UNDERSTANDING CHORUS

What is CHORUS?

The Clearinghouse for the Open Research of the United States (CHORUS) is a framework for a possible public-private partnership to increase public access to peer-reviewed publications that report on federally-funded research. Conceived by publishers, CHORUS would:

- Provide a full solution for agencies to comply with the OSTP memo on public access to peer-reviewed scientific publications reporting on federally-funded research
- Build on publishers' existing infrastructure to enhance public access to research literature, avoiding duplication of effort, minimizing cost to the government and ensuring the continued availability of the research literature
- Serve the public by creating a streamlined, cohesive way to expand access to peer-reviewed articles reporting on federally-funded research. Reflecting the OSTP memo, CHORUS will present and preserve these as digital form, final peer-reviewed manuscripts or final published documents
- Support funding agencies in fulfilling the OSTP directive to provide public access, use public-private partnerships where possible and avoid extra-budgetary costs; CHORUS would require little to no federal funding
- Utilize current and developing tools, resources and protocols for discoverability, search, archiving and preservation (such as CrossRef, FundRef and ORCID), ensuring continued innovation in the delivery of scholarly communication

What would CHORUS do?

- Identify journal articles resulting from federal funding
- Enable a reader to access, free of charge, a full-text version of all peer-reviewed articles reporting on the results of federally funded research
- Streamline compliance for authors and funding agencies by integrating public access into the publishing system
- Provide an open structure to enable discovery and search through familiar, commercial search engines such as Google Scholar and Microsoft Academic Search as well as government and library search systems
- Ensure ongoing and longterm access to and preservation of these articles and their updates

Who is involved in CHORUS?

- CHORUS represents a broad-based group of scholarly publishers, both commercial and not-for-profit; this group collectively publishes the vast majority of the articles reporting on federally-funded research
- CHORUS includes a resource partner, CrossRef (details on CrossRef and FundRef follow), a nonprofit organization responsible for enabling linking among the world's scholarly publishing platforms
- Publishers involved in CHORUS have engaged with funding agencies subject to the OSTP memo and are in continuing discussions to determine how CHORUS can suit agency needs

<u>Why CHORUS?</u>

What are the benefits of CHORUS for publishers?

- The mission of scholarly publishers is to disseminate knowledge; the advancement of public access aligns with that mission
- CHORUS leverages publisher investments in a proven infrastructure for identifying, accessing and archiving journal articles
- CHORUS minimizes additional compliance costs for publishers
- CHORUS enables publishers to offer free public access in context while maintaining their continued access to information about article usage, so that publishers can continue their critical role in science communication and innovation

What are the benefits of CHORUS for agencies?

- CHORUS minimizes compliance costs for agencies by integrating compliance with existing publishing practices and systems
- CHORUS provides a framework that minimizes development and operational costs for agencies, in keeping with OSTP's requirement that resources must be identified within existing agency budgets
- CHORUS allows agencies to focus on their research funding mission rather than investing time and energy in building infrastructure that duplicates what already exists
- OSTP recognized the integral contributions that scholarly publishers bring to scientific knowledge and new discoveries as well as the need for public-private collaboration. CHORUS provides an approach that preserves scholarly publishing through collaboration
- CHORUS can interface with any existing infrastructure or repository for identifying and linking to related content

What are the benefits of CHORUS for universities, libraries and researchers?

- CHORUS provides access to research articles in a way that is familiar to the research community: finding them in the journals in which they are published. This streamlines the research effort, ensures that articles are viewable in context and allows for surveying the past topical literature
- CHORUS can interface with institutional repositories for identifying and linking to related content; CHORUS minimizes compliance costs for universities and researchers by integrating compliance with existing publishing practices and systems
- CHORUS protects limited research funding by eliminating the need for agencies to duplicate infrastructure

<u>Additional Background</u>

What is the cost of CHORUS?

The combined existing infrastructures of CrossRef and the CrossRef member publishers are capable of addressing the vast majority of the requirements articulated in the OSTP directive. Publishers have offered to subsume the remaining costs. Thus, the essential elements of the OSTP directive for public access to publications can be provided with little or no expenditure of federal agencies' funds – preserving these resources for the direct funding of research.

Additionally, the required CrossRef metadata to link to articles that report on federally-funded research are already available to the federal agencies, universities, research libraries and the public at no cost. FundRef is in place to allow the addition of metadata to identify these articles. More sophisticated interfaces could be developed according to agency needs with interfaces (APIs) and infrastructure provided by CHORUS.

Governance and accountability

Publishers will be responsible for ensuring that each article subject to the public access policy becomes available to users on the appropriate date. Publishers will also provide listings of such articles to agencies and research institutions to satisfy their own accountability requirements. There will be back-up systems to ensure persistent access in case of compliance issues, whether technical or otherwise.

In addition to publishers, CHORUS governance will include agency representatives to oversee high-level requirements, monitor implementation and maintain the essential interactions with agencies and connections to the US research community. CHORUS will also involve key stakeholder groups such as universities and research libraries to ensure these partners can easily and cost-effectively comply with the OSTP directive. Additionally, they will provide expertise in critical areas such as digital preservation.

Embargo periods

Articles will be available through CHORUS after the determined embargo for each discipline and agency.

In its directive released in February 2013, OSTP suggested 12 months as a guideline for embargoes for posting peer-reviewed published journal articles but also cited the need for flexibility in setting the plan "(based on needs) unique to each field." Publishers' statement on OSTP and background

What is the status of CHORUS and what's next?

The publishers that conceived CHORUS are in discussions with OSTP, the funding agencies, universities and research library communities. Agency and research university representatives have been invited to join the project teams. Our plan is to work out the system architecture and technical specifications over the summer and have an initial proof of concept completed by August 30, 2013.

About CrossRef and FundRef

What are FundRef and CrossRef and what are their roles in CHORUS?

CrossRef is a non-profit organization that oversees the international database of metadata on scholarly publications. It is responsible for enabling reference linking among the world's scholarly publishing platforms. CrossRef has registered more than 60 million Digital Object Identifiers for electronic versions of research articles, book chapters and technical reports.

CrossRef was launched in 2000 and now has more than 4300 participating scholarly publishing organizations from around the world, covering all scholarly disciplines. Participating publishers are collectively responsible for more than 27,000 journal titles that publish more than 1.8 million articles per year. Nearly 2000 libraries have signed up for free CrossRef accounts to take full advantage of CrossRef metadata; countless others (e.g. researchers) use CrossRef's open interfaces, which don't require signing up for an account, and services such as abstracting and indexing databases pay for access to support commercial services. CrossRef website

CrossRef launched a production version of FundRef on May 27, 2013. This collaboration between publishers and three US funding agencies (DOE, NSF and NASA) identifies journal articles reporting research from federal funding through publisher-provided metadata. It will provide the essential back-end infrastructure for CHORUS. [FundRef website](#)

CrossRef and, now, FundRef create the infrastructure and protocols that will establish a foundation for a streamlined, comprehensive public access distribution solution for federal agencies: one specifically designed to be nimble and scalable and to more efficiently serve the public demand for access without the burden of creating a new system from scratch.

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