These slides were made by Tim Brody, Chawki Hajjem and Stevan Harnad (Southampton University & Université du Québec à Montréal). Thanks also to Alma Swan (Key Perspectives Ltd), Arthur Sale (U. Tasmania), and Michael Kurtz (Harvard U.) for the many slides we have poached.

Permission is granted to anyone to use them to promote open access and self-archiving as long as their source is acknowledged.
Why researchers publish their work

- Communicate results to peers: 100%
- Advance career: 90%
- Personal prestige: 80%
- Gain funding: 70%
- Financial reward: 10%
“Online or Invisible?” (Lawrence 2001)

“average of 336% more citations to online articles compared to offline articles published in the same venue”

http://www.neci.nec.com/~lawrence/papers/online-nature01/
Citation impact for articles in the same journal and year is consistently higher for articles that have been self-archived by their authors. (Below is a comparison for Astronomy articles that are and are not in ArXiv.)
By discipline: total articles (OA+NOA), gray curve; percentage OA: (OA/(OA+NOA)) articles, black bars; percentage OA citation advantage: ((OA-NOA)/NOA) citations, white bars, averaged across 1992-2003 and ranked by total articles. All disciplines show an OA citation advantage.

- marginal dollar value of one citation in 1986: $50-$1300 (US), depending on field and number of citations.

- (an increase from 0 to 1 citation is worth more than an increase from 30 to 31; most articles are in citation range 0-5.)

- Updating by about 170% for inflation from 1986-2005: $85.65-$2226.89
• Research Councils UK (RCUK) spend £3.5 billion pounds annually.

• UK produces at least 130,000 research journal articles per year (ISI) yielding 130,000 articles x 5.6 = 761,600 citations

• Self-archiving increases citation impact 50%–250%, so far only 15% of researchers are self-archiving spontaneously.

• multiply by UK’s 85% not-yet-self-archived output as a proportion of the RCUK’s yearly £3.5bn research expenditure

• 50% x 85% x £3.5.bn =

  £1.5bn worth of loss in potential research impact
  (323,680 potential citations lost)
Research Assessment, Research Funding, and Citation Impact

“Correlation between RAE ratings and mean departmental citations +0.91 (1996) +0.86 (2001) (Psychology)”

“RAE and citation counting measure broadly the same thing”

“Citation counting is both more cost-effective and more transparent”

(Eysenck & Smith 2002)

http://psyserver.pc.rhbnc.ac.uk/citations.pdf
Time-Course and cycle of **Citations (red)** and **Usage (hits, green)**


1. Preprint or Postprint appears.
2. It is downloaded (and sometimes read).
3. Next, citations may follow (for more important papers)…
4. This generates more downloads…
5. More citations…
Limited Access: Limited Research Impact

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

12-18 Months

New impact cycles: New research builds on existing research
Maximized Research Access and Impact Through Self-Archiving

**Impact cycle begins:**
Research is done

Researchers write pre-refereeing “Pre-Print”

Submitted to Journal

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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

Pre-Print is self-archived in University’s Eprint Archive

Post-Print is self-archived in University’s Eprint Archive

New impact cycles:
Self-archived research impact is greater (and faster) because access is maximized (and accelerated)

New impact cycles:
New research builds on existing research

12-18 Months
Respondent profiles I (n=1296)

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage of total respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia/New Zealand</td>
<td>7</td>
</tr>
<tr>
<td>Asia (except China and Japan)</td>
<td>4</td>
</tr>
<tr>
<td>China</td>
<td>3</td>
</tr>
<tr>
<td>Japan</td>
<td>1</td>
</tr>
<tr>
<td>Canada</td>
<td>4</td>
</tr>
<tr>
<td>USA</td>
<td>21</td>
</tr>
<tr>
<td>Central/South America</td>
<td>6</td>
</tr>
<tr>
<td>European union (except UK)</td>
<td>17</td>
</tr>
<tr>
<td>Other European countries (exc EU or UK)</td>
<td>10</td>
</tr>
<tr>
<td>UK</td>
<td>18</td>
</tr>
<tr>
<td>Middle East</td>
<td>4</td>
</tr>
<tr>
<td>Africa</td>
<td>4</td>
</tr>
</tbody>
</table>
Respondent profiles II (n=1296)

<table>
<thead>
<tr>
<th>Subject</th>
<th>Percentage of total respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture &amp; food science</td>
<td>5</td>
</tr>
<tr>
<td>Business &amp; management</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry</td>
<td>6</td>
</tr>
<tr>
<td>Computer sciences</td>
<td>12</td>
</tr>
<tr>
<td>Earth &amp; geographical sciences</td>
<td>3</td>
</tr>
<tr>
<td>Engineering, materials science</td>
<td>8</td>
</tr>
<tr>
<td>Humanities</td>
<td>8</td>
</tr>
<tr>
<td>Law &amp; politics</td>
<td>1</td>
</tr>
<tr>
<td>Library &amp; information science</td>
<td>6</td>
</tr>
<tr>
<td>Life sciences</td>
<td>17</td>
</tr>
<tr>
<td>Mathematics</td>
<td>6</td>
</tr>
<tr>
<td>Medical sciences</td>
<td>17</td>
</tr>
<tr>
<td>Physics</td>
<td>7</td>
</tr>
<tr>
<td>Psychology</td>
<td>9</td>
</tr>
<tr>
<td>Social sciences &amp; education</td>
<td>10</td>
</tr>
</tbody>
</table>
Awareness of self-archiving by subject area
“If your institution and/or funder mandated self-archiving, what would you do?”

That mandating question....

- Whole population: 81% would comply willingly, 13% would comply reluctantly, 5% would not comply
- Self-archivers: 81% would comply willingly, 13% would comply reluctantly, 5% would not comply
- Non self-archivers: 78% would comply willingly, 16% would comply reluctantly, 6% would not comply

Key Perspectives Ltd
Institutional-level mandates

- QUT: introduced a mandate to self-archive at the beginning of 2004
- Southampton University School of Electronics & Computer Science, Jan 2004
- CERN
- University of Minho, Portugal
- University of Zurich
Example 1 (U of T):
+1: Incentives *(visible impact statistics for authors)* -2: No library activism -3: No mandate
Annual research deposit growth relative to annual research output is slow and weak
Example 2 (UQ):
+1: Incentives (visible impact statistics for authors) +2: library activism; -3: No mandate
Annual research deposit growth relative to annual research output better, but still too slow and weak
Example 3 (QUT):
+1: Incentives (visible impact statistics for authors) +2: library activism; +3: Mandate

Annual research deposit growth relative to annual research output matched
Example 4 (Soton-ECS):
+1: Incentives (visible impact statistics for authors)  +3: Mandate
Annual research deposit growth relative to annual research output matched

University of Southampton Department of Electronics and Computer Science
http://eprints.ecs.soton.ac.uk/
CERN Self-archiving as percentage of annual output
Southampton (ECS) Bureaucratic “Keystroke” Policy: The Nth (OA) Keystroke

The metadata and full-text need merely be deposited, for the bureaucratic functions (for record-keeping and performance evaluation purposes)

The Nth (OA) Keystroke is strongly encouraged (for both preprints and postprints) but it is up to you.
Current Journal Tally: 93% of journals have already given their official green light to self archiving

FULL-GREEN = Postprint 68%
PALE-GREEN = Preprint 25%
GRAY = neither yet 7%

Publishers to date: 129
Journals processed so far: 8698
http://romeo.eprints.org/stats.php
UK House of Commons Science and Technology Committee Recommendation to Mandate Institutional Self-Archiving
http://www.publications.parliament.uk/pa/cm200304/cmselect/cmsctech/399/39903.htm

“This Report recommends that all UK higher education institutions establish institutional repositories on which their published output can be stored and from which it can be read, free of charge, online.

“It also recommends that Research Councils and other Government Funders mandate their funded researchers to deposit a copy of all of their articles in this way.

[The Report also recommends funding to encourage further experimentation with the “author pays” OA journal publishing model.]

US House of Representatives Appropriations Committee Recommendation that the NIH should mandate self-archiving
http://thomas.loc.gov/cgi-bin/cpquery/?&db_id=cp108&r_n=hr636.108&sel=TOC_338641&

“The Committee... recommends NIH develop a policy... requiring that a complete electronic copy of any manuscript reporting work supported by NIH grants.. be provided to PMC upon acceptance... for publication... [and made] freely and continuously available six months after publication, or immediately [if]... publication costs are paid with NIH grant funds.

(since passed by both House and Senate, then weakened by NIH to “encourage” rather than require, and within 12 months rather than 6; publication-charge rider dropped; delay/embargo period up to author; encouraged to self-archive as soon as possible)
RESEARCH COUNCILS UK (RCUK) will require for all grants awarded from [date TBA] that… a copy of any resultant published journal articles or conference proceedings should be deposited in an appropriate e-print repository. Deposit should take place at the earliest opportunity, wherever possible at or around the time of publication. 

http://www.rcuk.ac.uk/access/index.asp

INSTITUTIONAL OPEN-ACCESS PROVISION POLICY: Our institution hereby commits itself to adopting an official institutional policy of providing open access to our own peer-reviewed research output -- i.e., toll-free, full-text online access, for all would-be users webwide -- in accordance with the Budapest Open Access Initiative and the Berlin Declaration:

All articles are to be deposited in our own Open Access Institutional Repository immediately upon acceptance for publication

http://www.eprints.org/signup/sign.php

JISC INTERNATIONAL AUTHOR SURVEY (Swan & Brown 2005) "asked authors how they would feel if their employer or funding body required them to deposit copies of their published articles in one or more… repositories. The vast majority [95%]... reported that they would comply."  

http://eprints.ecs.soton.ac.uk/11005/
Why an institutional repository?

- Fulfils a university’s mission to engender, encourage and disseminate scholarly work
- Enables a university to compile a complete record of its intellectual effort
- Forms a permanent record of all digital output from an institution
- Enables standardised online CVs for all researchers (e.g. RAE exercise)
- ‘Marketing’ tool for universities
- An institution can mandate self-archiving across all subject areas

Key Perspectives Ltd
Institutional Archives Registry: 388 Archives, most near empty!
http://archives.eprints.org/eprints.php

Archive Type

* Research Institutional or Departmental (259)
* Research Cross–Institution (69)
* e–Theses (60)
* e–Journal/Publication (48)
* Database (11)
* Demonstration (26)
* Other (76)

Software

<table>
<thead>
<tr>
<th>Archives</th>
<th>Records</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPrints</td>
<td>195</td>
<td>104090</td>
</tr>
<tr>
<td>DSpace</td>
<td>116</td>
<td>148855</td>
</tr>
<tr>
<td>ETD–db</td>
<td>21</td>
<td>257197</td>
</tr>
<tr>
<td>OPUS</td>
<td>19</td>
<td>4984</td>
</tr>
<tr>
<td>Bepress</td>
<td>16 (37)</td>
<td>35330</td>
</tr>
<tr>
<td>BMC OpenRepository (?)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CDSWare</td>
<td>8</td>
<td>99984</td>
</tr>
<tr>
<td>ARNO</td>
<td>4</td>
<td>168766</td>
</tr>
<tr>
<td>DoKS</td>
<td>3</td>
<td>2027</td>
</tr>
<tr>
<td>HAL</td>
<td>3</td>
<td>45263</td>
</tr>
<tr>
<td>Fedora</td>
<td>1</td>
<td>118</td>
</tr>
<tr>
<td>EDOC</td>
<td>1</td>
<td>37488</td>
</tr>
<tr>
<td>MyCoRe</td>
<td>1</td>
<td>1721</td>
</tr>
<tr>
<td>Other</td>
<td>162</td>
<td>2463438</td>
</tr>
</tbody>
</table>

Country

1 United States (154)
2 United Kingdom (65)
3 Germany (53)
4 Canada (31)
5 Brazil (30)
6 France (26)
7 Italy (20)
8 Australia (19)
9 Netherlands (18)
10 India (13)

* Spain (9)
* Belgium (9)
* Japan (6)
* Denmark (6)
* China (5)
* Mexico (5)
* Finland (4) (11)
* Switzerland (4)
* Portugal (4)
* Hungary (4)
* Portugal (4)
* South Africa (4)
* Chile (3)
* Austria (3)
* Colombia (3)
* Singapore (2)

* Ireland (2)
* Norway (2)
* Russia (2)
* Greece (2)
* Turkey (1)
* Argentina (1)
* Israel (1)
* Slovenia (1)
* Croatia (1)
* Namibia (1)
* Peru (1)
* Taiwan (1)
* Pakistan (1)
* New Zealand (1)
* Costa Rica
Universities and research institutions who officially commit themselves to implementing the Berlin Declaration by adopting a systematic institutional self-archiving policy for their own peer-reviewed research output are invited to describe their policy in this Registry so that other institutions can follow their example.

_Self-archive unto others as ye would have them self-archive unto you..._

<table>
<thead>
<tr>
<th>Institution</th>
<th>OA Archive(s)</th>
<th>OA Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>GERMANY: Universitaet Hamburg</td>
<td><a href="http://www.rrz.uni-hamburg.de/FZH/archiv.html">http://www.rrz.uni-hamburg.de/FZH/archiv.html</a></td>
<td>Policy</td>
</tr>
<tr>
<td>GERMANY: Bielefeld University</td>
<td><a href="http://bieson.ub.uni-bielefeld.de/index.php">http://bieson.ub.uni-bielefeld.de/index.php</a></td>
<td>Policy</td>
</tr>
<tr>
<td>GERMANY: University of Bremen</td>
<td><a href="http://elib.suub.uni-bremen.de/">http://elib.suub.uni-bremen.de/</a></td>
<td>Policy</td>
</tr>
<tr>
<td>*SWITZERLAND: University of Zurich</td>
<td><a href="http://ask.lub.lu.se/">http://ask.lub.lu.se/</a></td>
<td>Policy</td>
</tr>
<tr>
<td>*UK: Southampton Univ. Electronics/Computer Science</td>
<td><a href="http://eprints.ecs.soton.ac.uk/">http://eprints.ecs.soton.ac.uk/</a></td>
<td>Policy</td>
</tr>
<tr>
<td>*PORTUGAL: Universidade do Minho, Portugal</td>
<td><a href="https://repositorium.sdum.uminho.pt">https://repositorium.sdum.uminho.pt</a></td>
<td>Policy</td>
</tr>
<tr>
<td>UK University of Southampton</td>
<td><a href="http://eprints.soton.ac.uk/">http://eprints.soton.ac.uk/</a></td>
<td>Policy</td>
</tr>
<tr>
<td>US: University of Kansas</td>
<td><a href="http://kuscholarworks.ku.edu/">http://kuscholarworks.ku.edu/</a></td>
<td>Policy</td>
</tr>
</tbody>
</table>
Quo usque tandem patientia nostra...?

How long will we go on letting our cumulative daily/monthly/yearly research-impact losses grow, now that the online medium has at last made this all preventable?

Our cumulative yearly/monthly/daily impact losses as long as we keep delaying Open Access (assuming even only a minimal 50% OA advantage)