Guidelines for Proposers to ROSES Dual-Anonymous Peer Review Programs

1. Introduction

NASA's Science Mission Directorate is strongly committed to ensuring that the review of proposals is performed in an equitable and fair manner. To this end, SMD will evaluate proposals to many ROSES program elements using dual-anonymous peer review (DAPR). Under this system, not only are proposers unaware of the identity of the members on the review panel, but the reviewers are not told the identities of the proposers until after the evaluation and rating of all proposals is complete (see below). The objective of dual-anonymous peer review is to minimize the impact of implicit or unconscious bias in the evaluation of the merit of a proposal.

This document provides instructions to proposers submitting to DAPR ROSES program elements. See also https://science.nasa.gov/researchers/dual-anonymous-peer-review

A separate document describes how to prepare proposals for the Astrophysics General Investigator/Observer/Scientist Calls that use the 2-phase proposal submission process.

2. The Anonymized Proposal Document

In the subsections below and in the rows in the Summary table that appears in Section 5 and in each DAPR program element, we attempt to address each aspect of the proposal specifically and individually. However, if there is an aspect of your proposal that we didn't include the general rule is: anonymize the peer reviewed proposal and any information omitted from the proposal because of anonymization should be added to the Expertise and Resources (E&R) Not Anonymized document. If there is no additional information to be provided, then that section need not be repeated E&R document. For example, the OSDMP or Budget (see Sections 2.4 and 2.6).

2.1 Submission of Proposals

Proposers should note that for those programs that follow the 2-Step proposal process, Step-1 proposals need not be anonymized unless directed by the program element; however, Step-2 proposals must be anonymized according to the guidelines in the program element.

Even for DAPR programs, proposers should continue to fill in all required information on the NSPIRES cover page (e.g., team members, institutions) in a not-anonymized fashion. The forms filled out on the NSPIRES web pages with Proposal Summary, Budget, Proposal Team and Program Specific and Business Data known as the NSPIRES "cover pages" will be partly hidden for the peer reviewers. The one exception is the Proposal Summary (see Section 2.2) but all other sections of the NSPIRES cover page should be completed as normal and NSPIRES will hide the identifying information from the reviewers.

2.2 Proposal Summary

The Proposal Summary of a Step-2 or full proposal must be anonymized, omitting names of the team members or their institutions as well as any other individually-identifying information.

The anonymized proposal summary shall be provided only as part of the NSPIRES cover page. Proposers should no longer include a copy of the anonymized proposal summary in the main body of the uploaded proposal PDF file.

2.3 Scientific/Technical/Management Section

Proposers are required to write the Scientific/Technical/Management (i.e., science justification) section of the proposal in an anonymized format, i.e., in a manner that does not explicitly identify the names of the team members or their institutions. Some specific points follow:

- Reference callouts in the text must be written in the form of a number in a square bracket, e.g. [1], which will then correspond to the associated citation in the reference list.
- Do not use the proper names of people or institutions anywhere outside of the reference list in the anonymized proposal document. This includes but is not limited to, page headers, footers, diagrams, figures, watermarks, or PDF bookmarks. The only exception is in the case of named phenomena/objects (e.g. Van Allen Radiation Belts, Comet Hyakutake, Barnard's Star, the NIST Atomic Spectra Database, the Mikulski Archive for Space Telescopes, etc.).
- Do not claim ownership of past work or use possessive pronouns that indicate ownership, e.g., "my previously funded work..." or "Recently published results from our laboratory demonstrate that…"
- Do not associate personnel with named teams or collaborations, e.g., "the PI is a member of the EAGLE collaboration."
- When citing references, use third person neutral wording. This especially applies to self-referencing. For example, replace phrases like "as we have shown in our previous work [17], …" with "as previously shown [17], ..."
- Do not use gendered pronouns (e.g. he, she, his, her, etc.) anywhere in the anonymized proposal document. This includes the Open Science Data Management Plan, the Summary of Personnel and Work Effort, and the Budget/Budget Justification, in addition to the main Scientific/Technical/Management (S/T/M) section of the proposal.
- Depending on the program element, it may be occasionally important to cite exclusive access datasets, non-public software, unpublished data, or findings that have been presented in public before but are not citable. Each of these may reveal (or strongly imply) the investigators on the proposal. In these instances, proposers must use language such "obtained in private communication" or "from private consultation" when referring to such potentially identifying work. If proposers include this type of citation, do not include with whom the personal communication

took place, i.e., do not refer to the names or roles of individuals or provide a description of a team or group.

As always, the reviewers expect proposers to describe the past work in the field to put the proposed work into context and how the proposed work would improve, build-upon, complement, contradict, or complete that past work. Using the above guidelines, proposers should be able to successfully accomplish this in an anonymized manner.

2.4 Open Science and Data Management Plan

Proposals to most ROSES-2024 program elements are required to include an "Open Science and Data Management Plan" (OSDMP), formerly known as the Data Management Plan, as part of the anonymized proposal document. See the instructions in the program element, the *SMD Open-Source Science Guidance* at https://science.nasa.gov/oss-guidance and https://science.nasa.gov/researchers/sara/faqs/OSDMP. In most cases, the OSDMP is included as a separate 2-page section of the anonymized proposal document, outside of the S/T/M section. However, there are some program elements that require the OSDMP to be included within the page-limited S/T/M section so proposers should be careful to follow the instructions in the program element to which they are proposing.

Proposers are required to write the Open Science and Data Management Plan section of the proposal document in an anonymized format that does not explicitly identify the names of the team members or their institutions (see guidelines in Section 2.3 above). If a proposer is planning to use an archive that might identify the proposing organization (e.g., one that can only be used by staff at a particular organization) that should be obfuscated in the anonymized proposal but fully described in the Expertise and Resources (E&R) Not Anonymized document.

2.5 Table of Personnel and Work Effort

The Summary of Work Effort, including the Table of Work Effort must be included in anonymized fashion (e.g., PI; Co-I-1; Co-I-2) in both the main proposal document, in the place indicated by *the NASA Proposer's Guide* (formerly known as the *Guidebook for Proposers*), and in non-anonymized fashion in the separate "Expertise and Resources Not Anonymized" document (see Section 3).

2.6 Budget and Budget Narrative

As usual for ROSES, proposals should include a redacted budget, i.e., one with the costs of things but not salary, fringe or overhead. For DAPR programs, this redacted budget must also not include any names of persons or organizations. Similarly, the proposal should include a budget narrative that may discuss the financial support for the PI, Co-Is, etc., but it must not identify the names or institutions of these individuals. Travel budgets should not name the origin city for any travel, as that may reveal the proposing organization. Please review tabular budget summaries, as they sometimes contain information that identifies individuals or organizations. Please review the final

PDF file for bookmarks that contain the names of merged budget files that reveal team member names or organizations.

2.7 Additional Considerations

2.7.1 *Supporting Letters or Statements*

All Statements of Commitment and Letters of Support, Feasibility, or Endorsement are to be included in the separate "Expertise and Resources Not Anonymized" document. However, when such documents are provided, the proposal should mention this fact in the anonymized proposal just to set reviewer expectations.

2.7.2 *Facilities and Equipment*

The complete Facilities and Equipment section must not be included in the main proposal document submitted in response to a program element that employs dual-anonymous peer review. Instead, this information (including Letters of Resource Support) will be gathered in the separate "Expertise and Resources Not Anonymized" document. However, the main body of the proposal should address the need, utilization, and salient capabilities of the facilities and equipment necessary for the proposed research in an anonymized manner.

2.7.3 *High End Computing*

If a proposing team is requesting an allocation of NASA's High-End Computing resources, the Scientific/Technical/Management section of the proposal document must provide a brief anonymized overview of the computing resources required, and state that a separate HEC request form is included. Proposers are still required to submit a separate PDF copy of the official HEC request form (see https://www.hec.nasa.gov/request/science.html for guidance). In NSPIRES, upload the not-anonymized PDF HEC form as attachment type "Optional HEC request".

2.8 Return without Review of Unanonymized Proposals

SMD understands that dual-anonymous peer review represents a major shift in the preparations and evaluation of proposals and, as such, there may be occasional minor errors in writing anonymized proposals. However, SMD reserves the right to return without review proposals with anonymization errors so pervasive and/or numerous that it is deemed impossible to fairly evaluate the proposal within the context of the dual-anonymous process.

SMD further acknowledges that some proposed work may be so specialized that, despite attempts to anonymize the proposal, the identities of the Principal Investigator and team members may be discernable. That notwithstanding, as long as the proposers follow the above guidelines for proper anonymization, SMD will not return these proposals without review.

3. The Separate "Expertise and Resources Not Anonymized" Document

Proposers will also be required to upload a separate "Expertise and Resources Not Anonymized" document (hereafter, simply the “E&R document”). As the name suggests, the contents of the E&R document are not anonymized. There is no overall page limit to the E&R document, but page limitations might apply to individual components of the document (e.g., the Bio Sketches, description of facilities, etc.). In addition to the instructions provided below, proposers must follow any instructions regarding the required content and applicable page limits of the required E&R document provided in the program element to which they are responding. Moreover, proposers must restrict the material contained in the E&R document to the elements described below. In NSPIRES, upload as Attachment type "Expertise and Resources Not Anonymized". (For proposers with an HEC appendix, there will be two uploaded attachments, in addition to the proposal itself and the Total Budget file.)

The "Expertise and Resources Not Anonymized" document will contain the following elements:

i. On the first page, a list of all team members, together with their institutional affiliations and roles (e.g., PI, Co-I, collaborator).
ii. Brief descriptions of the scientific and technical expertise each team member brings, emphasizing the experiences necessary to be successful in executing the proposed work.
iii. A discussion of the contribution that each team member will make to the proposed investigation.
iv. A discussion of specific resources (“Facilities and Equipment”, e.g., access to a laboratory, observatory, specific instrumentation, or specific samples or sites) that are required to perform the proposed investigation.
v. A summary of work effort, to include the non-anonymized table of work effort. Given that the program element requires an anonymized version of this table in the main proposal body, the table here should be identical, but with the roles now also identified with names (e.g., Sandra Cauffman PI; Nicky Fox Co-I-1; Lori Glaze Co-I-2).
vi. Bio sketches, if required by the program element (limit 2 pages for the PI, 1 page for each Co-I).
vii. Statements of Current and Pending support, if required by the program element.
viii. Letters of resource support, if required by the program element.
ix. Any other specialized documentation explicitly required by the individual program element.
x. Any additional information needed to clarify or describe something that was anonymized in the main proposal document. However, this shall not be used as an attempt to add additional technical content that should have been included in the S/T/M section of the anonymized proposal. Doing so would be pointless as the E&R document is not seen by peer reviewers until after they have assessed the anonymized document and any attempt to circumvent the S/T/M page limit is likely to have severe consequences for the proposer.

After the review panel has completed the evaluation and rating of all its proposals, the E&R documents for only those proposals that may realistically be considered for selection under the program (as determined by the distribution of grades and the projected selection rates) will be distributed to the review panel. The panelists will review the contents of the E&R documents to assess the qualifications, capabilities, and related expertise of the team and the facilities, instruments, equipment and other resources or support systems required to execute the proposed investigation.

The following is an example list of team members and statement of team member roles and expertise:

List of investigators, institutional affiliations, and roles:

Dr. Karen St. Germain, NASA Headquarters (PI)
Dr. Nicky Fox, NASA Headquarters (Co-I)
Dr. Lori Glaze, NASA Headquarters (Co-I)
Dr. Paul Hertz, NASA Headquarters (collaborator)

Team expertise:

Dr. Karen St. Germain has extensive experience in the development, management, and oversight of space-based science missions. She will coordinate the project and be responsible for obtaining the samples. Dr. Nicky Fox is an expert in telematics and satellite communications, and previously served as the Project Scientist for NASA's Parker Solar Probe. Dr. Fox will integrate the laboratory data with the supercomputer-derived models. Dr. Lori Glaze brings expertise in the conceptualization and development of planetary instrumentation. Dr. Glaze will refine the machine learning algorithm that is necessary to complete the proposed work. Dr. Paul Hertz is an expert in X-ray emission from neutron stars, black holes, and globular clusters. Through his institutional affiliation, Dr. Hertz has access to the synchrotron beamline necessary to complete the proposed work.

4. Total Budget File

As is the case for all ROSES proposals, a mandatory "Total Budget" file all direct and indirect costs for at U.S. organizations, including those at government laboratories, must be uploaded as a separate document in NSPIRES. The "Total Budget" document is not released to reviewers and should not be redacted or anonymized.

5. Summary of Requirements for Anonymized Proposals

Each program element using the DAPR process will include a table of requirements similar to that shown below. The instructions in the table below represent the default for ROSES, but maybe superseded by instruction in any given program element.

Item	Requirement
Proposal Document PDF file	In addition to anonymizing the content, ensure that any PDF bookmarks are anonymous, and the document properties do not reveal names of author or organization.
Science-Technical-Management (S/T/M) section of proposal	The S/T/M section must be anonymized. Omit all names of team members, names of their associated organizations, and other personally-identifiable information.
References	Reference callouts must be in numerical form using the [1], [2] format. Citations should not include author names (see Sec. 2.4).
Open Science and Data Management Plan	If an OSDMP is required, it must be anonymized. Any identifying information omitted from OSDMP to maintain anonymity should be included in the "Expertise and Resources Not Anonymized" document, see Section 2.5.
Biographical Sketches	Do not include in main proposal document. Include in separate "Expertise and Resources Not Anonymized" document.
Table of Personnel and Work Effort	Include in an anonymized fashion (e.g., PI; Co-I#1; Co-I#2) in the main proposal document and in non-anonymized fashion in the separate "Expertise and Resources Not Anonymized" document.
Current and Pending Support	Do not include in main proposal document. Include in separate "Expertise and Resources Not Anonymized" document.
Letters or Statements	All Statements of Commitment and Letters of Support, Feasibility or Endorsement are to be included in the separate "Expertise and Resources Not Anonymized" document
Redacted Budget and Narrative	Include both redacted budget and narrative in proposal document in an anonymized format. Redacted budgets must not include institutional logos or insignia.
Facilities and Equipment	The Facilities and Equipment Section is to be placed only in the separate "Expertise and Resources Not Anonymized" document. However, the S/T/M Section of the anonymized proposal should address the need for and capabilities of facilities and equipment necessary for the proposed research in an anonymized fashion. Any unique/identifying descriptions of facilities and evidence of access to or affiliation with facilities are to be included in the separate "Expertise and Resources Not Anonymized" document.

Separate "Expertise and Resources Not Anonymized" document	Upload as a separate document in NSPIRES. Choose Attachment Type = "Expertise and Resources Not Anonymized". This document provides a list of all team members, their roles, institutional affiliations, expertise, and contributions to the work. The document should also discuss any specific resources that are key to completing the proposed work, as well as a summary of work effort. Statements of Current and Pending Support must also be included.
Total Budget	Upload as a separate document in NSPIRES. Choose Attachment Type = Total Budget. The mandatory total budget file is full and complete with all costs for those at U.S. organizations, including those at government laboratories. It is not redacted or anonymized.
High-End Computing (HEC) request	Submit optional not-anonymized PDF HEC form as attachment type "Optional HEC request" in NSPIRES. The S/T/M section in the main proposal must state that a HEC request is included and must provide an outline of the computing resources required in an anonymized fashion.

Special note for Grants.gov proposers. Content should not be duplicated in a Grants.gov submission. All material that belongs in the “Expertise and Resources Not Anonymized” document should only be provided in that document. If Grants.gov requires the attachment of separate files (e.g., Bio sketches or facilities and equipment, etc.) please attach a dummy file that simply states: "see E&R document".

6. Example Text for Anonymized Proposals

Much of the following text has been reproduced, with permission, from the Hubble Space Telescope dual-anonymous peer review website.

Here is an example of text from a sample proposal:

> Over the last five years, we have used infrared photometry from 2MASS to compile a census of nearby ultracool M and L dwarfs (Cruz et al, 2003; 2006). We have identified 87 L dwarfs in 80 systems with nominal distances less than 20 parsecs from the Sun. This is the first true L dwarf census a large-scale, volume-limited sample. Most distances are based on spectroscopic parallaxes, accurate to 20%, which is adequate for present purposes. Fifty systems already have high-resolution imaging, including our Cycle 9 and 13 snapshot programs, #8581 and #10143; nine are in binary or multiple systems, including six new discoveries. We propose to target the remaining sources via the current proposal.

Here is the same text, re-worked following the anonymizing guidelines:

> Over the last five years, 2MASS infrared photometry has been used to compile a census of nearby ultracool M and L dwarfs [6,7]. 87 L dwarfs in

> 80 systems have been identified with nominal distances less than 20 parsecs from the Sun. This is the first true L dwarf census a large-scale, volume-limited sample. Most distances are based on spectroscopic parallaxes, accurate to 20%, which is adequate for present purposes. Fifty systems already have high-resolution imaging available from two recent HST snapshot programs [REFERENCE]; nine are in binary or multiple systems, including six new discoveries. We propose to target the remaining sources via the current proposal.

Here is another example of text from a sample proposal:

> 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.

Here is a third example of text from a sample proposal:

> Before and after radiolysis, we will test changes in ice composition with our established cryogenic mass spectrometry technique (2S-LAI-MS) [Henderson and Gudipati 2014; Henderson and Gudipati 2015]. Our technique uses an IR laser tuned to the absorption wavelength for water to gently eject the sample into the gas phase, where it can be ionized by a UV laser and analyzed by time-of-flight mass spectrometry. A key advantage of our technique is that compositional information can be obtained directly in situ, for temperatures that are relevant to Europa (i.e., 50, 100, 150 K), without a need for warming to room temperature or other sample preparation. We will also perform continuous mass spectral analyses (using a residual gas analyzer and a quadrupole mass spectrometer already

installed) during radiation to quantify the amount of sputtered material and evolved gas byproducts.

Here is the same text, again re-worked following the anonymizing guidelines:

> Before and after radiolysis, we will test changes in ice composition with an established cryogenic mass spectrometry technique [12,13]. This technique uses an IR laser tuned to the absorption wavelength for water to gently eject the sample into the gas phase, where it can be ionized by a UV laser and analyzed by time-of-flight mass spectrometry. A key advantage of this technique is that compositional information can be obtained directly in situ, for temperatures that are relevant to Europa (i.e., 50, 100, 150 K), without a need for warming to room temperature or other sample preparation. We will also perform continuous mass spectral analyses during radiation to quantify the amount of sputtered material and evolved gas byproducts.

Another common situation that occurs in proposals is when a team member has institutional access to unique facilities (e.g., access to a laboratory, observatory, specific instrumentation, or specific samples or sites) that are required to accomplish the proposed work. An anonymized proposal does not prohibit stating this fact in the Scientific/Technical/Management section of the proposal; however, the proposal must be written in a way that does not identify the team member. Here is an example:

> "The team has been awarded XX days of telescope time on Keck to observe Titan" or "The team has XX days at the NASA Ames Vertical Gun Range to study impacts on Titan" or "The team has XX days in the NASA Venus In-situ Investigations Chamber, which will enable us to examine the properties of sulfuric acid rain on Venus."

Note: in this situation, NASA strongly recommends that the team provide detailed supporting information (e.g., a letter of resource support) to validate the claim in the "Expertise and Resources - Not Anonymized" document.

7. Common Pitfalls in the Preparation of Anonymized Proposals

Below is a non-exhaustive list of common pitfalls when preparing anonymized proposals:

i. Including metadata (e.g., PDF bookmarks, document properties) that reveal the name of the PI.
ii. Recycling proposals prepared prior to dual-anonymous peer review and not carefully anonymizing the text.
iii. Providing the names of investigators on the contents page or in a header or footer.
iv. Use of possessive pronouns and/or gendered pronouns.
v. Providing the origin of travel for professional travel (e.g., conferences).
vi. Mentioning the institution name in the Budget Narrative.
vii. Including the PI or Co-I names in budget tables.

viii. Attempting to “redact” identifying information by inserting a black rectangle over parts of the text, versus formally redacting the text using specialized software.
ix. Including the “Expertise and Resources Not Anonymized” document within the main proposal PDF.

Many of these issues may be resolved by carefully searching the proposal PDF for identifying information, e.g., PI name, Co-I name(s), institution(s) before submission.

8. Evaluation of Proposals in Dual-Anonymous Peer Review

The overarching objective of dual-anonymous peer review is to reduce the impact of unconscious bias in the evaluation of the merit of a proposal. In order to ensure this goal, the review panels will be instructed to evaluate proposals based on their scientific merit, NASA relevance, and cost reasonableness without taking into account the identity of the proposers. Here are some specific instructions that are provided to reviewers:

i. Evaluate proposals solely on the merit of what is proposed.
ii. Do not spend any time attempting to identify the PI or the team. This applies even if you think you know the identities of the team members. Remember to discuss the science and not the people.
iii. In the panel discussions, do not make guesses on identities, insinuate the likely identities, or instigate discussion on a possible team’s past work.
iv. When writing evaluations, use neutral language focused on the work and not the people (e.g., instead of saying, "what they propose to investigate" or "the team has previously evaluated similar data" say “the proposed investigation will address” or “the proposal summarizes a previous evaluation of similar data”).

In addition, SMD will appoint a "leveler" to be present in the panel room for all discussions. The Leveler is not a reviewer or a panelist but is an individual trained to ensure that the panel deliberations focus on the strengths and weaknesses of the proposed investigation and do not deviate into a discussion of the identity, qualifications, and experience of the PI and team. SMD will provide full and comprehensive instructions to all reviewers, Panel Chairs, and Levelers ahead of the review.

As a final check, and only after the evaluation and rating of all the anonymized proposal documents assigned to the panel has been completed, panelists will be provided with the "Expertise and Resources Not Anonymized" documents for a subset of proposals that scored highly (the cutoff being dependent on the distribution of grades and projected selection rate for the program). If applicable, the accompanying request for NASA's High-End Computing resources will be released to reviewers at this time as well. Based on this information, the panel will assess the qualifications, capabilities, and related expertise of the of the team and the facilities, instruments, equipment and other resources or support systems required to execute the proposed investigation. Based on their assessment, the panel will assign the "Expertise and Resources Not Anonymized" document to one of three categories: Uniquely Qualified; Qualified; or Unqualified. This categorization, together with any finding documented by the panel, is captured in a

separate evaluation form, which is returned to the proposing team along with other documentation from the review. This validation process may not be used to "upgrade" proposals for having particularly strong team qualifications, nor may it be used to re-evaluate proposals.

This document was last updated February 2024. Additional information, as well as frequently asked questions, may be found at https://science.nasa.gov/researchers/dual-anonymous-peer-review. Comments and questions on this document may be directed to douglas.m.hudgins@nasa.gov and SARA@nasa.gov.