

Kudos to Reviewers for the *JGP*: You Make Our Science Better

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As the *Journal of General Physiology* embarks on the new year and I look back on the last six months, I thought that it would be healthy to take stock of the values that underlie the *JGP*'s reviewing practices. In this effort, I found that a useful comparison can be made with a recent self-evaluation by the National Institutes of Health of the grant application review process.

Core Values of Peer Review

In its establishment of the *Peer Review Advisory Committee* (for the history and minutes of meetings of the NIH Peer Review Advisory Committee, see <http://grants1.nih.gov/grants/peer/prac/index.htm>), the NIH undertook a review of the core values of peer review. A broad consensus was reached by the committee, consistent with an historical analysis by Alan Willard, chief of the Scientific Review Branch of NINDS (for the historical review and analysis by Alan Willard, see http://grants1.nih.gov/grants/peer/prac/prac_may_2005/prac_20050516_meeting.htm and http://grants1.nih.gov/grants/peer/prac/prac_sep_2005/prac_20050926_meeting.htm). Not surprisingly, the committee concluded that every grant review should be

1. Scientifically and technically competent.
2. Fair and objective, and untainted by conflict of interest.

The committee enunciated a third core value, which should characterize the administrative process; specifically, the latter should be

3. Understandable, transparent, and efficient.

These core values were articulated to serve as an enduring foundation for the scientific review process within the overarching NIH mission (<http://www.nih.gov/about/index.html#mission>).

The Review Process at the *JGP*

The review process managed by a scientific journal likewise should be governed by a set of core values. The first two core values articulated by the NIH have long, if implicitly, been implemented by the *JGP* through the activities of its editors in the practice of reviewing. Specifically, the editors work assiduously to obtain at least two scientifically competent reviewers for every submitted manuscript, and in their weekly meetings the associate editors "review the reviews" (Andersen, 2007) to ensure that they are fair and objective. The *JGP* has endeavored in our instructions to authors to make the

review process understandable and transparent, and we strive to keep the turnaround time on reviews and the time from acceptance to publication to the minimum consistent with quality control. We are proud that the median time from submission to first decision at the *JGP* was 29 days and from acceptance to online publication 26 days (data from 2007; 2008 data are still coming in).

The *JGP*'s mission is to "publish original work of the highest quality that elucidates basic biological, chemical, or physical mechanisms of broad physiological significance" (<http://www.jgp.org/misc/policies.shtml>). The concept of "mechanistic insight" has been articulated by my predecessor, Olaf Andersen, and further elaborated with respect to the role of models in achieving such insight (Pugh and Andersen, 2008). Mechanistic insight serves as an explicit and critical criterion in the *JGP* review process. The *JGP* is not interested, for example, in merely elegant, quantitative descriptions of physiological phenomena, but requires that the analysis of the results leads to novel insight into the mechanisms underlying the data. To encourage authors to pursue such insight, the *JGP* eschews policies that would arbitrarily restrict the length or content of articles. The absence of such restrictions is a manifestation of our core values, and contrasts with increasingly common practice by other journals. A personal encounter brought this contrast home.

After I assumed the responsibilities as editor, an accomplished scientist suggested to me that the *JGP* ought to consider publishing shorter articles. I was puzzled as to the meaning of his statement because the *JGP* has no lower (or upper) limit to the length of an article. However, upon probing it became clearer that what he wanted was for the *JGP* to adopt practices that would make it easier for him to reformat and submit short articles that had been previously submitted to (and presumably rejected by) "high profile" journals. Implicit was an ironic understanding that the manuscripts produced for the other journals were artificially short in a manner that made it difficult for them to meet the *JGP*'s criterion for mechanistic insight (and clarity) without extensive revision.

Another expression in practice of the *JGP*'s core values is the importance it places on methods. The quality and replicability of science rests on impeccable documentation of methodology. In support of this value, the Materials and methods section of a *JGP* submission is

expected to be thorough and complete, and when published, it is not relegated to an appendix or supplement as though it were less important—or insignificant.

Thoughtful, Thorough Reviewers Are Critical for the Quality of Science

It is well and good for a journal to enunciate high principles for reviewing and publication, and to strive for administrative execution consistent with those principles. But the simple truth is that overall quality control is critically dependent on the willingness of scientifically competent peers to voluntarily devote serious effort to reviewing. With respect to such effort, the college of *JGP* reviewers is exceptionally talented and devoted. The reviews of most manuscripts submitted to the *JGP* not only include an evaluation of the scientific merit that is generally tough, but they are also almost always constructive, with specific and often detailed suggestions for improving the quality of the science and its presentation.

Authors are usually grateful for detailed, thoughtful reviews, and often include specific statements thanking reviewers for their contributions to a manuscript. The editors believe that the willingness of reviewers to be so diligent arises not only from an altruistic commitment to science, but also in part from the experience of seeing their comments—even though provided anonymously—improve the quality of the science of their peers. Three important components need to operate effectively for this

quality control loop to succeed. First, authors need to provide thorough documentation of their responses to reviews, including a detailed explanation of how the manuscript itself has been revised to accommodate the critiques. Second, reviewers need to be willing to assess revised manuscripts for appropriate changes. And third, the editors need to ensure that reviewers' critiques are taken seriously at each step in the review process. In regards to the last point, let it be known that no one who submits a manuscript to the *JGP* can expect to get a free pass on revision: heed the reviewers' comments and provide a detailed exposition of the revisions upon resubmission!

Thanks for Your Thoughtful Reviews

And so, as we embark on the year 2009, I would like this editorial to serve as a message of sincere gratitude on behalf of our authors and editors toward all who serve as conscientious reviewers for the *JGP*. You are unsung guardians of our science, and our debt to you is profound. We look forward to receiving your thoughts on peer review at the *JGP*.

REFERENCES

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