



SCHOLARLY PUBLISHING & ACADEMIC RESOURCES COALITION
SPARC EUROPE

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Open Access and the Future of Scholarly Communication

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MARIS et al. *RNA*.2005; 11: 173-186.

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The Effect of the Internet

- Opportunities for **expanded access** and **new uses** offered by
 - ever-expanding networking
 - evolving digital publishing technologies and business models
- New dissemination methods
- Better ways to handle increasing volume of research generated
- 75% of journals (83% in STM) now online



The Situation Today – Dissatisfaction at Many Levels

- Authors
 - Their work is not seen by all their peers – they do not get the recognition they desire
 - Despite the fact they often have to pay page charges, colour figure charges, reprint charges, etc.
 - Often the rights they have given up in exchange for publication mean there are things that they cannot do with their own work
- Readers
 - They cannot view all the research literature they need – they are less effective
- Libraries
 - Even libraries at the wealthiest institutions cannot satisfy the information needs of their users
- Funders
 - Want to see greater returns on their research investment
- Society
 - We all lose out if the communication channels are not optimal.



Scholarly Publishing & Academic Resources Coalition

- Formed in 2002 following the success of SPARC (launched in 1998 by the US Association of Research Libraries)
- Encourages partnership between libraries, academics, societies and responsible publishers
- Originally focused on STM, but coverage expanding
- Has over 110 members in 14 countries
- By acting together the members can influence the future of scholarly publishing



Open Access

What is it?

Call for *free, unrestricted access* on the public internet to the literature that scholars give to the world *without expectation of payment*.

Why?

Widen dissemination, accelerate research, enrich education, share learning among rich & poor nations, enhance return on taxpayer investment in research.

How?

Use existing funds to pay for *dissemination*, not *access*.



Budapest Open Access Initiative

www.sparceurope.org

Two complementary strategies:

- **Self-Archiving:** Scholars should be able to deposit their refereed journal articles in open electronic archives which conform to **Open Archives Initiative** standards
- **Open-Access Journals:** Journals will not charge subscriptions or fees for online access. Instead, they should look to other sources to fund peer-review and publication (e.g., publication charges)

<http://www.soros.org/openaccess/>



What are institutional repositories (open archives)?

Essential elements

- *Institutionally defined*: Content generated by institutional community
- *Scholarly content*: preprints and working papers, published articles, enduring teaching materials, student theses, data-sets, etc.
- *Cumulative & perpetual*: preserve ongoing access to material
- *Interoperable & open access*: free, online, global



Why institutional repositories?

- **For the Individual**
 - Provide a central archive of their work
 - Improved discovery and retrieval
 - Increase the dissemination and impact of their research
 - Acts as a full CV
- **For the Institution**
 - Increases visibility and prestige
 - Acts as an advertisement to funding sources, potential new faculty and students, etc.
 - Helps in administration, e.g., Research assessment and evaluation
- **For Society**
 - Provide access to the world's research
 - Ensures long-term preservation of institutes' academic output



What is a Journal?

Scholarly publishing comprises four functions:

REGISTRATION Establishing intellectual priority	CERTIFICATION Certifying the quality/validity of the research	AWARENESS Assuring accessibility of research	ARCHIVING Preserving research for future use
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Current model:

- Integrates these functions in journals
- This made sense in print environment



The Four Functions - Repositories



REGISTRATION

Establishing
intellectual
priority



CERTIFICATION

Certifying the
quality/validity
of the research



AWARENESS

Assuring
accessibility
of research

ARCHIVING

Preserving
research
for future use



Certification

- Certification gives:
 - Authors – Validation of their work (important for promotion and grant applications)
 - Readers – Quality filter
- Journals provide peer review and give a ‘quality stamp’ to research and authors
- Journals should be open access



The Four Functions of a Journal



Institutional
Repositories



REGISTRATION

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ARCHIVING

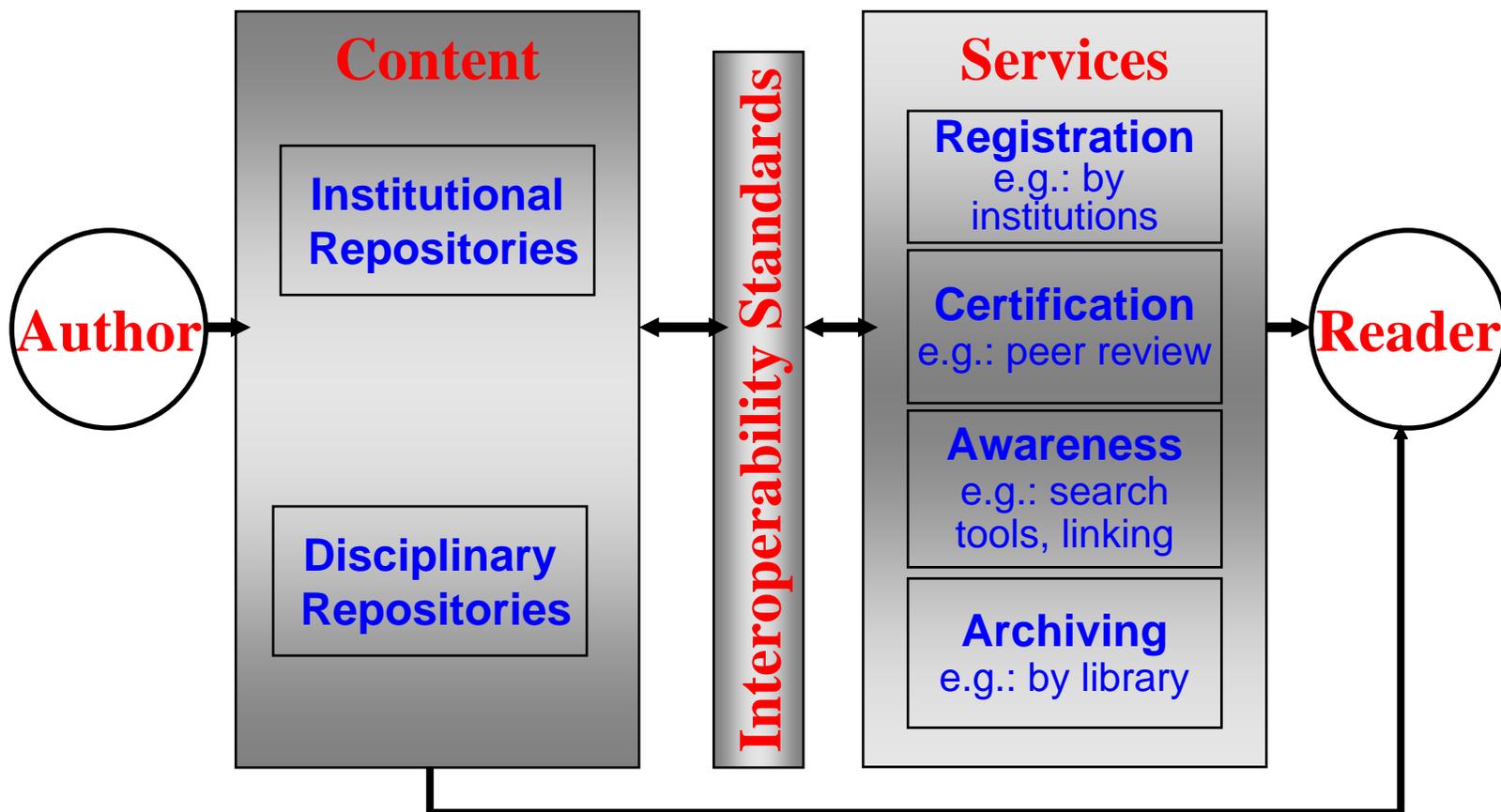
Preserving
research
for future use



Open Access
Journals



How the pieces work together





Theory Into Practice - Institutional Repositories

- GNU EPrints – Southampton
- D-Space – MIT
- CDSWare – CERN
- ARNO – Tilburg, Amsterdam, Twente
- Fedora – Cornell University / University of Virginia

- SHERPA – UK
- DARE – The Netherlands
- DRIVER – EC

- SPARC Resources – (<http://www.arl.org/sparc/repositories/>)



Theory Into Practice - Institutional Repositories

OpenDOAR (Directory of Open Access Repositories)

- An authoritative directory of academic open access repositories
- List of over 1125 repositories
- Can be used to search across content in all listed repositories
- Gives information on repository policies (copyright, re-used of material, preservation, etc.)
- Six repositories in Greece listed:
 - [Aristotle University of Thessaloniki Repository](#)
 - [DSpace at NTUA](#) (National Technical University of Athens)
 - [Educational Repository - University of Patras](#)
 - [Kosmopolis](#) (University of Patras)
 - [Nemertes](#) (University of Patras)
 - [Psepheda: Digital Library & Institutional Repository](#) (University of Macedonia)

<http://www.openoar.org/>



Theory Into Practice

- Open Access Journals

- Lund Directory of Open Access Journals (<http://www.doaj.org/>) – lists over 3300 peer-reviewed open access journals
- *PLoS Biology* (launched 2003 – IF 14.1), *PLoS Medicine* (2004, IF 13.8), *PLoS Computational Biology*, *PLoS Genetics*, *PLoS Pathogens* (2005)
- *BioMed Central* (published almost 34,000 papers)
- *New Journal of Physics* (IF 3.754)
- Scientific Electronic Library Online (SciELO-<http://www.scielo.org/index.php?lang=en>) – 279 titles open access online



New Models – Making Use of OA

[Nature Preceedings](#) – A permanent, citable archive for pre-publication research and preliminary findings. It is a place for researchers to share documents, including presentations, posters, white papers, technical papers, supplementary findings, and non-peer-reviewed manuscripts.

[eprintweb.org](#) – A ‘user-friendly’ front-end for the [arXiv](#) developed by IOPP.

[PLoS ONE](#) – an international, peer-reviewed, open-access, online publication. It provides:

- Open-access—freely accessible online, authors retain copyright
- Fast publication—acceptance to publication in an average of 14 working days
- Peer reviewed by an international editorial board of over 400 experts
- Post-publication tools to indicate quality and impact
- Community-based dialogue on articles



The Power of Open Access – Self Archiving

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- For 72% of papers published in the *Astrophysical Journal* free versions of the paper are available (mainly through ArXiv)
- These 72% of papers are, on average, cited **twice** as often as the remaining 28% that do not have free versions.

Figures from Greg Schwarz

- Tim Brody from Southampton has shown that papers for which there is also a free version available have, on average, greater citations than those that are only available through subscriptions

http://citebase.eprints.org/isi_study



The Power of Open Access – Journals

www.sparceurope.org

- Open access PNAS papers have 50% more full-text downloads than non-open access papers

http://www.library.yale.edu/~license/ListArchives/0505/m_sg01580.html

- ...and are on average twice as likely to be cited

<http://biology.plosjournals.org/perlserv/?request=get-document&doi=10.1371/journal.pbio.0040157>



Open Access Policies

As the public policy agenda develops we are seeing an increasing number of policies relating to open access from:

- Research groups
- Universities
- Research centers
- Funding bodies
- Governments
- National and international bodies



Berlin Declaration in Support of Open Access

- ‘Our mission of disseminating knowledge is only half complete if the information is not made widely and readily available to society.’
- Signatories should promote open access by
 - encouraging researchers/grant recipients to publish in open access.
 - encouraging the holders of cultural heritage to support open access by providing their resources on the Internet.
 - developing means to evaluate open access contributions and online-journals in order to maintain the standards of quality assurance and good scientific practice.
 - advocating that open access publication be recognized in promotion and tenure evaluation.
- Issued on 22nd October 2003

<http://www.zim.mpg.de/openaccess-berlin/berlindeclaration.html>



Berlin Declaration in Support of Open Access

- 249 signatories world-wide, including:
 - **Germany:** Fraunhofer Society, Wissenschaftsrat, HRK, Max Planck Society, Leibniz Association, Helmholtz Association, **German Research Foundation**, Deutscher Bibliotheksverband
 - **France:** CNRS, INSERM
 - **Austria:** FWF Der Wissenschaftsfonds
 - **Sweden:** Swedish Research Council, Swedish Library Association, Association of Swedish Higher Education
 - **Italy:** Rectors of almost all Italy's universities
 - **Spain:** Rectors and Chancellors of 13 universities, Spanish National Research Council (CSIC)
 - **Belgium:** 17 Higher education rectors and ministers
 - **Greece:** Alexander Technological Educational Institute of Thessaloniki, University of Macedonia Economic and Social Sciences, National Hellenic Research Foundation



Open Access Policies

The Wellcome Trust, UK

- From October 1 2006, it became a condition of funding that copy of any **original research paper** published in a peer-reviewed journal must be deposited into PubMed Central (PMC). http://www.wellcome.ac.uk/doc_WTX022827.html

Research Councils, UK

- Six of the seven UK research Councils require deposit of papers in freely accessible electronic repositories. http://www.sparceurope.org/press_release/RC%20OA%20policies%20v1.5.xls

National Institutes of Health (NIH), US

- The NIH is the world's largest non-military research funder, spending just under \$30 billion per year
- Low uptake of a voluntary deposit policy (about 4%) led to action from the US Congress
- In December 2007 a provision directing the NIH to provide the public with open online access to findings from its funded research was passed into law.
- Now grant recipients are required to deposit electronic copies of their peer-reviewed manuscripts into PubMed Central no later than 12 months after publication in a journal.
- Approximately 60,000 papers each year could be made freely available as a result of the policy

<http://www.taxpayeraccess.org/media/release07-1226.html>



European Commission Study

www.sparceurope.org

- ‘Study on the economic and technical evolution of the scientific publication markets in Europe’
- Connected to the EC’s objective of ‘establishing a genuine European Research Area and [their] aim to raise the profile of European research’
- Looking at:
 - What are the main changes in Europe?
 - What and who is driving change and why? If there is any resistance to positive change, what/who is blocking it?
 - What are the consequences for users (authors, readers, libraries)?
- Launched 15 June 2004

<http://www.europa.eu.int/comm/research/press/2004/pr1506en.cfm>



European Commission Study

- Concludes that ‘...policies should make sure that the market is sufficiently competitive and ‘dissemination-friendly’. In particular, they should address the need to:
 - enhance access to research output;
 - prevent strategic barriers to entry and to experimentation.
- **Recommendation A1. Guarantee public access to publicly-funded research shortly after publication**
 - Research funding agencies ... should promote and support the archiving of publications in open repositories, after a ... time period to be discussed with publishers. This archiving could become a condition for funding.
 - The following actions could be taken at the European level: (i) Establish a European policy mandating published articles arising from EC funded research to be available after a given time period in open access archives, and (ii) Explore with Member States and with European research and academic associations whether and how such policies and open repositories could be implemented.

http://europa.eu.int/comm/research/science-society/pdf/scientific-publication-study_en.pdf



European Commission Study

- The EC hosted a conference on scholarly communication in Brussels in February 2007.
- Before the meeting a SPARC Europe-sponsored petition collected 22,000 signatories calling on the Commission to adopt the study's recommendations. (<http://www.ec-petition.eu/>)
- The conference was inconclusive, but the Commission has issued a 'Communication' which includes:
 - A commitment to include open access publishing costs in EC grants
 - The promise of specific guidelines to be issued, within specific programmes, on the publication of articles
 - in open repositories.
 - Significant funding for repository infrastructure and digital preservation
 - Funding of research on publication business models and on the scientific publication

http://ec.europa.eu/research/science-society/document_library/pdf_06/communication-022007_en.pdf



Funding Bodies - The Future

- The last three years has seen funding agencies in Europe and US begin to take an interest in open access
- They see dissemination as part of the research process and publication costs as research costs
- We will continue to see increasing high-level support for open access
- We can expect further policy statements over the next year, some of which will mandate deposit in suitable repositories
- These policies and high-level support will underpin work on institutional repositories



Self-Archiving Policies

Research Organisations:

- CERN – Requires researchers to deposit papers in the CERN repository
- CNRS (Centre National de la recherche scientifique)

Institutions:

- Harvard University – February 2008
- Queensland University of Technology
- Bielefeld University
- University of Bremen
- University of Hamburg
- Universidade do Minho
- University of Southampton
- Case Western Reserve University
- University of Oslo

<http://www.eprints.org/signup/fulllist.php>



Open Access – A Policy Issue

Open Access policies are:

- Welcomed by authors
- Complied with by authors
- Compatible with copyright and respect authors' moral rights
- Compatible with patent registration
- Respectful of academic and intellectual freedoms
- Aligned with the aims of most funding bodies and institutions
- Effective!



What Institutions Are Doing

Self-archiving:

- Set-up and maintain institutional repository.
- Help faculty deposit their research papers, new & old, digitizing if necessary.
- Implement open-access policies

Open-access journals:

- Help promote open access journals launched at their institution become known externally.
- Ensure scholars at their institution know how to find open access journals and archives in their fields.
- Support open access journal ‘institutional memberships’ (e.g. BioMedCentral, PLoS)
- Engage with politicians and funding bodies to raise the issue of open access

<http://www.createchange.org/>



European University Association

www.sparceurope.org

Recommendations for University Leadership

- Universities should develop institutional policies and strategies that foster the availability of their quality-controlled research results for the broadest possible range of users, maximising their visibility, accessibility and scientific impact.
- The basic approach ...should be the creation of an institutional repository or participation in a shared repository..
- University institutional policies should require that their researchers deposit (self-archive) their scientific publications in their institutional repository upon acceptance for publication. Permissible embargoes should apply only to the date of open access provision and not the date of deposit.
- ...It should be the responsibility of the university to inform their faculty researchers about IPR and copyright management...
- University institutional policies should explore also how resources could be found and made available to researchers for author fees to support the emerging "author pays model" of open access.

http://www.eua.be/fileadmin/user_upload/files/Policy_Positions/Recommendations_Open_Access_adopted_by_the_EUA_Council_on_26th_of_March_2008_final.pdf



Open Access – Appealing to All the Major Stakeholders

- To the funders of researcher – both as a public service and as an increased return on their investment in research
- To the authors – as it gives wider dissemination and impact
- To readers – as it gives them access to all primary literature, making the most important ‘research tool’ more powerful
- To editors and reviewers – as they feel their work is more valued
- To the libraries – as it allows them to meet the information needs of their users
- To the institutions – as it increases their presence and prestige
- To small and society publishers – as it gives them a survival strategy and fits with their central remit



A Changing Environment

www.sparceurope.org

“It is one of the noblest duties of a university to advance knowledge, and to diffuse it not merely among those who can attend the daily lectures--but far and wide.”

Daniel Coit Gilman, First President, Johns Hopkins University,
1878 (on the university press)

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

Budapest Open Access Initiative, Feb. 14, 2002

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