

Rutgers University Senate
Research, and Graduate and Professional Education Committee (RGPEC)
Report in Response to Charge S-1505 on Implementing ORCID Identifiers
February 2016

Charge

Investigate and make recommendations with regard to an implementation of ORCID identifiers (i.e. issuing ORCID iDs) at Rutgers. If deemed appropriate, make specific recommendations for incremental implementation, for example, beginning with the graduate school(s). Identify benefits, processes, timeline, who would be involved, and approximate costs. Respond to Senate Executive Committee by February 2016.

Background

An ORCID iD is a persistent (i.e. portable throughout one's career) digital numeric identifier that distinguishes a researcher from every other researcher and, through integration in key research workflows such as manuscript and grant submission, supports automated linkages between the researcher and his or her professional activities, thus ensuring that each person's work is properly attributed and recognized. ORCID is the organization; ORCID iD is the identifier.

ORCID is an open, non-profit, community-driven organization that works in collaboration with other stakeholders in the research community, including publishers, funders, repositories, universities, and societies. In short, ORCID provides a registry of unique identifiers for people in the research community, as well as an API¹ that allows the community to embed identifiers in research systems and workflows.

ORCID benefits authors, scholarship, and the institution in many ways. Up until now, there has not been a good way to reliably link researchers with their professional activities and scholarly output. Researchers want to know that people can find their work throughout their career, even through changes of name and institutional affiliation. Name ambiguity is a major problem; one researcher may have multiple variant names, and many people can share the same name. At the University of Michigan for example, two dozen faculty are "J. Lee." A name alone is not enough to identify an author for accurate attribution of a work, but a unique identifier is. Because ORCID is an open, universal identifier system, rather than a proprietary one, ORCID can reach across a variety of systems, disciplines, research sectors and national boundaries.

An ORCID iD is of value at every stage of an individual's career. ORCID iDs can be integrated into an electronic thesis/dissertation submission system, starting graduate students off with a scholarly identity. Articles published on the way to dissertation completion will be brought together under a unique identifier associated with the scholar.

Researchers interact with many different information systems, which can and should work together. Because ORCID is an open, collaborative effort, its source code is readily available for other institutions and systems to use. ORCID's capabilities for interoperability have enabled its integration into many components of the research landscape. ORCID can integrate with grants

¹ An API, or Application Programming Interface, is a set of programming instructions that allow systems to talk to one another and interoperate. For a good layperson's explanation of an API, see <http://money.howstuffworks.com/business-communications/how-to-leverage-an-api-for-conferencing1.htm>

and contracts databases, HR systems, and authentication/authorization databases. It is rapidly becoming embedded into existing research workflows, data systems, and other identifier systems, such as ISNI², ResearcherID (Thomson Reuters), and Scopus Author ID (Elsevier). ORCID has broad support from all segments of the research community, including funders and publishers.³ ORCID has advantages over “competing” identifier systems in that it is non-proprietary (unlike ResearcherID and Scopus Author ID), and it is capable of large-scale implementation (unlike ISNI).

ORCID can also link with SOAR (Scholarly Open Access at Rutgers), the scholarship portal of the University’s institutional repository. SOAR has already integrated ORCID, allowing authors to update their profiles with their ORCID iDs, which are then captured and inherited into the metadata with each new deposit. ORCID is auto-updating very quickly from SOAR deposits; ORCID’s service is recognizing each SOAR DOI via Dataverse and that pulls the paper right into the author’s ORCID profile within a number of hours. This expands the reach of the author’s publication while simultaneously helping to populate the author’s ORCID record.

Scholars want to minimize redundant data entry, be it in biosketches, curricula vitae, scholarly networking tools, or promotion/tenure documentation. By linking with these other systems, ORCID iDs helps individuals reduce repetitive data entry. Embedding of ORCID iDs is becoming more and more widespread, such as in university current research information systems (CRIS), researcher profile systems, manuscript submission systems, and grant application systems.

Several indicators suggest that ORCID is evolving from a useful tool to a necessary element of research. Well over a million ORCID iDs have been issued to date. It has already been integrated into the systems of various publishers, funders, research institutions, manuscript submission systems (e.g., ScholarOne), and CRIS vendors (e.g. Symplectic, Elsevier’s PURE, Thomson Reuters’ Converis). ORCID receives sponsorship from many major publishers, including Elsevier, PLOS, Sage, Springer, Taylor and Francis Group, and Wiley (for a complete list, see <http://orcid.org/about/community/sponsors>). On January 7, 2016, seven publishers (the American Geophysical Union, eLife, EMBO, Hindawi, the Institute of Electrical & Electronics Engineers, the Public Library of Science, and the Royal Society) announced they would begin requiring authors to use an ORCID iD during the publication process. Even in the short time since, other publishers including AAAS’s *Science*, ScienceOpen, Frontiers, and others have joined in requiring ORCID iDs. Country-wide adoptions are ongoing in Denmark (8 universities), the United Kingdom, Italy (75 universities), Portugal, and Australia (40 universities), with more coming soon.

Though not yet required, the National Institutes of Health have incorporated ORCID iDs into SciENcv (the researcher profile system for individuals associated with federally funded research) and the National Science Foundation has incorporated them into FastLane, its grant submission system. The number of funders actually mandating use of ORCID iD is increasing, and presently includes Autism Speaks, the U.S. Department of Transportation, NIHR in the UK, and Wellcome Trust. As funding agencies begin requiring ORCID, an ORCID iD could be used to associate a

² The International Standard Name Identifier, or ISNI, is a unique numeric identifier for contributors to books, articles, media, etc., developed by the International Organization for Standardization (ISO) and published in 2012.

³ Publishers include AAAS, American Chemical Society, American Society of Civil Engineers, APA, and many more; a full member list is available at <http://orcid.org/about/community/members>. The complete list of the journals requiring ORCID iDs may be found at: <https://orcid.org/content/requiring-orcid-publication-workflows-open-letter?et rid=49286515&et cid=221170>.

grant with its associated publications, facilitating tracking of compliance with federal funder public access mandates.⁴

For research institutions, ORCID implementations provide a significant form of support to ORCID, primarily by bringing more scholars into ORCID participation, and secondarily via the annual membership fee. ORCID allows discounts and additional benefits for consortia of universities interested in membership. There are currently three ORCID consortia in the U.S.: the Committee on Institutional Cooperation (CIC), the Greater Western Library Alliance (GWLA), and the NorthEast Research Libraries (NERL) consortium.⁵ Current member universities of the CIC consortium include University of Illinois, University of Iowa, University of Maryland, University of Michigan, Michigan State University, University of Minnesota, Ohio State University, Purdue University, and University of Wisconsin. Each of these have implemented ORCID, and several other CIC institutions are actively considering it.

ORCID is supported by a number of professional societies, including American Chemical Society, American Institute of Physics, American Physical Society, Association of Computing Machinery, American Astronomical Society, and American Psychological Association. For a complete list, see <http://orcid.org/about/community/sponsors>.

Crossref and DataCite (both non-profit organizations) are leaders in assigning DOIs (Digital Object Identifiers) to published works and datasets. For example, Crossref has worked with over a thousand scholarly publishers to generate more than 75 million DOIs for journal articles and book chapters. In October 2015, both partnered with ORCID to automatically update individuals' ORCID records using DOIs. Once a researcher has published (or posted in SOAR) and the work is assigned a DOI, Crossref and DataCite push the citation back to ORCID and populate the researcher's ORCID record with the full citation. Proquest, the global database of theses and dissertations from over 700 universities, has incorporated ORCID and will assign ORCID iDs as part of the deposit process.

Specific Benefits of ORCID Membership to Rutgers

ORCID membership allows access to the Member API that has many potential applications:

- The Member API can be used to facilitate the creation of ORCID iDs for eligible University participants. (Although any researcher can easily obtain an ORCID iD, only a small percentage of Rutgers researchers have done so thus far.)
- A University-wide implementation ensures that the ORCID record for each researcher includes enough information (institutional and departmental affiliations) to disambiguate that researcher from others with the same name.
- The API is the mechanism by which Rutgers would update and maintain over time ORCID data within its own systems.

⁴ Per an Obama Administration memorandum in 2013 (available at: http://www.whitehouse.gov/sites/default/files/microsites/ostp/ostp_public_access_memo_2013.pdf), federal agencies receiving more than 100 million dollars in R&D were directed to develop plans to make the results of federally funded research freely available to the public—generally within one year of publication. These agencies include the departments of Agriculture, Commerce, Defense, Education, Energy, Health and Human Services, Homeland Security, Housing and Urban Development, Interior, Labor, Transportation, Veterans Affairs, as well as IMLS, NASA, NIST, NOAA, NSF, and the Smithsonian Institution.

⁵ Although Rutgers would be eligible for participation in the NERL consortium, the community of practice available through the CIC consortium would be considerably more robust; RGPEC does not recommend the consortial agreement through NERL.

- ORCID data can be used to create reports for internal use (i.e. to support networking or collaboration), or for national assessment programs.
- Rutgers can include ORCID identifiers in local systems, such as personnel databases, identity management systems, the electronic theses and dissertations (ETD) submission system, or the institutional repository, and use the iDs to interoperate with external systems also using it. Should the University adopt a Current Research Information System (CRIS), it could be populated with researcher profiles, scholarship, grants, achievements for discovery of research, grant tracking, and to facilitate cross-disciplinary collaborations.
- Publishers can feed content back to the institutional repository when authors use their ORCID iD in manuscript submissions, reducing work for authors to comply with the Rutgers Open Access Policy.
- Member organizations that serve as trusted parties may also push updates to ORCID. This may streamline the work needed to keep research information up-to-date.

ORCID membership under the CIC consortial license agreement provides a number of benefits, primarily:

- Participation in the CIC community of practice
- Consolidated invoicing and technical support
- Assistance with outreach via a group approach to implementation
- Reduced cost (\$6,000 instead of \$20,000 for individual institutional membership)

Senate Charge: Development and Process

In January 2014, ORCID held a meet-up for New York-area integrators and potential integrators at the Memorial Sloan-Kettering Cancer Center, with speakers from Nature Publishing Group, American Institute of Physics, Elsevier, Social Science Research Network (SSRN), Thomson Reuters, NYU Langone Medical Centers, and others. This event was attended by RGPEC member Jane Otto, Laura Mullen (the Libraries' Open Access Specialist and currently serving as a consultant to RGPEC on this charge), and other Rutgers researchers, along with representatives from Columbia, Cornell, New York University (NYU), Princeton, and Stony Brook University. Even at that time many universities, including Boston University and NYU, were requiring ORCID for all of their scholars, to govern and provide proper stewardship of data on their own research activities.

Shortly thereafter, ORCID was discussed at the CIC Graduate Deans' meeting, and a number of CIC members decided to proceed with implementations for their doctoral students (Michigan, Minnesota, Illinois, Maryland, Wisconsin and Michigan State). As a result, University Senator and RGPEC member Jerry Kukor, Dean of the Graduate School—New Brunswick, invited Otto and Mullen to provide information on ORCID to the Graduate School's Executive Council. Otto and Mullen arranged for ORCID's Technical Director, Laura Paglione, to deliver a presentation to that group and take questions.

Given the positive response from the Graduate School's Executive Council, it was decided to present information about ORCID to RGPEC. Otto and Mullen gave a presentation to RGPEC at its January 2015 meeting, which was also attended by Chris Molloy, Vice President for Research and Economic Development (ORED), whose office would be a key stakeholder in any ORCID implementation. A charge was drafted and presented to the Senate Executive Committee in

March 2015. RGPEC was assigned the charge at that meeting, and work commenced in the fall through the RGPEC ORCID subcommittee. By September 2015, the CIC had secured a consortial agreement with ORCID. Although Rutgers was not an original signatory, it may sign on at any time and will be granted the consortial discount. Throughout this process, Kukor, RGPEC's liaison with the CIC on this matter, has gathered additional information through his regular contacts with Galen Rafferty, the CIC's Assistant Director for Technology Collaboration. Conversations with the CIC confirmed that it is usually the University Librarian and/or the University's Chief Information Officer who takes the lead in ORCID implementation, often with involvement from the Research Office.

In order to bring ORCID experts together with the major stakeholders at Rutgers, RGPEC arranged for ORCID's Technical Director (Laura Paglione) and Executive Director (Laurel Haak) to present to RGPEC via webinar at its December 11, 2015, meeting. RGPEC invited representatives from Rutgers' main stakeholder groups to this meeting, including Donald E. Smith (Vice President for Information Technology and Chief Information Officer), Michele Norin (Senior Vice President and Chief Information Officer), Christopher Molloy (Senior Vice President for Research and Economic Development), Robert Heffernan (Executive Director, Institutional Research & Planning), Krisellen Maloney (Vice President for Information Services and University Librarian), and Barbara Lee (Senior Vice President for Academic Affairs).

The goals of this meeting were to gather information on the process for implementation, costs, and addressing the concerns of stakeholders. Primary takeaways from this meeting were:

1. Paglione and Haak directed us to reports by Jisc⁶ and the Alfred P. Sloan Foundation. The Jisc report detailed eight pilot projects of ORCID implementation in the UK, including a cost analysis.
2. Rutgers Office of Information Technology (represented at the meeting by Smith, Norin, and Director of Enterprise Middleware and Database Management David Badger) is well-equipped to handle the technical side and supports in principle an ORCID implementation.
3. The primary challenge of any ORCID implementation is winning the hearts and minds of individual researchers and students involved in research to achieve the maximum possible participation.
4. While the costs of technical implementation can be absorbed by OIT, there would be real costs in providing the outreach necessary to ensure success, with this advocacy work expected to fall to the Libraries and ORED.

ORCID Implementation Steps

Planning:

This report may be used as a starting point for planning purposes. According to the Jisc report, planning and feasibility activities typically involve representatives from the following offices: libraries, research, information technology, risk management, human resources, and the academic departments.

⁶ Jisc (formerly the Joint Information Systems Committee) is a United Kingdom non-departmental public body whose role is to support higher education and research, by providing relevant and useful advice, digital resources and network and technology services, while researching and developing new technologies and ways of working. It is funded by a combination of the UK and individual higher education institutions.

Technical development:

Technical aspects of an ORCID implementation would, at Rutgers, logically fall to the Office of Information Technology. Rutgers OIT has requested a six month time frame to complete the work needed to integrate ORCID into the University registry. David Badger, Director of OIT Enterprise Application Services, was identified as the lead contact for this process. OIT would work in consultation with other University stakeholders to integrate ORCID into various University systems, using the ORCID API.

An important task in technical implementation is the development of an integration map of University systems that might interact with ORCID., including (but not limited to) the Human Resources database(s), University Registry and LDAP database, Electronic Theses and Dissertations (ETD) submission system, institutional repository (RUcore and its SOAR scholarship portal), grant tracking systems, and the Faculty Survey database maintained by the Office of Institutional Research and Academic Planning.

Enrollment:

Each eligible participant from the University would receive an email inviting them to register for an ORCID iD, with a link connected to a registration workflow webpage. The registrant may then sign up for an ORCID iD, or sign in with his or her e-mail and password if they already have one. In either case, during the Rutgers registration process, the individual will be asked permission to read from/write to their record for the purpose of populating it with institution name, organization identifier, and source, via the ORCID API.

ORCID implementation is an opt-in, rather than an opt-out system. No ORCID iD is created until the researcher has opted in, which requires minimal effort on the part of the participant. Implementation would be ongoing in that new faculty, graduate students, and postdoctoral scholars would be asked to create an ORCID iD upon entry to the University.

Advocacy and promotion:

The Libraries and ORED are best situated to lead the promotion of ORCID enrollment at Rutgers. ORED interacts with Rutgers researchers on a regular basis. The Libraries routinely provide research services and information to departmental faculty, graduate students, and postdoctoral scholars. Furthermore, ORCID iDs are important for SOAR, the scholarship portal of the Rutgers institutional repository, which is administered by the Libraries under the Rutgers Open Access Policy (50.3.17).

The Research Office, OIT, the Libraries, and administrators must be in communication and engaged. Administrators such as Chancellors, Provosts and Deans are in a good position to know what will motivate eligible participants in their School or Division. Scholars will look to the Research Office, OIT, and the Libraries for information and support. Activities related to promotion could include a website, educational presentation/seminars, and creation/distribution of fliers or other media related to ORCID participation.

Participation goal:

Despite the strong case for ORCID, a 100% rate of participation by eligible scholars is unrealistic. For perspective, in nationwide implementations of ORCID, the participation goal in Denmark was 60%, while in Italy, it was 80%. We anticipate that the growing list of publishers requiring an ORCID iD will be a strong motivator for participation. We recommend setting a goal of 80% enrollment of all eligible University participants within three (3) years of implementation.

Costs of ORCID Implementation

We anticipate costs associated with the following ORCID implementation to include:

1. Planning activities, with consideration of feasibility, technical implications, and any legal or regulatory factors that might affect the introduction and operation of ORCID
2. Technical development of institutional systems to allow an ORCID iD to be recorded and associated with existing staff records such as the Rutgers University registry, Human Resources (HR) systems, the institutional repository (RUcore/SOAR), the ETD submission system, the Faculty Survey, etc.
3. Development of promotional materials and webpage, plus delivery of advocacy activities to encourage researchers to opt in for an ORCID iD and/or record it in institutional systems
4. The cost of consortia membership is \$6,000 annually.

The Jisc report found that “on average, the eight pilot institutions estimated that they had devoted 290 hours of staff time to ORCID’s implementation over a period of roughly six to nine months. In most cases, implementation projects were managed by library staff (who contributed 55% of the overall effort), with additional support from information services/technical staff (29%), and the institutional research office (8%). A small amount of input from other areas was also required (8%), including oversight by academic managers, postgraduate researchers used as ORCID advocates, and staff in human resources, internal communications and legal departments.”⁷ One would expect costs to vary based on size of institution and implementation. The Jisc report includes a more detailed cost-benefit analysis, but its conclusion was that “adoption of ORCID can be achieved at a relatively small cost to institutions ... and that the potential benefits substantially exceed the costs incurred.”

Most of the costs of a University-wide ORCID implementation are up-front and incurred during the first year. Ongoing costs are the premium consortial membership (\$6,000 per year) and a small amount of OIT resources for maintenance.

Scope of ORCID Implementation

RGPEC recommends that ORCID be implemented for faculty, doctoral students, and postdoctoral scholars, which aligns it with the scope of the Rutgers Open Access Policy. Each Rutgers affiliated individual falling in one of these categories will be considered an “eligible participant.”

While we considered a rolling implementation (i.e. piloting this at one or more Schools), we do not recommend this. Among our CIC partners, full institutional implementation inclusive of faculty and graduate students, is the norm. Most of the expenses of ORCID implementation are up-front costs in the first year; prolonging implementation would unnecessarily increase the amount of work-hours invested in technical implementation, promotion, and support.

Although there was discussion in committee about the possible inclusion of undergraduates, the consensus was that the benefits of this approach would be minimal compared with the greatly increased costs of a broader implementation. The ORCID directors indicated that at member Universities, undergraduates have not yet been included. At Rutgers, specific undergraduate research-oriented programs, such as the Aresty Research Center, could be targeted in outreach and advocacy efforts, and encouraged to individually apply for ORCID iDs

⁷ According to the Jisc report, “On average, institutions estimated that the time taken for an individual researcher to create an ORCID iD and record it in institutional systems was no more than three minutes.”

Resolution

Whereas, the Research and Graduate and Professional Education Committee (RGPEC) has carefully investigated the benefits and costs of joining ORCID as a Committee on Institutional Cooperation (CIC) consortial member,

Whereas, RGPEC has been persuaded that ORCID implementation will promote Rutgers's mission as the premier comprehensive public research university in New Jersey,

Whereas, the Senate has considered RGPEC's recommendations and finds them to be sound and in the best interest of Rutgers University,

Therefore be it resolved that the University Senate recommends:

- 1) That Rutgers University sign the necessary agreements to become of a member of the CIC ORCID consortium
- 2) That Rutgers University charge the Senior Vice President for Academic Affairs (SVPAA) with establishing an ORCID Implementation Working Group, to include representatives from the offices of the primary stakeholders (Office of Research and Economic Development; Rutgers University Libraries; Office of Information Technology; Office of Institutional Research and Academic Planning; Office of Enterprise Risk Management, Ethics, and Compliance; and University Human Resources), to develop an implementation plan in consultation with CIC consortium members and ORCID to:
 - a) determine funding sources for technical implementation, maintenance, an education and outreach program, and the annual institutional membership fee
 - b) finalize the constituencies who will be included in the ORCID implementation
 - c) identify the institutional point of contact for the CIC consortium's working group
 - d) determine the focus and priorities of the implementation through development of an integration map of University systems that might interact with ORCID
 - e) identify responsible personnel and develop a work plan and timelines for technical implementation, maintenance, and user support
 - f) develop an education and outreach program, with a timeline, work plan, and responsible personnel
 - g) develop the mechanism(s) by which incoming faculty, doctoral students, postdoctoral scholars, and other scholars will obtain an ORCID iD upon entry to the University
- 3) That the ORCID Implementation Working group, or a designee of the SVPAA, will report on the status of the ORCID implementation to the University Senate within three (3) years of implementation

Research and Graduate and Professional Education Committee

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