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ORCID Author Identifiers: A Primer for Librarians

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ORCID Author Identifiers: A Primer for Librarians

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The ORCID (Open Researcher and Contributor ID) registry helps disambiguate authors and streamline research workflows by assigning unique 16-digit author identifiers that enable automatic linkages between researchers and their scholarly activities. This article describes how ORCID works, the benefits of using ORCID, and how librarians can promote ORCID at their institutions by raising awareness of ORCID, helping researchers create and populate ORCID profiles, and integrating ORCID identifiers into institutional repositories and other university research information systems.

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INTRODUCTION

Helping researchers compile and track their publications and other research products is a key research support service provided by librarians. However, both librarians and researchers frequently experience difficulties in conducting accurate database searches due to shared or ambiguous author names. ORCID (Open Researcher and Contributor ID), which launched in 2012, seeks to fix this problem by providing researchers with unique, 16-digit author identifiers (iDs) and serving as a central registry enabling automatic linkages between researchers and their scholarly activities.[1] As an international, not-for-profit organization, ORCID works with over 400 (and counting) research organizations, publishers, funders, and professional associations to embed ORCID iDs into various research workflows,[2] such as the submission of grant proposals to funding agencies, manuscripts to journal publishers, and datasets to data repositories (see Figure 1). ORCID is free for individual researchers; open, flexible, easy to use; and reaches across disciplines, research sectors, and national boundaries to help reduce reporting workload, improve attribution and discoverability of research products, and streamline research, collaboration, and evaluation workflows. This article describes how ORCID works, how researchers and librarians benefit from using ORCID, and how librarians can promote ORCID at their institutions.

[PLACE FIGURE 1 HERE]

Legend: FIGURE 1. Selected systems for importing information into and exporting information out of ORCID profiles.

3

HOW ORCID WORKS

Registering for an ORCID iD

Creating an ORCID iD is easy and fast. A researcher simply goes to the ORCID website[3]; clicks "Register now!"; enters their name and e-mail address; creates a password; and selects whether they would like their profile to be public, private, or viewable by trusted parties. They will then be assigned a 16-digit number that serves as their ORCID iD.

Importing Information into ORCID Profiles

After registering for an ORCID iD, researchers have the option of populating their ORCID profile with professional information including education, employment history, funding, and works (e.g., journal articles, conference abstracts, book chapters, books, dissertations, magazine articles, reports, datasets, patents). Researchers can either manually add works to their profile, import a BibTeX file, or search and link to works indexed in external databases. For instance, researchers can link their ORCID iD to their Scopus Author ID or Thomson Reuters' ResearcherID and import citations from Scopus or Web of Science databases. Dataset citations can be imported directly from DataCite. Moreover, when researchers provide their ORCID iD during the manuscript or dataset submission process and authorize CrossRef and/or DataCite to update their ORCID record, their ORCID profile will be automatically updated after manuscript publication or dataset deposit.[4] Researchers can also search and link to grant information in the ÜberResearch tool, which includes records from federal and private funding organizations such

as the National Institutes of Health (NIH) and National Science Foundation (NSF). Furthermore, researchers can link their ORCID and Publons accounts to import their peer review contributions into their ORCID profile.[5] Thus, with continued enhancements in the integration between ORCID and other research systems, ORCID profiles could serve as "constantly updated digital curriculum vitaes."[6]

Exporting Information from ORCID Profiles

After researchers have added professional information to their ORCID profile, they can push that information to other systems or give permission to trusted organizations to read from their profile. For instance, by linking their ORCID and NCBI accounts, researchers can transfer information from their ORCID record to the SciENcv system to create NIH or NSF biosketches that are pre-populated with affiliation, education, and publication information.[7] For certain journals, researchers can provide their own and their co-authors' ORCID iDs during the manuscript submission process to automatically complete parts of the submission form.[8] An ORCID iD can also be provided during the creation of an ImpactStory account to export publication lists from ORCID into the altmetrics tool.[9] Furthermore, by allowing universities or other institutions to access their ORCID profiles, information on researchers' publications and other research activities can be pulled into local repository, faculty profile, or research information systems.[10,11] Thus, by using an ORCID profile as a central record of scholarly activity and allowing data transfer between ORCID and other research systems, researchers can eliminate the need to repeatedly enter the same professional information into multiple systems.

The primary benefits of ORCID for researchers are two-fold. Attaching unique ORCID iDs to journal articles, datasets, and other research products eliminates the problem of misattribution due to shared or ambiguous author names, and linking ORCID profiles to other research systems and allowing automatic transfer of information between systems alleviates reporting workload and saves time. Furthermore, as ORCID iDs are assigned directly to individual researchers, researchers can maintain the same iD throughout their career, even when their institutional affiliation changes.

In addition to researchers, librarians are also clear beneficiaries of the ORCID registry.[12] ORCID iDs can streamline the process of identifying a researcher's publications when helping them track their citations, calculate their h-index, or create a biosketch for federal funding agencies. Compiling accurate bibliographies via ORCID records can also quickly provide librarians with a better understanding of the research interests, priorities, and collection needs of particular faculty members and departments, thereby enabling more informed decisions about journal renewals and cuts in an era of rising journal prices and inflation. Disambiguated researcher bibliographies also help librarians identify potential deposits to library-hosted institutional repositories (IR), and the integration of ORCID iDs into IRs can help draw attention to and connect IRs with other university research information systems. Finally, by raising awareness of and helping researchers claim and use their ORCID iDs, librarians can foster a culture of open research and strengthen relationships with faculty members, postdoctoral fellows, graduate students, university administrators, and other research support staff.

The ORCID registry provides new opportunities for librarians to provide greater research and

publishing support.[13] Although librarians at any institution can encourage researchers to register

for and use ORCID iDs, institutions that become ORCID members (for a fee) can take greater

advantage of ORCID's functionality by batch-creating iDs on behalf of researchers, writing to

researchers' ORCID records, and receiving personalized technical support when integrating

ORCID iDs into internal or vendor-hosted systems.[14] The following sections describe several

ways in which librarians can promote ORCID and highlight examples of academic libraries (both

ORCID members and non-members) that have advocated and implemented ORCID on their

campuses.

Raising Awareness of ORCID iDs

Although nearly 1.7 million researchers worldwide currently have ORCID iDs,[2] many

researchers may still not be aware of the existence and benefits of ORCID.[15] Therefore,

librarians could use several strategies for raising awareness of ORCID among researchers at their

institutions. First, librarians can create LibGuides or web pages on ORCID, such as those at the

University of Illinois at Urbana-Champaign,[16] California Institute of Technology,[17] and

University College Dublin.[18] Second, librarians can register for their own ORCID iD and include

their iD in e-mail signature lines, profile web pages, and professional social media accounts such

as ResearchGate, Academia.edu, and LinkedIn. In addition, registering for their own ORCID iD

gives librarians first-hand experience in creating and populating an ORCID profile, which is

invaluable for describing the process to researchers. Third, librarians can post ORCID signs and hand out fliers that capture the visual interest of researchers. For example, librarians at Northumbria University in the UK hung ORCID posters in their Research Zone, a well-used study area and meeting space for graduate students and faculty.[19] Fourth, librarians can incorporate information on ORCID into newsletters or existing workshops, seminars, and classes for faculty and student researchers. For instance, Syracuse University librarians publicize ORCID in monthly departmental newsletters and encourage the use of ORCID iDs each time they talk to researchers about tracking article citations,[20] and East Carolina University librarians share information about ORCID during departmental meetings and presentations to faculty on database searching and measuring research impact.[21] Fifth, librarians can incorporate ORCID-related information and activities into campus research events. As one example, during the annual Northumbria University research conference that showcases research performed by faculty and students, librarians mentioned ORCID during their presentation on research support services, set up an ORCID iD sign-up booth, and held a raffle with a monetary prize for researchers who registered for or brought in their ORCID iDs.[19] As another example, Stanford University librarians distributed information on ORCID at an annual new graduate student orientation event.[22] Notably, ORCID provides a variety of professionally designed outreach materials in different languages, including posters and banners, videos, handouts, slide presentations, and sample text for newsletters and e-mails.[23] Furthermore, in addition to raising awareness of ORCID among researcher populations, librarians can also inform members of campus offices, such as the Office of the Vice President of Research and the Office of the Provost, about ORCID and its functionalities, as staff in these offices could be key collaborators in implementing the use of ORCID on campus.

Helping Researchers Register for ORCID iDs and Populate ORCID Profiles

Using public or ORCID member application programming interfaces (APIs), librarians can create university-branded landing pages enabling researchers to create a new ORCID iD, report an existing iD, and/or allow the university permission to read from or write to their ORCID record,[24] such as those provided by Boston University,[25] University of Pittsburgh,[26] and Carnegie Mellon University.[27] After e-mailing a link to their ORCID landing page to researchers, librarians at King Abdullah University of Science and Technology in Saudi Arabia saw uptake rates of 82% for faculty and 52% for postdoctoral fellows.[28]

After a researcher registers for an ORCID iD through the ORCID website or a university-branded landing page, librarians can work individually with researchers to add professional information to their ORCID profiles. To facilitate this process, a researcher can permit another ORCID user to act as a "trusted individual" for managing their ORCID profile.[29] In this manner, librarians can add information to researchers' ORCID records, including citations imported from Scopus or Web of Science,[20] and configure the profiles to allow automatic updates as researchers engage in or complete new scholarly activities.

Assigning ORCID iDs to Researchers

Going beyond helping researchers sign up for ORCID iDs themselves, several libraries have directly assigned ORCID iDs to researchers. Using ORCID member APIs, librarians or other university staff members can create batches of ORCID iDs for groups of researchers (although

this approach is currently being phased out by ORCID[30]).[24] Researchers receive an e-mail

notifying them that an ORCID iD has been created on their behalf. After clicking a link to claim

their iD, researchers have the option of populating their ORCID profile with professional

information and/or allowing the university to have read/write access to their profile. As some

researchers may already have an ORCID iD, the e-mail may contain instructions for how to

merge existing and new ORCID profiles or eliminate a duplicate profile. The batch creation of

ORCID iDs for groups of researchers typically requires buy-in from university administrators,

consensus on which researcher population(s) to target with this "opt-out" approach (e.g., faculty

vs. graduate students, entire campus vs. particular departments), possible changes to university

policy, and coordination with informational technology units.[21,31] For example, after successfully

piloting the batch creation of ORCID iDs for all librarians on staff, librarians at the University of

Michigan created iDs for faculty members in certain departments with permission from the

departmental chairs, including the Department of Human Genetics, the Department of

Computational Medicine and Bioinformatics, and Department of Molecular & Integrative

Physiology. University of Michigan librarians are also planning to auto-generate ORCID iDs for

all incoming faculty and graduate students.[19,32] Also, librarians at Texas A&M University, with

support from the Office of Graduate and Professional Studies, created ORCID iDs for all

graduate students with the goal of tracking student success after graduation.[19,21]

Integrating ORCID iDs into IRs and University Systems

Librarians can also lead efforts to integrate ORCID iDs into various university systems. An

obvious starting point is the integration of ORCID iDs into library-hosted IRs, which capture the

scholarly output of researchers at particular institutions. Not only can this improve IR search results, IRs can also exchange data with ORCID, thereby permitting the population of IR author profiles with ORCID record information, the notification of IR managers of new content for possible inclusion, and the automatic updating of ORCID profiles with new works upon IR deposit.[10] Furthermore, libraries can also partner with other campus offices to integrate ORCID iDs into various internal and vendor-based university systems for identity or research information management. For example, after directly assigning ORCID iDs to certain staff and faculty members, University of Michigan librarians integrated the iDs into their DSpace-based IR as well as the campus directory, medical school faculty CV system, and local instance of SciVal Experts.[19,32] Also, after assigning ORCID iDs to graduate students, librarians at Texas A&M University integrated the iDs into their Vireo-based electronic thesis and dissertation submission and management system.[19,21] Furthermore, U.S.-based universities that participated in the Alfred P. Sloan Foundation-funded ORCID Adoption and Integration Program[33,34] and UK-based universities involved in the Jisc-ARMA ORCID pilot project[35] integrated ORCID iDs into a variety of university systems, including the following.

- IRs (Fedora/Hydra, DigitalCommons, and ePrints)

- HUBzero platform for scientific collaboration

- identity and access management systems, campus directories

- human resources management systems

- systems for annual faculty merit evaluations

- research information and professional networking systems (Profiles, VIVO, SciVal Experts/Pure, Symplectic Elements, CONVERIS).

By working to integrate ORCID iDs into both IRs and other university systems, librarians can enhance the functionality of IRs, demonstrate the value of IRs to both researchers and university administrators, raise awareness of the library as an important provider of research support, and strengthen collaborative relationships between the library and other campus offices.

Teaching Researchers to Use Their ORCID iDs

Librarians can also teach researchers how to use their ORCID iDs to their fullest extent. For example, librarians at King Abdullah University of Science and Technology,[36] Harvard-Smithsonian Center for Astrophysics,[37] and University of Queensland in Australia[38] hold basic ORCID training sessions for researchers. In addition to offering ORCID training to specific groups of researchers,[39] Texas A&M University librarians created an ORCID "care and feeding manual" for graduate students describing how to initially set up an ORCID profile and manage its settings.[40] Beyond basic training, ORCID training sessions and materials could also focus on specific strategies for using ORCID iDs to streamline research workflows depending on the audience and its needs. For example, librarians could demonstrate how to provide ORCID iDs when submitting manuscripts to journals published by the Nature Publishing Group, Elsevier, Wiley, and Public Library of Science (PLOS) or how to use ORCID record information to create biosketches for NIH or NSF grant proposals using the SciENcv system.

CONCLUSION

Unlike other author identifiers, ORCID iDs are open, non-proprietary, and mobile. Since the launch of the ORCID registry in 2012, a rapidly increasing number of stakeholders in the research process, including universities and research institutes, granting agencies, publishers, professional societies, and software companies, have integrated ORCID iDs into their workflows,[41] suggesting that ORCID iDs will ultimately become the primary method by which an author's identity is attached to their research outputs and activities. Librarians can use several strategies to expedite the adoption of ORCID iDs by researchers at their institution, including raising awareness of ORCID and its benefits, helping researchers sign up for and populate their ORCID profiles, integrating ORCID iDs into university systems, and teaching researchers how to take maximum advantage of their ORCID iDs. Not only do ORCID iDs have practical benefits to librarians in terms of disambiguated search results, the ORCID registry also provides new opportunities for librarians to strengthen their relationships with members of the campus research community and to demonstrate their value in supporting research and scholarly communication.

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