Be an NIH Reviewer: Contribute to Multidisciplinary Research

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Abstract
One of the best ways to contribute to multidisciplinary research and to improve your own knowledge of the review process at the National Institutes of Health (NIH) is to serve as a peer reviewer for research, traineeship, and small business innovation research proposals. Proactive targeted outreach to Scientific Review Officers (SROs) at NIH will increase your chances to become a reviewer. Reviewers with nursing expertise are especially welcome as multidisciplinary research is becoming more prevalent. Steps to identify a likely study section, contact the correct SRO, and review responsibly are described in this article, written by an experienced NIH review officer.

Keywords
peer review, NIH, multidisciplinary research

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Review Officers (SROs) at NIH will increase your chances to become a reviewer. Due to the growing call for multidisciplinary research, reviewers with nursing expertise are especially welcome in many and varied study sections. Based on the author’s 5 years’ experience as an SRO at the NIH Center for Scientific Review (CSR), important steps to becoming a reviewer, as well as steps the peer reviewer follows, filtered from the deluge of information on NIH websites, are spelled out in this article.

What Is Peer Review?

Peer review is “evaluation of scientific, academic, or professional work by others working in the same field” (“Peer Review,” 2017). Peer review at NIH is a systematic process that results in an overall impact score and an individual summary statement of the reviewers’ critiques and discussion related to the scientific and technical merit of the application. Critiques of research and small business applications follow a template emphasizing five areas: significance to public health, approach or proposed method of the study, innovation potential, investigators’ qualifications, and strength of the research environment (NIH, 2016b, 2016d). Most important are significance—is the project worth doing?—and approach—can the project be done as proposed? Hyperlinks in the template describe key points to address in each of the five criteria.

Peer review at NIH is a vital step in judging the scientific merit of proposals to allocate funds for the majority of the NIH extramural grant budget, which totaled over $31 billion in 2015 (NIH, 2015b, 2016a). The funds are not equally spread among the 27 Institutes and Centers; the National Cancer Institute (NCI) gets close to $5 billion per year while the National Institute of Nursing Research gets about $145 million. Overall, about 35,000 grants are currently funded. The success rate varies by Institute. The overall success rate for new applications is about 16%; the success rate for competing renewal applications is about 37% (NIH, 2016a). Basic and applied research are equally relevant to the mission of NIH.

Peer reviewers have the opportunity to learn many essentials that may contribute to their own successful applications. NIH instructions for applicants and reviewers are very precise and you see how important it is to follow instructions and write very clearly. You experience the diversity of NIH study section participants as to racial and ethnic characteristics, geographic representation, and scientific expertise. Participating in peer review can lead to intellectual growth as well as new collaborations.

Most NIH peer review is managed by the CSR, no matter which Institute will eventually provide the requested funding. Review is purposefully separate from programs at NIH Institutes that are responsible for funding and
grant management. The SROs managing the various “study section” review meetings at CSR are responsible several times a year to recruit reviewers whose expertise fits that of the applications received at the time. Reviewers must be a diverse group, balanced from all areas of the United States. Contacting one or more SROs is key to becoming a first-time reviewer. Program officers do not routinely speak to SROs at CSR about reviewer selection.

How to Identify a CSR Study Section and SRO

Each of the regular CSR study sections is listed online (NIH, n.d.-c). By clicking on the link to each type of study section, you will see an interactive list. Click on the titles within your area of expertise to find a detailed description of the focus of that study section, links to closely related study sections, as well as links to the standing members (if applicable), and three recent meeting rosters with the name of the managing SRO. Clicking on the SRO’s name will show you their email and phone number, and sometimes their bio and photo. Even if the meeting SRO is different from the SRO listed on the main page, the SRO listed will connect you to the most current SRO for the study section. Email is the preferred method of contact for most SROs.

While there is a high standard and lengthy process for a reviewer to be invited as a “standing member” of a “standing study section” (NIH, n.d.-d), when there is a need for specific expertise missing from the standing member group, frequently an outside expert is invited. There are also frequent meetings of “temporary” study sections without standing members; the peer review group will be newly invited for each such meeting. Temporary study sections include those “Special Emphasis Panels” reviewing applications for occasional targeted Program Announcements, Fellowships, and applications for Small Business Innovation Research. A new reviewer has a higher chance of being invited to a temporary study section.

Another way to find an appropriate study section is to search through NIH RePorter (NIH, n.d.-e). Enter key words and dates into the search form to find funded applications and identify which study section provided the review. Or, begin with a study section name and recent dates to search for a list of successful applications that went through that particular study section.

How to Introduce Your Expertise to an SRO

Take a look at the description of the study section where your expertise fits, and describe your expertise in a brief email expressing your interest to the SRO. Attach a brief biosketch that features your position, your education,
your current research interests, and any publications or funding you have received. If you have a biosketch in NIH format, it is an ideal attachment (NIH, n.d.-a). If the SRO is interested, she or he will likely request a current CV with more complete information.

The work of an SRO ebbs and flows, so expect a reply within a week or so, not immediately. Recruitment of reviewers is year round; however, peak times for recruitment are about 2 months before the standard meeting times, which are February-March, June-July, October-November. The first SRO you contact may suggest another one, based on her or his current understanding of the applications coming in, or based on your expertise. If the SRO does not respond to you within a week or two, feel free to contact another one.

If you are early in your research career, with few publications or little funding, you may still qualify as an “Early Career Reviewer” (ECR) and you will have fewer applications to review, usually four or less (NIH, n.d.-b). Although you are encouraged to apply and be placed on a master list of ECRs, in the rush of preparing for a study section meeting, the SRO may not refer to the list. You have a better chance of getting the SRO’s attention by a direct email, mentioning that you have applied as an ECR and stating your expertise and your background. This author witnessed four “early career” nurse reviewers who subsequently wrote successful grant applications of their own.

Once the SRO invites you to a particular meeting, you will receive an automated email directing you to establish an online NIH profile in NIH Commons. Actually, anyone can establish a personal profile at any time (NIH, 2015a). If you already have a profile as a grant applicant, you may have to edit parts of it to be a reviewer. When you are included in a meeting, you will receive a series of emails asking you to update your personal profile and giving you access to the electronic applications that you are responsible to critique. Your participation in a given meeting is not confidential; however, to facilitate a free discussion, your specific assignments, the contents of the reviews, and the discussions are highly confidential (NIH, 2015c). You will sign an online legal agreement to this effect.

**Reviewer Responsibilities**

Reviewers are responsible for the scores and the crucial feedback that go directly to the applicant, as well as to the Program Officers at the funding Institute. Applicants and Program Officers read the summary statements very closely to decipher the meaning of reviewer critiques and the group discussion in support of their priority score. Priority scores are averaged across all reviewers at the study section meeting. If the score is not fundable, the summary statement will guide the applicant in a potential resubmission.
The applicant’s academic career, promotion, and tenure may hinge on successful grant applications. Reviewers have an extraordinary responsibility to evaluate the scientific merit of each proposal they review.

The SRO is expected to assign 8 to 12 critiques to each reviewer; assignments are to be made available 4 to 6 weeks in advance of the meeting. Usually three reviewers, with relevant expertise, are assigned to critique each application. To facilitate preparations for the meeting, reviewers must submit their scores and critiques online at least 1 week before the meeting date. Meeting dates and locations are usually arranged about 3 months in advance (see Table 1 for timeline). Depending on several factors, the SRO will decide to hold the meeting in person, by secure Internet video connection, by telephone, or by written Internet discussion. Travel and lodging expenses are provided for in person meetings; most of these are held in the Washington, D.C., area.

Upon receiving your assignment, you must identify any conflicts of interest (COI) and verify with your online signature that you’ve done this. Usually a conflict will not prevent you from serving as you may be recused from a particular discussion (NIH, 2015d). At any time that you discover a potential conflict, you must notify the SRO, even if it is during the meeting.

Before the meeting, you read carefully and write a concise critique to focus on the major strengths and weaknesses of the five components: significance to public health, approach or proposed method of the study, innovation potential, investigators’ qualifications, and strength of the research environment (NIH, 2016b, 2016d). Refer only to the materials submitted and to your
own expertise. You are prohibited from considering hyperlinks to online materials as they are outside the (page limited) application and your accessing them may be used to reveal your identity.

The NIH uses a 9-point, whole number, scoring system for the overall impact and five criteria scores. Lower scores are better; 5 is an average score. The overall impact score is not to be an average of the criteria scores. The preliminary overall impact scores you submit before the meeting may be adjusted at the time of final scoring during the meeting.

The main driver of scores is your opinion of the likelihood of the project to exert a sustained, powerful influence on the research field. Often, approach is the major score-driving criteria as it may show the likelihood of successful completion of a rigorous study. Your own knowledge of research methods contributes to your judgment regarding the approach (Hoffmann et al., 2014; Von Elm et al., 2007). There is a growing emphasis at NIH for scientific rigor and reproducibility, including scientific premise and biological variables (such as sex, age, weight, and underlying health conditions; NIH, 2016e).

Protection of human subjects; inclusion on the basis of sex/gender, race, ethnicity, and age; and protection of vertebrate animals are factored into the score. There is specific guidance regarding these protections, and SROs will explain all of them to you (NIH, 2016c). Reviewers do comment on the project budget, but the budget is not factored into the score (NIH, 2012).

Allow sufficient time to prepare and submit your reviews before the SRO’s deadline; it may take several hours to do each critique after reading and contemplating each application. Once you submit your critiques and scores, looking over the other critiques and scores for your assignments will give you a preview and a chance to prepare for likely agreements and disagreements that may come up during the discussion. After you prepare for your discussions, read at least the aims of the other applications in the meeting, in order to participate in the other discussions and score.

During a daylong meeting, the SRO’s goal is to discuss concisely about 30 applications. When you are the First Reviewer, you will be asked to lead the discussion, present a brief summary of the application, and briefly state important strengths and weaknesses documented in your critique. Second and Third Reviewers follow with a brief summary of any further strengths and weaknesses in their expert opinions. Then, the meeting Chairperson (one of the reviewers) summarizes all three presentations and asks for final scores from the three presenters. A discussion among all reviewers proceeds, followed by online confidential scoring. Usually only the best scoring applications are discussed; however, if an application you critiqued is not planned for discussion, you may request that it be discussed. All applications receive a summary statement with reviewers’ critiques; those that were not discussed do not have an SRO’s summary of the discussion.
After the meeting, you will sign an additional conflict of interest form online. You will then have a few days to edit your critiques online, so that they reflect your thinking during the discussion and they match well with your final scores. After the edit period, you are asked to destroy any documents related to the confidential meeting. You may want to stay in contact with fellow reviewers and the SRO as you plan for your own research.

NIH peer review is truly a worthwhile community service. After devoting lots of time and thought to preparing and discussing your critiques, you will be rewarded with extensive knowledge regarding how to prepare a strong application of your own, and a deeper appreciation of our public contribution to scientific research. Peer review strengthens the equitable distribution of public funds to further the health of all.

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References


