

**TRANSLATION**

**CHORUS Dashboard Service and Initiatives at Chiba University Library**

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**1. Introduction**

Chiba University formulated the “Chiba University Open Access Policy” in March 2016 (1). This policy stipulates that the research results of faculty members published in academic journals, etc. should be published in institutional repositories. On the other hand, the catch rate of peer-reviewed academic papers was only 6%, and it was suggested that it was difficult for researchers themselves to self-archive in institutional repositories (2). For this reason, in the process of formulation and approval, it has become a challenge to realize open access (OA) without burdening researchers.

This article uses the CHORUS Institutional Dashboard Service (3) to explore the third OA path, which is neither a green OA, which is a burden on authors, nor a gold OA, which has the financial burden of author processing costs (APCs).

**2. What is the CHORUS dashboard service?**

CHORUS is creating a future where the output flowing from funded research is easily and permanently discoverable, accessible and verifiable by anyone in the world. It is an initiative that helps institutions, publishers, researchers and research institutions achieve public access to research papers (4). The operation is conducted by CHOR Inc., a non-profit organization based in the United States.

CHORUS includes 60 major academic publishers (5) (6) such as Elsevier, Wiley, Springer Nature, etc., which provide “Publicly accessible versions” of articles on the publishers websites. Where a paper is not published OA under a Creative Commons licence, in some cases a text file of the accepted manuscript is published. The version, format of the text file and the choice of embargo are left to the publisher (7). The author's final version published by the publisher can be viewed by anyone on the publisher's website, but when accessed from an environment that allows viewing of subscribed electronic journals, the publisher's version of record is automatically displayed. The publication of text files by publishers is made in response to the OA requirements of research results by funding agencies.

Institutions affiliated with CHORUS subscribe to the "CHORUS Dashboard Service" (8) (9) (10). This is a service in which CHORUS monitors and provides data on all the articles published by the institution and their OA status. The Japan Science and Technology Agency (JST) is one of the funding organizations participating with CHORUS.

The data provided on the CHORUS Dashboard uses persistent identifiers including Crossref Open Funder Registry (formerly FundRef), Scopus, ORCID, Scholix, DataCite, Portico and CLOCKSS and Crossref. (11) (12) (13). Its feature is that the information provided links existing infrastructures related to the distribution of academic information.

There are three types of dashboards, one for research institutions, one for publishers and one for funding agencies. The "CHORUS Institution Dashboard Service" for research institutions, which is contracted by Chiba University, provides data on the papers published by researchers from the institution research organization. There is a display of statistical graphs including line graphs showing changes in the number of captured papers for example, pie charts for each item, such as the ratio of OA papers confirmed on the publishers' platforms, and a bar graph with papers per funding agency (Fig. 1).

In addition, in the "CHORUS Japan Dashboard" for funding agencies and contracted by JST (15) shows JST-supported papers regardless of the researcher's institution.

Extracting data from behind the Dashboard Data at a paper level includes the published paper DOI, author information with links to ORCID IDs (see CA1740), datasets and other publication sites, and there is a search function for CHORUS captured papers.

### **3. Initiatives in institutional repositories**

Chiba University established a "CHOR-JST pilot project" (see E1844) conducted between CHOR, Inc. and JST, a Japanese funding agency, from August 2016 to May 2017 (17). In December 2017, Chiba University subscribed to the CHORUS Institutional Dashboard Service (18). As an experimental effort, we examined the model and flow of work by registering the article information on the dashboard in our institutional repository and linking to the articles on the publishers' platforms via the article DOIs.

The specific work procedure is as follows:

- (1) Where an article is confirmed as OA on the publisher's website by CHORUS, the data is extracted from the dashboard.
- (2) The metadata is converted into junii2 format using Excel macros.
- (3) The metadata is loaded into the institutional repository and released.
- (4) Chiba University researchers Identified in the KAKEN database have author information included (NRID).
- (5) Japanese names are added to the institutional repository.

A total of 167 articles by November 2019 (14 November 2016, 2 January 2017, 63 March 2018, 88 June 2019) were registered in the institutional repository. The improvement of the dashboard was fed back to CHORUS.

#### 4. Evaluation

The CHORUS services are similar to Gold OA in that papers published in journals on publisher websites become OA, but are similar to Green OA in that they open the papers without the payment of APCs. While there are concerns about the increase in APC costs, and there are limits to the expansion of self-archiving by authors, this experiment confirms that it is meaningful as a method for promoting OA at least in the short term. In addition, version management and embargo management are performed at the publishers' sites, and by analysing the CHORUS data rather than sourcing our own data reduces the management burden at the library. In addition, various ideas were suggested by Chiba to CHORUS to make the CHORUS Dashboard easier to use for Japanese funders and research institutions. Resulting from this dialogue CHORUS added the author affiliation report to the extracted data options.

The CHORUS Institutional Dashboard Service makes it easy to understand the research results of each institution, and further expectations are placed on improving visibility by distributing metadata through institutional repositories. The following three points can be made.

First, the coverage at the trial stage was low, but now the number of publishers affiliated with CHORUS has increased and the coverage has also increased. The target funding agencies have been gradually expanded to funding agencies registered in the Funder Registry. The Japan Society for the Promotion of Science (JSPS), the Japan Agency for Medical Research and Development (AMED), and the New Energy and Industrial Technology Development Organization (NEDO) were also added in January 2019 as funding institutions in Japan (19). However, it should be noted that the confirmation of OA status by CHORUS is limited to funding organizations (currently 10 organizations) that are members of CHORUS. JST continues to verify the completeness, immediacy, accuracy of information and OA conversion rate of the CHORUS dashboard (20), and in order to prevent omissions of papers from the CHORUS data, it is necessary to inform researchers that they must enter, Funder IDs, Grant Numbers, ORCID IDs.

Second, the CHORUS dashboard is not intended to provide bibliographic information itself. Therefore, if detailed bibliographic information is to be entered into an institutional repository, metadata must be supplemented. Obtaining metadata from others based on the provided DOI and ORCID identifiers is a matter for further study (21). This point is expected to be simplified by applying the JPCOAR schema (22).

Third, at the initial stage of the trial project "Publicly accessible versions" were obtained from the publisher as the main text file and negotiated between Chiba University and the publisher to register it in the institutional repository. The publisher's approval was not obtained. It should be noted that a new contract between Couperin and Elsevier, a French academic institution consortium, will provide a text file from the publisher to the repository (23), and we hope that the publisher's attitude will change in the future.

#### 5. For the future

The CHORUS Institution Dashboard has the advantage of allowing a research institution to easily monitor the OA status of research results that have received funding. Information is also provided to the research administrator (URA) on campus seeking cooperation in promoting OA research results.

In addition, as a new function of the CHORUS dashboard, the DOI of the dataset related to the paper was added in August 2018, and this item can also be extracted. How we use data set information is also being considered. This project needs to be considered strategically as a method for realizing OA from the standpoint of universities and university libraries.

We would like to keep an eye on whether the OA method based on CHORUS, which is the publication of free paper files on publisher websites, will be a sustainable framework for researchers and universities in the long term.

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