

Public library of science shifts gears

As scientific publishing boycott deadline approached, advocates of free scientific publishing announce that they will create their own online, free-access archive

In August 2001, the US Public Library of Science (PLOS) announced that it will establish its own non-profit publishing initiative to distribute scientific research online and free-of-charge. This move rep-

resents a significant change in the PLOS' tactics—from supporting PubMed Central (PMC), a free full-text archive for scientific publications, to starting its own electronic journals. Rather than waiting for the publishers to get on board, PLOS has decided to take matters into their own hands. 'If we really want to change the publication of scientific research, we must do the publishing ourselves', PLOS states on its website.

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The PLOS initiative, led by Patrick O. Brown, Stanford University, Michael Eisen, Lawrence Berkeley National Laboratory, and Michael Ashburner, University of Cambridge, UK, as well as others, coalesced last autumn to encourage—some say demand—that scientific publishers turn over their contents to the public 6 months after publication and asked scientists to boycott those journals that do not agree to these demands. They circulated a letter on its website (www.publiclibraryofscience.org) asking scientists to sign on by September 2001, and now have more than 28 000 signatures of scientist from 172 countries. However, some say that the recent announcement, that PLOS is now starting its own journals, can be regarded as an indication that this strategy did not work. 'Guess what—the boycott backfired', Catherine DeAngelis, Editor of the *Journal of the American Medical Association (JAMA)*, commented.

The idea underlying PMC and the new PLOS initiative is that scientific research should be freely available to the scientific community in a way that does not hurt the publishers financially, taking into account that the public pays for most of that

research. 'At the heart of the controversy over PubMed Central, the PLOS initiative and the future of scientific publishing is a fundamental question: should the scientific literature—the only permanent

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archive of scientific ideas and discoveries—be privately owned and controlled?' Eisen and Brown wrote in an article posted on the website of the journal *Nature* as part of a series of opinions that journal published on this topic (<http://www.nature.com/nature/debates/e-access/index.html>). 'Should the reward for the publishers' small contribution be permanent, private ownership of the published record of scientific research, and monopoly control over how, when and by whom a paper can be read or used and how much this access will cost? No! [...] there is absolutely no evidence that private monopoly ownership is the only practical business model [...] it is time to develop alternative ways to pay for scientific publishing and to fund the societies that currently rely on profits from publishing', they conclude.

Eisen and Brown believe that many authors would be willing to shoulder the cost of producing a manuscript if it were made available without charge to readers and databases. Institutions could pool resources to help individual researchers pay publication costs, they write, and those scientists and institutions with financial hardship could be subsidised. But although this idea is supported by many scientists, PLOS' strategy to issue a boycott has drawn criticism. 'Don't threaten me if you want my co-operation',

JAMA's DeAngelis warned. PLOS' actions did not make JAMA reconsider its editorial policies, but rather made it dig its editorial heels in, she indicated. 'While the idea of public access is not a bad one—and PLOS isn't the first to propose it—issuing a petition without discussion is not the way professionals act', she said.

The American Physiological Society Executive Director Martin Frank called the PLOS' petition tactics 'coercion [which] is an unacceptable means of effecting change'. In a position paper posted on the *Nature* website, Frank urged society members not to sign the boycott letter, because 'after all, there is no such thing as a free lunch'. Specifically, the economics of the initiative do not take into consideration that not all journals are equal, and some may be less able to afford to participate. 'The irony is that this would hit hardest the not-for-profit scientific society publishers, whose motive is to serve academia', wrote Michael Keller, Publisher at HighWire Press, on the *Nature* site. 'Their position against the large commercial publishers who compete with them for authors and readers would be reduced, with negative consequences for universities—the principal consumers of scientific information—and science in general'.

Even highly subscribed publications have trouble with the PLOS model. 'With

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4000 submissions per year at JAMA, who's going to pay for the process of reviewing each paper and deciding which will be published?' asked DeAngelis. 'I'd love to publish without charging readers, offer reprints for free, and we do offer the journal for free to doctors in developing countries and on an as-required basis. But when push comes to shove, someone's got to pay for the editorial process', DeAngelis said.

Martin Richardson, Oxford University Press' Journals Publishing Director, wrote in *Nature* that after OUP gave free access to the full text of 11 of its journals with a 12–24 month delay from publication, they observed an average decline of 3% per year in institutional subscriptions. Such revenue loss must be made up in some other way, he wrote. 'My personal view is that a better objective would be for the scientific community, publishers and librarians to work more closely together to agree to an equitable distribution of charges', Richardson wrote.

Furthermore, it is questionable if many researchers, even if they have signed the contract, will comply with it. Every scientist knows that recognition and wide readership of his work is larger if it is published in a prestigious journal, such as *Nature* or *Cell*, two of the journals that do not grant free access to their content.

But the authors and many supporters of the PLOS' initiative do not see it that way. 'The idea of "boycott" is a horrendous misnomer', said Nicholas Cozzarelli, Editor of the *Proceedings of the National Academy of Sciences (PNAS)*. While he acknowledges that the PLOS's original idea and petition polarised many scientists and publishers, the August statement is much more reasonable than a 'for-or-against it', attitude, Cozzarelli said. 'What's been learned is that very few publishers are willing to meet all its requests', he observed. However, the initiative did cause publishers to review their editorial policies and in some cases, change them for the better, he said. Rather than viewing the new publishing initiative as a failure, Cozzarelli believes that it signifies success. 'Some publishers were

scared into taking a middle ground, of reconsidering their policies', he said.

Indeed, Jean Lawton of Elsevier said in response that 'we take the concerns expressed by the research community on the issues raised by the PLOS seriously [...] we have been working in close consultation with our editorial boards on a

PMC after 2 months; the *Canadian Medical Association Journal* after 6 months; *Plant Physiology* and *The Plant Cell* after 1 year.

Other journals have agreed to provide their contents to PMC but restrict the display of full text of their articles to their own site. These include the *Journal of*

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different model to achieve the widest possible access to and visibility of their journals'. Elsevier is creating agreements with library consortia for electronic access to its journals and is developing a payment schedule that is responsive to an institution's means and degree of access. 'We share the concerns that there is an information problem: how to ensure access to the enormous amount of scientific material available', Lawton said, but issues a word of caution. 'If experiments making journals available for free fail, then the community's brainchild—the journal—will be killed in the process', she said.

In the end, only *Genome Biology*, *The British Medical Journal*, *Critical Care*, *Breast Cancer Research* and the 59 online journals published by BioMed Central agreed that all research they publish can be freely distributed by PMC without delay, and have provided to it all current and archival content for distribution. *PNAS* has agreed to distribute its research publications after a 6-month period. *Molecular Biology of the Cell* has agreed to allow their papers to be distributed by

Virology, *Microbiology and Molecular Biology Reviews* (6 months' delay), *The EMBO Journal* (after 1 year), *Cold Spring Harbor Press*, *Genetics* and the *American Journal of Human Genetics* (delay interval unknown).

A crucial point of the PLOS initiative is that material should be accessible within one comprehensive archive. Eisen compares the retrieval of one paper at a time to being able to access only one DNA sequence at a time on GenBank, on which PMC was modelled. He and his colleagues also believe that journal subscriptions would ultimately not suffer if papers were to be made available 6 months after publication. The next few months will determine whether the new publishing effort gets off the ground and a new model of scientific publishing can be launched.

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DOI: 10.1093/embo-reports/kve239