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Response to FR DOC 2011-28623

Dear Sir or Madam,

On behalf of BioMed Central Ltd, I am writing to respond to the OSTP's RFI on *Public Access to Peer-Reviewed Scholarly Publications Resulting From Federally Funded Scientific Research*.

BioMed Central is a leading open access publisher. Since its launch in 2000, BioMed Central has demonstrated that commercially viable business models exist which allow scientific publishers to make the peer-reviewed research articles they publish immediately and freely available online in their official form, with costs typically covered via a publication fee. BioMed Central is a founder member of the Open Access Scholarly Publishers Association (<http://www.oaspa.org/>) and since 2008, has been part of Springer Science+Business Media, the world's second largest publisher of scientific, technical and medical journals (STM).

Results to some of the specific questions in the RFI are given below:

(1) Are there steps that agencies could take to grow existing and new markets related to the access and analysis of peer-reviewed publications that result from federally funded scientific research? How can policies for archiving publications and making them publically accessible be used to grow the economy and improve the productivity of the scientific enterprise? What are the relative costs and benefits of such policies? What type of access

to these publications is required to maximize U.S. economic growth and improve the productivity of the American scientific enterprise?

Innovation in science, technology and medicine is a key driver of economic growth. Making that innovation as efficient as possible, both to increase productivity and to accelerate discovery, can serve to increase the rate of economic growth. When the results of publically funded research are immediately accessible to those who need them, this immediate access reduces duplicated research effort and ensures faster and more efficient dissemination of the latest knowledge upon which further advances can be built. This in turn accelerates the pace of innovation, and the resulting increase in the rate of progress and in the efficiency of the research process allows the tax dollars invested in research by public agencies to go further.

Making research results freely available in machine-readable, openly-licensed form also introduces new avenues for innovation. Scientists are using new text-mining techniques to discover connections and insights that are hidden within the existing corpus of published research. Such text-mining is difficult or impossible in an environment where published research articles are available only to subscribers, under restrictive licensing conditions which prevent the articles from being aggregated, indexed or redistributed.

Public access to research outputs also serves to benefit agencies by increasing public engagement with scientific and medical research, and public awareness of the benefits resulting from the research that has been funded.

Researchers at biotechnology companies often face challenges due to limited access to traditional subscription-based journals. Open access to research results can stimulate economic growth by making more of the latest scientific knowledge available to companies to serve as the basis for commercial innovation.

(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?

Public Agencies fund the majority of scientific research. Scientific publishers, both for-profit and not-for-profit, play an important complementary role by helping to coordinate and manage the validation, dissemination and archiving of research results, which is generally achieved via publication in peer-reviewed journals. There are considerable costs involved in

managing the processes of peer review, copyediting, production, dissemination and archiving of the articles in scientific journals. These processes are carried out by publishers and traditionally the costs have been covered through the publisher being granted exclusive rights to the research article concerned, and then charging a fee to those who wish access it.

However, this is by no means the only way for publishers to recoup the cost of the publication process. There are now many hundreds of successful, high-quality open access journals, including those published by BioMed Central, which operate on a model whereby the publisher does not take exclusive rights and does not charge for access, but instead is paid upfront for the service of publishing the research article. With the costs having been covered upfront, the research can then be made freely and immediately available in its official final form, without undermining intellectual property rights or the financial viability of the scholarly publishing system. The success of BioMed Central as a commercial publisher has provided an important demonstration that open access publishing offers a sustainable model with many benefits for researchers, research funders, and society in general.

Modeling of the economic impact of a move to an open access publishing model has led to the conclusion that the economic benefits would far outweigh the costs that might be incurred in such a transition. Research [<http://bit.ly/zDZO7r>] led by John Houghton of Victoria University, Australia, and Charles Oppenheim of Loughborough University, UK, concluded that “the potential benefits of more open access to research findings suggests that returns to research can also be substantial, and that different scholarly publishing models can make a material difference to the returns realized, as well as the costs faced[..... and that] there are gains to be realized from moving towards open access publishing models and, despite the lag between the costs and the realization of benefits, the transition may be affordable within existing system wide budgetary allocations.”

When funders seek to maximize the return on their research investment, appropriate licensing has an important role to play. Creative Commons licenses [<http://creativecommons.org/>], used by almost all major open access publishers, have emerged as powerful tools for this purpose. The Creative Commons licenses operate through the mechanism of copyright law, and allow copyright holders to reserve certain rights (e.g. the right to be attributed and credited as the author of the work), while also explicitly allowing and encouraging reuse and redistribution. Millions of items on the web have been explicitly shared under Creative Commons licenses (including every page on Wikipedia) and this consistent licensing greatly facilitates the aggregation and redistribution of composite and derivative works which build on multiple sources. For example, Creative Commons licensing makes it possible for a third party to create and distribute interactive educational material, building on content both from Wikipedia and from open access journals.

Under the open access publishing model, a research publisher's role changes to become one of service provision, rather than content ownership, but this has proven, in BioMed Central's case, to be entirely compatible with financial sustainability.

(3) What are the pros and cons of centralized and decentralized approaches to managing public access to peer-reviewed scholarly publications that result from federally funded research in terms of interoperability, search, development of analytic tools, and other scientific and commercial opportunities? Are there reasons why a Federal agency (or agencies) should maintain custody of all published content, and are there ways that the government can ensure long-term stewardship if content is distributed across multiple private sources?

While entirely distributed solutions to archiving problems are possible, they are not a panacea. Central 'hubs' can greatly enhance efficiency, turning a many-to-many relationship between content creators and content users, into an more easily managed pair of one-to-many relationships, firstly between the content creators and the hub, and secondly between the hub and the content users. Users of open access content would be disadvantaged if they had to assemble content from a wide variety of disparate sources. By acting as a hub to take care of aggregation, consolidation and redistribution, PubMed Central adds a great deal of value and efficiency to the open access ecosystem.

Of course, when considering long term digital archiving, it is not desirable to have all eggs in one basket, and so it makes sense for central public archives such as PubMed Central to maintain relationships with international mirrors and to encourage parallel distributed archiving approaches, such as LOCKSS (<http://www.lockss.org/>), to minimize the risk of permanent loss to the scientific record resulting from policy changes, funding problems, or natural/man-made disasters at a single central archive.

(8) What is the appropriate embargo period after publication before the public is granted free access to the full content of peer-reviewed scholarly publications resulting from federally funded research? Please describe the empirical basis for the recommended embargo period. Analyses that weigh public and private benefits and account for external market factors, such as competition, price changes, library budgets, and other actors, will be particularly useful. Are there evidence-based arguments that can be made that the delay period should be different for specific disciplines or types of publications?

Embargo periods of any length will reduce the benefit of open access to the results of federally-funded research. When open access publishing was still an unproven idea, embargo periods served a useful role, as they allowed a compromise to be struck that would allow existing subscription publishing models to be maintained, while delivering some

fraction of the benefit of open access by making a version of the research article freely available after the embargo period has elapsed.

To maximize the benefits of open access to the results of research, however, the ideal would be to have no embargo period at all, and to provide *immediate* access to the final version of the article. Such an approach is feasible, as open access publishers have demonstrated, but only if the costs which publishers incur in managing the research publication process are covered upfront (the so-called 'gold' open access model), rather than relying on unfunded mandated deposit of copies of research articles from subscription journals into open access repositories (the 'green' model).

For these reasons, in order to encourage open access publication, the most important step that federal agencies can take with respect to embargo periods is to ensure that provision is made in all research grants to cover the cost of 'gold' open access publication. This will allow the published results of research to be immediately openly shared without any embargo period. Ideally such funding to support the open communication of published results should be ring-fenced so that researchers are not faced with an either/or choice of whether to spend funds on additional research or on ensuring the open communication of their research results. It serves the wider public interest to ensure that *all* research resulting from federal funding should be immediately shared wherever possible, and so it is important for agencies to ensure that researchers are not financial disincentivized from doing so.

Yours sincerely,



Matthew Cockerill

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