Open Access to Government Sponsored Research

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Abstract

Awareness to the movement supporting public access to federally funded research has grown since the National Institutes of Health created a policy to make such research available to the public. Although flawed in many aspects, NIH policy served as the basis to the Federal Research Access Act bill introduced in May 2006. This paper provides an overview of the main issues concerning open access and what it means to the public and the scientific community.
Open Access to Government Sponsored Research

As science and technology build upon discoveries already made and rely on the exchange of information among scientists, the prompt access to such discoveries is essential for science to continue to develop. Therefore, communication among scientists and researchers has always been crucial to the advance of science and technology.

In the most common model of communicating scientific discoveries in place today, research findings and discoveries are made available to those interested through peer review journals. In this same model, publishers of such peer-reviewed publications add value to the research by formatting the final research in a more legible way and coordinating the peer-review process, among other services. For the service provided, publishers hold copyright of the research in its final format, making it available either through a print journal and/or through restrict online access.

As the bulk of research is produced in large universities, university libraries become crucial points of access of recent published research, which is used by researches to produce more scientific findings. The access to scientific journals either in print or electronic formats in libraries cost large amount of the libraries' budget. Using as example the Colorado State University Libraries, access to over 31,000 serials costs "approximately 3.6 million per year" or 65 percent of the libraries budget. (Who should have access, ¶ 4) Regular increase in subscription costs, with prices raising three times greater than the general inflation over the past twenty years (English and Suber, p.362), often result in subscription cancellations in response to budget cuts in libraries.

Both the cost of offering access to scientific publications and the advent of the Internet, which has the potential of offering prompt access to any published material, have contributed
greatly to the current discussion surrounding open access to scientific research. However, the main push to offer free access to government sponsored research comes from interest groups that have been raising awareness to the right of access to research paid with taxpayers' money through federal government funding. Interests groups include the Alliance for Taxpayer Access and the Scholarly Publishing and Academic Resources Coalition (SPARC). Scientists are also starting to take stand on the issue: in 2004 a group of Nobel Prize winning scientists "called for the US government to make all taxpayer-funded research freely available." (Falk, p. 528)

Statistics show that the United States government sponsors "about 59 percent of academic research and development. Universities fund about 20 percent, while state and local government fund about 7 percent." (Falk, p. 527) Using these figures, public funded research accounts for approximately 86 percent of the scientific product of the United States. The investment is great but access to the findings of this research is mostly restricted to those who have access to peer-reviewed publications, either by a personal subscription or through the affiliation to a large library.

On a 2004 financial analysis of the scientific, technical and medical journal industry, the Credit Suisse First Boston summarizes the main argument stirring the defense of open access to federally funded research:

Taxpayers and governments pay for scientific journal research three times over: (1) through research grants to scientists, (2) through university subsidies that pay the salaries of researchers, editors, and referees, and (3) through university subsidies that pay for journal subscriptions. This is not sustainable. Eventually taxpayers and governments will wake up to what is happening and put an end to it. ([http://www.earlham.edu/~peters/fos/newsletter/05-03-04.htm](http://www.earlham.edu/~peters/fos/newsletter/05-03-04.htm))

The case for open access to public funded research seems simple enough. Taxpayers fund the research, and consequently should be allowed prompt and free access to the final product of that research. Besides, public access to this research will foster more discoveries as shared
knowledge flows freely among scientists. (Peek, ¶ 7) However, the publishing industry is powerful and profitable, and has been lobbying fiercely against open access. The main argument used by publishers is that open access will jeopardize the peer-review process and as a result the quality of the research produced cannot be guaranteed. But open access to federally funded research does not put the peer-process at risk, neither threatens to put publishers out of business.

The National Institutes of Health Open Access Model

Even though considered to be flawed from its inception, the National Institutes of Health (NIH) open access policy is considered to be foundation for legislation currently in transit in Congress supporting open access of government sponsored research.

Established in 2005, the NIH policy requests that every researcher that works under a NIH grant and publishes the results of the research in a peer reviewed journal, to deposit a copy of the article in PubMed. (http://www.earlham.edu/~peters/fos/nihfaq.htm) This policy was a result of a House Appropriations Committee recommendation for the 2005 federal budget. The recommendation requested that NIH create a policy to offer free access to its funded scientific production within six months of publication.

The deposit of research into PubMed is entirely voluntary under the NIH policy. But the requirements set by the policy created many impediments in the implementation process. For example, the copy to be deposited into PubMed is the final, peer-review copy submitted to be published. And although deposited into PubMed, the release of the full-text of the article remained a prerogative of the researcher, who was encouraged to do so within 12 months. (http://www.earlham.edu/~peters/fos/nihfaq.htm)

While well intentioned, the NIH policy has not been widely embraced by its own researchers, with "only four percent of eligible research making it into PubMed Central." (Peek,
¶ 3) Many reasons can be attributed to the low participation, including publisher lobbying and pressure to withhold articles as long as possible (English and Suber, p.364) However, the National Institutes of Health open access policy created a way for a bipartisan bill introduced on May 2007 in Congress.

*The Federal Research Public Access Act of 2006*

On May 2, 2006, Senator John Cornyn introduced the bipartisan bill known as the Federal Research Public Access Act of 2006, requiring and regulating access to research produced by federal agencies with budgets of more than $100 million dollars.

The rationale behind the bill follows the same arguments used by interest groups defending the right of public access to government-sponsored research. Cornyn, in his speech introducing the bill points out that the "federal government invests more than $55 billion on basic and applied research" (cited by Peek, ¶ 2) and taxpayers have the right to access this research as soon as it becomes available.

Another strong point for the open access bill is that open access facilitates the exchange of knowledge, allowing the advancement of science. Richard J. Roberts, Nobel Prize winner, summarizes the scientific community's view on the matter, by pointing out that open access "expands shared knowledge across scientific fields and is best path for accelerating multi-disciplinary breakthroughs in research." (cited by Peek, ¶ 11)

The Federal Research Public Access Act can be summarized as follows:

- agencies with research budget of more than $100 million are required to enact policy ensuring that articles generated through these agencies are made available online within 6 months of publication;
researchers will submit the final manuscript that has been accepted for publication in a peer review journal;

free, online access, in a sustainable format, will be made available to taxpayers as soon as possible, and no later than 6 months;

the bill does not apply to laboratory notes, preliminary data analyses, notes of the author, phone logs, or other information used to produce final manuscripts; classified research, research resulting in works that general revenue or royalties for authors or patentable discoveries; and to authors who do not submit their work to a journal or works that are rejected by journals.

Important to emphasize is the fact that the Federal Research Public Access Act protects copyright and does require that the final version of the published research be made available to the public. In contrast to the National Institutes of Health policy, the bill has better feasibility as far as publishers' interests are concerned. Another point to this bill is that authors can still transfer copyright of their articles to publishers, who in their turn will keep exclusive rights to distribute the final published version of articles. (English and Suber, p. 365) Nevertheless, publishers and others in the industry strongly oppose the bill and the open access movement.

**The Case Against Open Access of Federally Funded Research**

The main opposition to open access to research funded by federal government comes from publishers of scientific, medical, and technical journals. Publishers' profits come from basically three sources: copyright, peer-review, and bundling (the final formatting and actual publication of research).

Copyright and peer-review are the strongest arguments used by publishers to support their opposition to open access. In a letter to Senator Cornyn, Lieberman, and Collins, protesting
the Federal Research Public Access Act, "opponents argue that the bill would destroy the peer-review system, which ensures journal quality, and would pit federal agencies as competitors against scholarly publishers." (Who should have access, p. 5)

Open access is not likely to bankrupt publishers. As the financial analysis of the publishing industry prepared by the Credit Suisse First Boston reports, open access "will not "undermine" or "destroy" the STM publishers, but it will reduce their profit margins and future growth." (http://www.earlham.edu/~peters/fos/newsletter/05-03-04.htm) It may just be that the publishers have been profiting way beyond what is their fair share in this market for too long and the time may be for them to review their business practices and accountability.

As for the peer-review process, the Federal Research Access Act protects it by providing an embargo of six months for research to be made available to the public. And even so, the bill requires the final manuscript to be made available to the public, not the final, peer-reviewed, formatted version of the research. Publishers will still be the first ones to publish and make the research available on its final format. It is very likely that researchers and libraries would still want prompt access to research and would not cancel subscriptions just for the fact that free access would be available within six months.

Another important point is that open access can actually improve the peer-review process and help in the prevention of plagiarism. Making full text of research available and searchable online "may result in increased scrutiny of published work, which would in turn ensure greater quality control in scholarship." (Who should have access, p. 6)

Conclusion

The question about open access is far from being agreed upon, as the bill carrying the Federal Research Access Act transit through the Congress. Both sides of the issue have much to
gain and loose if the bill is either approved or not. Groups supporting the bill are also becoming stronger as more awareness to the issue is brought into public attention. But the publishing industry is powerful and is lobbying strongly against the Act.

But open access is not about questioning the service publishers provide to the scientific community. Protection of copyright, the peer-review process, and the value added by publishers to the final publication of research findings secure value and credibility to the scientific literature.

However, the very process that secures the so desired quality of the literature has become a barrier to the exchange and advance of science. The cost to have access to such research hinders even the best-funded organizations to provide access to the information scientists and researchers need to continue their work, not to mention the regular taxpayer. Add to this figure the fact that the Internet has created the means to provide prompt access to research, and it shows that the present is a new era of access to information, where possibilities have raised awareness of many interested groups to the open access discussion.

The Federal Research Access Act includes provisions that protect both copyright and the peer review process. When this point is considered, it seems that publishers will be pressed to review and change their business practices. Taxpayers should not have to pay to have access to research they have already funded and well paid for.
References


Who should have access to federally funded research? (2006). *Library Connection*, 1(1/2).