

FES Office Hours: How to Become an Effective Reviewer

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By

Fusion Energy Sciences

Research Division Program Managers



U.S. DEPARTMENT OF
ENERGY

Office of
Science

Introduction to Fusion Energy Sciences

Reviewer Responsibilities

Merit Review Criteria

PIER Plan, Data Management Plan, and Conference Proposals

Reviewer Best Practices



Program Office Introduction

Fusion Energy Sciences Program Mission:

- The FES program mission is to expand the fundamental understanding of matter at very high temperatures and densities and to build the scientific foundation needed to develop a fusion energy source.
- The Energy Act of 2020, Section 2008 augmented the scientific mission of FES with supporting “the development of a competitive fusion power industry in the U.S.”

Ref: <https://science.osti.gov/fes/About>

Accessed Dec 30, 2022



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Office of Science Statement of Commitment

- **SC Statement of Commitment** - SC is fully and unconditionally committed to fostering safe, diverse, equitable, inclusive, and accessible work, research, and funding environments that value mutual respect and personal integrity. <https://science.osti.gov/SW-DEI/SC-Statement-of-Commitment>
- **Expectations for Professional Behaviors** -SC's expectations of all participants to positively contribute to a professional, inclusive meeting that fosters a safe and welcoming environment for conducting scientific business, as well as outlines behaviors that are unacceptable and potential ramifications for unprofessional behavior. <https://science.osti.gov/SW-DEI/DOE-Diversity-Equity-and-Inclusion-Policies/Harassment>
- **How to Address or Report Behaviors of Concern**- Process on how and who to report issues, including the distinction between reporting on unprofessional, disrespectful, or disruptive behaviors, and behaviors that constitute a violation of Federal civil rights statutes. <https://science.osti.gov/SW-DEI/DOE-Diversity-Equity-and-Inclusion-Policies/How-to-Report-a-Complaint>
- **Implicit Bias** - Be aware of implicit bias, understand its nature - everyone has them - and implicit bias if not mitigated can negatively impact the quality and inclusiveness of scientific discussions that contribute to a successful meeting.



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Notice to Reviewers

- Thank you for contributing your time and effort to the Office of Science merit review process.
- Serving as a reviewer carries serious responsibility. Improprieties can invalidate the process with serious consequences for applicants, taxpayers, and DOE/Office of Science.
- In many circumstances, it can be valuable to read and understand the contents of the Funding Opportunity Announcements (FOAs), or other types of solicitations, prior to completing your review.



PAMS is used to manage the SC review process

- SC uses the Portfolio Analysis And Management System (PAMS) to handle COI declarations, share applications with reviewers, and manage reviewer reports
 - <https://pams.science.energy.gov/>
- Reviewers must have an active account
 - See documentation for instructions: pamsexternalhelp.science.energy.gov
 - Essential information: Name, Affiliation, Primary Email, Demographic information
 - Demographic information supports DOE DEIA initiative
- PAMS users can seek support from the PAMS Helpdesk: PAMS-Helpdesk@science.doe.gov
- Other Comments
 - Often, a program manager will create an account for a new reviewer.
 - Avoid creating multiple PAMS accounts for the same person as this can cause confusion and circumvent the COI interlocks in PAMS



Conflict of Interest (COI) Guidance

- The Office of Science requires all individuals who participate in the evaluation of Full Applications to perform their duties with the highest standard of integrity and to avoid any actual or apparent conflicts of interest.
- Prior to beginning Full Application reviews, you will review the names and institutions of applicants and identify potential COIs in PAMS.
- If you are not certain about a potential COI, ask the responsible Program Manager (PM) before identifying it in PAMS. If the PM is not able to help, the DOE legal counsel will be consulted.
- If you identify a potential COI while reviewing a Full Application, please cease review of that Full Application immediately and inform the responsible PM



Examples of Conflict of Interest

Affiliation with an applicant institution.

- Current employment at the institution as member of the scientific staff, professor, adjunct professor, visiting professor, or similar position.
- Current employment or are being considered for employment at the institution.
- Current membership on a visiting committee or similar body at the institution.
- Any office, governing board membership, or relevant committee chairpersonship in the institution.
- Received and retained an honorarium or award from the institution within the last 12 months.
- **Relationships with an investigator, project director, or other person who has a personal interest in the proposal or other application.**
 - Employment at the same institution within the last 12 months.
 - Past or present association as thesis advisor or thesis student.
 - Collaboration on a project or on a book, article, report, or paper within the last 4 years. If publication with more than ten authors are the norm for your scientific field, only relationships with individuals in the core group with whom you interacted on a regular basis while the research was being done are covered.

Other affiliations or relationships.

- Any other relationship, such as close personal friendship, that you think might tend to affect your judgments or be seen as doing so by a reasonable person familiar with the relationship.



Reviewer Responsibilities

- Do not discuss the Full Applications or the evaluation process with anyone except authorized Department of Energy personnel.
- Do not divulge your role in the merit review process to anyone.
- Do not contact applicants about Full Applications.
- Should any applicant contact you about their proposal submission, don't respond, and contact the responsible PM.
- **Do not accept anything from any applicant during the review period.**
- Do not divulge any knowledge or information acquired through your involvement in the review process to anyone.
- Maintain the confidentiality of:
 - (a) Information contained in the submissions.
 - (b) your identity and role in the merit review process.
- Destroy all paper and electronic copies of submissions after the conclusion of the merit review process.



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Merit Review Criteria

DOE SC's standard merit review criteria are set forth by 10 CFR Part 605.10 and may include additional criteria relevant to the scope and objectives of the solicitation. **Unless otherwise tailored in the solicitation** (Funding Opportunity Announcement or DOE Laboratory Call), the merit review criteria for the evaluation of applications are as follows, in descending order of importance:

- **Scientific and/or Technical Merit of the Project;**
- **Appropriateness of the Proposed Method or Approach;**
- **Competency of Applicant's Personnel and Adequacy of Proposed Resources;**
- **Reasonableness and Appropriateness of the Proposed Budget; and**
- **Quality and Efficacy of the Plan for Promoting Inclusive and Equitable Research**

The sponsoring SC Program Office may elect to modify this order at the time the solicitation is developed, as appropriate for the scope and objectives of the solicitation.

- **Each criterion is distinct:** FES is seeking reviewer comments on the strengths and/or weaknesses of a proposal for each criterion
- **Sub-criteria** may also be specified by the responsible PM or other coordinating official.
 - Sub-criteria may simply be a series of prompts to assist the preparation of a review, or
 - Sub-criteria may be specific questions that must be addressed. If you are uncertain how to treat sub-criteria, contact the responsible PM.



Merit Review Scores

- Reviewer reports include written comments and may include “scores”
- Scores may include numerical and/or adjectival components, both of which can vary between FOAs
- Scores are intended to provide a global assessment of the application and help to clarify the reviewers overall ranking of the proposal
- Written comments and scores should be consistent
 - Program manager may ask a reviewer for clarifications when there is an inconsistency so reviewers should use their written comments to inform the score and iterate further as necessary

Example scores: adjectival and numerical

- *10,9 – Excellent: Thorough, compelling proposal of exceptional merit that is fully aligned with the FOA with numerous or significant strengths and no major weaknesses*
- *8, 7 - Very Good: Competent proposal of high merit that is fully aligned with the FOA with strengths that fully outweigh any weaknesses and no fatal flaw*
- *6, 5 – Good: Competent proposal that credibly addresses needs of the FOA, but strengths and weaknesses balance each other, yet no fatal flaw*
- *4,3 – Fair: Nominally aligned with the FOA but weaknesses outweigh strengths, yet no fatal flaw*
- *2,1 – Poor: Has at least one fatal flaw, is not aligned with the FOA, or is impossible to evaluate*



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Promoting Inclusive and Equitable Research (PIER) Plans

At-a-glance:

- Should describe the activities and strategies proposed by the Principal Investigator (PI)/project team to promote equity and inclusion integral to the research project;
- Are between 1-3 pages long, and included as an appendix to the research proposal narrative;
- Will be evaluated as part of the merit review process used to inform funding decisions;
- Are required for all research proposals submitted to SC through FOAs, Laboratory Announcements, and invitational proposals from DOE Labs;
- Are not required for existing awardees unless they are submitting a renewal proposal starting in FY 2023;
- Are not required for applications for supplemental funding on existing awards;
- Are not required for applications requesting funding to support conferences (but there are new conference proposal requirements for FY 2023)
- Are not required for proposals submitted to SBIR/STTR Programs announcements. A requirement will be phased in later.



Guiding Reviewer Questions for PIER Plan Criterion

Quality and Efficacy of the Plan for Promoting Inclusive and Equitable Research

- Is the proposed Promoting Inclusive and Equitable Research (PIER) Plan suitable for the size and complexity of the proposed project and an integral component of the proposed project?
- To what extent is the PIER Plan likely to lead to participation of individuals from diverse backgrounds, including individuals historically underrepresented in the research community?
- What aspects of the PIER Plan are likely to contribute to the goal of creating and maintaining an equitable, inclusive, encouraging, and professional training and research environment and supporting a sense of belonging among project personnel?
- How does the proposed Plan include intentional mentorship and are the associated mentoring resources reasonable and appropriate?

Additional reviewer questions may be included in the solicitation if applicable to the scope of the solicitation and history of the research efforts.



Informational Resources on the SC Website

[About](#)

[Funding Opportunity Announcements \(FOAs\)](#)

[DOE National Laboratory Announcements](#)

[Grants Policy and Guidance](#)

[Applicant and Awardee Resources](#)

[Grants Process](#)

[Promoting Inclusive and Equitable Research \(PIER\) Plans](#)

[Conferences Proposals](#)

[Statement on Digital Data Management](#)

[Applicant FAQs](#)

[Awardee FAQs](#)

[DOE Public Access](#)

[Award Search / Public Abstracts](#)

[Acknowledgements of Federal Support](#)

Promoting Inclusive and Equitable Research (PIER) Plans

Beginning in FY 2023, all Department of Energy (DOE) Office of Science Funding Opportunity Announcements (FOAs) and DOE National Lab Announcements and other funding solicitations will require applicants to submit a Promoting Inclusive and Equitable Research (PIER) Plan as an appendix to their proposal narrative. PIER Plans should describe the activities and strategies applicants will incorporate to promote diversity, equity, inclusion, and accessibility in their research projects. PIER Plans will be evaluated as part of the merit review process and will be used to inform funding decisions.

The Office of Science (SC) is deeply committed to supporting diverse, equitable, inclusive, and accessible work, research, and funding environments that value mutual respect and personal integrity, and SC is committed to promoting people of all backgrounds, including individuals from groups and communities historically underrepresented in STEM fields and SC activities in recognition of our responsibility to serve the public. Transforming our understanding of nature to advance scientific discovery and U.S. energy, economic, and national security can only be accomplished by harnessing a diverse range of views, expertise, and experiences to drive scientific and technological innovation. The inclusion of PIER Plans in funding applications makes this commitment to inclusive excellence explicit and a consistent expectation of all SC-funded research and research related activities.

Applications to the Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs do not require PIER Plans at this time but will be phased in at a later date. Applications for supplemental funding on existing awards and applications requesting funding for conferences do not require PIER Plans.

- [Information about PIER Plans](#)
- [Frequently Asked Questions](#)
- [PIER Plan Resources for SC Program Staff](#) (Internal to SC network only)

Information about Promoting Inclusive and Equitable Research (PIER) Plans



Data Management Plans

Additional Guidance for Reviewers on Digital Data Management (Effective 1/1/2022)

(NOTICE: The following Guidance will take effect for Office of Science solicitations issued after January 1, 2022.)

As part of the DOE Office of Science Merit Review process, reviewers are asked if the DMP is suitable for the proposed research and to what extent does it support the validation of research results. Reviewers are expected to determine if the DMP has met the [Requirements](#) and provide constructive feedback to the Office of Science and the researcher. The Office of Science developed a document containing additional guidance for the reviewer to help reviewers prepare and provide constructive feedback. This document provides example reviewer feedback utilizing the Suggested Elements.

[Guidance for Reviews of DMPs](#) 

<https://science.osti.gov/-/media/funding/pdf/Guidance-for-Reviews-of-DMPs.pdf>



Guidance for Reviewers

You are being asked to review the Data Management Plan (DMP) as part of the overall proposal review

- DOE/SC provides a list of [Suggested Elements for a DMP](#) online to:
 - Help researchers organize information and display it clearly in their DMP for program offices and reviewers
 - Help reviewers determine if the DMP has met the [DMP Requirements](#)
- Your review should address whether the provided DMP adequately addresses the DMP Requirements
 - The [Guidance for reviewers slides 6-7](#) provide example feedback mapped to DMP suggested elements and may serve as a useful cross-reference between the Suggested Elements for a DMP and the DMP Requirements
 - Detailed feedback will aid PIs in improving their DMP in future submissions



Conference Proposals

At-a-glance:

- Applies to all applications to SC requesting funding to support conferences or conference activities.
- Requires that host organization of the conference have a code of conduct (or equivalent policy) that addresses:
 - Discrimination and harassment of all kinds,
 - Defines how issues can be reported and how complaints will be addressed,
 - Describes how all attendees will be informed of the policies and procedures.
- Requires a recruitment and accessibility plan that describes plan for speakers and attendees.

Applications must include:

An online link to the current code of conduct of the host organization for the meeting, or the link to where the code of conduct will be posted. If a code of conduct has not yet been established by the meeting organizers, the application must describe the process and timeline by which a code of conduct will be written, approved, and endorsed.

A recruitment and accessibility plan for speakers and attendees that includes discussion of recruitment of individuals from groups underrepresented in the research/professional community associated with the technical focus of the meeting, and discussion on plans to address possible barriers for attendees, including but not limited to physical barriers.

It is SC's policy that proposals requesting funding for conferences/meetings submitted to SC from DOE National Laboratories are subject to the same above requirements.



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Effective Comment Writing – Do's

DO

- Provide well-written (complete sentences) comments with supportive discussions of all points
- Base comments on sound technical judgements
- Reference relevant peer reviewed documents as needed
- Address sub-criteria as desired by the responsible PM
- Comment on both the strengths and weaknesses of a proposal
 - *Rarely is a proposal perfect or garbage*
- Provide concise comments
- Address all review criteria
- Ensure your written comments are consistent with any numerical ratings and read the adjectival rating descriptions carefully as these may vary between FOAs



Effective Comment Writing – Don'ts

DON'T

- Combine two or more thoughts into one comment (e.g. same sentence)
- Include inflammatory language
- Reference or compare to different proposals you are reviewing (if you are reviewing multiple proposals simultaneously), unless instructed to do so by the responsible PM
- Write comments in the form of questions
- Penalize for grammar unless the submission is incomprehensible
- Cut and paste (or rephrase) large portions of the submission into comments
- Reply to sub-criteria questions or prompts with a simple 'Yes' or 'No'.
- Reveal your identity, or share info. that could identify you or your institution
- Excessively refer to your own peer reviewed pubs to justify your comments
- Express any funding opinions (e.g., "I recommend this proposal for funding.")
Funding recommendations are the responsibility of DOE program managers. The role of the reviewer is to address the review criteria.



Final Comments

- There is **no 'one size fits all' approach** to being an effective reviewer
 - E.g., the review process associated with the FES Milestone Program is unique from the review process for the Spherical Tokamak Program
- The most important way to be an effective reviewer is to understand the specific aims of the PM requesting the review.
- **The best reviewer completes a review on-time!**
 - It is understandable to request additional time, if needed, when a review is initially solicited, this allows FES to plan ahead.
 - Accepting a review deadline and then forcing FES to chase you to complete it after a deadline threatens the integrity of the solicitation.
- Although proposal peer review is sometimes anonymous, **engaging in this review process of research proposals is essential to advancing the FES mission** and you should **take pride in serving in this important role**



Questions?



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