Designing the Optimal Open Access Mandate

Stevan Harnad
Open Access @ UNT
18 May 2010
How the Optimal Open Access Mandate Can Help UNT Reach TIER I

Stevan Harnad
Open Access @ UNT
18 May 2010
UQAM Montreal 21-30 June

http://www.summer10.isc.uqam.ca

ACFAS/Sudbury 1 April

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- **Larivière**, Vincent (U. Québec à Montréal)
- **Oppenheimer**, Charles (U. Loughborough)
- **Sale**, Arthur (U. Tasmania)
- **Swan**, Alma (U. Southampton, EPrints, Key Perspectives)

May 18, 2010 OA@UNT
Seemingly tiny but crucial details

• request vs. require
• deposit mandates vs. permission mandates
• university mandates vs. funder mandates
• university deposit vs. central deposit
Gold Rush
So don’t pay for **Gold OA** today without first mandating **Green OA**

- COPE
- SCOAP3
QUESTION 1:

What is open access in a university setting and what is meant by the open access movement?
QUESTION 2:

Why are universities thinking that developing an open access policy is important at this time?
QUESTION 3:

What are the benefits to faculty; to the university; to the world?
QUESTION 4:

What are hot-button issues or issues that faculty should consider in thinking about open access?
QUESTION 5:

What are the anticipated costs to the University and individual faculty members?
QUESTION 6:

After open access, what's next on the horizon in terms of academic information sharing on the internet?
QUESTION 7:

Provide an overview of similar academic (peer) institutions who have adopted open access...
QUESTION 8:

Are there legal issues dealing with international and/or collaborative scholarship and publications?
QUESTION 9:

*How might open access play into UNT's push to gain Tier 1 status?*
What Is Open Access:?
Open Access is NOT:

- Copyright Reform
- Publishing Reform
- Peer Review Reform
- Digital Preservation
- “Freeing Knowledge”
Open Access is:

- Free,
- Immediate
- Permanent
- Full-Text
- On-Line
- Access
Open Access to What?

~2.5 million articles yearly

~25,000 peer-reviewed journals

1. Books
2. Textbooks
3. Magazine articles
4. Newspaper articles
5. Music
6. Video
7. Software
8. “Knowledge”
9. Data
10. Unrefereed Preprints
Open Access: Why?
Open Access: Why?

1. To **maximise** the uptake, usage, applications and impact of the research output of your university
Open Access: Why?

1. To **maximise** the uptake, usage, applications and impact of the research output of your university

1. To **measure and reward** the uptake, usage, applications and impact of the research output of your university (research metrics)
Open Access: Why?

1. To **maximise** the uptake, usage, applications and impact of the research output of your university

1. To **measure and reward** the uptake, usage, applications and impact of the research output of your university (research metrics)

1. To **collect, manage and showcase** a permanent record of the research output and impact of your university
OA maximises research
OA maximises research

visibility
usage
uptake
applications
impact
productivity
progress
funding
manageability
assessability
OA maximises research

visibility
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uptake
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by maximising research:
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assessability

by maximising research:

accessibility
Open Access: How?

By mandating Green OA Self-Archiving

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Open Access: How?

By mandating Green OA Self-Archiving

OA Metrics motivate OA Mandates

And OA Mandates maximize OA Metrics
Open Access: How?

By mandating Green OA Self-Archiving

OA Metrics motivate OA Mandates

And OA Mandates maximize OA Metrics

- **Metrics** of research usage and impact quantify, evaluate, navigate, propagate and reward the fruits of OA self-archiving, motivating Green OA Mandates.
Open Access: How?

By mandating Green OA Self-Archiving

OA Metrics motivate OA Mandates
And OA Mandates maximize OA Metrics

• Metrics of research usage and impact quantify, evaluate, navigate, propagate and reward the fruits of OA self-archiving, motivating Green OA Mandates.

• Mandates for Green OA self-archiving, incentivized by the Metrics, once adopted by most or all universities and research funding agencies, will provide OA to 100% of research output, maximizing research usage and impact, productivity and progress.


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There are 2 ways to make research OA
1. Gold OA: publishers convert
2. Green OA: researchers self-archive
<table>
<thead>
<tr>
<th></th>
<th>Gratis OA (no price barriers)</th>
<th>Libre OA (no price barriers + no permission barriers)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Green OA</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(published in journal + deposited in OA Repository)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gold OA</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(published May 18 2010 OA@UNTd in OA journal)</td>
<td></td>
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</table>
The Immediate Practical Implication of the Houghton Report: Provide Green Open Access Now


It would yield a forty-fold benefit/cost ratio if the world’s peer-reviewed research were all self-archived by its authors so as to make it OA.
<table>
<thead>
<tr>
<th>Gratis OA (no price barriers)</th>
<th>Libre OA (no price barriers + no permission barriers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deposit Mandates</td>
<td>Deposit + Permission Mandates</td>
</tr>
</tbody>
</table>

**Green OA**
(published in journal + deposited in OA Repository)
**Impact cycle begins:**
Research is done

Researchers write pre-refereeing “Pre-Print”

Submitted to Journal

Pre-Print reviewed by Peer Experts – “Peer-Review”

Pre-Print revised by article’s Authors

Refereed “Post-Print”
Accepted, Certified, Published by Journal

Researchers can access the Post-Print if their university has a subscription to the Journal

**New impact cycles:**
New research builds on existing research

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What Is Green OA?
Maximized Research Access and Impact Through Self-Archiving

Impact cycle begins:
Research is done

Researchers write pre-refereeing “Pre-Print”

Submitted to Journal

Pre-Print reviewed by Peer Experts – “Peer-Review”

Pre-Print revised by article’s Authors

Refereed “Post-Print” Accepted, Certified, Published by Journal

Researchers can access the Post-Print if their university has a subscription to the Journal

More impact cycles:

New impact cycles:
New research builds on existing research

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Open Access: Why?
Open Access: Why?

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How the Optimal Open Access Mandate Can Help UNT Reach TIER I
The G-factor International University Ranking measures the importance of universities as a function of the number of links to their websites from the websites of other leading international universities. Copyright Peter Hirst, 2006.

Why is Southampton ranked 3rd highest in the UK and 25th in the world, above Columbia (27th) and Yale (51st)?
Contributors to the OA Advantage

EA + QA + UA + (CA) + (QB)

- **EA: Early Advantage:** Self-archiving preprints before publication hastens and increases citations (higher-quality articles benefit more: top 20% of articles receive 80% of citations)

- **QA: Quality Advantage:** Self-archiving postprints immediately upon publication hastens and increases citations (higher-quality articles benefit more)

- **UA: Usage Advantage:** Self-archiving increases downloads (higher-quality articles benefit more)

- **(CA: Competitive Advantage):** OA/non-OA advantage (CA disappears at 100%OA, but very important today!)

- **(QB: Quality Bias):** Higher-quality articles are self-selectively self-archived more (QB disappears at 100%OA)
Open Access increases citations

Range = 36%-200%
(Data: Brody & Harnad 2004; Hajjem et al. 2005)
This page allows you to generate graphs and tables of data summarising the usage data for eprints in the repository. Select the data you want to graph in 'Set of Eprints', choose the date range to process in 'Date Range', select the type of analysis to make in 'Choice of View' and then click 'Generate'.

**Set of Eprints**

You can choose to only include data for particular sets (e.g. eprints deposited by a named author) or show data for only a single eprint.

- All
- Research Group
- Creators Name

**Creators Name**

Berners-Lee, T. (7113)

- Eprint ID

**Date Range**

Change the period of access log data included based on when the request was made. Warning! The more data you include the longer it will take to generate the results.

- Period: Last Quarter
- From date: 1 January 2005
- Until date: 31 January 2005
The view determines how data is rendered and may provide additional data refinements (for example showing a summary for authors).

Summary Data
- MonthlyDownloadsGraph
- DailyDownloadsGraph
- MonthlyUniqueVisitorsGraph
- AllMonthlyDownloadsGraph
- DownloadCountHTML

Simple Analyses
- TopTenTable
- ReferrerGraph
- SearchEngineGraph
- TopCountriesTable
- TopTenAcademies

Complex Analyses
- TopTenMonthlyDownloadsGraph
- TopTenAuthorsTable
- TopTenTableDashLinked
- HighestClimbersTable
- MonthlyDownloadsByGroupGraph
- TopTenNonSearchReferrers
- RandomFromTopTenHTML
Some EPrints download metrics for top deposits by Southampton author Tim Berners-Lee.
Citebase is currently only an experimental demonstration. Users are cautioned not to use it for academic evaluation yet. Citation coverage and analysis is incomplete and hit coverage and analysis is both incomplete and noisy.
Search Result Rank-Ordering
The ranking controls the order in which results are shown.

Search Score
For author and keyword queries this is the relevance score returned by Xapian (the text-search tool).

Creation Date
The date the record first appeared. Based on the source archive's policy (archive dependent, can be a date given by
the author or the date the record was added to the archive).

Last Update
The last time a change was made to the record (not necessarily the actual paper). Based on the source archive's
policy.

Paper Citations - Caution
The total number of citations identified by Citebase to a paper.

Author Citations - Caution
The author impact of a paper is the mean author impact of that paper's named authors.
Author impact is the total number of citations identified by Citebase to papers that the author is named on, divided by
the number of papers that same author is named on.

Paper Hits - Caution
The total number of web requests made for this paper. Web log usage data ("hits") (1) currently cover only from
August 1999 to the present and (2) are based only on the UK arXiv.org mirror-site usage (the other 17 international
mirror-sites, including the main one in the US are not currently covered).

Author Hits - Caution
The author hits of a paper is the mean author hits of that paper's named authors.
Author hits is calculated as the total number of hits to papers that the author is named on, divided by the number of
papers that same author is named on.

Hub/Authority Scores
These are experimental metrics.

Co-citedness
The degree to which two articles are related according to the co-occurrence of citations.
The Symbol Grounding Problem [Abstract, 69 Cites]
69 Harnad, Stevan (1999-06-01) In PHYSICA D 42 335 (1999)
How can the semantic interpretation of a formal symbol system be made intrinsic to the system, rather than just parasitic on the meanings in our heads? How can the meanings of the meaningless symbol tokens, manipulated solely on the basis of their (arbitrary) shapes, be grounded in anything but other ...

Minds, Machines and Searle [Abstract, 28 Cites]
Searle's celebrated Chinese Room Argument has shaken the foundations of Artificial Intelligence. Many refutations have been attempted, but none seem convincing. This paper is an attempt to sort out explicitly the assumptions and the logical, methodological and empirical points of disagreement. Searle is ...

Other bodies, Other minds: A machine incarnation of an old philosophical problem [Abstract, 27 Cites]
Explaining the mind by building machines with minds runs into the other-minds problem: How can we tell whether any body other than our own has a mind when the only way to know is by being the other body? In practice we all use some form of Turing Test: If it can do everything a body with a mind can do ...

Consciousness: An afterthought [Abstract, 26 Cites]
26 Harnad, Stevan (1982-01-01) In AN AFTERTHOUGHT:COGNITION AND BRAIN THEORY 5 29 (1982)
Our sense that we do something deliberately may be an afterthought that arises after our brains have already triggered our action unconsciously. Consciousness itself may be a similar illusory afterthought, with ...
Free at Last: The Future of Peer-Reviewed Journals [Abstract, 14 Cites, ]
3966  Harnad, Stevan (1999-01-01) In JOURNALS.D-LIB MAGAZINE 5 12 (1999)
I don’t think there is any doubt in anyone’s mind as to what the optimal and inevitable outcome of all this will be: The Give-Away literature will be free at last online, in one global, interlinked virtual library (see <http://www.cogsci.soton.ac.uk/~harnad/citation.html>), and its QC/C ...

Behavioral and Brain Sciences [Abstract ]
3319  Harnad, Stevan oai:eprints.ecs.soton.ac.uk:2625

2685  Harnad, Stevan (1996-01-01) oai:coprints.soton.ac.uk:1692
Electronic networks have made it possible for scholarly periodical publishing to shift from a trade model, in which the author sells his words through the mediation of the expensive and inefficient technology of paper, to a collaborative model, in which the much lower real costs and much broader reach of ...

Artificial Life: Synthetic Versus Virtual [Abstract ]
2419  Harnad, Stevan (1993-01-01) In SYNTHETIC VERSUS VIRTUAL.SANTA FE INSTITUTE STUDIES IN THE SCIEN 16 593 (1993)
Artificial life can take two forms: synthetic and virtual. In principle, the materials and properties of synthetic living systems could differ radically from those of natural living systems yet still resemble them enough to be really alive if they are grounded in the relevant causal interactions with the ...

Searle’s Chinese Room Argument [Abstract ]
1988  Harnad, Stevan (2003-01-01) oai:coprints.soton.ac.uk:4075
Summary of Searle’s “Chinese Room Argument” showing that cognition cannot be just computation. Searle implements a computer programme that can pass the Turing Test in Chinese. Searle does not understand Chinese in doing so, hence neither does the computer.
Sample citation and download growth with time. (Downloads only start in 2005 because that is when this paper was deposited.) Early growth rate and late decay metrics for downloads and citations can also be derived.
Sample of candidate OA-era metrics:

- Citations (C)
- CiteRank (like Google)
- Co-citations
- Downloads (D)
- C/D Correlations
- Hub/Authority index
- Chronometrics:
  - Latency/Longevity
- Endogamy/Exogamy
- Book citation index
- Links
- Tags
- Commentaries
- Journal Impact Factor

- h-index (and variants)
- Co-authorships
- Publication counts
- Number of publishing years
- Semiometrics (latent semantic indexing, text overlap, etc.)
- Research funding
- Students
- Prizes
There are plenty of repositories
But almost all of them are almost-empty of OA’s target content (5-25%)
One of the few exceptions – and the first: Why?
The world’s c. 15,000 research universities and institutions produce all research output, in all disciplines, funded and unfunded

- **World’s first Green OA Mandate**: University of Southampton School of Electronics and Computer Science (UK 2003)

- **World’s first University-Wide Green OA Mandate**: Queensland University of Technology (Australia Feb 2004)

- **Europe’s First Green OA Mandate**: University of Minho (Portugal Dec 2004)
University of Tasmania
+Repository -Incentive -Mandate
Green line: total annual output
Red line: proportion self-archived

Data courtesy of Arthur Sale
University of Queensland

+Repository +Incentive -Mandate

Green line: total annual output
Red line: proportion self-archived

Data courtesy of Arthur Sale
Queensland University of Technology
+Repository +Incentive +Mandate

Green line: total annual output
Red line: proportion self-archived

Data courtesy of Arthur Sale
Journal Policies - Summary Statistics So Far

Current Journal Tally:  **95% Green!**

FULL-GREEN = Postprint, PALE-GREEN = Preprint, GRAY = neither yet

Total number of publishers registered at ROMEO to date:  **414**

- 63.31%  6457  GREEN journals
- 31.65%  3228  PALE-GREEN journals
- 5.04%   514   GRAY journals
The ID/OA mandate applies (with no exceptions or delays) to the deposit of the author’s final, peer-reviewed draft (“postprint”).

This must be deposited *immediately upon acceptance for publication*, but the deposit need not be made Open Access.

Where access is embargoed (37%), the deposit can be made Closed Access.

During the embargo period, the Institutional Repository’s 

Button provides **Almost-Instant, Almost-OA**, for just a few extra keystrokes, as follows:
El crecimiento mundial de los requisitos de depósito
National Institutes of Health Public Access

The Public Access Policy ensures that the public has access to the published results of NIH funded research to help advance science and improve human health.

Access to Research Outputs

ROARMAP (Registry of Open Access Repository Material Archiving Policies)

as recommended by the Berlin Declaration

- Register your Institutional Policy in ROARMAP
- also register your Institutional Repository in ROAR

Summary By Type

<table>
<thead>
<tr>
<th>Type</th>
<th>Proposed Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>INSTITUTIONAL</td>
<td>90</td>
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<tr>
<td>DEPARTMENTAL</td>
<td>24</td>
</tr>
<tr>
<td>FUNDER</td>
<td>44</td>
</tr>
<tr>
<td>THESIS</td>
<td>60</td>
</tr>
<tr>
<td>MULTI-INSTITUTIONAL</td>
<td>5</td>
</tr>
<tr>
<td>TOTAL MANDATES</td>
<td>218</td>
</tr>
<tr>
<td>PROPOSED INSTITUTION</td>
<td>5</td>
</tr>
<tr>
<td>PROPOSED DEPARTMENTAL</td>
<td>2</td>
</tr>
<tr>
<td>PROPOSED FUNDER</td>
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</tr>
<tr>
<td>PROPOSED THESIS</td>
<td>0</td>
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<tr>
<td>PROPOSED PROPOSED MULTI-INSTITUTIONAL</td>
<td>5</td>
</tr>
<tr>
<td>TOTAL PROPOSED MANDATES</td>
<td>19</td>
</tr>
</tbody>
</table>

Universidade do Minho

Queensland University of Technology
So don’t pay for **Gold OA** today without first mandating **Green OA**

- **COPE**
- **SCOAP3**
Post-Gutenberg Post-Green-OA: Then What?

1. Green OA version enough?
2. Institutions cancel journal subscription
3. Journals downsize to peer-review
4. Journals convert to **Gold OA**
5. Institutions pay costs out of windfall cancellation savings
6. (“no-fault” peer review)
SUMMARY:

**OA: How?** Universities and funders mandate Green OA self-archiving

**Deposit Where?** In universities' own Institutional Repositories (IRs)

**Deposit How?** A few minutes of keystrokes per paper is all that stands between the world research community and 100% OA

**Deposit What?** Author's final, revised, peer-reviewed draft ("postprint")

**Deposit When?** Immediately upon acceptance for publication
Open Access: How?

Universities adopt the ID/OA mandate:

Immediate Deposit +
Optional Access +

Request eprint
The Optimal Open Access Mandate
The Optimal Open Access Mandate

• Immediate Deposit (required)
• Immediate Open Access (recommended)
• Permission Clause (optional)

• Make deposit the official means of submitting publications for annual performance review
• Implement usage and impact metrics
• Implement Button
Open Access: Why?

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3. To collect (and showcase and manage) a permanent record of the research output and impact of your university
Three sources of policy-making and strategic guidance

• EOS
• OASIS
• SPARC
Open Access policies for universities and research institutions

There are two basic types of policy – voluntary and mandatory. The former requests or encourages researchers to make their work Open Access by self-archiving it in the institutional repository: the latter requires this action. Whilst research managers, in the spirit of the academy and out of a reluctance to add more to the administrative burden of researchers, may shy away from requiring certain behaviours from their staff, in the case of Open Access it has been shown that voluntary policies have little effect.

The spontaneous rate of self-archiving by researchers to make their work Open Access is around 15-20% and this is not increased in institutions with voluntary policies on Open Access. Only mandatory policies bring the high level of self-archiving required to ensure a success of Open Access.
http://www.openoasis.org/

The following optimal wording for an Institutional Policy on Open Access for [institution] is recommended to accommodate publisher embargoes:

Institutional Managers & Policy Makers

The Optimal Open Access Policy for Institutions
http://www.arl.org/sparc/advocacy/campus/

Campus Open Access Policies

If you're considering a campus open-access policy, or already have one in development, SPARC is here to help. SPARC has coordinated with open-access policy leaders and experts to develop this new set of resources to support data-driven, community-engaging, and successful open-access policy development at institutions everywhere. Please explore and let us know how we can support you.

- **If you've initiated a campus open-access policy:**

  Some faculty members or administrators are unfamiliar with Open Access. If an open-access policy is under discussion on your campus, or you are involved in beginning such a discussion, it is essential that you provide such individuals with timely, accurate information about the reasons for adopting an open-access policy, and the mechanics for how such a policy would operate in connection with faculty publishing practices. [Read more]

- **If you're considering a campus open-access policy:**

  The Internet has brought unparalleled opportunities for expanding the availability of research by bringing down economic and physical barriers to sharing. To take advantage of these opportunities and to further their mission of creating, preserving, and disseminating knowledge, many academic institutions are taking steps to capture the benefits of Open Access by building digital repositories to distribute faculty scholarly articles and other research outputs. [Read more]

How we can help

Advisory Group

Hal Abelson, Massachusetts Institute of Technology
Michael W. Carroll, American University
Ray English, Oberlin College
Diane Graves, Trinity University
Lorraine Haricombe, University of Kansas
Stevan Harnad, University of Southampton
John Palfrey, Harvard University
Stuart Shieber, Harvard University
Peter Suber, Earlham College
John Willinsky, Stanford University
Heather Joseph, Executive Director, SPARC

1. LEARN MORE
2. REQUEST DOCUMENTS
3. REQUEST SUPPORT
Author’s URLs (UQAM & Southampton):
http://www.crsc.uqam.ca/
http://users.ecs.soton.ac.uk/harnad/

BIBLIOGRAPHY ON OA IMPACT ADVANTAGE:
http://opcit.eprints.org/oacitation-biblio.html

BOAI Self-Archiving FAQ:  http://www.eprints.org/self-faq/

CITEBASE (scientometric engine):  http://citebase.eprints.org/

EPRINTS:  http://www.eprints.org/

OA ARCHIVANGELISM:  http://openaccess.eprints.org/

ROAR (Registry of OA Repositories):  http://roar.eprints.org/

ROARMAP (Registry of OA Repository Mandates):
http://www.eprints.org/openaccess/policysignup/

OA maximises research

visibility
usage
uptake
applications
impact
productivity
progress
funding
manageability
assessability

by maximising research:

accessibility