An open access option for PNAS

A revolution is taking place in scientific publishing. To leverage the tremendous advantages of electronic publishing and the Internet, journals such as PNAS are making the scientific literature more freely available online than ever before. PNAS has already done the following:

- We are making PNAS free online to everyone around the world. By the end of this year, all content should be free from the first volume in 1915 to articles published just 6 months ago. The articles will be on our web site (www.pnas.org) and on the National Library of Medicine's PubMed Central (www.pubmedcentral.nih.gov).
- We have made PNAS content free online immediately upon publication to 145 countries that are struggling to develop their scientific infrastructure. The list of countries is available at www.pnas.org/misc/faq.shtml.
- We have changed our copyright and permissions policy to make it easier for authors and readers to freely use material published in PNAS for educational purposes. PNAS now allows authors to post the PDF of their article on their web site, to post and update preprints, and to post webcasts. Anyone may reuse original figures and tables published in PNAS for educational purposes without having to request permission.

In this Editorial, we announce an experimental open access option for PNAS authors, whereby authors may pay a surcharge of \$1,000 to make their article freely available online immediately upon publication. We are pleased to note that the first open access article appears in this issue and is by Yang and Purves (1), first published online in PNAS Early Edition on May 19, 2004.

The benefits to science of unfettered access to the literature are obvious and unassailable. The challenge of open access is how to pay for it. This challenge is particularly important for PNAS, which operates as a nonprofit, break-even operation and does not maintain contingency funds or capital reserves. PNAS does not receive funds from the National Academy of Sciences or from the government, nor are Academy activities supported with journal revenue. Although I have no doubt that open

access will be made to work for much of the scientific literature, I am not sure how.

Thus, PNAS is starting with a compromise between moving to an author-pays open access model for all articles and doing business as usual with online site licenses and individual online subscriptions. The experiment was approved after careful deliberation. We began with discussions with our Editorial Board and other scientists. We were informed by a 3-month poll of our authors regarding an open access option (see Editorial; ref. 2). Approximately one-half of the authors who responded indicated that they would participate at some level. The experiment received overwhelming support from the PNAS Editorial Board and was unanimously approved by the Publications Committee of the National Academy of Sciences, which has oversight over PNAS.

The plan is as follows:

1. Authors may elect to pay a \$1,000 surcharge for open access, meaning that their article will be freely available on the PNAS and PubMed Central web sites immediately upon publication. The surcharge is intended to cover administrative costs and potential lost revenue.
2. The option is available immediately. The titles of articles that are freely available online will be highlighted in blue in the online Table of Contents and identified by a morning sun icon in the print Table of Contents. A footnote will appear in print and in the online PDF that reads "Freely available online through the PNAS open access option."
3. The experiment will last until December 31, 2005. We will then continue to move toward an author-pays open access model, maintain the option in the same or modified form, or discontinue the option.

The operational word is "experiment," as there are uncertainties that we hope will be clarified by our experience. How many authors will choose the option? Our rough estimate based on the poll of PNAS authors is that one-tenth to one-third of authors will exercise it after a ramp-up of several months. Will other granting agencies follow the lead of the Howard Hughes

Medical Institute and some European agencies and provide direct support for open access fees? How many subscriptions will be lost? Will librarians embrace the concept of open access as a savings for them and the right thing to do to support the research community, or see it as degrading the value of their subscriptions?

Why do this experiment? We believe that all journals should strive to give everyone, everywhere, immediate access to the scientific literature. The open access option gets us part way to this ideal without exposing us to substantial financial risk. Additionally, we hope that if PNAS takes a leadership role regarding open access, other journals will be encouraged to follow. There is also a practical reason for implementing such an option. A small but growing group of scientists will publish only in open-access journals. Open access resonates particularly with young scientists. We do not want to lose the opportunity of publishing the important work of these researchers, and we want to provide an established journal in which they can publish.

What do I see as the likely outcome of the experiment? Surely, open access will become increasingly important, but authors cannot bear the whole cost. Some hybrid model for meeting the costs of publishing the journal is needed. For PNAS, the income might be from author charges, subscriptions for the print journal, foundation and grant support, advertisements, and institutional support. I think that the critical step is gaining institutional support. This support might be in the form of sponsorships that could give a discount on author costs or print subscriptions for an institution. Institutional support of journal publishing has always been important and generally has taken the form of subscription funds in the library budget. Universities and companies are recognizing the benefits to them of open access and are beginning to support open access journals such as the Public Library of Science's *PLoS Biology* and BioMed Central's journals. It is critical, too, for the major granting agencies such as the National Institutes of Health and the National Science Foundation to embrace open access.

Nicholas R. Cozzarelli, *Editor-in-Chief*

1. Yang, Z. & Purves, D. (2004) *Proc. Natl. Acad. Sci. USA* **101**, 8745–8750.

2. Cozzarelli, N. R., Fulton, K. R. & Sullenberger, D. M. (2004) *Proc. Natl. Acad. Sci. USA* **101**, 1111.