

Moving from piecemeal to systematic: Reprioritizing how academic libraries approach research information management

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Abstract. This paper is based on a lightning talk given at the 2023 NISO Plus conference. The authors explore how research information management (RIM) workflows at universities are increasingly intersecting with library workflows, particularly regarding compliance with federal funding and preservation of the institution’s scholarly record.

This paper outlines one academic library’s plan to shift from thinking about library-supported RIM services as a piecemeal approach to a more systematic approach that prioritizes open infrastructure. Though in its early stages of implementation, the authors seek to examine current RIM systems and services at their institution, expand on the current findings of U.S. activities brought forth in reports produced by OCLC and Lyris, and to identify local opportunities for library-supported RIM tools/services that are open and transparent. Specifically, this paper emphasizes the implementation and adoption of persistent identifiers, such as ORCID, but discussion will also cover other RIM systems and services.

Keywords: Research information management, RIM, persistent identifiers

1. Introduction

Research information management (RIM) is a growing area of interest for many academic institutions and academic libraries are increasingly demonstrating their value as partners in this work. While a recent survey by Rosen [1] suggests that RIM activities are not yet a strategic priority for many institutions in the United States, this work has a longer history in Europe, where public institutions and funders seek to monitor research activities, outputs, and funding to support decision making and policy development [2].

The systems and services that comprise research information management (RIM) workflows across institutions are varied, partly due to a lack of shared terminology and standardization [3]. However, RIM is generally defined as the “aggregation, curation, and utilization of metadata about research activities” [4]. The software and systems that enable this work are referred to as research information management

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systems (RIMS) and are often used by academic institutions to collect and store data about their faculty's research activities [5]. Academic libraries have long supported many stages of the research lifecycle from design and planning to dissemination and reuse. RIM work overlaps with the mission of academic libraries in areas that include supporting research assessment, supporting compliance with federal funding, and preserving the institution's scholarly record [6]. With an ever-changing research landscape influenced by government mandates, increasing commercialization of research infrastructure, and globalization there is a need to evaluate current practices, priorities, and institutional collaborators related to RIM workflows that connect with libraries so that open tools and infrastructure remain at the forefront of this work.

This paper aims to explore the feasibility of an implementation plan that focuses on centralizing internal efforts related to supporting the use and adoption of open community support systems and services, such as ORCID, to aid in systematically thinking about managing the research output metadata at a public R2 university (a university with high research activity). Specifically, this paper will consider (1) How can academic libraries engage with other departments or campus to support more rapid knowledge sharing about research outputs through the implementation of ORCID in a scalable way?; (2) What other opportunities exist for libraries to adopt and advocate for open and transparent practices in their institution's existing RIM infrastructure?; and (3) When thinking about the funding for RIM infrastructure, what areas of the university should contribute?

2. Summary

2.1. *Social interoperability and communication*

Indiana University-Purdue University Indianapolis (IUPUI) is a public university in Indianapolis, Indiana which began as a joint venture between Indiana University and Purdue University in 1969. IUPUI is responding to a new vision for the campus, where the partnership between Indiana University and Purdue University will no longer exist after more than fifty years and will officially become two separate universities in 2024 [7]. Through this separation, the research identity of the campus will rapidly change as areas, departments, and units are realigned. Current library services will need to adapt and evolve to support the changing research identity of the university as departments and units are realigned and the vision and strategy for the campus changes. The IUPUI University Library Center for Digital Scholarship has begun the process of planning for how this separation will impact services related to RIM.

Currently the IUPUI University Library Center for Digital Scholarship has been integral in openly disseminating scholarship, data, and creative works created by IUPUI researchers, students, and affiliated partners. Through this work the Center for Digital Scholarship has developed relationships with areas, departments, and units throughout campus to advocate for open and equitable practices in creating, disseminating, and evaluating scholarship at IUPUI. To support these efforts the Center for Digital Scholarship has made it a priority to adopt and advocate for open-research infrastructure controlled and maintained by the academic community. Current investments to software, services and organizations are towards Crossref, DataCite, DSpace, the Library Publishing Coalition (LPC), ORCID, the Public Knowledge Project (PKP), and SPARC [8].

As the current literature suggests, RIM has many different facets [9]. The main elements of RIM are people (librarians, researchers, research offices, information technologists, information professionals), systems (VIVO, DSpace-CRIS), and services (ORCID, DOIs, ROR). These pieces can look different on each campus as research information can be administrated or maintained by various stakeholders [10]. In

conversations related to RIM a heavy emphasis is often placed on technical infrastructure and data interoperability. However, along with technical interoperability, RIM relies heavily on social interoperability which is “the creation and maintenance of working relationships across individuals and organizational units that promote collaboration, communication, and mutual understanding [11]”. Focusing on the people and fostering strong working relationships across the university is vital to any successful systematic implementation of RIM.

Much of the work that the Center for Digital Scholarship does is focused on shifting the culture around the dissemination and evaluation of scholarly and creative works through the establishment of strong relationships across the university. Over the years, the Center for Digital Scholarship has built good working partnerships with various researcher support units on IUPUI’s campus. Recently, it partnered with the Office of Academic Affairs and the Office of Research, along with other campus libraries, on a membership to the ORCID U.S. Community hosted by LYRASIS. This collaboration furthers a priority for the Center by adopting and promoting a key piece of open infrastructure related to RIM and has benefits for our partners as well, including helping the Office of Research promote and populate profiles in the university’s faculty profiling system. This example of collaboration, and the others discussed in this paper, provide examples for how an academic library can leverage its position as a trusted partner to work across internal silos to advance the open and transparent aggregation, curation, and dissemination of information about the activities of its researchers. As the Center for Digital Scholarship responds to the shifting culture and forthcoming changes with the separation of IUPUI, new complexities will be woven into the social fabric of the university. With these new complexities it will become increasingly important to maintain and expand relationships across the university to help maintain an accurate picture of the research happening during and after the separation of IUPUI.

2.2. Using existing open infrastructure

In the scholarly communication context, infrastructure refers to software, services, and resources that enable scholars to conduct, store, share, and assess research [12]. Open infrastructure is open source; it utilizes open standards; and it removes barriers to conducting, sharing, and assessing research [13]. Examples of open infrastructure in research information management (RIM) include tools such as VIVO [14] and DSpace CRIS [15]; open-source institutional repository software such as DSpace [16]; and persistent identifiers such as ORCID [17] and ROR [18].

Adopting open infrastructure to collect, curate, and use data about researcher activities has a variety of advantages. Open-source software provides an alternative to costly proprietary RIM tools. While there are costs associated with installing and maintaining open-source software, many academic libraries are already supporting open infrastructure that can be incorporated into an institution’s RIM system. For example, libraries host institutional repositories with the goal of preserving and making accessible their institution’s scholarly record. The metadata captured in these repositories can help universities understand the research activities of their faculty and demonstrate the scientific, social, and economic value of this research [19]. Deposit of research outputs and data into these repositories can be supported by developing RIM workflows that connect repositories with systems for faculty annual reporting, by encouraging author self-archiving, and by supporting library-mediated deposit [20]. IUPUI University Library maintains a robust institutional repository, IUPUI ScholarWorks, that has archived over thirty thousand items [21]. Archiving research outputs at this scale is supported through an opt-out open access policy [22] and integration with faculty annual reporting that was enabled with the Center for Digital Scholarship’s partnership with the Office of Academic Affairs.

Other open solutions to research information management, such as ORCID, can increase local control over data about researcher activities and promote interoperability. There is growing concern about universities contracting with third party systems to collect, curate, and assess data about faculty research and teaching activities and it is being seen as an encroachment into the core business of the university [23]. Open solutions, such as leveraging public ORCID profiles to collect this data, keep researchers in control of the data that they choose to share. Furthermore, open infrastructure is designed with technical interoperability in mind. Proprietary systems may not allow users to extract their data and even if they do, these data may not be in a format that is easily imported into platforms [24]. RIM data that is interoperable and can easily be combined with other open data increases its utility for benchmarking, reputation management, and the study of science.

Finally, open RIM systems that are populated by researcher-supplied data can offer a more complete picture of an institution's research activities. Large commercial citation indexes were built for the sciences and offer poor coverage of certain disciplines, such as the humanities [25]. RIM systems built on the automated ingest of data from these databases reproduce these gaps in disciplinary coverage and lack data on researchers producing scholarship not captured in journal articles, such as lectures, technical reports, blogs, and white papers [26]. IUPUI has a long-standing commitment to community-engaged research, and the output from this research is not universally captured in commercial RIM systems. Promoting RIM workflows built on researcher-supplied open data about their activities is more likely to yield a clearer picture of the unique research strengths of our changing campus.

3. Future directions

The Center for Digital Scholarship is still in the early stages of formally implementing a more systematic approach to RIM. Plans for this work will focus on the priorities discussed in this paper. With the impending separation of IUPUI, maintaining and establishing strong working relationships with other departments, areas, and units is the initial step that the Center for Digital Scholarship will take to begin systematic RIM initiatives. Outreach and communication efforts will take precedence, but alongside this work, the Center for Digital Scholarship is investigating funding structures and incentives to support future systematic RIM initiatives.

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