

EURAB 06.049

**EUROPEAN RESEARCH ADVISORY BOARD  
FINAL REPORT**

**SCIENTIFIC PUBLICATION:  
POLICY ON OPEN ACCESS**

December 2006

## **Recommendations**

A clear policy at European level is required which sets out a number of key high level principles. The forthcoming Communication on scientific information scheduled for publication in late 2006 or early 2007 will be a key milestone in this respect. The Commission can play a role in three respects: as a funding body, as a policy body, as a supporting body.

### ***As a funding body:***

1. The publication policy should not compromise the freedom of scientists to publish wherever they feel is most appropriate.
2. The effect of the policy should be to increase the visibility of and improve access to the research funded by the Commission.
3. The policy should be based on recognised best practice,
4. EURAB recommends that the Commission should consider mandating all researchers funded under FP7 to lodge their publications resulting from EC-funded research in an open access repository as soon as possible after publication, to be made openly accessible within 6 months at the latest.
  - a. The repository may be a local institutional and/or a subject repository.
  - b. Authors should deposit post-prints (or publisher's version if permitted) plus metadata of articles accepted for publication in peer-reviewed journals and international conference proceedings.
  - c. Deposit should be made upon acceptance by the journal/conference. Repositories should release the metadata immediately, with access restrictions to full text article to be applied as required. Open access should be made available as soon as practicable after the author-requested embargo, or six months, whichever comes first.
  - d. Suitable repositories should make provision for long-term preservation of, and free public access to, published research findings.

5. Given the complexity of the issues involved, the Commission should consider implementation of this policy on a phased basis, starting with research funded by the European Research Council.

***As a supporting body:***

6. There should be an emphasis on streamlining the process of deposit for researchers, and on standards for supporting interoperability, in digital archive projects funded under FP7. To this end it is recommended that the commission introduces a specific supporting action into every FP7 programme/thematic priority which will specifically address facilitating the use of deposit in OA repositories by the researchers funded under the particular programme/theme. They should provide key guidelines for researchers on what to deposit, where to deposit it, and when to deposit it. These supporting actions should work closely with the Digital Library Initiative and be co-ordinated across the entire FP7.

7. FP7 should include an action to invite proposals for an enhanced ranking of journals which includes not only traditional indicators of impact but also open access policies.

***As a policy body:***

8. The Commission should strongly encourage all Member States to promote open access publication policies for all their publicly funded research.

## **1. INTRODUCTION**

EURAB was invited by the Commission to examine the issue of scientific publication with particular reference to policy recommendations regarding open access for Framework Programme 7 (FP7).

The challenges and complexity of the issues surrounding open access (OA) publication are clear from the vast amount of literature and comment on the subject and the numerous declarations, initiatives, and statements e.g. Berlin Declaration, 2003; Budapest Open Access Initiative, 2002; Bethesda Statement on Open Access Publishing, 2003, and many others including the Federal Research Public Access Act of 2006 [FRPAA, 2006] currently going through Congress in the US. The recent report produced for the Commission “*Study on the economic and technological*

*evolution of the scientific publication markets in Europe*” [European Commission, 2006a], which is the subject of a public consultation, has attracted widespread interest<sup>1</sup>. However, as the title suggests, its main focus is economic, although the recommendations do open up the debate and address the wider context. EURAB welcomes the engagement of the Commission in this important EU-research policy issue, which it considers vital to the development and promotion of the European Research Area.

Research funding agencies, universities and research institutes are all actively considering the implications of new forms of scientific publication and in particular the role of open access. All share a common interest in maximising the dissemination and impact of research. While some agencies, such as for example, the Wellcome Trust [Wellcome Trust, 2006] have already decided to mandate deposit of publications in OA repositories resulting from research funded by them, others are uncertain as to how to proceed. Some of the main concerns centre around the maintenance of quality and the peer-review process, preserving long-term access, perceived threats to the viability of smaller circulation publications and to the publications of learned societies and academies particularly in the humanities and social sciences<sup>2</sup>, and the impact on research careers. These are genuine concerns but it is the opinion of EURAB that the benefits to the scientific research system as a whole of making research results freely available are overwhelming<sup>3</sup>.

It is beyond the remit of a EURAB Working Party to conduct a detailed analysis of scientific publication, rather the *modus operandi* has been to examine the recommendations of others with a view to identifying best practice in relation to OA policies. What is certain is that the nature of scientific communication is changing very rapidly and radically as a result of the Internet and World Wide Web. The challenge is to exploit the new possibilities offered by the technology to improve scientific communication while at the same time retaining the best features of the present system.

In such a dynamic environment it is not surprising that there is a degree of confusion as to what is meant by open access. Thus it is important to be clear what definitions are being used in the context of the EURAB recommendations contained in this report. These are presented below.

---

<sup>1</sup> The authors of the Study are the Université libre de Bruxelles and the Université des Sciences Sociales, Toulouse. See [http://ec.europa.eu/research/science-society/page\\_en.cfm?id=3185](http://ec.europa.eu/research/science-society/page_en.cfm?id=3185) for responses to the consultation on the Study.

<sup>2</sup> While the initial impetus for OA has come from the physical sciences, the momentum in the humanities and social sciences is also building up [ACLS, 2006].

<sup>3</sup> There is still no evidence to show that open access has had a negative impact on journal subscriptions in any subject area [e.g. RIN 2006]. Furthermore, rather than threatening the viability of small to medium sized publications, OA opens up the market for them to adopt new business models and to overcome the difficulties that they currently face in the subscription market [Peters, 2006].

## **2. DEFINITIONS**

This report focuses on scholarly publications in refereed journals and international conference proceedings, which do not involve payment (royalties) to the authors. Books and scientific data are not covered by the recommendations but may be the subject of a future report by EURAB.

### ***Open Access***

Loosely speaking Open Access is concerned with making digital content available free of charge without restriction [Public Library of Science, 2006]. A more formal definition is provided by the Berlin declaration [Berlin Declaration, 2003]:

Open access contributions must satisfy two conditions:

1. The author(s) and right holder(s) of such contributions grant(s) to all users a free, irrevocable, worldwide, right of access to, and a license to copy, use, distribute, transmit and display the work publicly and to make and distribute derivative works, in any digital medium for any responsible purpose, subject to proper attribution of authorship (community standards, will continue to provide the mechanism for enforcement of proper attribution and responsible use of the published work, as they do now), as well as the right to make small numbers of printed copies for their personal use.
2. A complete version of the work and all supplemental materials, including a copy of the permission as stated above, in an appropriate standard electronic format is deposited (and thus published) in at least one online repository using suitable technical standards (such as the Open Archive definitions) that is supported and maintained by an academic institution, scholarly society, government agency, or other well-established organization that seeks to enable open access, unrestricted distribution, interoperability, and long-term archiving.

It is important to stress that OA is compatible with copyright, peer review, revenue (even profit), print, preservation, prestige, career-advancement, indexing, and other features and supportive services associated with conventional scholarly literature. Thus publications in OA repositories and OA journals are subject to exactly the same peer review process as traditional print journals. The primary difference is that the bills are not paid by readers and hence do not function as access barriers [Suber, 2006]. In addition, it should be noted that there is no difference between OA

publication and conventional publication with regard to intellectual property rights associated with the research.

There are two primary vehicles for delivering OA to research articles, namely OA journals and OA archives or repositories (Suber, 2006).

### ***Open Access journals***

OA journals are published exclusively on-line and use a funding model that does not charge readers or their institutions for access. The key attributes of such journals (Suber, 2006) are:

- OA journals conduct peer review;
- OA journals typically let authors retain copyright;
- Some OA journal publishers are non-profit (e.g. Public Library of Science) and some are for-profit (e.g. Biomed Central);
- Less than half are based on the ‘author-pays’ model and all have commitment to ensure that ability to pay is not a factor so page charges can be waived<sup>4</sup>;
- Published on-line;
- Users have the right to read, download, copy, distribute, print, search, or link to the full texts of all articles published in the journal (Budapest Open Access Initiative, 2003).

### ***Pre-print***

- A preprint is any version of an article prior to peer review and publication, and is therefore usually the version submitted to a journal [Suber, 2006].
- Pre-prints are of limited value to the scientific community in the context of a quality system based on peer-review. Most, but by no means all, scholarly publishers allow pre-prints to be freely distributed by authors.

---

<sup>4</sup> According to the Kaufman-Wills survey (2005, p. 17), the most prevalent source of financial support for full OA journals was display advertising income.

### ***Post-print***

- A post-print is any version of an article which has been approved by peer review but not copy-edited [Suber, 2006]. In scientific content it is identical to the published version of the article (see below).
- The majority of major scholarly journals now give authors permission to deposit post-prints in OA repositories.

### ***Publisher's version***

Known as the 'publisher's version' or the 'publisher-generated pdf', 'the published version of the article usually includes additional changes made by the journal's editorial staff after acceptance of the author's final manuscript. These edits may be limited to matters of style and format or they could include more substantive changes made with the concurrence of the author' [PubMedCentral]. This version of a paper includes the publisher's branding and layout and typically appears in Portable Document Format (pdf) on the publisher's web site.

### ***Open Access Repository or Archive***

- OA repositories or archives provide storage and management of OA scholarly publications;
- OA repositories provide free access to the material contained in them and are also committed to long-term preservation of the material;
- They contain both metadata (citation details of the publication) and the full text of the publication;
- OA archives can be organized by discipline (e.g. arXiv for physics, or CERN Document Server (CDS), or by institution (e.g. eScholarship Repository for the University of California). *OpenDOAR* provides a comprehensive list of OA repositories which is updated regularly;
- Institutional OA repositories may be integrated with local research information systems. They have been federated within countries e.g. the DARE consortium and the DAREnet harvesting service, which automatically collects publication information from several repositories in the Netherlands (DARE 2006);

- OA archives do not perform peer review. However, they may limit deposit to pieces in the right discipline or authors from the right institution. OA archives may have a policy of accepting post-prints only [i.e. post-peer review];
- OA archives can contain preprints, postprints, or both;
- They contain metadata (citation details of the publication) and the actual content (text) of the publication, or both. OA archives may contain supporting data in various file formats;
- OA archives provide rich searching functionality and emerging standards will support searching across multiple archives.

### **3. KEY FEATURES OF OA POLICIES**

The processes of scholarly communications are changing in response to the opportunities provided by the digital environment (eResearch) and to fulfil the increased demand for information. With over 24,000 scholarly journals being published, individual institutions can no longer afford to subscribe to more than a fraction of these. Of particular significance in the context of FP7, is the prohibitive cost of access to research results for small and medium sized enterprises (SMEs). The movement to open access publishing is gaining ground: institutions, funding agencies, universities are increasingly supporting and (in some cases) mandating open access practices<sup>5</sup>.

Publishers are attempting to adapt to this new environment, but universities' evaluation of faculty is still largely based on traditional models of publishing as is the evaluation of proposals for research funding. Few researchers are fully aware of the issues, many are confused: they need clear information and advice on copyright and other issues. To maximise the impact of their research, researchers need to be encouraged in practical ways to disseminate their research openly whenever and as soon as possible. The biggest challenges are cultural, legal and political.

There are 3 key drivers towards OA publications:

- Public funding bodies are currently effectively paying 3 times for research: firstly for the research itself to be conducted; secondly, for the peer review; and finally for the library subscription to the journal in which the paper is published. Page charges and the

---

<sup>5</sup> See ROARMAP (Registry of Open Access Repository Material Archiving Policies) at <http://www.learningcontent.edu.ie/ual-wg/mod/resource/view.php?id=67>



additional author-side fees levied by traditional toll-access journals may be considered a fourth charge for this research.

- Ensuring widespread dissemination and maximising the impact of research is critical to the European Research Area; and
- Scientific publication affects the research system directly through its impact on research careers and on funding.

It is possible to restructure the system to ensure better value for public research monies while at the same time increasing the impact of research, but it is essential to consider all the stakeholders.

From the researchers' viewpoint, it is important that the impacts of any new models of publishing are positive (for example, in terms of the recognition given to their work institutionally and professionally), and are not excessively burdensome (for example, in terms of time demands). The new models will not be accepted unless there are clear rewards and incentives for all stakeholders.

It is possible that, rather than one model, a series of models will need to be developed appropriate to the type of material, the level of dissemination required, and the characteristics of the supplier/publisher. There could be a continuum of flow between the models according to the 'lifecycle' of the data. These include:

- open access publishing i.e. 'born free';
- traditional publishing with eventual open access;
- e-print deposit: deposit of versions of traditionally published papers in OA repositories (postprints, etc.);
- e-press: institutional [etc] e-publishing eg of 'grey literature', linking with e-journal management systems;
- e-availability of research data as a by-product of eResearch processes; and a
- blended approach: to support the learned societies & small publishers.

Any policy will need to take this continuum into account. This report concentrates on the first three models.

Key aspects of the policy are whether deposit should be compulsory or voluntary, whether it should apply to research which is only partially funded by FP7, compliance for researchers should be simple, and it should not compromise the freedom of scientists to publish in the journal or conference which they deem to be the most appropriate.

Several surveys have shown that researchers support open access and if required to do so would be willing to deposit their publications in an appropriate repository [Suber 2006] and the experience with the Wellcome mandate has shown a high degree of compliance. On the other hand, the NIH experience (3.8% deposit) indicates that requests, encouragements and exhortations do not work [SPARC, 2006].

It is vital that any policy is clear and unambiguous and therefore it is much more straightforward for it to apply to research irrespective of whether it is wholly or only partially funded by FP7.

The biggest impediment to uptake by researchers of OA is lack of awareness of what is involved in open access deposit: what, where and when to deposit. “There is still a substantial proportion of authors unaware of the possibility of providing open access to their work by self-archiving. Of the authors who have not yet self-archived any articles, 71% remain unaware of the option. With 49% of the author population having self-archived in some way, this means that 36% of the total author population (71% of the remaining 51%), has not yet been appraised of this way of providing open access.” [Swan 2005]. The survey showed that 94% of researchers surveyed would comply with a mandate.

Finally, the policy must not force scientists to publish in one journal rather than another. Thus not only should it be feasible for scientists to comply with the policy from an administrative point of view, it should also be feasible in the sense that it is consistent with the existing policies of all the major publishers.

#### **4. Recommendations**

A clear policy at European level is required which sets out a number of key high level principles. The forthcoming Communication on scientific information scheduled for publication in late 2006 or early 2007 will be a key milestone in this respect. The Commission can play a role in three respects: as a funding body, as a policy body, as a supporting body.

***As a funding body:***

1. The publication policy should not compromise the freedom of scientists to publish wherever they feel is most appropriate.
2. The effect of the policy should be to increase the visibility of and improve access to the research funded by the Commission.
3. The policy should be based on recognised best practice,
4. EURAB recommends that the Commission should consider mandating all researchers funded under FP7 to lodge their publications resulting from EC-funded research in an open access repository as soon as possible after publication, to be made openly accessible within 6 months at the latest.
  - a. The repository may be a local institutional and/or a subject repository.
  - b. Authors should deposit post-prints (or publisher's version if permitted) plus metadata of articles accepted for publication in peer-reviewed journals and international conference proceedings.
  - c. Deposit should be made upon acceptance by the journal/conference. Repositories should release the metadata immediately, with access restrictions to full text article to be applied as required. Open access should be made available as soon as practicable after the author-requested embargo, or six months, whichever comes first.
  - d. Suitable repositories should make provision for long-term preservation of, and free public access to, published research findings.
5. Given the complexity of the issues involved, the Commission should consider implementation of this policy on a phased basis, starting with research funded by the European Research Council.

***As a supporting body:***

6. There should be an emphasis on streamlining the process of deposit for researchers, and on standards for supporting interoperability, in digital archive projects funded under FP7. To this end it is recommended that the commission introduces a specific supporting action into every FP7 programme/thematic priority which will specifically address facilitating the use of deposit in OA repositories by the researchers funded under the particular programme/theme. They should provide key guidelines for researchers on what to deposit, where to deposit it, and when to

deposit it. These supporting actions should work closely with the Digital Library Initiative and be co-ordinated across the entire FP7.

7. FP7 should include an action to invite proposals for an enhanced ranking of journals which includes not only traditional indicators of impact but also open access policies.

***As a policy body:***

8. The Commission should strongly encourage all Member States to promote open access publication policies for all their publicly funded research.

## **5. BIBLIOGRAPHY**

ACLS (2006). *Our cultural commonwealth. The Report of the American Council of Learned Societies' Commission on Cyberinfrastructure for Humanities and Social Sciences.* <http://www.acls.org/cyberinfrastructure/acls.ci.report.pdf>. Accessed 9 October 2006.

arXiv. <http://arxiv.org/>. Accessed 10 October 2006.

Berlin Declaration (2003). Berlin declaration on open access to knowledge in the sciences and humanities. [http://oa.mpg.de/openaccess-berlin/berlin\\_declaration.pdf](http://oa.mpg.de/openaccess-berlin/berlin_declaration.pdf). Accessed 8 October, 2006.

Bethesda statement on open access publication, 2003 <http://www.earlham.edu/~peters/fos/bethesda.htm>

Budapest Open Access Initiative (2002). <http://www.soros.org/openaccess/read.shtml>. Accessed October 8, 2006.

CDS. CERN Document Server. <http://cdsweb.cern.ch/>. Accessed 10 October 2006.

DARE (2006). *DAREnet Worldwide access to Dutch academic research result,* <http://www.darenet.nl/en/page/language.view/home>. Accessed 9 October 2006.

eScholarship Repository, University of California. [<http://repositories.cdlib.org/escholarship/>]. Accessed 10 October 2006.

European Commission (2006a). *“Study on the economic and technological evolution of the scientific publication markets in Europe.* European Commission, Directorate-General for Research, Brussels. Available from [http://ec.europa.eu/research/science-society/pdf/scientific-publication-study\\_en.pdf](http://ec.europa.eu/research/science-society/pdf/scientific-publication-study_en.pdf). Accessed October 10, 2006.

European Commission (2006b). Scientific Publications [http://ec.europa.eu/research/science-society/page\\_en.cfm?id=3184](http://ec.europa.eu/research/science-society/page_en.cfm?id=3184). Accessed 8 October 2006

FRPAA (2006). *Federal Research Public Access Act or 2006.* [[http://cornyn.senate.gov/doc\\_archive/05-02-2006\\_COE06461\\_xml.pdf](http://cornyn.senate.gov/doc_archive/05-02-2006_COE06461_xml.pdf)]. Accessed 9 October 2006.

Kaufman-Wills (2006). The facts about Open Access. Kaufman-Wills Group LLC. <http://www.alpsp.org/publications/FAOAccompleteREV.pdf>. Accessed 9 October 2006.

OpenDOAR. The Directory of Open Access Repositories. <http://www.opendoar.org/>. Accessed 10 October 2006.

Peters, P (2006). *Economics of Open Access Publishing*. To be presented at *OnLine Information 2006, 28-30 November, 2006, London, UK*. Open Business. Available at <http://www.openbusiness.cc/2006/09/29/economics-of-open-access-publishing/>. Accessed 9 October 2006.

Public Library of Science (2006). Open Access <http://www.plos.org/oa/index.html>. Accessed 8 October 2006.

PubMedCentral. <http://www.pubmedcentral.nih.gov/about/authorms.html>. Accessed October 10, 2006.

RIN (2006). *Analysis of data on scholarly journals publishing*. Research Information Network Report, <http://www.rin.ac.uk/data-scholarly-journals>. Accessed 8 October 2006.

SPARC (2006). *Open Access Newsletter*, Issue 100, August 2, 2006. <http://www.earlham.edu/~peters/fos/newsletter/08-02-06.htm#lessons>

Suber, P (2006). *Open Access Overview*. <http://www.earlham.edu/~peters/fos/overview.htm>. Accessed 8 October 2006.

Swan, A. (2005) Open access self-archiving: An Introduction. Technical Report, JISC, HEFCE, <http://eprints.ecs.soton.ac.uk/11006/>. Accessed 9 October 2006.

Wellcome Trust (2006). *Position statement in support of open and unrestricted access to published research*. [http://www.wellcome.ac.uk/doc\\_WTD002766.html](http://www.wellcome.ac.uk/doc_WTD002766.html)

## **6. WORKING GROUP MEMBERS**

The Working Party would like to express its gratitude to the Rapporteur, Ms. Niamh Brennan, Research Support Systems Administrator, Trinity College Dublin for her assistance in the production of this report, and to the other members of EURAB for the comments and suggestions on earlier drafts.

Jane Grimson (Chair)

Bertil Andersson

Catherine Cesarsky

Ulrike Felt

Norbert Kroó

Zita Kučinskienė

Gretty Mirdal

Ms. Niamh Brennan (Rapporteur)