Enhancing Peer Review:
Implementation of Recommended Actions
Transcript Accompanying Video of Dr. Alan Willard, February 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.

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As many of you know, fair and rigorous review lies at the heart of the NIH system for identifying and funding highly meritorious research. This system has served as a standard of excellence throughout the world. It relies on a collaboration between NIH staff and extramural scientists — and that collaboration has served both groups very well for over 50 years. During 2007, the NIH Director challenged NIH and the extramural community to ask whether this system, which was designed at a time when there were many fewer practicing scientists, and when there were many fewer complex interdisciplinary research projects, could be improved or enhanced to best serve the current research enterprise.

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In particular, the NIH Director asked whether the peer review system can accommodate the changing nature of science and whether it is doing a good job of identifying and encouraging applications from new and early stage investigators. The director also noted that the current process is quite burdensome – both for applicants and reviewers, and that a very large amount of time can elapse between the time when one first submits an application and the time when a grant award is actually made. This overall challenge is summarized by the charge that was given to a set of internal and external working groups to find ways to "fund the best science, by the best scientists, with the least administrative burden."

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The response to this charge began with a diagnostic phase, which ran from June 2007 to February 2008. As this slide illustrates, advice and opinions were solicited several ways — including formal requests for information, surveys, and a set of internal and external town hall style meetings. Over 5,000 responses were received from the public and from NIH staff. These culminated in a set of recommendations from the working groups that were presented to the NIH Director in February 2008. These recommendations were studied carefully during the Spring of 2008, and in the Summer, the NIH Director appointed a peer review oversight committee, along with several working groups, to implement the recommendations.

The priorities of the working groups are listed here. They are: ONE— to identify ways to engage and retain the best reviewers,

TWO — to improve the quality and transparency of reviews,

THREE — to ensure that balanced and fair reviews occur for all scientific fields and for applicants at all career stages,

and FINALLY, to establish a system for the continuous review of peer review, so that the system can be modified on an ongoing basis, rather than once every 10 or 15 years.

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This has been a very quick summary of the process by which NIH decided to make changes to the peer review system. You can find a much more comprehensive set of information at the Enhancing Peer Review website. The URL for that website is given [here](). You can also access it by going the main NIH web page, http://www.nih.gov, and clicking on the Peer Review link. Or, you can easily find this page by doing a simple Google search for enhancing NIH peer review; this will easily find this site.

This video, as well as other resources, are available on the Enhancing Peer Review web site for your future use. You will also find up-to-date information on each of the four priority areas, including frequently asked questions and answers, timelines for implementation, a listing of all the guide notices announcing policy changes, a listing of press releases about the changes, as well as other training and communication resources. We recommend checking this web site regularly to stay informed. I'll also point out that there is an enhancing peer review mailbox – email box – to which you can send questions that you may have about any of the information on the web site or in this presentation.

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I am now going to briefly discuss changes that are already taking place. I will then describe changes that will be taking place in the near future, and then some changes that will not be taking place until next year.

For all major changes, the goal is to initiate them at the start of a federal fiscal year, so that all applications being considered for funding during any particular year are subject to the same rules and procedures. Believe it or not, applications are already being received for fiscal year 2010. For example, new R01 applications, which were due February 5, will be assigned to the October 2009 national advisory councils. The Federal fiscal year begins on October 1, so even though those applications were submitted in February and will typically be reviewed in May and June, their source of funding will be fiscal year 2010.

I will now discuss two changes that are already in place and which will be in place for applications submitted for funding for 2010. These are: a new policy on resubmissions, and steps that are being taken to enhance the success rate for applications from new and early stage investigators.

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I will first discuss the new policy on resubmissions.

During the past several years when NIH paylines have been very low, it has been noticed that a large number of excellent applications have had to be revised and resubmitted, even though the underlying science did not change significantly. In effect, excellent investigators with great projects had to wait in line. To try to address this problem, a new policy is in place to fund highly meritorious science earlier. Specifically, NIH plans to increase the success rate of new and first resubmission applications by decreasing the number of resubmissions or amendments that are allowed.

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Whereas previously, an application could be revised and resubmitted twice, under this new policy, which has gone into effect for fiscal year 2010, applications can only be revised and resubmitted once. To give a specific example for R01s, new applications that were submitted for February 5, 2009 will only be allowed a single resubmission. Similarly, new competing continuation R01 applications that are submitted for March 5, 2009 will also be allowed only a single resubmission. By reducing the number of resubmissions, the goal is to permit funding of larger numbers of new and first resubmission applications and thereby to allow investigators to spend less time revising and resubmitting and to start doing their research projects sooner.

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The second policy is one that was announced in October. For fiscal year 2009 and beyond, NIH intends to support R01 applications from new investigators at success rates comparable to those for established investigators submitting new applications.

NIH hopes that the majority of the new investigators supported under this policy will be early stage investigators. Just to remind you, a new investigator is someone who has never successfully competed for their own major NIH research grant before. An early stage investigator is a new investigator who has received their terminal research degree or who has completed their medical residency within the past ten years.

Please note that this policy applies ONLY to R01 applications and NOT to smaller, shorter applications such as R03s or R21s. Although some people believe they should only try for an R03 or R21 at the start of their research career, these grants are generally insufficient to launch an independent research career. Accordingly, NIH is strongly encouraging new investigators, especially early stage investigators, to apply for R01 grants at the start of their independent careers.

To facilitate the identification of early stage investigators, the eRA Commons has been updated to include a field for the date of the terminal degree and medical residencies. New investigators should be sure these dates are accurate so that their early stage investigator status is accurate.

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The goals of this policy are based on the idea that many investigators have their best and most creative ideas during the early stages of their career. Accordingly, NIH would like to enable people to establish

their independence earlier rather than later. We hope this policy change will help counter the trend of ever-increasing amounts of time being spent in training phases of careers.

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All applications for new investigators and early stage investigators will be clustered together during review meeting discussions, whenever logistically possible. These changes will begin at the May 2009 review meetings.

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I've just described changes in policy that pertain to new applications coming in for potential fiscal year 2010 funding. I am now going to talk about changes that will take place during the review of these applications in May or June of 2009.

There are three major changes that are happening. They are listed here – let me go through them now. A new 1 to 9 point scoring system, the scoring of individual review criteria, and providing reviewers with templates to structure their critiques.

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First I'll describe the new scoring system. This will use a 9-point scale, which will go from 1 to 9. 1 will still be the best score.

Behavioral studies have noted that individuals can only distinguish between 7 and 11 categories. At least two different studies of the peer review system have noted that the current 41-point scale is not in alignment with human abilities to categorize. The new system will attempt to remedy that.

The 1 to 9 scale will be used not only for overall impact/priority scores, but also for individual review criterion scores, which is a topic I will talk about in a minute.

One thing that has not changed is that preliminary scores will continue to be used to help determine which applications are discussed at a review meeting.

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The second change I'll discuss is that assigned reviewers will also use the 9-point scale to rate each of five review criteria.

It is hoped that by giving explicit ratings to each of these five criteria, applicants and NIH staff making funding decisions will have an easier time understanding the basis of the overall score that an application received. The goal is to provide more information about the strengths and weaknesses of each application and so each reviewer's criterion scores will be reported on the summary statement. An important change is that all applications – whether they have been discussed in the review meeting or not – will receive criterion scores.

Reviewers will use the criterion scores to help them determine the overall impact or priority score, but the criterion scores will not be weighted explicitly. It will be up to each reviewer to determine an overall score that best describes the likely overall impact that each application will have. Such determinations will reflect each reviewer's best estimate of how much impact the application will have, given the importance of the questions being asked and the likelihood that the project will succeed, given the combination of investigators, approach and environment that are described in the application. This leads me to the next change, which is the use of structured templates for reviewer critiques.

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Reviewers will be provided with templates that will prompt them to list strengths and weaknesses for each of the core review criteria, for the overall impact, and for any other relevant review considerations for any particular application such as protection of human subjects or sharing of model organisms.

Reviewers will be asked to convey strengths and weaknesses in bullet format and to use short narratives when further explanation of a particular strength or weakness is needed.

The overall goal is to give both the applicant and the NIH staff clearer and more explicit information about why a particular application received the score that it did.

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Finally, I will mention a set of major changes that will be coming later. These changes will entail shortening the research plan section of applications and aligning them with the review criteria.

The earliest that these applications will be coming is in January 2010 for potential funding in fiscal year 2011. We expect to have extensive future training available on these changes by late summer or early fall of 2009 so that potential applicants and institutional grants offices will have sufficient time to understand the changes and to plan for preparation of these restructured applications.

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This concludes our brief overview of the changes that are coming to the NIH peer review system. 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 that web site by going to the NIH web page and clicking on "peer review" or by doing an internet search for NIH peer review changes.

We hope that you have found this information useful and we wish you success in your research.