

An open access mandate for the National Institutes of Health

PETER SUBER

Peter Suber is a research professor of philosophy at Earlham College, Richmond, Ind., and a visiting fellow at Yale Law School, New Haven, Conn.

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Correspondence: peters@earlham.edu

The Director of the National Institutes of Health shall require that all investigators funded by the NIH submit or have submitted for them to the National Library of Medicine's PubMed Central an electronic version of their final, peer-reviewed manuscripts upon acceptance for publication, to be made publicly available no later than 12 months after the official date of publication: Provided, That the NIH shall implement the public access policy in a manner consistent with copyright law.

US Consolidated Appropriations Act, 2008¹

THE DAY AFTER CHRISTMAS IN 2007, US President George W. Bush signed an omnibus spending bill containing a provision requiring the US National Institutes of Health (NIH) to mandate open access for NIH-funded research beginning on 7 April 2008.¹ Measured by the ferocity of opposition overcome and the volume of literature liberated, this is the largest victory so far in the open access movement.

The new NIH policy² is groundbreaking for a handful of reasons. First, it is the first open access mandate for a major public funding agency in the United States; it is also the first one for a public funding agency anywhere in the world that was demanded by the national legislature rather than initiated and adopted independently by the agency.

The NIH mandate comes after a long struggle. The US Congress asked for an open access mandate for the NIH in 2004, but in 2005 the agency decided to request rather than require that its researchers deposit their work in open access repositories. Open access propo-

nents have worked tirelessly ever since to persuade Congress to strengthen the policy. Open access opponents have worked just as hard, first to keep the policy weak and then to help the weak policy succeed in order to head off pressure for a stronger policy.³

Second, despite being frustratingly laborious, the process sets an important precedent. Other US agencies no longer have to worry that a strong open access policy will antagonize Congress or the White House. Some agencies will see the congressional bill as a green light to adopt similar policies of their own; others will wait to see how the NIH policy fares in court.

Third, the sheer size of the NIH makes the new policy important. The NIH is the world's largest funder of scientific research, not counting classified military research. Its budget last year, US\$28 billion, was larger than the gross domestic product of 142 nations and more than 5 times larger than the combined budgets of the 7 UK research councils. NIH-funded research results in 80 000 peer-reviewed articles per year, or 219 per day.⁴ The NIH open access mandate not only frees up an unprecedented quantity of high-quality medical research, but also cultivates new expectations among researchers, funders, governments and voters that publicly funded research should be open access.

Finally, the policy is strong. The mandatory deposit policy will drive compliance toward 100% (it was a dismal 4% after the first year of operation under the 2005 voluntary policy⁵). The bill requires deposit of manuscripts in an open access repository (PubMed Central) immediately upon acceptance by a peer-reviewed journal. This is much better than requiring deposit during or after a 12-month embargo period. Immediate deposit allows immediate release of metadata, which will enhance the article's visibility and allow the NIH to move the article from closed to open access status automatically as soon as the embargo period ends. NIH staffers will no longer have to hunt down the author and beg for a copy of his or her year-old manuscript.^{6,7}

There are some drawbacks to the new policy, such as the allowance for an embargo period of up to 12 months. Any embargo compromises the public interest, and longer embargoes are more harmful in medicine than in other fields. However, a mandate is better than a shortened embargo, if we have to choose. The reason is simply that a short embargo without a mandate is not really short, because there is no enforceable deadline for ending the embargo and providing open access.

Table 1: Common misconceptions about the new NIH open access policy

Fiction	Fact
The mandate is to publish in open access journals.	The mandate is to deposit in an open access repository (PubMed Central).
The mandate is to bypass journals and peer review.	The mandate is to provide open access to articles already published in peer-reviewed journals.
The mandate applies to the published version of articles.	The mandate applies to the final versions of the authors' peer-reviewed manuscripts.
The mandate directs deposits to PubMed.	The mandate directs deposits to PubMed Central.
The mandate requires a 12-month embargo on the copy in PubMed Central.	The mandate permits an embargo of up to 12 months on the copy in PubMed Central.
The new NIH budget is US\$29 million.	The new NIH budget is US\$29 billion.
The new mandate will last for only 1 year.	The new mandate will last indefinitely.
The mandate requires violation of copyright law.	The mandate requires compliance with copyright law.

Moreover, we do not have to choose between the 2 options; we can make a shorter embargo period our next goal.

A lawsuit by a publisher could delay the implementation of NIH's new open access policy. However, the only legal objection that publishers have raised to date is that the policy will violate copyright, and the wording of the policy decisively answers this objection. Under the new rules, when NIH grantees publish an article in a journal, they will retain the right to comply with the NIH policy, even if they transfer all of their other rights to the publisher. Publishers cannot complain that compliance with the NIH policy violates a right they possess, only that it violates a right they might wish to possess. Moreover, of course, in any lawsuit the NIH's case will be strengthened by the fact that Congress and the President ordered the agency to adopt an open access mandate.

How will the NIH deal with conflicts between its open access mandate and the policies of publishers to whom NIH grantees submit work? The policy does not depend on publisher consent or cooperation; it simply requires grantee compliance. If a publisher refuses to accommodate the NIH policy, then authors must look for another publisher.² The NIH will ensure that its grantees comply with the policy by requiring them to cite the submission reference number assigned by PubMed Central for any of their previous papers covered by the policy, when they submit progress reports

or apply for new grants. Noncompliance may "delay or prevent" the awarding of funds.⁴

The new NIH policy, like the old one, allows grantees to use grant funds to pay the publication fees at fee-based open access journals. The policy applies to "all graphics and supplemental materials that are associated with the article." Data files are exempt from the new policy but continue to fall under the NIH's 2003 data sharing policy.⁸

In the short time since President Bush signed the omnibus spending bill there have been various misconceptions about what has taken place (see Table 1). These misunderstandings no longer function as impediments to legislation, but they could well function as impediments to implementation. It is incumbent upon all of us to correct them to ensure that authors' support for and compliance with the legislation are not undermined by misinformation.

In Canada the open access policy for research funded by the Canadian Institutes of Health Research⁸ is stronger than the NIH policy in 2 respects: it allows only a 6-month embargo and it also applies to datasets. However, in another respect it is considerably weaker than the NIH policy: it applies only "where allowable and in accordance with publisher policies."⁹

The road to the new NIH policy has been a long and difficult one, but now that we have reached its end we can see a new world ahead of us. We are moving from a world in which most funded research is disseminated

exclusively by expensive journals, where only researchers lucky enough to work at affluent institutions can see it, to a world in which most publicly funded research is freely available to everyone who can make use of it. We are not there yet, I realize. However, before 2008, more than 30 other funding agencies worldwide had already mandated open access for the research they fund (their policies are available in ROARMAP, the registry of open access repository material archiving policies, at www.eprints.org/openaccess/policysignup/) and now they have been joined by the world's largest funder of unclassified research.

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