

Enhancing Peer Review: What Reviewers Need to Know Now

Transcript Accompanying Video of Dr. Alan Willard, March 2009

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Hello. My name is Alan Willard. I am the Chief of the Scientific Review Branch at the National Institute of Neurological Disorders and Stroke. I am also the Coordinator of several groups that have been charged with the implementation of a set of Enhancements to the NIH Peer Review system.

As many of you know, enhancements to the NIH peer review system have been under study since 2007, when the NIH Director asked whether the current system could be enhanced to accommodate the constantly changing nature of science, to do the best job possible of encouraging applications from new and early stage investigators, and whether administrative burden could be reduced, both for applicants and reviewers.

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This video will discuss some upcoming changes to the peer review system — from the perspective of a reviewer — with particular emphasis on how these changes will affect you as you prepare for the next set of review meetings in May and June of 2009. By the way, thank you very much for agreeing to serve as a reviewer.

This video will also serve as a supplement to the extensive resources already available on the NIH Enhancing Peer Review Web site. The URL for this site is shown [here](#). You can also access this site from the main NIH Web site, <http://www.nih.gov>, by clicking on the peer review link at that site or by doing a simple Google search for the words “enhancing NIH peer review.” Some of the additional resources you will find at this site include: a video overview of the enhancements in which you can learn background information on how the changes were developed and how they are being implemented, a set of frequently asked questions and answers, and an e-mail box to which you can send questions about information in the video or on the Web site. We recommend that you check this Web site frequently to stay informed.

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Now, let’s talk about changes to the peer review process that will begin with the meetings occurring in May and June of 2009. These changes will be put in place for the review of applications that have been received for potential funding in fiscal year 2010.

The changes that will affect you as a reviewer are the following:

The descriptions of the review criteria have been enhanced somewhat, and in addition, the criteria have been reordered to place more emphasis on the significance and impact of applications and less emphasis on overall technical details. As you can see the order of the review criteria for Research

Project Grants is now: significance, investigators, innovation, approach and environment. To illustrate exactly what changes have been made in the review criteria, there is a side-by-side comparison of the previous and enhanced versions, and this comparison can be found on the Enhancing Peer Review Web site.

The second change that I will talk about in the video is the development of templates for reviewers to use when preparing their critiques.

And finally, up to 5 core review criteria will now be scored individually, and scoring will use a new scale that varies from 1 to 9.

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I will now briefly describe the goals of the changes to try to help you better understand why these changes were made. A major overall goal is to help both applicants and NIH staff have a better understanding of the basis of the ratings that any particular application received. It is hoped that scoring the criteria individually and the use of a structured critique template will result in succinct and well-focused critiques that explicitly evaluate the strengths and weaknesses of each application. As I have already said, the review criteria were enhanced and reordered in order to increase the emphasis on the potential impact of the proposed project and to decrease the time spent on discussion of specific technical details.

The major reason for changing the scoring system was to create a rating scale that realistically reflects the range of quality of applications that most study sections actually see and, thereby, to encourage routine use of the entire rating scale.

Finally, it is hoped that these changes will ultimately reduce the burden on you the reviewers, whom we all recognize are the lynchpins of the entire process.

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Now, let me talk about the actual changes that you will encounter as you prepare for the upcoming review meetings. As you are looking at the applications assigned to you, please keep in mind the following things:

First of all, please consider what are the appropriate criteria and other review considerations for the specific application you are evaluating.

Secondly, as you read the application and think about the criteria, please try to identify major strengths and weaknesses.

Based on these strengths and weaknesses, assign a score from 1 to 9 to each of the 5 core review criteria.

And then finally, thinking about the likely overall impact of the application, assign an overall impact/priority score to that application.

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As you are preparing your critiques, we ask that you do the following:

First of all, please use bullet points to make very succinct, focused comments.

Although it may, occasionally, be necessary to use short narratives, we ask that this be kept to a minimum.

We want to emphasize that it is essential to focus on major strengths and weaknesses. In particular, ones that really contributed directly to the overall rating that you gave the application.

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The template itself will contain boxes for each of the core review criteria, boxes for all the other applicable review criteria and considerations, and a box for the overall impact of the application. There will also be a box to provide advice to the applicants. I will say more about that box in a few minutes.

Because there are many possible considerations that could apply to any particular research project, the template contains a total of 18 boxes; however, for any specific application, it is likely that you will only need to provide comments for 6 to 8 boxes. Six boxes would be the minimum to cover the 5 core review criteria and the overall impact. And then, of course, we ask that you comment on the appropriateness of the budget for all applications.

For some of the non-core criteria and other review considerations, it may well be appropriate to simply indicate acceptable or unacceptable. A rating of unacceptable will, of course, require a written explanation for why you found that particular element to be unacceptable.

Another feature of the critique template is it will contain hyperlinks to Web pages that provide specific descriptions of the review criteria and of other review considerations. Even if you have reviewed frequently for us before, I recommend that for this first time through you take a look at the new descriptions of the criteria and considerations and really think about them, as though you are going through them for the first time. These descriptions are also available for download and subsequent use when you are working in an environment without Web access.

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Let me now show you an example of what a section of the critique template will look like. Here we are looking at criterion number 1, which is significance. As you can see, there are bullets that encourage you to list major strengths and weaknesses. And we really do ask you to focus on major strengths and weaknesses — ones that contributed to your overall rating. We recognize that there will be other comments and minor concerns that you may have, and we ask that you put those comments into a separate box at the end of critique, which is called “advice to applicants.” The goal here is to distinguish between strengths and weaknesses that really have a major impact on your rating of the application

from ones that are only intended as advice and might not have much impact on the application if the applicant addressed them.

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When you are thinking about scoring an individual review criterion, please use the 9 point scale to determine a score for each of the five core review criteria. I will remind you 1 is still the best score, and 9 is still the worst. I'll point out that only the core criteria will receive scores. ~~There will be other non-core criteria and additional considerations, such as protection of human subjects or sharing of model organisms, that you should certainly comment on as appropriate, but which will not receive individual criterion scores.~~¹

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Finally, we come to the important job of giving an overall impact/priority score to each application. As a reviewer, you need to identify the overall score that best describes the likely overall impact that an application will have. This overall rating will likely reflect your best estimation as a reviewer of how much impact an application will have, given the importance of the questions being asked, and given the combination of investigators, approach and environment that are described in the application.

I want to draw your attention to the fact that this is a NEW scoring system. Please consider it independently of any other rating systems you may have used in the past. One of the most important goals in developing this new scoring system was to come up with ratings that actually reflect the typical range of quality that reviewers see in applications at study sections. We recognize that the majority of applications you will see are actually pretty good. Most of them will probably have more strengths than weaknesses. For that reason, the new scale has very few scores that indicate truly lousy applications, and a larger number of scores that represent reasonable to really great applications. We hope that having more scores that reflect a realistic range of grant quality will help you spread your scores over the entire range of possibilities. While at the same time, we are trying not to force you to make artificial distinctions between applications of very similar quality.

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This slide shows you an example of one way to think about the scores. You'll note that there are 7 descriptions that range from fair to exceptional and only 2 descriptions that are weak or worse. For those of you who prefer diagrams, we have provided a graphic that illustrates just what I have said. Namely, that most applications tend to have more strengths than weaknesses, and that as you are thinking about the overall rating of the application, you are trying to balance strengths and weaknesses.

¹ There are other review criteria that will only be applicable for a subset of applications, for example, protection of human subjects. These criteria should certainly be applied when appropriate, but they will not receive individual criterion scores. There are also some review considerations, for example model organism sharing plan, that you are asked to evaluate when applicable but which you should not consider when assigning an overall impact/priority score.

It is important to recognize that there is no magic formula. For any particular application, one really big weakness might outweigh numerous strengths, and conversely, one really important strength might greatly outweigh numerous minor weaknesses. This is why we have recruited experts like yourself to serve as reviewers. We really need your judgment in weighing all the strengths and weaknesses of each application in order to come up with your best assessment of its overall quality.

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After you have read your applications, written your preliminary critiques and assigned scores, you should post these critiques along with your criterion scores and overall priority scores on the Internet-Assisted Review Web site. Please do not include the scores within the critique template. They should be posted directly in specially designated fields on the IAR Web site, so that they will then be captured by the relevant data base. Your Scientific Review Officer will provide you with separate information, both tutorials and documentation, on how to use the newer version of the Internet-Assisted Review site. There will also be links to these tutorials and documentation on the Enhancing Peer Review Web site.

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Now let's talk about what happens at the review meeting. The procedure for discussion of applications will be essentially the same as it is at review meetings now. The primary reviewer will describe the application to the panel. Assigned reviewers will discuss the strengths and weaknesses of the application and will recommend overall impact/priority scores. Importantly, individual criterion scores will not be discussed by the committee. The purpose of these individual criterion scores is to help clarify what the assigned reviewers identified as strengths and weaknesses within their critiques, but they are not something that will be discussed by the overall committee. At the end of the discussion, as is currently the case, all eligible members of the panel will record an overall impact/priority score for each application, followed by discussion of budget and any other administrative items.

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After the review meeting, if your opinion on any of the applications that were assigned to you changed as a result of the discussion, please modify your criterion scores and also please post revised critiques on the IAR Web site. This way what appears in the summary statement will indeed accurately reflect your final opinion.

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Let me now describe what will be reported in the summary statements. The overall impact/priority score will be the average of scores voted by all eligible reviewers and multiplied by 10. Thus, the final score will be a whole number that will range from 10 to 90. Another important change is that summary statements for all applications, whether they were discussed or not, will receive the criterion scores as well as the critiques that were posted by the assigned reviewers.

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This concludes our overview of the changes that will affect you as a reviewer at the May/June meetings and beyond. As I said at the outset of this video, extensive additional information can be found at the Enhancing Peer Review Web site. I will remind you that you can get to the Web site by bookmarking the URL shown in this slide, by going to the NIH Web site and clicking on “peer review,” or by doing an internet search for “NIH peer review changes” or “enhancements.”

We hope that you have found this information useful, and let me say once again, how much we greatly appreciate your service to both NIH and the research community by serving as reviewers. Thank you.