they have any conflicts-of-interest (see §3.1).

- 4.5.3. As with the normal “Expertise and Resources” Validation process described in Section 4.4, the evaluation process involves the general verification of the expertise of the proposing team. The “Expertise and Resources” Evaluation process, however, places a greater emphasis on a critical evaluation of the “Resources” aspect of the document. Based on their assessment of the “Expertise and Resources” documents for all proposals under consideration for selection, the review panel will assign each proposal to one of three categories based on the degree to which the expertise and resources documented therein are sufficient to successfully execute the proposed investigation. The ratings and their definitions are as follows:

**Exceeds Expectations:** As a whole, the qualifications of the team, the specialized tools and facilities to which they have access, and the capabilities of the proposing institution(s) significantly exceeds the level required for successful implementation of the proposed investigation. Any concerns voiced by the panel are minor in nature and unlikely to significantly impact the overall success of the investigation.

**Meets Expectations:** As a whole, the qualifications of the team, the specialized tools and facilities to which they have access, and the capabilities of the proposing institution(s) is likely sufficient to successfully implement the proposed investigation. Weaknesses identified by the reviewers may be substantive and, if left uncorrected, could impact the success of the proposed investigation. However, those concerns are addressable and, subject to appropriate corrective steps, there is a high likelihood that the investigation will be fully successful.

**Does Not Meet Expectations:** Taken as a whole, the qualifications of the team, the specialized tools and facilities to which they have access, and the capabilities of the proposing institution(s) are clearly not sufficient to successfully implement the proposed investigation. One or more weaknesses identified by the reviewers are substantial and, even with remedial action, there is a significant likelihood that proposed investigation will not be fully successful.

The “Expertise and Resources” category assigned by the panel together with their written findings will be provided to the selecting official along with the adjectival grade from the merit evaluation of the anonymized proposal for consideration in making selection decisions.

- 4.5.4. The intent to implement the “Expertise and Resources” Evaluation process should be clearly stated in the text of the associated ROSES program element so that

proposers are aware of the higher degree of scrutiny those documents will receive and their enhanced role in the selection decision.

- 4.5.5. The relative weight that the “Expertise and Resources” grade will carry in the selection decision should be established by the Program Officer and the selecting official prior to the proposal review and documented in the Selection Recommendation Package.
- 4.5.6. The Program Officer should allocate commensurately more time in the review schedule for the panel to conduct the more in-depth “Expertise and Resources” Evaluation and document the findings. Panels should also be provided with a suitable form for recording the “Expertise and Resources” category and associated strengths and weaknesses.
- 4.5.7. A copy of the form used to document the results of the “Expertise and Resources” Evaluation process must be appended to the panel evaluation form for all proposals reviewed by the panel. If the associated Expertise and Resources document for a proposal was not revealed to the panel, the form should simply be marked “*Not Assessed*”

## **5. Preparation of Selection Recommendations**

- 5.1. Program Officers may use their full knowledge of the identities of the proposers and proposing institutions in order to facilitate any necessary programmatic balancing when developing selection recommendations.
- 5.2. Program Officers may apply the findings of “Expertise and Resources” review phase during the preparation of selection recommendations (e.g., to recommend the non-selection of a proposal with a “Not Qualified” grade or to recommend conditional selection of a proposal categorized as “Meets Expectations” subject to specified corrective actions).
- 5.3. The Selection Recommendation Package for any program implementing the enhanced “Expertise and Resources” Evaluation process should include an explicit selection rationale for each proposal for which the “Expertise and Resources” document was evaluated, regardless of whether the proposal is recommended for selection or not. That selection rationale should address how both the merit rating of the anonymized proposal and the categorization of the Expertise and Resources document factored into the final selection recommendation.
- 5.4. The Selection Decision Document for any program implementing the enhanced “Expertise and Resources” Evaluation process should include the selection rationales for all selected proposals.



5.5. Selection Recommendation Packages (SRPs) and Selection Decision Documents (SDDs) should be prepared in accordance with SPD-08, “Requirements for Selection Decision Documents for NASA Research Announcements Including ROSES”, with no deviations necessary for dual-anonymous reviews.

APPENDIX A

