Collaborative Librarianship

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Improving the Enhanced Journal Access through an Academic Library and Publisher Collaboration

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Cover Page Footnote

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From the Field

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Abstract

In May 2017, the George A. Smathers Libraries (Libraries) at the University of Florida (UF) and Elsevier delivered the Phase I findings of a pilot project that aimed to maximize visibility, impact and dissemination of articles by UF researchers who have published in Elsevier journals. Beginning April 2016, the collaboration provided metadata with article links automatically delivered to UF's Institutional Repository, the IR@UF, in the *IR@UF-Elsevier Collection*. As of December 31, 2018, links to over 42,000 articles by UF authors published between 1949 and 2018 are available through integration of the IR@UF with the ScienceDirect application programming interfaces (APIs) that are freely available to libraries. Access to full-text articles on ScienceDirect written by UF authors is available for all UF institutional repository users who are affiliated with a ScienceDirect subscribing institution.

Keywords: institutional repository, collaboration, innovation, access

Introduction

In May 2017, the George A. Smathers Libraries ([Libraries] http://www.uflib.ufl.edu/) at the University of Florida ([UF] http://www.ufl.edu/) and Elsevier (http://www.elsevier.com/) delivered Phase I of a pilot project intended to maximize visibility, impact and dissemination of articles by UF researchers who have published in Elsevier journals. Beginning in April 2016, the collaboration provided metadata with article links automatically delivered to UF's Institutional Repository, ([IR@UF] http://ufdc.ufl.edu/l/ir) in the

IR@UF-Elsevier Collection (http://ufdc.ufl.edu/ielsevier).

The IR@UF-Elsevier Collection is a strategic collaboration between UF and Elsevier. The project addresses shared library and publisher needs for integrated systems to meet common goals including:

- improving compliance with current and future funder policies;
- facilitating efficient, responsible sharing of scholarly journal articles through university institutional repositories;
- broadening awareness of UF scholarship; and,
- improving public access.

Additionally, the Libraries sought to create automated download and ingest workflows that would require no more maintenance than most library databases or digital collections.

To confirm that the Phase I workflows established by the Libraries' technology and digital services teams and Elsevier's project team provided an effective search for users, the Libraries conducted usability testing with research and teaching faculty, librarians, library technology administrators and UF graduate students. This confirmed that the system design provided seamless navigation to the ScienceDirect platform from within the IR@UF. Key findings indicated that users understood the labels, text and images selected to guide them to published versions of articles by UF authors.

However, as noted in the article describing the pilot project,[1] Phase I did not provide access to UF-authored articles for all IR users. Some users in the academic scholarly communications community criticized the IR@UF-Elsevier collection because it did not deliver content to those users not affiliated with a subscribing institution, or to those who may not be searching using an affiliated institution's network. To address this criticism, the Libraries and Elsevier embarked on a second phase of the project that developed an option for users to obtain a UF author's searchable and downloadable accepted manuscript for their personal use.

Phase II, Accepted Manuscripts for the Institutional Repository (AM4IR), implements the features and workflows developed to provide access to full-text manuscript versions of papers published from 2013 forward to all repository users not affiliated with a subscribing library. Full-text, UF-authored accepted manuscripts are now available to the user through a search conducted in the IR@UF. The Libraries conducted user and usability testing of this cross-platform user experience and assessed author and reader preferences for access to the accepted manuscript and final version of the articles.

This article describes the project's current status, the Phase II workflows, the user experience feedback, what the overall project currently delivers, and next steps including expansion to include articles by UF authors from other publishers. It concludes with a strategic discussion on the impact, alternative applications of this type of access, and the priorities negotiated by the library and publisher collaborators.

IR@UF–Elsevier project update

The IR@UF currently contains metadata and links for over 42,000 articles by UF authors that were published in Elsevier journals between 1949 and 2018. This collection provides access to published versions of UF-authored articles on ScienceDirect for UF-affiliated users and other users with access via any subscribing institution. This important feature enables tracking and reporting of article usage while creating a new type of resource by which researchers can more easily access UF-authored articles published by Elsevier with just a search of the IR@UF. Additionally, authors and other users are provided

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with a stable link to the published article for citation purposes.

Because external stakeholders stressed the need for access through the IR@UF- Elsevier project for users who are not affiliated with a subscribing institution, the project teams initiated Phase II to provide access to post-embargo author manuscripts within the IR@UF.

AM4IR

An important feature in Phase II was the ability for users without subscription access to ScienceDirect to display and download accepted manuscripts after the embargo has ended. Elsevier has prepared searchable PDF files for manuscripts accepted since 2013. These manuscripts are associated with the published version, so a user without access to the published version will be offered the ability to view and download for personal use the manuscript when one is available, and to purchase or otherwise obtain the published version if they wish to do so.

Phase II Usability Testing

In Phase II, we engaged research and teaching faculty, librarians, and UF graduate students to assess navigation to UF-authored accepted manuscripts. As in Phase I testing, Phase II also examined the user's understanding of labels and language created to indicate the type of access available and the terms of use. AM4IR is currently using "iFrame" technology that allows Elsevier to display content through the IR@UF platform, providing a secure, "embedding" environment that functions as a browser within a browser (Figure 1). This embedded iFrame view displays the title, the authors, their institutional affiliations and the corresponding author, if available. The benefits of using an iFrame view are that it allows the IR to capture metrics and to evaluate the usage of the author manuscript on an author level. The limitations of the embedding viewer are the lack of page numbers, no search capability, no zoom feature, and the need for users to scroll down to view the entire page.

However, once the user selects the option to download the PDF version, the user is provided with the Elsevier PDF viewer and downloader. This choice provides an enhanced view of the PDF, with page numbers, zoom functions, search capability, and access to a downloadable PDF.

During usability testing, we focused on user experience with the results pages, and the subsequent embedded view (using both the iFrame view and the Elsevier PDF viewer and downloader). Users remarked on their understanding of label text and function, the label location, and the landing pages presented with each selection. The iFrame view and the Elsevier PDF viewer were seen as redundant steps. Elsevier found the onscreen reading page images were not meeting accessibility standards and it complicated the production process of the AM4IR service. Elsevier recently produced an enhanced onscreen reader that resolves these issues (Figure 2).

Other findings include that users find the iFrame view to be a "busy" page; users spent a lot of time finding the labels to navigate to a downloadable PDF. Some of the features do not work consistently, and the page is seen as an unnecessary extra step. As it is not a searchable page, the users found it simply functioned as a "print preview." The Elsevier PDF viewer offered all of the features of interest to users to determine content value. This page offers access to the actual PDF, which automatically displays and can be downloaded. If users navigate to the publisher version, they land on the ScienceDirect title page; a familiar site welcomed by the user.

Figure 1. IR@UF iFrame

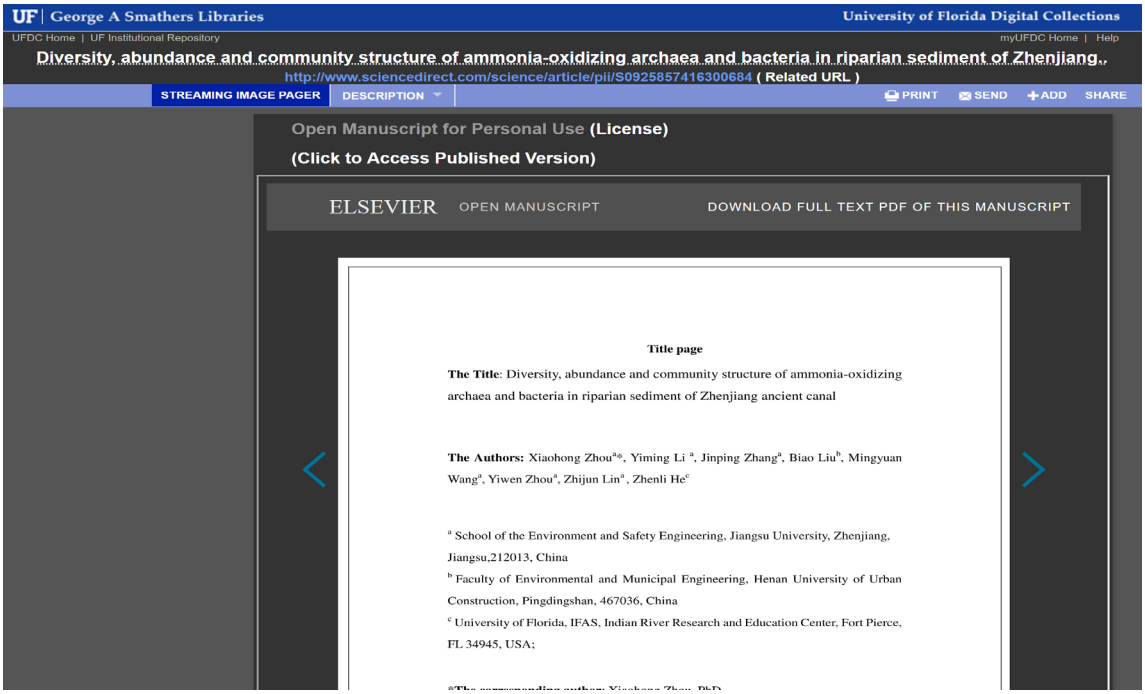
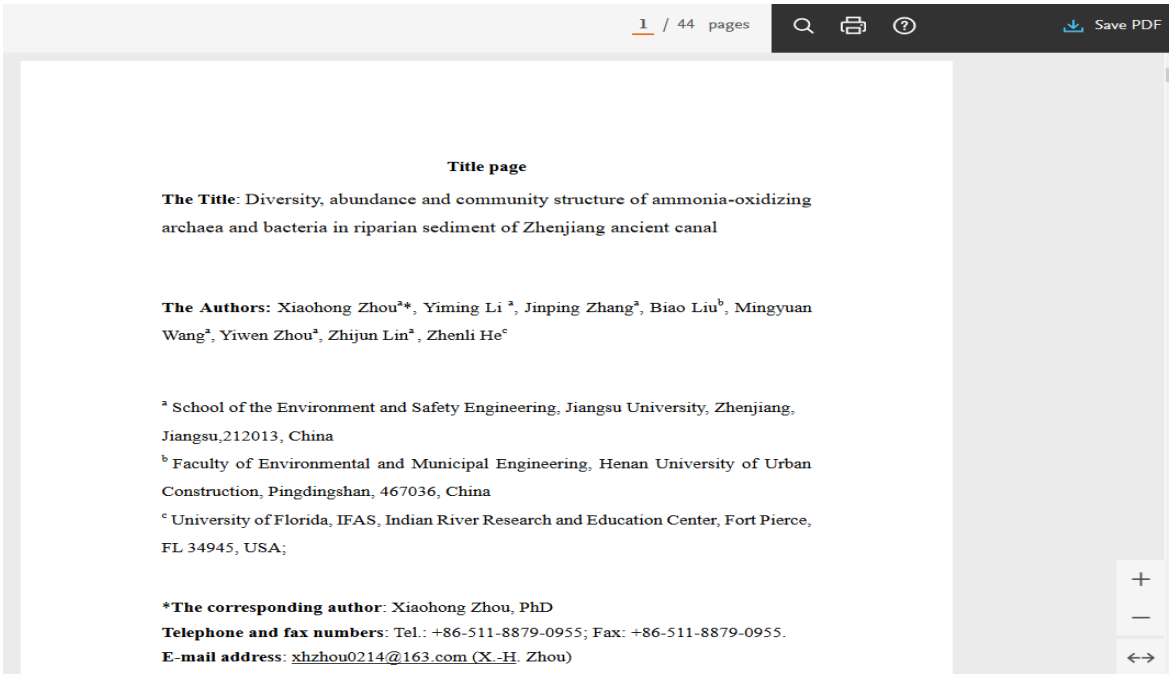


Figure 2. Elsevier Enhanced Reader



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The findings of user responses to labels indicate that the use of the word "Open" in both the results page thumbnail (Open Manuscript PDF Available) and the viewer label that displays the license terms (Open Manuscript for Personal Use) is either misleading or confusing. Users thought this meant the article was "in press," or was a "digitized version of the published article." Use of the word "open" led many to believe these are "open access" versions, free to the public with unrestricted use. UF has recommended that Elsevier reconsider using "Author Manuscript" in lieu of "Open Manuscript."

This last finding underscores the ongoing challenges of the project; managing the tension involved in providing immediately accessible material to deliver both compliance and access, while addressing the limitations of technology and the constraints of the publisher business model. Our conversation and scrutiny of the tools, process, and policies is ongoing as the teams work on language that represents the publisher's licensing permissions and the academic library's user-centric focus.

What Elsevier Has Learned

This strategic collaboration between UF and Elsevier has been of tremendous value to Elsevier. This collaboration gave the program team a deeper understanding of the ScienceDirect program for institutional repositories from both institutional and broader industry viewpoints.

Elsevier developed the ScienceDirect Application Programming Interface (API) program in 2015 in response to the continuous growth in the number of institutional repositories, and the challenges institutions face in facilitating access to their institutional output, ensuring compliance with funder and publisher policies, and in maintaining and developing a good user experience.

To help the Libraries present the Elsevier journal article output of UF authors, the ScienceDirect program offered Elsevier journal article metadata through an API. As the UF faculty publishes a significant number of articles with Elsevier, this provides access at scale, for both the institution and the publisher.

Another advantage of the ScienceDirect program accessed through the IR@UF is that it enables users to identify the best (published) article version and informs users when they have access to the full-text. This functionality is helpful for UF authors and Elsevier as it aggregates data on usage of the article, which provides a more comprehensive view on article usage and impact. Additionally, the ScienceDirect program offers automatic ingest of embargo end dates and licensing information on the article level.

Automating this comprehensive process enables the Libraries to ensure accepted manuscripts are hosted and shared in compliance with publisher policies, a value that can be replicated with other institutions, authors and publishers. Elsevier now seeks to work with other university librarians who wish to emulate the UF IR project experience to save staff and authors' time, as well as meet funder compliance requirements.

Next Steps

This UF and Elsevier collaborative concept is in line with CHORUS (http://www.chorusaccess.org/), an online dashboard that monitors publicly funded research compliance that can be used by authors, libraries, publishers, government agencies and others. Using a similar collaborative workflow and access policy, the CHORUS service identifies articles that meet the deposit requirements of U.S. funding agencies. Based on the Phase 1 success of the IR@UF-Elsevier, UF entered into a pilot program to test this new service from CHORUS. CHORUS demonstrates the scalability of this type of collaboration both technically and administratively. It would certainly be an administrative challenge to expand the IR@UF-

Elsevier model to multiple publishers without a central coordinating body like CHORUS.

In the future, Elsevier will focus its ScienceDirect program for institutional repositories on large volume repositories, especially those with extensive Elsevier articles, to ensure the time commitment of both parties is mutually beneficial. Feedback for this project and for projects like CHORUS, indicates that a cross-publisher version of the entitlements API like Elsevier's would have broad application and Elsevier along with other publishers, are exploring how to address that user need.

While this initiative only represents UF authors' work from a single publisher, for the years 2013 through 2017, Elsevier accounts for 19.3% of an annual average of 7,043 UF-authored publications. CHORUS includes Elsevier and other publishers and serves as a dashboard with key indicators for quick monitoring of compliance status. Mandatory deposit of articles can be verified, and if necessary, universities can contact their authors to remind them of the need to deposit.

Discussion

This IR@UF-Elsevier Project initiative has already provided a significant return on investment, one that is expected to grow with the additional access to author accepted manuscripts. The ongoing efforts for both Elsevier and UF are minimal, with adjustments anticipated only to accommodate software updates as with any other vendor's platform. After migration to the enhanced AM4IR viewer, the Elsevier program team plans to evaluate user experiences and impact on article usage metrics with the Libraries' team.

Establishing the AM4IR process and an acceptable user interface concludes the development aspect of this project. While the language within the labels guiding the user to download the accepted manuscripts remains a point for further discussion between the Libraries and Elsevier, the process for ingesting the articles using the API is complete and now occurs automatically. The introduction of the new Elsevier viewer will require modest amendments to the existing code, but this update is welcomed as it will eliminate the need for the iFrame view, which frustrated and confused users.

Using Elsevier APIs for automatic embedding of both published articles and accepted manuscripts by UF authors alleviates the burden of author submission to the IR@UF, while ensuring full coverage of UF-authored publications from Elsevier journals for users of the IR@UF. This greatly increases the ability of the public to access scholarship. These were among the desired outcomes for the UF and Elsevier collaboration. An additional benefit for researchers is the concentration of UF-authored scholarship published by Elsevier in one central location, providing ease of access to a relevant author's research stream.

Re-envisioning the Role of Institutional Repositories

The usability testing and assessment provided an opportunity to explore the various stakeholder views of the institutional repository, the user's understanding of the document types being displayed, and the ease of navigation given the customized labels that are clearly a departure from those typically in use in ScienceDirect results. These unique labels describe the type of access users may encounter in a platform that is primarily for open access content. Usability participants began their search within the IR and some were confused when presented with materials that did not immediately provide access. However, several faculty participants commented that the type of one-stop discovery that the IR@UF-Elsevier project offers - with the bulk of an author's works accessible from the institutional repository - enhances their practice of following the work of just a few relevant research-

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ers, plumbing the scope of their work in depth. This is a finding the Libraries can leverage to grow the culture of deposit of UF faculty and researchers and lead to other features they may find of value.

Both phases of the IR@UF-Elsevier project serve as a use case for integrating Open Researcher and Contributor IDs (ORCIDs) and other author/institutional identification systems into the IR and throughout the scholarly publishing process. Challenges remain as metadata can be incomplete, especially for articles authored by many researchers from many institutions; also, the wide variety of metadata included by publishers emphasizes that the use of an authority structure like ORCID would enhance the accurate identification of an author, linking all of their work, irrespective of its source publication. Systems like ORCID are expanding within academic institutions and have started to see increased usage by academic publishers.[2]

Value of the Library-Publisher Collaboration

The benefits of a partnership between a research library and a publisher is to share the resources each brings to the collaboration. Academic libraries offer a captive but highly informed audience with strong views of both access and intellectual property rights; a large publisher like Elsevier contributes volume of content to an innovative initiative such as the IR@UF-Elsevier project.

While as librarians, we are aware of the value of these resources to our users, we are also aware of the demands placed on increasingly constrained budgets in providing access. Acknowledging this contentious relationship, this project provided UF librarians and staff an opportunity to work with representatives of Elsevier and to collaborate within a very different context, sharing resources and expertise to address diverse objectives with shared stakeholders.

The Libraries expect this project to strengthen its relationship with the UF office of the Vice President for Research and the UF faculty. The information derived from the IR@UF-Elsevier project can assist the Division of Research Compliance with identifying published articles that may have a deposit requirement in order to assure compliance, reducing the need for authors to do this. Currently, the onus is upon UF researchers to ensure compliance. Elsevier, among other publishers, increasingly supports compliance with funder public access mandates, and both the Libraries and Elsevier view this project as the beginning of a practical and cost-effective way for the Libraries to facilitate the UF funding compliance requirements.

[1] Russell, Judith C.; Wise, Alicia; Dinsmore, Chelsea S.; Spears, Laura I.; Phillips, Robert V.; and Taylor, Laurie "Academic Library and Publisher Collaboration: Utilizing an Institutional Repository to Maximize the Visibility and Impact of Articles by University Authors," *Collaborative Librarianship* 8, no. 2, 2016, Article 4. Available at: https://digitalcommons.du.edu/collaborativelibrarianship/vol8/iss2/4.

[2] "Connected Research!," ORCID blog, ORCID, last modified March 13, 2019, https://orcid.org/blog/2019/03/14/connected-research