Interview with Dan Stover

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How long have you been with DOE and working alongside ORISE?

This is my 16th year with DOE and working with ORISE.

What benefits does Peer Review provide for DOE?

DOE/SC depends on external subject matter experts from the broader scientific community to serve as reviewer to aid us in determining the strengths, weaknesses and technical merit of each research proposal. Each proposal is reviewed by topical experts and domain generalists that carefully and critically evaluate novel scientific ideas, experimental and modeling approaches, and theory. The review comments, scores and (where applicable) panel discussion help program managers better understand the unique contributions and concerns with each proposal. This feedback helps our office make informed selection decisions, determine alignment with DOE and administration priorities, and provides valuable feedback to the PIs that can be used to refine their work for future submissions.

What advice would you give to an Early Career reviewer?

The best advice I can give early career reviewers would be:

1. Don’t be afraid to volunteer. A large part of being a scientist in our community is evaluating science. Dive in! Being a reviewer is a great way to learn about new methods, new viewpoints on the cutting edge of your field, and you get to network and make connections with other early, mid, and senior career scientists. You may be intimidated when in a room of senior scientists but remember you are equally qualified and have expertise in areas they don’t know about.

2. Being a reviewer will open your eyes to what happens behind the "curtain". You will see both good and bad ways of how to present your research ideas and reminds you of things you want – and don't want to do in your own proposals (e.g., spell checking, using conceptual diagrams to convey a point, ways to organize your thoughts). I often tell PIs that to be successful in landing a DOE award, they need to convince the review panel first (not DOE program managers!).

What types of reviewer comments bring the most value to DOE?

Clear, thoughtful, and specific review comments are the most useful to program managers and the PI. Single sentence reviews are regularly useless to program managers. General statements that don't identify the specific issue or compliment make it difficult to understand the feedback and where to highlight areas for improvement or excellence. Vague statements also leave room for DOE and PIs to mistakenly 'read between the lines". Using qualifier adjective such as "critical flaw", "minor weakness", "truly innovative", "novel approach", "incremental", etc. help make your point. Additionally, summary comments at the end of the review help highlight the major takeaways are from your entire review. Also, remember your review is your own opinion, and it's ok to differ from other reviewers. And a good rule of thumb is to consider what level of feedback you would want on your own proposal and to provide the same level of detail to others.

Per DOE's standards, what are the primary ethical components for reviewers to uphold?

A cornerstone of any review panel is to ensure that each evaluation is fair and unbiased. If you feel you have a conflict of interest or would be biased in your evaluation, please notify the program manager as soon as possible. Additionally, reviewers should refrain from self-identifying or blatantly inflammatory comments to be fair.

How has new AI technology affected Peer Review both positively and negatively?

Great question. I think AI will change the peer review process in both good and bad ways. First, AI will help polish the final reviews (e.g., spelling, complete sentences, making the major points succinct and clear, etc.). AI will also be useful in co-drafting review panel summaries for each proposal. However, there is a reasonable concern that AI might be unethically asked to do the actual

review and in turn blindly submitted without vetting the comments. While AI is an evolving tool, it doesn't know what it doesn't know yet and may have a hard time understanding the integration of several nuanced research ideas. The federal funding community is also starting to see a rise in the number of AI generated research proposals where AI has 'filled in the gaps' with incorrect or generated information. Something that only subject matter experts would be able to identify. Ultimately, we just need to be aware of the opportunities and limitations of AI as these tools develop, and what we ask AI to do in the peer review process.

What would be the best avenue to promote the Peer Review Resource Hub?

There are several opportunities, including:

- Including it in the invitation we send out to potential panelists
- Sharing it on our program websites
- Brochures that could be shared at meetings, conferences, etc.
- Including it on the reviewer volunteer/sign up page on the program website

If there is a frequently asked question that you get or another piece of information you think would be beneficial for this resource, please list it here.

- I often get asked how university panel reviews differ from lab panel reviews or facility reviews. They each have a different approach and 'flavor'.
- When recruiting reviewers, I always get asked about the workload (usually smaller than other agencies like NSF and NASA, and if travel is required. Given that most of our panels are virtual now, this allows for more flexibility to accommodate teaching schedule, family care, etc.
- Another piece of advice is Don't wait until the day before the panel to start. Most proposals take time to properly evaluate!
- I often get asked lots of PAMS logistic questions (how to submit, can I reopen my review, why do I see all the proposals instead of just the ones I'm assigned, as the primary - do I need to write the panel summary, etc.