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Report of the Ad Hoc Committee on Open Access

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University of Rhode Island
REPORT OF THE AD HOC COMMITTEE ON OPEN ACCESS
November 27, 2012

Charge from the Faculty Senate Executive Committee

"The committee should look at some of the issues of Open Access in scholarly communication, look at some solutions, and present suggestions as to what approach would best fit URI's needs and how that might be realized."

Committee Members

Andrée Rathemacher (LIB), Chair
Laura Beauvais (Provost's Office)
Corey Lang (ENRE)
Julia Lovett (LIB)
Louis Kirschenbaum (CHM)

Meeting Dates and Discussion

The Ad Hoc Committee on Open Access met on the following dates during fall 2012: October 11, October 25, and November 15. In these meetings the Committee discussed Open Access strategies, examined model Open Access policies at other institutions, selected Harvard's "Model Open-Access Policy" as a model for URI, and developed a list of Frequently Asked Questions to respond to potential questions of the faculty.

Recommendations

The Committee recommends that the University of Rhode Island faculty, through a vote of the Faculty Senate, adopt an open access policy based on the Harvard model. (For text of policy, see attachment, "A Model Open Access Policy," lines 1-24.) Such a policy will allow the University of Rhode Island to assist faculty authors in retaining the rights to their scholarship and to distribute their scholarship as widely as possible.

Attachments

1. Stuart M. Shieber, "A Model Open Access Policy," 2012.
2. Ad Hoc Committee on Open Access, "University of Rhode Island Open Access Policy FAQ's," 2012. Available: http://www.uri.edu/library/OAFAQ.pdf.
3. David Shulenburger, "University Public-Access Mandates Are Good for Science," *PLoS Biology* 7, no. 11 (November 2009): e1000237. Available: http://www.plosbiology.org/article/info%3Adoi%2F10.1371%2Fjournal.pbio.1000237.

Respectfully submitted,
Andrée Rathemacher
Chair, Ad Hoc Committee on Open Access

A MODEL OPEN-ACCESS POLICY

STUART M. SHIEBER

The following is a model open-access policy in the Harvard style — with a freely waivable rights-retaining license and a deposit requirement. This language is based on and informed by the policies voted by several Harvard faculties, as well as MIT, Stanford University School of Education, Duke University, and others. I have added some annotations explaining why the wording is chosen as it is.

Further information explaining the motivation for and implementation of the Harvard open-access policies is available at the web site of Harvard's Office for Scholarly Communication (`http://osc.hul.harvard.edu/`*). Inquiries about the policy and this model language can be made to* `osc@hulmail.harvard.edu`*.*

This document will be updated over time as further refinements are made to the policy. This is revision 1.8 of October 10, 2012, 02:31:46.

The Faculty of ⟨*university name*⟩ is committed to disseminating the fruits of its research and scholarship as widely as possible. In keeping with that commitment, the Faculty adopts the following policy: Each Faculty member grants to ⟨*university name*⟩ permission to make available his or her scholarly articles and to exercise the copyright in those articles. More specifically, each Faculty member grants to ⟨*university name*⟩ a nonexclusive, irrevocable, worldwide license to exercise any and all rights under copyright relating to each of his or her scholarly articles, in any medium, provided that the articles are not sold ~~for a profit~~, and to authorize others to do the same. The policy applies to all scholarly articles authored or co-authored while the person is a member of the Faculty except for any articles completed before the adoption of this policy and any articles for which the Faculty member entered into an incompatible licensing or assignment agreement before the adoption of this policy. The Provost or Provost's designate will waive application of the license for a particular article or delay access for a specified period of time upon express direction by a Faculty member.

Each Faculty member will provide an electronic copy of the author's final version of each article no later than the date of its publication at no charge to the appropriate representative of the Provost's Office in an appropriate format (such as PDF) specified by the Provost's Office.

The Provost's Office may make the article available to the public in an open-access repository. The Office of the Provost will be responsible for interpreting this policy, resolving disputes concerning its interpretation and application, and recommending changes to the Faculty from time to time. The policy will be reviewed after three years and a report presented to the Faculty.

EXPLANATORY NOTES

line 1, *disseminating the fruits of its research and scholarship as widely as possible*: The intention of the policy is to promote the broadest possible access to the university's research. The preamble

emphasizes that the issue is access, not finances.

line 3, *grants*: The wording here is crucial. The policy causes the grant of the license directly. An alternative wording, such as "each faculty member shall grant", places a requirement on faculty members, but does not actually cause the grant itself.

line 4, *scholarly articles*: The scope of the policy is scholarly articles. What constitutes a scholarly article is purposefully left vague. Clearly falling within the scope of the term are (using terms from the Budapest Open Access Initiative) articles that describe the fruits of scholars' research and that they give to the world for the sake of inquiry and knowledge without expectation of payment. Such articles are typically presented in peer-reviewed scholarly journals and conference proceedings. Clearly falling outside of the scope are a wide variety of other scholarly writings such as books and commissioned articles, as well as popular writings, fiction and poetry, and pedagogical materials (lecture notes, lecture videos, case studies).

Often, faculty express concern that the term is not (and cannot be) precisely defined. The concern is typically about whether one or another particular case falls within the scope of the term or not. However, the exact delineation of every case is neither possible nor necessary. In particular, if the concern is that a particular article inappropriately falls within the purview of the policy, a waiver can always be obtained.

One tempting clarification is to refer to scholarly articles more specifically as "articles published in peer-reviewed journals or conference proceedings" or some such specification. Doing so may have an especially pernicious unintended consequence: With such a definition, a "scholarly article" doesn't become covered by the policy until it is published, by which time a publication agreement covering its disposition is likely to already have been signed. Thus the entire benefit of the policy's nonexclusive license *preceding* a *later* transfer of rights may be vitiated. If clarifying language along these lines is required, simultaneously weaker and more accurate language can be used, for instance, this language from Harvard's explanatory material (also used above): "Using terms from the Budapest Open Access Initiative, faculty's scholarly articles are articles that describe the fruits of their research and that they give to the world for the sake of inquiry and knowledge without expectation of payment. Such articles are typically presented in peer-reviewed scholarly journals and conference proceedings."

line 5, *grants*: Again, not "shall grant".

line 6, *exercise any and all rights under copyright*: The license is quite broad, for two reasons. First, the breadth allows flexibility in using the articles. Since new uses of scholarly articles are always being invented — text mining uses being a prime example — retaining a broad set of rights maximizes the flexibility in using the materials. Second, a broad set of rights allows the university to grant back to an author these rights providing an alternative method for acquiring them rather than requesting them from a publisher.

Even though the university is being allowed to exercise a broad set of rights, it is not required to exercise them. Universities are free to set up policies about which rights it will use and how, for instance, in making blanket agreements with publishers. For example, a university may agree to certain restrictions on its behavior in return for a publisher's acknowledgement of the prior license and agreement not to require addenda or waivers. Harvard has provided a model agreement of this type as well: `http://osc.hul.harvard.edu/docs/model-pub-agreement-090430.pdf`.

line 8, *not sold for a profit*: This term may be preferable to the vaguer term "noncommercial". The intention is to allow uses that involve recouping of direct costs, such as use in coursepacks for which photocopying costs are recovered. Given that open access availability allows seamless distribution using a medium with essentially zero marginal cost, even this level of commercial activity may not be

needed. Indeed, Harvard has stipulated in agreements with publishers that it will refrain even from cost-recouping sales: "When Harvard displays or distributes the Article, Harvard will not charge for it and will not sell advertising on the same page without permission of Publisher. Even charges that merely recoup reproduction or other costs, and involve no profit, will be forbidden." Allowing cost recovery does provide an additional set of rights that can be negotiated in this way. Alternatively, the policy can eschew all sales if deemed preferable, in which case, the phrase "for a profit" can be dropped.

line 8, *authorize others*: The transferability provision allows the university to authorize others to make use of the articles. For instance, researchers can be authorized to use the articles for data mining. The terms of use of the institution's repository can take advantage of transferability to make available an appropriately scoped set of rights automatically for articles covered by the policy. The Harvard DASH terms of use (`http://osc.hul.harvard.edu/dash/termsofuse`) provides an example.

Most importantly, the transferability provision allows the university to transfer the broad rights in the policy *back to the author*, so that authors can legally distribute their articles from their own web sites (as they often do illicitly now), to use them for their classes, to develop derivative works, and the like. In that sense, the policy leads to authors retaining rights, not just universities obtaining rights.

line 9, *do the same*: This ordering of phraseology, introduced in the MIT policy, makes clear that the transferability provision applies both to the retained rights and the noncommercial limitation.

line 10, *articles completed before the adoption*: Application of the license retroactively is problematic, and in any case suspect. This clause makes clear that the license applies only prospectively.

line 13, *Provost*: The model language is envisioned as a university policy, where the university academic arrangements are overseen by a Provost. For a school-wide policy within a university, with oversight by a Dean, some occurrences of "Provost" may be replaced by "Dean" where appropriate, as was done in the Harvard policies.

line 13, *will waive*: Not "may waive". The waiver is at the sole discretion of the author. This broad waiver policy is important for the palatibility of the policy. It is perhaps the most important aspect of this approach to open-access policies. The ability to waive the license means that the policy is not a mandate for rights retention, but merely a change in the default rights retention from opt-in to opt-out.

Many of the concerns that faculty have about such policies are assuaged by this broad waiver. These include concerns about academic freedom, unintended effects on junior faculty, principled libertarian objections, freedom to accommodate publisher policies, and the like. Some may think that the policy would be "stronger" without the broad waiver provision, for instance, if waivers were vetted on some basis or other. In fact, regardless of what restrictions are made on waivers (including eliminating them entirely) there is always a de facto possibility of a waiver by virtue of individual faculty member action demanding an exception to the policy. It is far better to build a safety valve into the policy, and offer the solution in advance, than to offer the same solution only under the pressure of a morale-draining confrontation in which one or more piqued faculty members demand an exception to a putatively exceptionless policy.

In any case, with several years of experience with these policies, it has become clear that waiver rates are exceptionally low even with this completely open waiver provision.

line 14, *license*: The waiver applies to the license, not the policy as a whole. The distinction is not crucial in a pragmatic sense, as it is generally the license that leads to waiver requests, not the deposit aspect of the policy, and in any case, an author has a de facto waiver possibility for the deposit aspect by merely refraining from making a manuscript available. Nonetheless, if it is possible to use this more limited formulation, it is preferable in reinforcing the idea that all articles should be deposited,

whether or not a waiver is granted and whether or not they can be distributed.

line 14, *delay access*: Duke University pioneered the incorporation of an author-directed embargo period for particular articles as a way of adhering to publisher wishes without requiring a full waiver. This allows the full range of rights to be taken advantage of after the embargo period ends, rather than having to fall back on what the publisher may happen to allow. Since this is still an opt-out option, it does not materially weaken the policy. An explicit mention of embargoes in this way may appeal to faculty members as an acknowledgement of the prevalence of embargoes in journals they are familiar with.

line 15, *express*: An author must direct that a waiver be granted in a concrete way, but the term "express" is preferred to "written" in allowing, e.g., use of a web form for directing a waiver.

line 15, *direction*: This term replaced an earlier term "request" so as to make clear that the request cannot be denied.

line 16, *author's final version*: The author's final version—the version after the article has gone through peer review and the revisions responsive thereto and any further copyediting in which the author has participated—is the appropriate version to request for distribution. Authors may legitimately not want to provide versions earlier than the final version, and insofar as there are additional rights in the publisher's definitive version beyond the author's final version, that version would not fall within the license that the author grants.

line 17, *no later than the date of its publication*: The distribution of articles pursuant to this policy is not intended to preempt journal publication but to supplement it. This also makes the policy consistent with the small set of journals that still follow the Ingelfinger rule. An alternative is to require submission at the time of acceptance for publication, with a statement that distribution can be postponed until the date of publication.

line 23, *reviewed*: Specifying a review makes clear that there will be a clear opportunity for adjusting the policy in light of any problems that may arise.

UNIVERSITY OF RHODE ISLAND OPEN ACCESS POLICY FAQ'S

PURPOSE AND AIM OF THE POLICY

What does this policy do in plain English?

Through the policy, URI faculty authors give the University of Rhode Island permission to make available a version of their published, peer-reviewed journal articles in URI's online repository, DigitalCommons@URI. (Faculty will submit their final article manuscripts, with any changes made as a result of peer review, through email or a simple web form.)

Under the policy, you retain the full copyright in your articles and grant URI a non-exclusive license to exercise your rights under copyright. "Non-exclusive" means that the permissions that you give to URI do not prevent you from giving permissions to others, including publishers, to also exercise some or all of the rights you have as the copyright holder.

In practice, this means that you grant URI permission to reproduce, display, and distribute your articles as long as the articles are not sold. The policy also allows the university to authorize others to use the articles, again, as long as the articles are not sold.

For example, researchers would be authorized to use the articles for data mining, and faculty at other institutions would be allowed to use the articles as course readings. The policy in effect transfers rights back to you as the author for similar uses, thus allowing you to retain your rights even if you subsequently transfer your copyright to a publisher.

Why implement such a policy?

The policy provides a basis for the University to preserve the work of its scholars and to provide access to that work to anyone who seeks it. The goal of the policy is expressed in the first line: "The Faculty of the University of Rhode Island is committed to disseminating the fruits of its research and scholarship as widely as possible."

The policy also conforms to URI's Academic Plan 2010-2015, which calls for "developing the DigitalCommons@URI platform into a showcase of research for the purpose of preservation, sharing, and promotion of URI research."

Open access policies are part of a rapidly growing movement in academia to make research and scholarship more accessible to scholars, educators, policymakers, and citizens worldwide.

What are the advantages for faculty authors?

The Internet has enabled individual faculty to make their articles widely, openly, and freely available. Research has repeatedly shown that articles available freely online are more often cited and have greater impact than those not freely available, and this trend is increasing over time. Consequently, many faculty already make their writings available on their web pages, sometimes in violation of copyright law. URI's open access policy would provide a legal mechanism for faculty authors to make their writings openly accessible, and it would enable the University to help them do so.

Why *require* this? Why not just suggest that faculty individually retain the rights to post their work in DigitalCommons@URI?
Experience has shown that "opt-in" systems have little effect on authors' behavior. For instance, before Congress made it a requirement, participation in the NIH Public Access Policy was optional. During that period, compliance was under 20%; now the deposit rate is 75%. On the other hand, opt-out systems (such as this policy) achieve much higher degrees of participation, even while remaining non-coercive through the option of seeking a waiver.

Also, a blanket policy provides the benefit of unified action. Individual authors will not need to negotiate directly with publishers since the policy makes it possible for the University to work with publishers on behalf of the faculty to simplify procedures and broaden access.

Have other institutions adopted this kind of policy?
Yes. A number of schools at Harvard have adopted similar policies, as have faculty at the Massachusetts Institute of Technology, the University of Kansas, Oberlin College, Duke University, the University of Hawaii-Manoa, Emory University, Princeton University, Utah State University, the University of California San Francisco, and the University of Massachusetts Medical School, to name a few. Moreover, of these examples, faculty voted for the policy *unanimously* in many cases. (Harvard Faculty of Arts & Sciences, Harvard School of Law, MIT, Duke, Oberlin, Emory, Princeton, Utah State, and UCSF.)

Research funders are supporting similar efforts. For example, the National Institutes of Health now require posting of articles derived from research they fund in an open access repository, and the Howard Hughes Medical Institute as well as the Wellcome Trust require any scholarly articles on research they fund to be made openly accessible.

ROARMAP <http://roarmap.eprints.org/> lists well over 200 open access policies adopted by academic institutions, departments, and research funders worldwide.

COMPLYING WITH THE POLICY

I'm busy. What do I have to do to comply with this policy? How much time will it take?
The policy operates automatically to give URI a license in any scholarly articles faculty members complete after its adoption. To be thorough, it is recommended that faculty authors communicate the policy to their publisher and add an addendum to the publisher's copyright agreement stating that the agreement is subject to a prior license. That way, you will avoid agreeing to give the publisher rights that are inconsistent with the prior license given to URI. The University will provide a suitable form of addendum for this purpose. Whether or not you use the addendum, the license to URI will still have force.

Papers should be submitted to DigitalCommons@URI as of the date of publication. To submit a paper, you will upload the author's final manuscript, post peer-review, via a web form, or send it via e-mail. Current calculations are that the handling of the policy requirements will take no more than 15-20 minutes per publication.

The overall intention of the policy is that a relatively small investment of time can greatly increase the overall accessibility and impact of your scholarship.

Would being subject to this policy prevent my work from being accepted by the top journals in my field?
A journal's decision to accept your work for publication is made by the journal's editors and peer reviewers, scholars like you. This decision is independent of the "business" side of the journal and takes place before you are asked to sign a publication agreement. So, no, being subject to the policy will not prevent your work from being accepted in a journal. Any objections to the policy raised by a journal would take place after your paper was accepted.

What if a journal refuses to publish my article because of this policy?
Given the experience of other institutions with open access policies, this is not likely, but it could happen. In this case, you have a number of options. One is to try to persuade the publisher that it should accept URI's non-exclusive license in order to be able to publish your article. A second is to consult with the publisher about steps you could take that might address their specific concerns (e.g. complying with the policy after an "embargo" period). A third is to seek a different publisher. A fourth is to obtain a waiver for the article under the policy.

SCOPE OF THE POLICY

What kinds of writings does the policy apply to?
Only "scholarly articles." In the language of the Budapest Open Access Initiative, scholarly articles are articles that describe the fruits of research and that authors give to the world for the sake of inquiry and knowledge without expectation of payment. Such articles are typically presented in peer-reviewed scholarly journals and conference proceedings.

Many of the written products of faculty are *not* encompassed in this notion of scholarly article, including: books, popular articles, commissioned articles, fiction and poetry, encyclopedia entries, ephemeral writings, lecture notes, lecture videos, or other copyrighted works. The policy is not meant to address these kinds of works.

Can I deposit other types of materials in DigitalCommons@URI if I want to?
While the open access policy only addresses scholarly articles, other deposits are welcome, if copyright allows.

What version of the article is submitted under this policy?
The author's final version of the article: This is the author's manuscript with any changes made as a result of the peer review process, but prior to the publisher's copy-editing or formatting. (In some cases, publishers allow the posting of the final publisher PDF, but this is not the target of the policy.) Note that DigitalCommons@URI can also accommodate supplementary material, e.g. illustrations, figures, media files, and small data sets.

Does the policy apply to articles I've already written?
No, the policy does not apply to articles that were completed before the adoption of the policy or to any articles for which you entered into an incompatible publishing agreement before the

adoption of the policy. The policy also does not apply to any articles you write if you are no longer affiliated with URI. (However, if you are interested in posting older articles and the publishers' policies allow for self-archiving, older material is welcome.)

I often collaborate with colleagues at other institutions. Does the policy apply to co-authored articles?
Yes. Each joint author of an article holds copyright in the article and individually has the authority to grant to URI a non-exclusive license. Therefore, if any co-author of an article is a URI faculty member, that person should comply with this policy.

What if my co-author objects to depositing our article in DigitalCommons@URI?
If a co-author has concerns about depositing your work in DigitalCommons@URI, you may request a waiver and thus prevent any complications. However, as more universities adopt such policies, you might find that your co-author is subject to a similar policy. In this case, you may deposit the article at both institutions.

OPTING OUT (OBTAINING A WAIVER)

Explain the waiver provision.
The policy allows a faculty member, for any reason at all, to opt out of making a work open access, with no questions asked. We anticipate creating a simple web form for this purpose. The policy does not, however, allow faculty to opt out of the deposit requirement.

Why require faculty to *deposit* their article even if they opt out of the open access requirement?
There are at least four possible advantages: 1) it allows the faculty member to change their mind later, possibly as the result of changes in publisher policy; 2) it allows for long-term preservation by URI of a copy of the article, which could be important if the publisher were to go out of business or decide to sell or cease publishing the journal; 3) it contributes to the creation of a robust archive of URI faculty publications for the purpose of showcasing research and scholarship at the University of Rhode Island; and 4) the article metadata, i.e. the citation, will be open access and indexed by search services such as Google and therefore the article will be more likely to be discovered by researchers, even if the full text is not available.

Why does the policy include a waiver provision? Doesn't that undermine the policy?
Allowing faculty to opt out of the policy preserves their academic freedom to publish in journals that refuse to accommodate the policy; this is especially important for junior faculty. Even with the opt-out option, the policy changes the default for author's rights. With the policy, the new status quo will be that URI has the rights to openly share faculty work and can extend these rights to URI authors for their use as well.

ACADEMIC FREEDOM & FACULTY RIGHTS

Does this policy require me to publish in open access journals?
No. The policy applies to journal publications but does not in any way dictate in which journals URI faculty should publish. You can choose the best forum for your research based on whatever criteria are most relevant. Depending on your discipline, you may or may not find an open access journal that meets your criteria, but whether to publish in one is entirely your choice.

Is the university trying to take the rights to my scholarship?
No. The license granted to URI under the policy is not an assignment or transfer of copyright. It is just permission from you, as the copyright holder, to make a certain use of your work. You as the author still retain ownership and complete control of the copyright in your writings, subject only to this prior permission. You can exercise your copyrights in any way you see fit, including transferring them to a publisher if you so desire. However, if you do so, URI would still retain the nonexclusive right to distribute the article from its repository and to exercise other rights under copyright, including reproducing, displaying, and distributing the article, as long as the article is not sold.

Isn't this policy a threat to academic freedom?
The policy does not affect your academic freedom—rather, it helps you protect your rights as an academic. The URI Open Access Policy has nothing to do with your choice of topic, methods, or arena of your research, or where you choose to publish. However, when you do publish, the policy assists you in retaining rights to your intellectual property, instead of transferring all of those rights to a publisher.

How will this policy affect the promotion & tenure review process?
The policy should help faculty in their bid for promotion and tenure. Studies show a large citation advantage for open access articles ranging from 45% to over 500%. The availability of articles in DigitalCommons@URI will make it easier for peers and administrators to access and evaluate the body of a particular faculty member's work. And if an important journal will not cooperate with the policy, a faculty member can rely on the no-questions-asked waiver option to publish in their journal of choice.

Who will monitor implementation of the policy?
As Harvard has done, we suggest that the Faculty Senate create a faculty advisory committee comprised of faculty from throughout the university to develop an implementation plan that has faculty interests in mind and to report regularly on the policy's progress and implementation.

WHAT WILL BE DONE WITH THE ARTICLES

What will URI do with the articles?
URI will continue to operate its open access repository, DigitalCommons@URI, to make available the scholarly articles provided under the policy. The repository has institutional backing to ensure its availability, longevity, and functionality, to the extent technologically

feasible. The repository is backed up, mirrored, and made open to harvesting by search services such as OAIster and Google Scholar by BePress, the vendor of DigitalCommons software.

How might my work be used after deposit?
We are recommending that articles subject to URI's Open Access Policy be distributed under the Terms of Use for DASH Repository pioneered by Harvard. These terms of use allow the articles to be used for:

a) personal study;
b) teaching (including distribution of copies to students and courseware programs);
c) research and scholarship (including computational research uses such as data-mining and text-mining);
d) provision of value-added services (including full-text searching, cross-referencing, and citation extraction)

Provided that:

i. users will not sell or charge for any article (whether or not any profit is involved) and will not sell advertising on the same page as any article;
ii. if making an article available to others, the user will retain with the article its title, the name of the author(s), a reference to the Terms of Use, and any copyright notice included on the original;
iii. if making an article available online, the user will both cite and provide a link to the publisher's definitive version of the article
iv. users will not use a facsimile of the published version of the article unless allowed by the publisher
v. users will not make any translation, adaptation or other derivative work of an article except that, as reasonably necessary to carry out a permitted use, a user may include the article in a collection or database, may change the technical format of an article, and may use excerpts of the article for teaching or other permitted purposes, with limitations.
vi. users may not sublicense or otherwise transfer their rights in any OAP article and will only make articles available to others for use by them under these Terms of Use

For instance, with the policy, faculty at other institutions would have permission to make articles available for free distribution to their students. (As would you, even if you've signed away your copyright to the publisher.) Likewise, articles could be used in a course pack, so long as the course pack is not sold. It is also conceivable that URI could authorize use of the articles in a commercial service that provides information extracted from the articles (but not the full text itself), such as bibliographic data, citation lists, and other information generated through text mining. Any arrangements URI agreed to would respect the integrity of the authors' work and be consistent with the goals of open access and ensuring wide visibility and availability of scholarly articles.

No one would be able to sell your articles or create derivative works based on your articles without getting permission from the appropriate rights holder, whether that is you or a publisher to whom you have assigned such rights.

It's worth noting that while the majority of publishers currently allow authors to self-archive a version of their article in an institutional repository, URI's Open Access Policy allows for additional uses such as those mentioned above.

Would the policy make my work vulnerable to piracy or plagiarism?
The policy creates an open access version of a scholarly article covered by copyright. All of the rights and duties that exist in the case of traditional publication remain in the case of the open access version, including the ability to prosecute in cases of piracy or plagiarism. If anything, an open access policy deters piracy by allowing access to a freely available version of an article that might otherwise be distributed unlawfully. Plagiarism is something that cannot be addressed by an open access policy.

IMPACT OF POLICY ON SCHOLARLY PUBLISHING ENVIRONMENT

Won't having their articles available for free through open access repositories harm journals? I'm especially concerned about the effect the policy will have on scholarly societies and smaller publishers.
There is no empirical evidence that open access through article repositories leads to journal cancellations. The major societies in physics have not seen any impact on their publishing programs despite the fact that for more than ten years an open access repository (ArXiv) has been making available nearly all of the High Energy Physics literature written during that period. In fact, most publishers currently allow authors to self-archive in a repository; if they found that this practice triggered cancellations, they would change their policies. Some subscription journals have found that open access to their articles actually increases submissions and subscriptions.

Even if there is eventually downward pressure on journal prices over time due to open access repositories, the publishers with the most inflated prices (which tend to be commercial publishers) will feel the effects sooner. The greatest threat of cancellation for subscription journals comes not from open access but from the journals' own price increases, which have grown roughly three times as fast as the rate of inflation over the past 15 years.

The intent of open access policies is not to destroy journals. In an open access world, journals will still be needed for their value-added services, such as coordinating peer review, copy-editing, typesetting, and maintaining web sites.

Finally, it is important to remember that publishers who are genuinely worried about the impact of open access policies on their subscription base have the remedy in their own hands: they can require a waiver. Few do.

For more on this topic, see Stuart Shieber's blog post "Why Open Access is Better for Scholarly Societies" at <http://blogs.law.harvard.edu/pamphlet/2013/01/29/why-open-access-is-better-for-scholarly-societies/>.

Is the policy a threat to peer review?
The policy has no effect on the peer review process. It explicitly applies to scholarly articles, most of which are assumed to be peer reviewed. And the policy does not come into effect until after your paper is reviewed and accepted for publication.

Won't this lead to the proliferation of article versions and confusion over citation? Will my citation count be split between multiple versions?
With or without this policy, the academic community will need to work on the problem of version control in digital scholarship. There are technical and standards-based solutions that will address this problem.

Meanwhile, all articles posted to DigitalCommons@URI will include a complete citation and hyperlink to the publisher's version. You will receive a monthly email with the number of times your articles have been downloaded from the repository.

While it is conceivable that downloads of your articles from DigitalCommons@URI may decrease the total number of downloads from the publisher's site, it is important to remember that open access will increase the overall number of citations to your work. Even if downloads and citations are split between more than one version of your article, the overall impact of each article will be greater than if it was sequestered behind a journal pay wall. Many who cite the open access version of your article will have no access to the publisher's paid version and, if not for the open access version, might not have read your work at all.

Does the policy interfere with a publisher's ability to serve as an intellectual steward for articles it publishes, for instance by pursuing illegal copying or plagiarism?
The policy does not prevent publishers from acquiring exclusive rights under copyright (subject to the prior license to URI), and publishers may still enforce those rights in any way they see fit. Publishers may even pursue infringements of moral rights on behalf of authors (e.g. cases of plagiarism). The nonexclusive license to URI does not undermine publishers' abilities to support authors in this way.

OPEN ACCESS Freely available online

PLoS BIOLOGY

Perspective

University Public-Access Mandates Are Good for Science

David Shulenburger*

Association of Public and Land-Grant Universities, Washington, D.C., United States of America

"*The faculty of Arts and Sciences of Harvard University is committed to disseminating the fruits of its research and scholarship as widely as possible.*"

Why would university faculty choose to place their scholarship on electronic archives for a world-wide audience? Many US universities have adopted such mandates for public access to faculty research, perhaps most notably Harvard [1], MIT, and the University of Kansas [2]. These policies (and many more like them in various stages of consideration on campuses across the nation and world) are harbingers of a new order, one in which essentially all scholarly articles can be found and accessed by any interested individual.

This spring, the Association of Public and Land-Grant Universities, the Association of American Universities, the Association of Research Libraries, and the Coalition for Networked Information sent a document entitled "The Research University's Role in the Dissemination of Research and Scholarship," [3] to all public and private US research universities, requesting that serious campus discussion on the topic occur. The document resulted from a roundtable of officers of the four associations and 21 provosts, research officers and librarians, and university press representatives, invited from their member universities. There is much to be gained by enlarging the universe of those who have full access to scholarship. Ubiquitous campus public-access deposit mandates will rapidly generate this gain.

Ending the Age of Disorder

The last 25 years have been an age of disorder, not an unusual beginning for a revolution. Stewart Brand's declaration at the dawn of the digital age that "information wants to be free" foretold the porous electronic world that scholarship has come to inhabit. In the 25 years since Brand uttered those words, scholarly works have grown increasingly free. That which, prior to the digital age, could be found only within the covers of the scholarly journal, first emerged from those covers as electronic replacements for working papers. Unlike the mimeographed and later photocopied versions of papers, the new electronic versions could be circulated without cost and, even after hundreds of reproductions, remain readable.

Soon, the informal digital circulation of working papers was followed by Web posting. Those far beyond the author's mailing list could get copies of the work. The first stirrings of the arXiv occurred in August 1991 and rapidly grew as a means of facilitating sharing of physics article preprints and post-prints. Other disciplines—funding agencies, national libraries, and universities—copied this innovation. The Directory of Open Access Repositories [4] now reflects the existence of 1,440 repositories world-wide, with roughly 80% housed in institutions, 13% hosted by disciplines, and the rest government- or aggregator-focused.

A diligent electronic search for most any article or manuscript today will produce the item itself or some version of it. However, what one finds often will reflect the disorderly nature of this age. Unfortunately, many of the hits will be accessible only if one has a subscription to the journal, is part of an institutional community that has a subscription, or is willing and able to pay for the manuscript on an ad hoc basis. Many researchers find that these hurdles inhibit their research. Surveying 2,157 US scientists in 2007, Stephen Hansen of the American Association for the Advancement of Science found that 29% of respondents said that their own research had been affected by difficulties in gaining access to or disseminating copyrighted scientific literature [5].

"Difficulties with obtaining access to or disseminating scientific literature" may mean that specific articles could not be found, that a version "of record" could not be found, or that multiple versions of an article were found, leaving the researcher unable to determine which version properly might be cited. Sources that are not curated and/or associated with stable URLs can be found one day and then vanish the next.

And the opportunity cost of blocking access to potentially valuable information increases as understanding of science grows. Those who already suffer from what Robert Merton dubbed "the Matthew effect" [6], in which eminent scientists receive greater recognition for their work than do unknown researchers, are placed at a further disadvantage by the exponential increase in scientific publications. Researchers must deal with the near impossibility of keeping up with "the flood of published science research, even in one's own narrow field." For example, Thinh Nguyen of the Science Commons reported (Universal Access Digital Library Summit, Boston, MA, September 25, 2008) that 128,000 papers have been written on apoptosis arising from the genes and proteins that may be associated with Huntington's disease and the similarly vast numbers of papers on the gene and cell interactions that may be implicated in autism. This "vastly increased bulk of publication stiffens the competition," Merton wrote—made all the worse by anything that makes papers harder to read.

While serving as head of the National Institutes of Health (NIH), Elias Zerhouni

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observed that "we have no one place where the integration of the information can be used as a powerful hypothesis generator" [7]. He set about to produce the desired order by continuing the work begun by his predecessor at NIH, Harold Varmus, building PubMed Central as a partial solution for the biomedical sciences. It has become a large, though not complete, corpus of the biosciences/biomedical literature. It will be more complete in the future because articles arising from NIH grants accepted for publication after April 7, 2008, must be deposited in PubMed Central.

The Emerging New Order

The only solution that gives science the maximum chance for advancement is one that ensures that all science findings are available to all researchers. "Available" does not permit permanent subscription or price barriers to stand between the researcher and scientific findings. When potentially important works that may bear on one's research number in the tens of thousands, "available" means that crawlers with sophisticated artificial intelligence must also have full access to help sort through the mass.

Public access mandates from funding agencies and foundations like NIH and the Wellcome Trust are part of the solution, but not all of it. While deposit mandates should be universally adopted by funders, such agencies support only a fraction of the work that is published in scholarly journals. Large portions of important work in most fields originate beyond US borders. Most work outside the physical and biological sciences is not funded by grants external to the university and will not be touched by such mandates. Given that important problems are seldom bounded by a single discipline's research, access to the non-science scholarly literature is potentially important to all researchers.

The most effective method of ensuring that the majority of important work is available is by replicating across the academy university public-access mandates like those of Harvard, MIT, and Kansas throughout the world. Most works originate with university-affiliated faculty or have co-authors who are faculty members. Deposit of articles in the form in which they were published in a journal requires permission of journals that require that authors provide exclusive copyright to them. In the Harvard policy, the faculty member grants a "nonexclusive, irrevocable, paid up, world-wide license to exercise any and all rights under copyright" to Harvard College [8]. While these provisions can be waived by the Dean in exceptional circumstances, the language sends a strong message to the journal that if it wishes to publish papers of the Harvard faculty, it will not object to inclusion of the articles in Harvard's repository. The MIT and Kansas policies have like provisions. When complemented by funding agency and foundation public-access mandates that capture the work originating with industry and government researchers who may not have faculty status, university mandates will, in time, produce nearly universal access to all the scientific literature.

Public Access for the Intermediate Term

Note that I use the term "public access" rather than "open access." Fortunately, open-access journals like those of BMC and PLoS have found a way to make open access work. Unfortunately, most of the scholarly literature journals depend on the subscription model and feel threatened by immediate open access to the material they publish. While open access is the desired goal in the long term, the same logic that compelled PubMed Central to design itself as "public access"—with up to a year's embargo permitted to protect the subscription base of journals—compels me to support public access as an interim measure. Public access permits the possibility of brief embargoes at the request of the journal of publication, in contrast to open access, which requires that access to full text and databases, without permission restrictions, occur immediately.

Journals opposing open access often claim that it will take away the funding needed for the refereeing process. Clearly the refereeing process must be supported. I know of no rigorous evidence that even very brief embargo periods before making articles publicly available cause scientific journal subscriptions to decline; therefore, I believe that public access has little impact on subscription revenue and is thus fully consistent with ensuring that refereeing of the literature continues.

An explicit tradeoff between having access to all scholarly journal articles after no more than one year's delay is preferable to running even a small risk that immediate access would damage the refereeing process. In the long run, it will be incumbent on any journal insisting that access be delayed to produce evidence that the harm done to science by delayed access is less than the harm that would be done to science if immediate access were provided. As more and more scholarly journals change their practices and permit immediate posting on publicly accessible Web sites, it will be increasingly difficult to defend the position that short embargo periods cause harm to journals.

Is This an Expensive Solution?

In this period of great financial stress for universities, the question of the cost of maintaining public-access repositories must be addressed. Fortunately, most US research universities already have operating repositories in which public-access–mandated collections may be placed. For the few institutions that do not, repository software is available for free [9] or organizations like the Berkeley Electronic Press will provide, for a very modest annual fee, a turn-key solution for establishing a repository that includes both the needed software and mass storage.

The future of all libraries is digital. Most collection access is now through electronic means. To argue that maintaining a digital archive of faculty scholarly articles will be too expensive is essentially to argue that the university will be unable to maintain a viable library resource in the future.

Benefits to Universities

Not many taxpayers know what university faculty are doing. In fact, not many university administrators or even other faculty know what research their colleagues are performing. This veil over faculty research may contribute to the 20-year trend of declining real per-student subsidy from states to their institutions of higher education. The decline in real state support is especially pronounced at research universities.

University public-deposit mandates will enhance the ability of universities to demonstrate faculty research productivity to the citizens of their states and to their donors. Imagine the massive collection of research that universities will accumulate after five years of mandated deposits. Further imagine alerting the public and donor community to the ability to search university X's repository to discover what local faculty findings exist on any subject. The results of such a search—on subjects ranging from stem cells to menopause and hair loss—would be impressive. Suddenly the invisible campus becomes a place populated by individuals researching topics relevant to the average citizen. Legislators who complain about faculty productivity would find their arguments more difficult to sustain. Donors and potential

donors might even alter their gift-giving based on such searches.

Your Opportunity and Responsibility

As a careful observer of scholarly communications, I'm convinced that the public goods aspect of faculty research will ultimately compel public access to it. Public goods have the characteristic that use of them by one individual does not diminish their value to others. In fact, the knowledge presented through scholarship generally becomes more valuable as it is shared more widely and becomes a building block upon which further scientific advances may occur.

Faculty members can accelerate the process. We can persuade colleagues on our own campuses to pass public-access mandates like those at Harvard, MIT, and Kansas. We can speed up what otherwise might be a 20-year process and make it happen in three or four. We can urge Congress to expand the NIH mandate to all federal funding agencies [10]. We can convince the less-enlightened scholarly societies that representing our disciplines means working for public access to scholarship rather than opposing it.

It is impossible to know how much more rapidly scientific progress will occur if all the scholarly literature becomes accessible. What we each know is the frustrations we've experienced in our own research because of access difficulties. It is within the power of the university faculty in this country to remove these roadblocks. Supporting adoption of a public-access deposit mandate on your campus is an effort most worthy of the involvement of dedicated scientists.

Notes and References

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