

How to review a grant: for Vision Scientists

We are all aware of times that excellent work goes unfunded. Sometimes you reviewed the grant proposal, sometimes you wrote it. Often the reason for rejection will simply be a shortage of funding and intense competition. Sometimes the reason might be a review. The reviewer may have failed to say something that would have helped the grant or you may have inadvertently said something that hindered the grant.

How would you describe the best grant proposal you have seen in years? “Very good”? If that is the top of your list of superlatives unfortunately it’s the not the top of other people’s. Other people may well read that as average (if you doubt this, talk to people that sit on committees, or take a look at this NIH document, <http://enhancing-peer-review.nih.gov/scoring&reviewchanges.html>).

Do you try to be helpful and point out places that the applicant might marginally improve the quality of their research, for example by indicating that a PEST procedure might be better than a 1-up, 1-down, or maybe by urging the applicants to think again about using method of adjustment? If so, the unfortunate truth is that your helpful comments may not be perceived as such. The non-experts on the funding panel may perceive them as substantial criticisms of the work.

Lastly, if you are an international reviewer, did you indicate that you had problems reviewing the grant because of lack of detail and hope that more would be provided in the second submission? If so, you should know there is only one round, it’s a “one strike and you are out” system. UK applications are typically restricted to a much shorter length than those in the USA, for example.

The notes that follow are advisory. This is **not** meant to encourage “grade inflation”. If you don’t think a proposal should be funded then you should say so. But if you do think it should be funded then the guide below is aimed at helping you communicate that clearly to the panel.

Reviewing a grant is a serious and important business and you should plan to spend a decent amount of time on each grant review. The applicants deserve that, as do the panels giving their time for the process of peer review. The job must be taken seriously. Panels will not take seriously very short sets of comments.

Why should you bother?

- (1) Because really good grants are a joy to read and provide an excellent learning experience.
- (2) Because poorer grants might be rather hard work, but can provide valuable lessons in what not to do.
- (3) Because we are the experts. We know what is exciting work, what should be funded and what should not. If you say no to (or worse ignore) an invitation to review, that grant may go to someone outside the area, without the appropriate expertise.
- (4) Because grant writers may ask you in advance if you’d be willing to review the proposal. Such an approach should be viewed pragmatically: it is wise to ask because potential reviewers may be too busy or not have the correct expertise. Be honest: say you would do it if you feel you would have the time to do it if asked.

Your job:

- (1) To give an educated view on the importance of the science being reviewed, on the competence of the applicants to carry out the work, and on the chances of the proposed work making a major contribution to scientific knowledge and development. If you feel unconfident in any of these areas, you will probably not do the proposal or the review process justice and should pass the job back to the funder.
- (2) Many funders have rather generic grant funding panels. For example, ICT at EPSRC conducts panels comprised of scientists right across the ICT remit (from photonics, through theory of computation, to human computer interaction and vision). As of summer 2011, grants submitted to BBSRC are still potentially 'in-remit' for panel A: Animal Disease, Health and Welfare, with panel members from related disciplines of animal vision and neuroscience. Panel members speaking on your grants are therefore unlikely to be vision experts. The individuals who are asked to speak on your grant may come from a closer research area, but they will not know enough to explain the importance and excitement (for EPSRC panels the first speaker for each grant is always out of area, the second speaker is closer to the research area). Therefore:
 - a. If you consider the work in the proposal to have problems, you should explain why to the panel in a way that cuts through jargon: keep criticisms clear and simple.
 - b. If you consider the work to be excellent and that it should be funded, then you need to 'sell' the importance of it to the panel. If it is exciting, it is your job as a reviewer to say so and to give broader significance and context if appropriate.
- (3) How much detail should a review contain? In vision science we have a tradition of careful stimulus design and rigorous experimentation. We are used to delving down into details to check and check again that work has been done properly. Of course, this should be done too for a grant review. But bear in mind (2) above. Panel members will likely not know the difference between a major fundamental flaw in a proposal, and a picky design niggle. Consider how your criticism will be viewed by the non-expert panel and make sure big issues are flagged as big, and small ones are carefully flagged as such. Consider whether smaller issues are important enough to flag at all: is the project important and interesting despite the issues, are the investigators likely to discover the issues as they progress the project, and if so do you trust them to fix the problem? Remember the author only has six pages in which to make their case: they cannot afford to fill this with technical detail. Panel members will be reading dozens of proposals. Make sure your review carries a clear message with key points that are easy to digest and easy for panel members to speak on to the rest of the panel.
- (4) Funding body strategy and delivery plans are constantly changing (especially the research councils in the current climate). Make yourself aware of current strategies and directions (read the web sites). These could well have changed since the grant you are reviewing was submitted. You can therefore help the panel by being clear about how the project being reviewed fits into that bigger picture. If we can't represent our area of science to

other scientists and display its value and importance, then why should our area be supported?

- (5) If you are reviewing a UK funded grant and you work outside the UK, note that the UK system may be very different from your own. If there isn't enough information to inform you of the system, the funder etc on the web, ask a neutral colleague in the UK. Note in particular that most UK funders work on a one-shot basis: if a grant is not funded there is no opportunity for revision or resubmission. Funders may even block a future application based on the same idea. Further, many funders in the UK require a maximum of 6-7 pages. It is therefore not helpful to make comments like 'there is not enough detail for me to review this proposal' if enough means another 5 pages. Clearly if there are major flaws in the proposed work these should be discussed, but suggesting a myriad of tweaks to design and implementation when the work is basically sound will result in panel members losing confidence and the grant going unfunded – with no opportunity for resubmission. Bear in mind also that only a small proportion of grants are actually funded: many deemed as above the funding quality cut-off don't make it due to lack of resources.

Expertise

The last point is that most funders ask you to write a few words on your own expertise. This informs the panel of your relevant experience. So if you're confident, and the grant is right smack in your area say so. If you have additional broader relevant expertise, say so. But take care not to mislead: the panel will have your name. Note also that the author will see this section (not your name) so don't include your full biographical details (most funders suggest this should be enough detail to inform the panel but not enough to reveal who you are).

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