A Story about Efficiencies
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Linking from one paper to another at scale
Current Mission statement:

“Crossref’s goal is to be a trusted collaborative organization with broad community connections; authoritative and innovative in support of a persistent, sustainable infrastructure for scholarly communication”
Where Crossref started

- Not-for profit: founded in 2000
- Set up by publishers to enable reliable reference linking.
- Bringing together publishers and their data for the benefit of the whole community.
- 16-member international board of directors from membership
- Based in Oxford, UK and Boston, USA
What Crossref does

- Network for scholarly community (over 5,000 publisher members)
- Run services publishers cannot do individually
- Facilitator for industry technical innovation
- Extended to include other data and services that address the status and relationships of and between scholarly works of all kinds.
- Engage many types of organizations: Publishers and “non-publisher” publishers; Commercial and non-profits; OA & Subscription; Funders; Researchers; Libraries
The DOI

- Digital Object Identifier
- Solves link rot (broken links)
- Uniquely identifies a piece of content
- Actionable
- Trademark of the International DOI Foundation (IDF)
81,000,000 content items
Over 1 billion DOI resolutions per year
DOIs aren’t just for articles

- Journals
- Books
- Conference proceedings
- Standards
- Technical reports
- Working Papers
- Theses and dissertations
- Components (figures, tables)
- Datasets (supplementary data)
- Databases
A Story about Efficiencies

Linking from a paper to its author information at scale.

Linking from a researcher to their papers at scale.
ORCID’s vision is a world in which all who participate in research, scholarship, and innovation are uniquely identified and connected to their contributions and affiliations across disciplines, borders, and time.
ORCID is an open, not-for-profit organization that serves the research community by collaborating and innovating with organizations like yours.

We provide unique ORCID identifiers free of charge to individuals, allowing them to reliably and clearly connect all participants in the research, scholarship, and innovation process with their contributions across time, disciplines, and borders.
1. Reduce/eliminate need for researcher disambiguation within and between systems
2. Enable automatic system-to-system updates for researcher reporting
3. Validate your researchers’ affiliation, awards, or works – building trust in the overall research infrastructure
4. Improve speed and accuracy of research reporting
5. Maintain connections with researchers despite name/affiliation changes
6. Ensures your researchers comply with funders and publishers requiring ORCID
7. Learn from other organizations’ experiences and share your own
8. Be eligible for public recognition of good ORCID integrations
9. Get involved and help shape ORCID’s future priorities and goals
10. Play your part in making the Internet work better

orcid.org
A Story about Efficiencies

Funders requires grantees to either deposit accepted manuscript or final articles for public access or have publisher make accepted manuscript or final article publicly accessible.
**Global approach to open access**

**Canada**
- Active in OA discussions and looking at gold and green
  - Tri-Agency policy: gold or 12 month deposit mandate
  - Gates Foundation: gold open access

**United States**
- Federal funders formulating policies to meet OSTP directive, e.g.
  - NIH (gold/green; deposit to PMC in 12 mo)
  - DOE (green or gold; public access in 12 mo. via PAGES & CHORUS)
  - NSF (gold/green; public access in 12 mo.)
- CHORUS working with DOD, DOE, NSF, Smithsonian, NIST, USGS

**Europe**
- UK funder mandates focused on gold (Research Councils UK & Wellcome Trust)
- VSNU driving expansion in gold open access
- Green open access mandates in Italy & Spain
- All EU members formulating open access policies at either national, funder or institutional level.

**Latin America**
- Focus on green open access
- Argentina: MINCYT introduced 6 month deposit mandate
- Brazil: Government formulating green open access policy
- Mexico: OA legislation passed to support repository development

**Africa**
- Developing repositories
- Publishers enabling philanthropic access
- New open access journals to support local research needs
- Some institutions have open access mandates, but no policies from any funders or Governments

**Asia Pacific**
- China: CAS & NSF; gold or green open access, deposit within 12 months
- ARC & NHMRC in Australia have 12 month self-archive mandate, as does A*Star in Singapore
- Other funders considering policy

Slide courtesy of Alicia Wise, Elsevier and David Crotty, Oxford University Press, with slight adaptations.
CHORUS advances sustainable, cost-effective public access to articles reporting on funded research in ways that benefit all in the scholarly communications community.

- 501(c)(3) not-for-profit membership organization
- Leverages existing infrastructure
- Promotes collaboration and compliance
- Sparks innovation
- Broadens the dialogue among publishers, societies, funders, service providers, institutions, and other stakeholders
How Does CHORUS Help?

Institution

Funder

Public

Researcher

Publisher

PRESERVATION

IDENTIFICATION

ACCESS

DISCOVERY

COMPLIANCE
Cost-effective Public Access Solution
Builds on Existing Infrastructure

Access
Identification
Discovery
Compliance
Preservation

CHORUS
Services
Open APIs

Persistent Identifiers
Trusted Archives

Publishing Platforms
Manuscript Tracking Systems

Crossref
PORTICO
ORCID

... AND MORE

... AND MORE

Advancing Public Access to Research | www.chorusaccess.org
Advancing Public Access to Research

PLUS OVER 118 SIGNATORIES
US Agencies & CHORUS

Department of Defense
Announced Partnership on 3 February 2016
Signed Agreement on 18 December 2015

National Science Foundation
Announced Partnership on 30 November 2015
Signed Agreement on 1 October 2015

US Geological Survey
Announced Partnership on 16 November 2015
Signed Agreement on 23 October 2015

Smithsonian
Announced Partnership on 18 August 2015
Signed Agreement on 24 June 2015

NIST
Signed Pilot Agreement on 9 July 2015

US Department of Energy
Announced Partnership on 4 August 2014
Signed Agreement on 15 April 2015

Active discussions with 5-10 other US federal agencies
## Monitored Articles by US Agency

<table>
<thead>
<tr>
<th>DOIs / Articles</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>238,026</td>
<td>reported in CHORUS Dashboard</td>
</tr>
<tr>
<td>50,532</td>
<td>verified publicly accessible today</td>
</tr>
</tbody>
</table>

As of 6/7/16
What Funding Agencies are Saying...

When you’re a federal agency and there’s a data call... it’s a huge resource drain. *With CHORUS, because they’re collecting this data continuously and in a consistent way, all that’s automated for us, and that’s a big plus.*

Keith Kirk
USGS

Given the extremely limited budget science agencies have because of the flat funding...for over a decade, we needed to have a cost-effective solution...for all these agencies it’s a grand experiment.

Jeffrey Salmon
DOE

...DOE has been providing public access to research since 1947. This has meant keeping up with and implementing radically changing technology across decades...*Formalizing our collaboration can only propel our acquisition process leading to more comprehensive coverage of the landscape of articles.*

Katherine Sharpless
NIST
Jim Kurose
NSF

...I’d like to combine the usage statistics from PubMed Central with CHORUS’s usage statistics to get a good idea of what our total usage is, so our library staff knows where to put their subscription money.

...we [NSF] are very much looking forward to working with CHORUS to help further our public access goals.

Reported by Lisa Peet
Library Journal, 1/21/16
How CHORUS Works: Access

- Embargo Period Expires or Author/Funder Pays for Public Access
- Accepted Author Manuscript becomes publicly accessible
- Version of Record becomes publicly accessible
US Agency Interactions

- Ingest bibliographic and compliance metadata via Open API
- Securely harvest full text for indexing from publishers
- Use dashboards for compliance tracking
- Present metadata on agency portal
- Use regular email alerts for compliance tracking
- Link to full text on publisher sites via DOI
- Engage with publisher members on compliance issues
• SHARE and CHORUS – work is complementary, not competitive
• CHORUS objective: interoperate with scholarly repositories and other systems providing access to scholarly articles
• Agreed to work jointly on persistent identifiers, metrics, and SHARE Notify system
• Exploring more areas of collaboration
• Active member of SHARE joint working group
Value cross-linking data and articles
CHORUS infrastructure can link to data repositories
Unclear if there is one unified mechanism for data and publications
Simplify procedures for researcher compliance and funding agency monitoring
Member RDA-WDS Publishing Data Services Working Group
CHORUS to use standard identifier schemes
CHORUS + Academic Institutions: Much to Learn, Much to Offer

Active engagement with librarians and the Office of Research through an Academic Advisory Group can:

○ Provide key stakeholder perspectives
○ Inform the development of new CHORUS capabilities that
  » help track faculty research output
  » relieve administrative burden
  » provide metrics on university research impact
○ Do all of the above sustainably and cost-effectively
Institution (or CHORUS) looks up DOIs for staff, faculty or student authored content on Scopus (or preferred service).

Sends relevant DOIs and metadata.

CHORUS filters DOIs to include US agency funded research only. Monitors relevant DOIs for public accessibility on publisher sites, reuse license urls recorded at Crossref, preservation at CLOCKSS or Portico, ingestion status on agency portals.

CHORUS creates and updates Institution dashboards.

CHORUS alerts Institution about publicly accessible content - monthly.
Institution uses metadata, dashboards and reports to populate research information management systems and encourage identified university grantees to comply with their US Funder public access obligations.

Institution uses metadata, dashboards and reports to help compile reports back to US Funders about public access compliance.

Librarian
Office of Research

Researchers

and more . . .
Summary

1. Meets the OSTP Public Access guidelines
2. Established partnerships with funding agencies
   - Help us grow as an authorized solution for meeting US agency policy requirements for grants and contracts
3. Free to agencies
   - Keep agency money for research
4. Efficient for universities
   - No added compliance burden for faculty
Join our institution pilot and Academic Advisory Group

Contact: Howard Ratner
hratner@chorusaccess.org

www.chorusaccess.org | @chorusaccess

Access • Discovery • Compliance • Identification • Preservation