



Effective Open Access Policies

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Towards an Open Science Enterprise
U.S. National Academies of Science
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Open Access to scientific articles is an
important component of a full Open
Science Enterprise.

BOAI

15



“An old tradition and a new technology have converged **to make possible** an unprecedented public good...”

“The public good they make possible is the world-wide electronic distribution of the peer-reviewed journal literature and completely free and unrestricted access to it by all scientists, scholars, teachers, students, and other curious minds. “

“This will accelerate research, enrich education, share the learning of the rich with the poor and the poor with the rich, make this literature as useful as it can be, and lay the foundation for uniting humanity in a common intellectual conversation and quest for knowledge.”

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Read the Budapest Open Access Initiative

An old tradition and a new technology have converged to make possible an unprecedented public good. The old tradition is the willingness of scientists and scholars to publish the fruits of their research in scholarly journals without payment, for the sake of inquiry and knowledge. The new technology is the internet. The public good they make possible is the world-wide electronic distribution of the peer-reviewed journal literature and completely free and unrestricted access to it by all scientists, scholars, teachers, students, and other curious minds. Removing access barriers to this literature will accelerate research, enrich education, share the learning of the rich with the poor and the poor with the rich, make this literature as useful as it can be, and lay the foundation for uniting humanity in a common intellectual conversation and quest for knowledge.

For various reasons, this kind of free and unrestricted online availability, which we will call **open access**, has so far been limited to small portions of the journal literature. But even in these limited collections, many different initiatives have shown that open access is economically feasible, that it gives readers extraordinary power to find and make use of relevant literature, and that it gives authors and their works [vast and measurable](#) new [visibility](#), [readership](#), and [impact](#). To secure these benefits for all, we call on all interested institutions and individuals to help open up access to the rest of this literature and remove the barriers, especially the price barriers, that stand in the way. The more who join the effort to advance this cause, the sooner we will all enjoy the benefits of open access.

The literature that should be freely accessible online is that which scholars give to the world without expectation of payment. Primarily, this category encompasses their peer-reviewed journal articles, but it also includes any unreviewed preprints that they might wish to put online for comment or to alert colleagues to important research findings. There are many degrees and kinds of wider and easier access to this literature. By "open access" to this literature, we mean its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited.

While the peer-reviewed journal literature should be accessible online without cost to readers, it is not costless to produce. However, experiments show that the [overall costs](#) of providing open access to this literature are far lower than the costs of traditional forms of dissemination. With such an opportunity to save money and expand the scope of dissemination at the same time, there is today a strong incentive for professional associations, universities, libraries, foundations, and others to embrace open access as a means of advancing their missions. Achieving open access will require new cost recovery models and financing mechanisms, but the significantly lower overall cost of dissemination is a reason to be confident that the goal is attainable and not merely preferable or utopian.

To achieve open access to scholarly journal literature, we recommend two complementary strategies.

I. Self-Archiving: First, scholars need the [tools and assistance](#) to deposit their refereed journal articles in open electronic archives, a practice commonly called, self-archiving. When these archives conform to standards created by the [Open Archives Initiative](#), then search engines and other tools can treat the separate archives as one. Users then need not know which archives exist or where they are located in order to find and make use of their contents.



Berlin Declaration

Signatories

Mission Statement

Expression of Interest

Berlin Conferences

Positions

Activities

Notes

BERLIN DECLARATION

The Internet has fundamentally changed the practical and economic realities of distributing scientific knowledge and cultural heritage. For the first time ever, the Internet now offers the chance to constitute a global and interactive representation of human knowledge, including cultural heritage and the guarantee of worldwide access. We, the undersigned, feel obliged to address the challenges of the Internet as an emerging functional medium for distributing knowledge. Obviously, these developments will be able to significantly modify the nature of scientific publishing as

Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities

The Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities of 22 October 2003 was written in English. It is one of the milestones of the Open Access movement. The wording of the English version shall prevail.

Preface

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SIGNING INSTRUCTIONS

Governments, universities, research institutions, funding agencies, foundations, libraries, museums, archives, learned societies and professional associations who share the vision expressed in the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities are therefore invited to join the signatories that have already signed the Declaration.

Contact

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Deutschland

Email: [President or Open Access Contact](#)

PDF VERSIONS BERLIN DECLARATION

- Arabic
- Chinese (Simp)
- Chinese (traditional)
- English
- French
- German
- Greek
- Italian
- Polish
- Portuguese
- Russian
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Foundational Text: Bethesda Statement on Open Access Publishing

The Bethesda Statement on Open Access Publishing is one of the three core declarations which defined and popularized the term Open Access (OA). It was created in a 2003 meeting at the Howard Hughes Medical Institute in Maryland, and was intended to push the biomedical community in particular to engage more with the idea of OA for scientific literature.

The statement sets out a definition of an OA publication as meeting two conditions:

First, it must be made available (with proper attribution) free of charge for users to “copy, use, distribute, transmit and display” as they will. ([source](#))

Second, it must be deposited in a relevant online repository.

Although the second condition is not necessarily a condition outside the biomedical research community, much of the first condition is strongly in line with current broad definitions of OA.

Beyond this basic definition, the Bethesda Statement provides supplementary

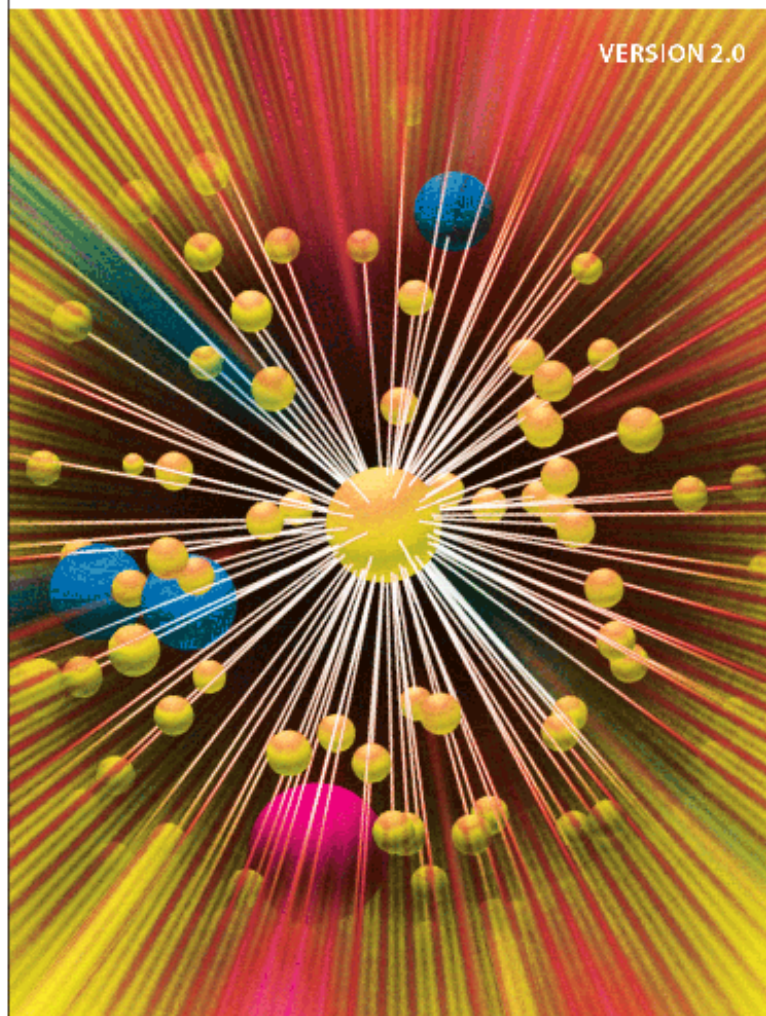
1. Make articles **immediately available** at **no cost** to the reader;
2. Ensure that articles can be **fully used – and reused** – in the digital environment.







“By "open access" to this literature, we mean its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself.”

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HowOpenIt? Guide to Research Funder Policies

A growing number of organizations are committing to the open sharing of research outputs. This guide is intended to help research funders develop open policies that advance their organizational values. A well-rounded policy should take into account a number of different considerations, recognizing that nuance exists within each of these areas. This guide frames the choices funding organizations should consider, and highlights the continuum that exists between a fully open and a fully closed policy.

					
	ARTICLE ACCESS	DATA & CODE ACCESS	REUSE	COSTS	COMPLIANCE
All articles resulting from funding must be published in a fully open access journal or posted in an open repository, with free, immediate readership rights	Any data, code, and software needed for independent verification of research results must be curated and made freely and publicly available in an established, open repository no later than the publication of the first paper based on the data, or no later than the expiration of the grant, whichever comes first	Research outputs (articles, data, code, and software) resulting from funding must be made available with generous reuse & remixing rights (e.g., CC BY/CC0 licenses)	Funder will incur all costs associated with policy compliance, including fees (e.g., article processing charges, data storage) not included in original grant, with no time limit	Funder proactively compiles proof of policy compliance as a component of interim and final reports, with grant disbursement contingent upon conformity	
All articles resulting from funding must be published in a fully open access journal, posted in an open repository, or published in a "hybrid" journal, with free, immediate readership rights	Any data, code, and software needed for independent verification of research results must be curated and made freely and publicly available in an established, open repository within 6 months of publication of the first paper based on the data or the expiration of the grant, whichever comes first	Research outputs (articles, data, code, and software) resulting from funding must be made available with moderate reuse & remixing rights (e.g., CC BY-SA license)	Funder will incur all costs associated with policy compliance, including fees (e.g., article processing charges, data storage) not included in original grant, within a specified time period (e.g., for up to a year after grant expiration)	Funder requires grantee to provide proof of policy compliance as a component of interim and final reports, with grant disbursement contingent upon conformity	
All articles resulting from funding must be made freely available to read, in a journal or an open repository, after an embargo of no more than 6 months	Any data, code, and software needed for independent verification of research results must be curated and made freely and publicly available in an established, open repository within 12 months of publication of the first paper based on the data or the expiration of the grant, whichever comes first	Research outputs (articles, data, code, and software) resulting from funding must be made available with no commercial modification rights (e.g., CC BY-NC license)	Funder will incur costs up to a specified dollar value associated with policy compliance, including fees (e.g., article processing charges, data storage) not included in original grant	Funder requires grantee to provide proof of policy compliance as a component of interim and final reports, with conformity a formal factor in future grant applications	
All articles resulting from funding must be made freely available to read, in a journal or an open repository, after an embargo of no more than 12 months	Any data, code, and software needed for independent verification of research results must be curated and made freely and publicly available only when a research article to which it is related is published	Research outputs (articles, data, code, and software) resulting from funding must be made available with no modification rights (e.g., CC BY-ND license)	Funder will incur costs associated with policy compliance, provided these fees (e.g., article processing charges, data storage) are included in the original grant application budget	Funder requires grantee to provide proof of policy compliance as a component of interim and final reports, with conformity an informal factor in future grant applications	
Grant recipients must submit a plan detailing how articles resulting from funding can be accessed by interested parties	Grant recipients must submit a data management plan detailing how data, code, and software can be accessed by interested parties	Grant recipients must submit a data management plan detailing how research outputs (articles, data, code, and software) can be reused by interested parties	Funder will consider incurring costs associated with policy compliance, on a case-by-case basis	Funder spot checks for policy compliance, with no formal mechanism for ensuring conformity	

The NIH “Public Access” Policy



“The Director of the National Institutes of Health ("NIH") shall require in the current fiscal year and thereafter 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.”

Free? **Yes.**

Immediately Available? **Nope.**

Fully Reusable? **Nope.**

Why does this matter?



PMC

PubMed Central® (PMC) is a free full-text archive of biomedical and life sciences journal literature at the U.S. National Institutes of Health's National Library of Medicine (NIH/NLM).

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Expanding Public Access to the Results of Federally Funded Research

FEBRUARY 22, 2013 AT 12:04 PM ET BY MICHAEL STEBBINS



Summary: The Obama Administration is committed to the proposition that citizens deserve easy access to the results of research their tax dollars have paid for. That's why, in a policy memorandum released today, OSTP Director John Holdren has directed Federal agencies with more than \$100M in R&D expenditures to develop plans to make the results of federally funded research freely available to the public—generally within one year of publication.

The Obama Administration is committed to the proposition that citizens deserve easy access to the results of scientific research their tax dollars have paid for. That's why, in a policy memorandum released today, OSTP Director John Holdren has directed Federal agencies with more than \$100M in R&D expenditures to develop plans to make the published results of federally funded research freely available to the public within one year of publication and requiring researchers to better account for and manage the digital data resulting from federally funded scientific research. OSTP has been looking into this issue for some time, soliciting broad public input on multiple occasions and convening an interagency working group to develop a policy. The final policy reflects substantial inputs from scientists and scientific organizations, publishers, members of Congress, and other

“To the extent feasible and consistent with law; agency mission; resource constraints; U.S. national, homeland, and economic security; and the objectives listed below, the results of unclassified research that are published in peer-reviewed publications directly arising from Federal funding should be stored for long-term preservation and **publicly accessible to search, retrieve, and analyze** in ways that maximize the impact and accountability of the Federal research investment.’

Free? **Yes.**

Immediately Available? **Nope.**

Fully Reusable? **Sort of...**

Can it be done?
For sure.



RESEARCH & INNOVATION

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Open Access

Open access (OA) can be defined as the practice of providing on-line access to scientific information that is free of charge to the user and that is re-usable. In the context of R&D, open access to 'scientific information' refers to two main categories:

- Peer-reviewed scientific publications (primarily research articles published in academic journals)
- Scientific research data: data underlying publications and/or other data (such as curated but unpublished datasets or raw data)

It is now widely recognised that making research results more accessible to all societal actors contributes to better and more efficient science, and to innovation in the public and private sectors. The Commission therefore supports open access at the European level (in its framework programmes), at the Member States level and internationally.

News

Academies' new guidelines on good science publishing

France's Académie des sciences, the German National Academy of Sciences Leopoldina, and the UK's Royal Society have presented to Commissioner Carlos Moedas joint guidelines for high-quality publications in scientific journals.

[» Read all](#)

“Facilitating **access** to results encourages the **re-use** of research output and supports Open Science. This is essential for Europe’s ability to enhance it’s economic performance and improve the capacity to compete through knowledge.”

- Spelling out the kinds of reuse the policy is encourages (read download, print, copy, distribute, search, link, crawl, mine, etc.);
- Encouraging authors to retain their copyright and grant adequate licenses (i.e., CC licenses) to publishers;
- Indicating publication in a journal that meets full the definition of Open Access is an acceptable form of compliance.


Free? **Yes.**

Immediately Available? **Almost...**

Fully Reusable? **Almost...**

Better.
But there's still more that can be
done...

BILL & MELINDA GATES FOUNDATION OPEN ACCESS POLICY

 Print

The Bill & Melinda Gates Foundation is committed to information sharing and transparency. We believe that published research resulting from our funding should be promptly and broadly disseminated. We have adopted an Open Access policy that enables the unrestricted access and reuse of all peer-reviewed published research funded, in whole or in part, by the foundation, including any underlying data sets.

Related

[OPEN ACCESS POLICY FAQ](#)

As of January 1, 2015 our Open Access policy will be effective for all new agreements. During a two-year transition period, publishers will be permitted to apply up to a 12 month embargo period on the accessibility of the publication and its underlying data sets. This embargo period will no longer be allowed after January 1, 2017.

Our Open Access policy contains the following elements:

1. **Publications Are Discoverable and Accessible Online.** Publications will be deposited in a specified repository(s) with proper tagging of metadata.
2. **Publication Will Be On “Open Access” Terms.** All publications shall be published under the [Creative Commons Attribution 4.0 Generic License](#) (CC BY 4.0) or an equivalent license. This will permit all users of the publication to copy and redistribute the material in any medium or format and transform and build upon the material, including for any purpose (including commercial) without further permission or fees being required.

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3. **Foundation Will Pay Necessary Fees.** The foundation would pay reasonable fees required by a publisher to effect publication on these terms.
4. **Publications Will Be Accessible and Open Immediately.** All publications shall be available immediately upon their publication, without any embargo period. An embargo period is the period during which the publisher will require a subscription or the payment of a fee to gain access to the publication. We are, however, providing a transition period of up to two years from the effective date of the policy (or until January 1, 2017). During the transition period, the foundation will allow publications in journals that provide up to a 12-month embargo period.

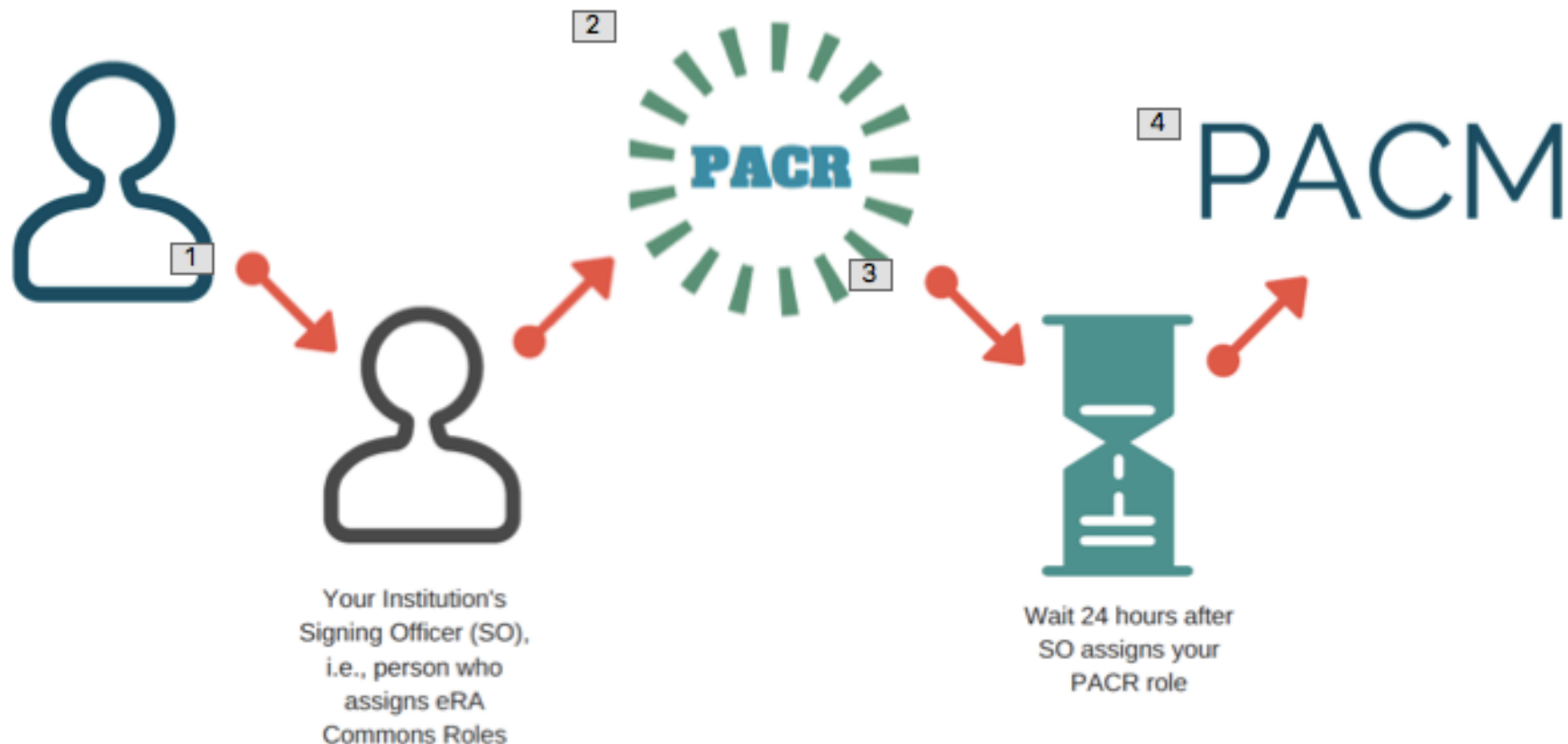
Free? Yes.

Immediately Available? Yes.

Fully Reusable? Yes.

How “effective” are these policies?

Accessing the Compliance Monitor



<http://www.ncbi.nlm.nih.gov/pmc/utis/pacm/>

Submission Process

from deposit of files through
public availability in PMC



Notes and Tips for Researchers:

Use the same sign in route each time (see email).
Typically takes about 2-3 weeks from initial approval until first notification of final approval.
Deposit at time of acceptance. Don't wait until publication or embargo period is up.
PMCID is assigned when final approval is complete and final publication information is available.

Source: <http://nihms.nih.gov/db/sub.cgi>



Reducing Textbook Cost to \$0: Tidewater Community College

A switch to OER could translate into millions in textbook cost savings to students and taxpayers.

Photo: Virginia Guard Public Affairs | CC BY 3.0



Battling Disease with Open: Open Source Malaria Consortium

Each year, 600,000 people die from Malaria. Matt Todd is using open science to try to change that.

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Openness as a Career Asset: Erin McKiernan

Erin used her open research pledge to raise her visibility and land a faculty position.

Photo: Elena Giglia



PMC FAQs

Below are answers to many of the questions PMC frequently receives. There are separate pages for publisher and author FAQs. If you cannot find an answer to your question, please contact the PMC Help Desk at pubmedcentral@ncbi.nlm.nih.gov.

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A dark grey world map serves as the background. Overlaid on the map are numerous red circles of varying diameters. These circles are most densely packed in North America, Europe, and East Asia, with smaller circles scattered across South America, Africa, and Australia. The circles represent the geographic distribution of pirated paper downloads.

Who's downloading pirated papers? **EVERYONE**

In rich and poor countries, researchers turn to the Sci-Hub website.

Open Access = free, immediate
availability + full reuse rights

Key Points to Consider

- Both **access** and **reuse** should be addressed;
- Specifics of **what uses** and **how** to enable them are critical;
- Costs/benefits of using **embargos** should be reconsidered;
- Compliance options need to be **harmonized**
- **Incentives** and **rewards** for practices supporting mission are needed.



OPEN IN
ORDER TO



INCREASE ACCESS TO KNOWLEDGE



FACILITATE COLLABORATION



RAISE YOUR RESEARCH VISIBILITY



OTHER:

“ Open Access will accelerate research, enrich education, share the learning of the rich with the poor and the poor with the rich, make this literature as useful as it can be, and lay the foundation for uniting humanity in a common intellectual conversation and quest for knowledge.”

Thank You.

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