

I am pleased to submit comments in response to the *Request for Information: Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Research* issued by the U.S. Office of Science & Technology Policy on behalf of the National Science and Technology Council's Task Force on Public Access to Scholarly Publications. I am the editor-in-chief of the *Journal of Industrial Ecology* (<http://jie.yale.edu/articles>), a peer-reviewed, international, English language bimonthly owned by Yale University, headquartered at the Yale University School of Forestry & Environmental Studies and published by Wiley-Blackwell. The *Journal* is the official journal of the International Society for Industrial Ecology (ISIE). The views expressed here are solely my own and do not necessarily reflect those of Yale University, the ISIE or others associated with the *Journal*.

Industrial ecology is a rapidly growing field that systematically examines local, regional and global materials and energy uses and flows in products, processes, industrial sectors and economies. It focuses on the potential role of industry in reducing environmental burdens throughout the product life cycle from the extraction of raw materials, to the production of goods, to the use of those goods and to the management of the resulting wastes.

The comments that follow can be viewed as responding to question #2 from the *Request for Information*:

(2) What specific steps can be taken to protect the intellectual property interests of publishers, scientists, Federal agencies, and other stakeholders involved with the publication and dissemination of peer-reviewed scholarly publications resulting from federally funded scientific research? Conversely, are there policies that should not be adopted with respect to public access to peer-reviewed scholarly publications so as not to undermine any intellectual property rights of publishers, scientists, Federal agencies, and other stakeholders?

However, my comments seek to address the broad question of the desirability of a shift to an open access scholarly publishing model, not merely issues of intellectual property rights. Thus, while the *Journal of Industrial Ecology* publishes some articles based on research funded by the Federal government, especially the National Science Foundation and the U.S. Environmental Protection Agency, these comments are not oriented toward to the specific matter of how best to ensure access to the results of publicly-funded research. Rather they are based on the premise that what the federal government elects to do with regard to open access will inevitably shape all scholarly publishing in the United States and to a significant extent throughout the world. Thus, as the 2010 *Report and Recommendations from the Scholarly Publishing Roundtable* indicates, the issues under discussion concern the entire enterprise of scholarly publishing: “We recognize that to [eliminate access barriers] ... will challenge a complex and interdependent system that depends on the deep commitment of many stakeholders but that operates optimally when the major players — governments, research communities, libraries, and publishers — work together cooperatively.”¹ My comments are focused primarily on the impact of open access on authors and research fields, rather than funders, journals, publishers, libraries, readers and the myriad of entities involved in scholarly publishing.

¹ <http://www.aau.edu/WorkArea/DownloadAsset.aspx?id=10044>

It is my view that a shift to open access will inevitably lead to an author-pays business model for scholarly publishing. In using the rubric author-pays, I mean not only payments by authors from their own research funds and grants (i.e., some form of page charges), but also financial support by institutions on behalf of authors, cross-subsidies by open access journals to allow waiver of fees for some authors, and, to a lesser extent, advertising in non-subscription-based journals.

As funders, universities and other institutions increasingly require or promote open access, the viability of subscription-based approaches to scholarly publishing declines. Users obtain the content that they need from free sources, librarians see usage drop, and subscriptions become less attractive. I see a shift from a reader-pays to an author-pays system as a choice between two approaches *both of which* entail mixed benefits and drawbacks.

It is my perception that the promotion of open access is based on a big science model of research publication. That is, an author-pays approach appears not to be particularly burdensome to a lab funded by larger grants—where the costs of page charges will be a small fraction of overall research budgets. And it is most advantageous in fields where immediate access to research results is paramount. In fields where considerable research occurs on a slim budget or even without any funding whatsoever (and where the impact of research may be less immediate but perhaps less transient), page charges will present a substantial burden. The notion that such research can or will be funded by internal sources, such as university monies freed up by reduction in subscription budgets is a coherent strategy, but it underestimates the changes in the research “ecosystem” that this entails. While senior faculty may have little difficulty obtaining such funds, the situation may be more difficult for graduate students, non-tenure-track faculty, visiting researchers and the like. In the same vein, in an era of constrained budgets, it is difficult to imagine that such funding would not be subject to bureaucratic hurdles. Put another way, it is hard to imagine that funds to pay page-charges would be available without limit. Thus, for those dependent on such funds, page charges would become not only an additional step in getting their work out to the research community, but a new barrier as well.

In the research community served by the *Journal of Industrial Ecology*, there is great diversity among authors. Some are part of large research institutions and successful research groups, but many others come from smaller institutions or programs where regular—external or internal—research funding is not common. Thus, not only the difference between big science and other science (i.e., between fields or disciplines), but also the disparities within fields may be exacerbated by a shift to an author-pays system.

It is also important to note that it is not only, as commentary on this issue has indicated, the humanities and social science that are likely to find an author-pays approach problematic. Interdisciplinary fields (and journals) are likely to suffer as well. As competing models of publication emerge and align by discipline, interdisciplinary collaboration and publication—already a complicated endeavor—becomes one step more difficult.

As a result, the possible consequences of an author-pays system include a handicapping of sources of innovative ideas and research—scholars within institutions with less facile access to

resources, scholars in less wealthy institutions, fields without routine access to external funding and interdisciplinary research.

In sum, the changes discussed in the *Report and Recommendations from the Scholarly Publishing Roundtable*, and implicit in the Request for Information, will eventually lead, I think, to an author-pays system of scholarly publishing. That, in turn, will weaken journals and fields operating outside of “big science” to the detriment of those fields and journals and to the research that they foster, distribute and archive.

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