



## Revising Your NIH Grant Application

As most everyone knows, the success rate for NIH funding is low for just about everybody right now. In this article, we focus on the key points to consider when you receive a score that is not in the “absolutely amazing” range, indicating that a revised application is needed. Since it is impossible to cover the subject in sufficient detail in a short article, we also refer you to several helpful books on grant writing (see References).

So what to do when your wonderfully crafted, scientifically exciting application doesn't get a fundable score from the study section?

### What to Do

1. Calm down. Don't take a nonfundable score personally. Keep in mind that most applications are not funded the first time through study section.
2. Once you have read the summary statement and recovered from the shock, contact your program officer. Do not berate him or her with a tirade against the insane reviewers who didn't understand your application. Instead, ask for helpful advice about what your next steps can be.

A grant application that narrowly missed the payline is, on occasion, still funded if the NIH Institute staff feel that it provides a unique and important direction that will have a large impact on the field. Disease relevance helps but isn't essential. Some Institutes have bridging funds if the score was within 10 points of the current funding percentile. Even if your score is well outside the likely fundable range, it helps to contact the program officer to ask advice. There is a chance that your program officer attended the study section meeting when your grant was discussed and took notes. If so, these will be extremely valuable in rewriting your application. Not all of the discussion that occurs during the review process makes its way into the summary statement; often

there are one or two problems that the review committee deems fundamental, but which appear in the summary statement as a single sentence.

3. Get advice from several colleagues. Do not be embarrassed by your score. Chances are they have also received a similar score at some point in their careers (or will in the future). Ask people whom you trust to give you an honest opinion, even if they are not experts in your field. You don't want advice from people who will just agree with your assessment that the reviewers are brainless nematodes. You want to ask people who can gently point out that even though the reviewers may be nematodes, they may have picked up on areas that need to be revised.
4. Plan a strategy. Do you need more preliminary data to make a convincing argument? Or can you address the points just by adding a few more references, mentioning some solutions to potential problems, or other minor writing changes? Do you think the study section that

reviewed your application will ever be enthusiastic enough to give your application an outstanding score, or do you need another study section? It is possible to have your revised grant application reviewed by a different study section if you can make a convincing argument about why the previous one is not appropriate. Be careful in changing study sections, though: A totally new group of reviewers may find 30 additional problems not

mentioned by the first group, or otherwise be less enthusiastic about your overall research area. The phrase “out of the frying pan, into the fire” may apply.

5. Write a draft of the Introduction section. Then, tear this up and write another draft that does not attack the reviewers for their failure to recognize the brilliance of your previous application. Be appreciative of the constructive advice offered, but don't automatically make all of the changes

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suggested by the reviewers. If they really said something stupid (and your colleagues agree with you), then nicely point out why you are not heeding a piece of sage advice (references to published papers help). The reason to start with the Introduction first, and not the actual application, is that reviewers usually focus on the Introduction. Also, this will provide a blueprint of the changes you need to make in the application.

6. Rewrite your application. Be sure to indicate all changes that you make. Bold or italic text is OK for short passages, but entire paragraphs of bold/italics can be difficult to read, and a line in the margin is easier for the reviewers. Even if the same people are not reviewing your application, the new reviewers will want to see what you changed. After rewriting your application, go back to the draft of your Introduction and make sure you changed everything you said you would.
7. Seek advice again from your trusted colleagues. In particular, ask them to suggest changes in your Introduction to make it stronger and not offensive to the reviewers.
8. Now, think about the advice of your colleagues, and make additional revisions to address their concerns.
9. Submit the application.
10. Pray to every deity you have ever heard of, and even those you haven't, just in case. Take the evening off and go home early. Spend a quiet evening with your family or friends, whom you haven't seen in the past months while working on your application. Then, get back to work on your next application! ■

—Lakshmi A. Devi and Lloyd D. Fricker

## References

The first is a humorous look at the grant writing and reviewing process that includes serious advice. The others are serious advice books.

Fricker, L.D., 2004, *How to Write a Really Bad Grant Application (and Other Helpful Advice for Scientists)*, Authorhouse.

Friedland, A.J., Folt, C.L., 2000, *Writing Successful Science Proposals*, Yale University Press.

Gerin, W., 2006, *Writing the NIH Grant Proposal: A Step-by-Step Guide*, Sage Publications.

Reif-Lehrer, L., 2004, *Grant Application Writers Handbook*, Fourth Edition, Jones and Bartlett Publishers.

Yang, O.O., 2005, *Guide to Effective Grant Writing: How to Write a Successful NIH Grant Application*, Springer.

## DEAR Labby



Dear Labby,

I am a new Ph.D. just leaving my old lab for a postdoc, and since my announced departure, I have become puzzled by the increasingly absurd, personal requests by my old advisor. They started out being awkward experimental requests, such as isolating some of his family members' cells for his personal use. As odd as the request was, I felt the pressure not to say no as he was beginning to write letters of recommendation for my postdoctoral fellowships at the time. Now that my departure date has finally hit, I've gotten several requests from him that I was told not to turn down or else "he wouldn't have time to finish writing the letters of recommendation for me." These included picking up his relatives from the airport, babysitting his children, etc. He has a history of writing questionable letters for people who did not do his bidding, so I am stuck between a rock and a hard place! Do I just go along with his requests to ensure my fellowships get funded? Or do I take a risk and tell him that these requests are not appropriate?

—Perplexed

Dear Perplexed,

Ironically, Labby has just returned from a visit to your city and would have been tempted to seek out your "mentor" [sic] to give her/him a scolding. What you describe is an exceptionally egregious case of graduate student abuse by a faculty member. Many of the "chores" you recite are totally inappropriate. Moreover, they may even be in violation of your university's human resources policies regarding graduate students. In addition, the request your mentor made for you to grow cells from family members carries potentially serious concerns related to informed consent and ethics.

In the criminal justice system there is a time-honored practice when assessing an alleged felony (or worse): to look for a previous pattern of criminal behavior. You imply that such a pattern may well exist. At this point the letters of recommendation are in play and, to use Julius Caesar's famous phrase when crossing the Rubicon: "the die is cast."

Labby advises you to go to the Chair of your department and fully disclose this horrible behavior. The Chair should then refer this matter to the Dean and you should be sure that step is taken. You need to be prepared to document this with as much evidence as you can (both written materials as well as testimony from observers).

You should be warned that your professor will try to mount a defense. Try to get previous "victims" to come forth. Your department Chair should be willing to write clarifying letters of recommendation. Your professor's conduct could well be the basis for an entire review of her/his employment status. And with regard to growing cells from your mentor's family members, you should contact the campus official responsible for informed consent (if a medical school) or your university's legal department. ■

—Labby

Direct your questions to [labby@ascb.org](mailto:labby@ascb.org). Authors of questions chosen for publication may indicate whether or not they wish to be identified. Submissions may be edited for space and style.