

Accelerating Social Impact Research: Libraries at the Intersection of Openness and Community-Engaged Scholarship

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About the Accelerating the Social Impact of Research (ASIR) Pilot Program

The social impact of research, whether it is examining educational and economic disparities, developing new medications, or understanding environmental challenges, is a developing, but key, component of higher education and research institutions. Critical to accelerating this impact and advancing public good is the broad adoption of open research principles and practices, which have been shown to benefit the individual researcher through increased citations and scholarly impact, to spur scientific advancements, and to provide more equitable access to research and a deep commitment and engagement with the local community or the communities that are engaged in or using the research.

As educators and stewards of the scholarly and scientific record, research libraries have a significant interest in accelerating open research and scholarship within their institutions, and are ideally situated to support the institutional mission to serve the public and their communities. Within higher education, research library leaders have a unique position on campus, supporting every discipline with services, expertise, collections, and infrastructure. To move forward together, ARL piloted a six-month cohort program for members to accelerate the adoption and implementation of open science principles at the intersection of social impact of research and scholarship.

Participating Institutions

- Johns Hopkins University – The Sheridan Libraries
- North Carolina State University – NC State University Libraries
- New York University – New York University Libraries
- Princeton University – Princeton University Library
- Simon Fraser University – Simon Fraser University Library
- University of Illinois Chicago – UIC Library
- University of Virginia – University of Virginia Library
- University of Texas at Austin – University of Texas Libraries

Project Team

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The goal of this pilot program was to meet institutional needs for developing a strategic approach for advancing the social impact of research, aimed at building and reinforcing institutional points of influence for open research practices and community engagement.

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Introduction

The global impact of the coronavirus pandemic, combined with heightened attention to inequality in the US and globally, highlighted known fissures in the research and scholarly publishing ecosystem. Urgent and life-saving need for open access to data and its analysis exposed inequity in knowledge production at a time of palpably declining trust in academic research, science, and government. Recent movement in research institutions, government agencies, and the scholarly community suggests an increased interest in public and social impact of research, with a concomitant commitment to open practices and to engaging the communities most affected by scholarly and scientific research in its design and execution. The public also rightly expects the research institutions they support with tax dollars, tuition, and in myriad other ways to provide accessible evidence of the benefits from its support. Research libraries, as community engaged institutions and historic champions of openness, are ideally situated to advance these promising trends and strengthen the bridges between them.¹

From the lens of public or social impact, where social impact is “an effect on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia,” this paper first introduces the Accelerating the Social Impact of Research (ASIR) Pilot Program, reviews consensus definitions of open scholarship (inclusive of science, social sciences, and humanities), and then examines the more diffuse and evolving landscape that is community-engaged scholarship.² While libraries are strongly associated with open scholarship, they are less visible in—and potentially less aware of—community-engaged scholarship; and the paper raises opportunities for their deeper involvement. These modes of scholarship are connected in interesting ways. Researchers in both open scholarship and community-engaged scholarship are often motivated by increasing the reach and impact of their work, particularly in democratizing knowledge production outside the academy. Both groups of scholars face challenges with institutional support and rewards. This paper therefore looks at research library

activities within both of these conversations, and provides examples and strategies for strengthening services at the intersection of open and community-engaged scholarship. The increased visibility for research libraries at this convergence represents an opportunity for institutional leadership.

Libraries profiled in this report came together in part to discuss how their organizations could partner with institutional efforts to align incentives to support open scholarship. Adoption of open practices and processes varies across disciplines, but the structure of academic career advancement, with its dependence on publication and research output in high impact venues, has been widely recognized as a structural and cultural challenge in this transformation. The relationship of research libraries to researcher incentives is complicated. Research libraries are partners in the research enterprise; focused both on scholars advancing scholarship and as organizational drivers to support institutional missions. For many of the libraries profiled here, those institutional missions include increasing engagement with their surrounding communities and an interest in communicating the social, or public impact of their local research externally—a set of objectives well-suited to the open access publishing and open scholarly practices these libraries have been promoting for more than two decades.

In early 2019, the National Academies of Science, Engineering, and Medicine (NAEM) established a [Roundtable on Aligning Incentives for Open Science](#). Featuring broad stakeholder representation, including representatives from academic and research libraries, the Roundtable built upon the previous consensus study *Open Science by Design*.³ Over the course of three years, the Roundtable convened several public meetings, issued two reports, and established a sense of momentum for shifts in research policy and funding. Its main output, an [Open Science Toolkit](#), published in 2021, includes strategies for fostering open science practices, terminology and a discussion framework about open science based on stakeholder groups, such as academic leadership. Of particular importance, the Toolkit takes a departmental/discipline approach on hiring and promotion and tenure review practices and also includes signaling language for funding

agencies to review open access in proposals, progress reports, and final grant reports. A next step for NASEM will be in advocating for research policies at the university level to account for open practices.

The ARL ASIR cohort was formed in part to amplify and reflect the conceptual work of the NASEM Roundtable within the library community and consider how libraries can contribute to its advancement. Through our cohort conversations and pre-cohort institutional interviews, library leaders indicated that the social or public impact of research was a strong reason driving why libraries were interested in advancing open research practices. **Research Libraries specifically saw roles for themselves supporting two modes of scholarship that are advancing social impact—open science and community-engaged research and scholarship.**

Equitable and enduring access to information, supported through open science and open access, is a critical mission of many libraries worldwide. Open practices can have a direct benefit to public good and advance real world outcomes and impact—such as socioeconomic mobility and environmental well-being. At the same time, open content and infrastructure can enable the kind of research that involves and benefits local communities, and is, foremost, how research libraries have the most significant social or public impact. “Knowledge brokering [or community-engaged scholarship]—the act of connecting and creating relationships between producers and users of knowledge—is not new. Jonathan Lomas (2007) reports that relationships between academic researchers and non-academic research partners can be documented as far back as 1880.”⁴ As discussed further below, community-engaged scholarship and research in collaboration with or within research libraries can take multiple forms, including community archiving, knowledge mobilization, and citizen science project support and collaboration.

Consensus Language of Open Science

“Open science is defined as an inclusive construct that combines various movements and practices aiming to make multilingual scientific knowledge openly available, accessible and reusable for everyone, to increase scientific collaborations and sharing of information for the benefits of science and society, and to open the processes of scientific knowledge creation, evaluation and communication to societal actors beyond the traditional scientific community. It comprises all scientific disciplines and aspects of scholarly practices, including basic and applied sciences, natural and social sciences and the humanities, and it builds on the following key pillars: open scientific knowledge, open science infrastructures, science communication, open engagement of societal actors and open dialogue with other knowledge systems.” – UNESCO, 2021

On a similar timeline to the NASEM Roundtable, the United Nations Educational, Scientific and Cultural Organization (UNESCO) published a supportive open science message through a global, long-term public consultation process that led to the ratification of their [Recommendation on Open Science](#) in November of 2021. Designed to be a consensus document, these recommendations can be considered as the global framework that synthesizes and promulgates a common definition and scope for the various threads of openness; indeed the UNESCO recommendations go so far as to group open access, open data, open education, open software, and open hardware into “open scientific knowledge,” which is just one of four areas of their overarching vision of open science.

With respect to ARL member libraries, Canada is a member state of UNESCO; the US formally left in 2019. While the path to rejoining is complex and in the near term unlikely, US organizations can and are advocating alignment with its international recommendations. UNESCO recommendations encourage seven specific actions for member states and include investing in training for researchers, developing an enabling policy environment, and fostering a supportive culture by aligning incentives.⁵ Research libraries contribute to all of these directions.

Engaged Scholarship: An Evolving Landscape

Reaching consensus for UNESCO's definition of open science was a protracted process and a comprehensive and conceptual stakeholder consensus has yet to be reached towards defining community-engaged scholarship and community-engaged research. Community-engaged modes of research are diffuse and may encompass specific modes such as community-placed research, community-based research, community-based participatory research, community-driven research, or community-engaged research. Although there is an opportunity for collaborative discussion on clearly demarcating the different modes of community engaged scholarship, and how libraries can support these practices, there are several working definitions of note considered in this report. The [Academy of Community Engagement Scholarship](#) (ACES) defines community engagement scholarship broadly, as “the collaborative generation, refinement, conservation, and exchange of mutually beneficial and societally relevant knowledge that is communicated to and validated by peers in academe and the community.”⁶

The White House [Office of Science and Technology Policy](#) (OSTP) offers a more specific definition of community-engaged research, where “Community-engaged research refers to research conducted collaboratively with groups of people affiliated by geographic proximity, special interests, or similar situations with respect to issues affecting their well-being. Researchers engage with a community to develop research questions, design a study, and collect data.”⁷ Integral to the practice of community-engaged research is the necessity of partnership development, cooperation and negotiation, and collaboration with community partners.⁸

Within higher education associations and throughout the academy, we observe a growing interest in community-engaged scholarship. Adjacent to citizen science, where projects are those that typically involve lay practitioners, engaged scholarship involves partnership with stakeholder communities in research conception, design, and authorship. This kind of scholarship is found in the humanities and social sciences,

medicine and public health, environmental science, and more. These partnerships take time, to establish relationships and build trust, and to communicate across cultural or disciplinary boundaries. In certain cases, they require overcoming explicit tension and distrust toward research institutions. And the research outputs of such endeavors might take additional time to co-author for various audiences. Despite these added challenges, scholars engage with communities because they believe the resulting research will have more impact and wider credibility. Recognizing such efforts within the academic incentives structure requires thoughtful intervention. The parallels to open scholarship are striking.

The Association of Public and Land Grant Universities (APLU) has spent the last decade supporting and catalyzing members to advance community-engaged science through public impact research (PIR). APLU broadly defines PIR as, “how university research improves lives and serves society—locally, regionally, nationally, and globally.” PIR projects frequently include researchers across disciplines, require engagement from a broad number of stakeholders, and are often designed to respond to the needs of a particular community. Given that all APLU member universities were founded specifically to benefit the public, the research that public and land-grant universities produce also serves this need. APLU’s PIR program further emphasizes the value of collaborative research with communities—not just *about* communities.⁹

In addition to association level efforts to accelerate community engaged science through PIR, there are also a number of researcher-based organizations advancing this work. Globally, the International Science Council, which “acts as the ‘voice of science,’ with the vision that scientific knowledge, data and expertise are universally accessible, and their benefits universally shared,” launched a Task Group on Citizen Science Data in 2016. Since 2016 this group has focused on showing the importance of data to citizen science outcomes, more specifically, using data and evidence to show progress towards the United Nations Sustainable Development Goals (SDGs).¹⁰ And in 2021,

seven scholarly societies—from anthropology to geophysical science—launched a new open access Community Science journal, Community Science Exchange, “aimed at developing and promulgating leading practices, resources, and information around community science.”¹¹

NASEM also has groups interested in and supportive of community-engaged scholarship. A recent workshop by its Standing Committee to Advance Science Communication focused on institutional barriers and incentives for engaged research.¹² The workshop surfaced differing modes of community engagement for researchers to potentially adopt, to identify needs and opportunities among institutions to support engaged research, and to encourage capacity building and scaling of community-engaged research. Like open scholarship, community engaged research is highly motivated by a desire to improve the diversity and inclusivity of academic research. In the field of health, for example, community-engaged research has been recognized by both the US National Institutes of Health and the National Academies as a pathway to greater health equity.¹³

Community engagement can also enhance public trust in science, research, and the policies and recommendations that flow from them. In January 2022, the White House Office of Science and Technology Policy (OSTP) [Scientific Integrity Task Force](#) released a [report](#)⁷ reviewing federal agency scientific integrity policies. In the report, the task force lays out a series of “good practices” for federal agencies to consider and adapt, on such topics as building a culture of scientific integrity, protecting the integrity of the research process, communicating scientific information with integrity, procedures for safeguarding scientific integrity, and institutionalizing scientific integrity. The report directs agencies to consider new forms of scientific inquiry including citizen science and community engagement.

In Canada, national funders use the term ‘knowledge mobilization’ to describe “the reciprocal and complementary flow and uptake of research knowledge between researchers, knowledge brokers and

knowledge users—both within and beyond academia—in such a way that may benefit users and create positive impacts within Canada and/or internationally, and, ultimately, has the potential to enhance the profile, reach and impact of social sciences and humanities research.”¹⁴ As the University of Winnipeg explains it, “traditionally, researchers have produced valuable knowledge and creative works that have been narrowly shared among other academics in similar disciplines, either through peer-reviewed journals or at conferences specific to an academic area of study. Translating that knowledge into a format that is more accessible to a range of sectors is critical to informing policy change and advancing social innovation through engaged scholarship. Knowledge mobilization is a *process* and research impact beyond the academy is the desired *outcome*.”¹⁵

Research Libraries at the Intersection of Openness and Engagement

Research libraries operate as essential partners with researchers and in alignment with institutional missions to increase the public impact of research and scholarship. However, in a study of researchers’ perceptions of the connection between open research and societal impact, the services and domain expertise of libraries were expressed as a clear need, without an awareness that the library is prepared and able to provide that knowledge through training, consulting, or partnerships.¹⁶ **The opportunity to clearly indicate that connection, with example programs, initiatives, or projects, was a defining theme.** The thrust of the decades-long push in libraries toward support for open access, open data, and open education coincides with an increased interest and acknowledgement of practices of engaged scholarship, summarized by Beaulieu, Breton, and Brousselle as “a true academic posture, rooted in values of social justice and citizenship, that prompts academics and universities, in their roles of teaching, research, and service to society, to work in ways that will build

mutually beneficial and reciprocal bridges between university activity and civil society.”¹⁷ Open science and community engaged scholarship are simultaneously rising in importance, and while the library currently has more visibility in open science it has much to offer in connecting engaged and community scholarship to an open research agenda.

More than 20 years ago, the Kellogg Commission report [*Returning to Our Roots: The Engaged Institution*](#) outlined seven common characteristics that an engaged university would promote: responsiveness, respect for partners, academic neutrality, accessibility, integration, coordination, and resource partnerships.¹⁸ A contemporary university library will see echoed in those characteristics much of the labor and effort that is invested in the full breadth of its support services. In the instances of both open scholarship and community engagement, libraries might consider the following questions, drawn from Ayris and Ignat, in their article *Defining the Role of Libraries in the Open Science Landscape: A Reflection on Current European Practice*:

- How are libraries offering leadership in their institution?
- What infrastructure is needed—technical, staffing, resources?
- What new skills are needed to deliver open science?
- Does your advocacy lead to innovation?

With these questions framing how libraries support open scholarship and community engaged research, outlined below are some specific examples from the ARL member libraries profiled in this report. and together broadly gesture at opportunity areas. Libraries may fall into one of two, or both, general categories at the intersection of openness and community engagement:

1. reimagining and translating open access, open data, and open education in the terms and scope of social impact and community engagement and/or
2. leveraging existing capacity and momentum around social impact/community engagement and looking for ways to connect it to open research.

Advocate for Open and Community-Engagement Activities

Open access, open data, and open education advocacy is well-tread territory for library support. Connecting open research with social impact continues to broaden the scope for how that advocacy might look, aimed at university-level policy change that hopes to produce wider evolution.

- The University of Texas at Austin is concluding on a year-long study centered on sustainable scholarship, with the library playing a significant role in the committee's work.¹⁹ The outcome is expected to flow into a library-supported initiative that will pair advocacy around open scholarship and social impact.
- The University of Virginia took the opportunity of the founding of a new School of Data Science to add the library's expertise and expend cultural capital in the development of open science criteria in the tenure and promotion guidelines of the School.²⁰ This work is largely seen as a model to other libraries with similar opportunities on the horizon.
- Princeton University Library Open Research Steering Committee has identified a number of areas of strengths and opportunities, including engaging with interest and expertise already in our library staff, students, and faculty to develop regular events and programming that both highlight and advance open scholarship. The Libraries will continue to expand and refine its infrastructure and services to provide the research community with easy access to what they need to embrace open research practices, this includes expanding the scope of our Open Access Repository and Open Publishing services.²¹
- Various stakeholders from the research community, including library leaders from MIT, Atlanta University Center, and National Library of Medicine, collaborated on the National Academies of Science, Engineering, and Medicine's Toolkit for Fostering Open Science Practices.²² This toolkit is expected to lay the groundwork for organizational change through a community of practice

and providing detailed recommendations for evolving research policies at universities to include open practices and products.

Build, Host, and Enhance Infrastructure (Human, Social)

While much emphasis has been placed on technical infrastructure to support open research (repositories, standards/protocols), several libraries are building new and innovative centers of expertise that offer examples of human and social infrastructure in support of technical knowledge.

- Simon Fraser University’s Knowledge Mobilization Hub, affiliated with the library, is “intended to facilitate wider public engagement with research and deepen connections between researchers and knowledge users.”²³ The Hub offers services that echo what a proposal development office might provide, paired with dedicated training in informing policy, engaging with media, and expanding concepts of research impact.
- Johns Hopkins University is one of the first, along with Rochester Institute of Technology, to launch an Open Source Programs Office (OSPO), which are becoming more common in the tech and commercial sector. Johns Hopkins OSPO pulls together knowledge and expertise from the libraries’ data and digital curation team and “focuses on both operational and engineering aspects of open source programs and strategic priorities such as educational experiences and partnerships with the broader community. The OSPO represents the first point of contact for Baltimore City organizations that wish to work with the Institute for Data Intensive Engineering and Science (IDIES).”²⁴
- NYU Libraries participated in a university-wide faculty cluster hiring initiative which focused on themes including “Building STEM for the Public Good: Cultivating Openness in the Sciences” and “Health and Scientific Literacy, Openness, and Equity.”²⁵ Through this initiative, NYU Libraries expects to increase its

investment in expertise in both open science and community engagement.²⁶ The clusters are also expected to lead to cross-fertilization among scholars (including library faculty and staff) who are both practicing in and researching “public technology” or the “social impact of technology” broadly defined.²⁵

Support New Research Modes and Methods

The concept of citizen science and its link to open research and science has been previously explored by library groups such as the Ligue des Bibliothèques Européennes de Recherche — Association of European Research Libraries (LIBER). Citizen science, or the participation of the general public in the scientific research process, is a direct link between community engagement and scientific research. In 2021, LIBER published the first of a four part book series on research libraries and citizen science. This first book focuses on articulating the skills that librarians, researchers, and the public need to create and manage citizen science projects in the open.²⁷ This set of skills, which was the output of the LIBER Citizen Science Working Group, centers citizen science in the open research domain and as a key method for research and scholarship.

- NC State University Libraries partners with the Leadership in Public Science cluster to support citizen science initiatives like the Citizen Science Challenge and faculty-led public science communication and interest projects, such as the Fermentology lecture series adapted for an open access publication.²⁸
- The University of Illinois Chicago (UIC) has been focused on community engagement as a chancellor priority for the past six years, with an Office of Community Engagement and Neighborhood Partnership, whose mission is to facilitate mutually beneficial partnerships between different Chicago area communities and UIC.²⁹ Over the next few years as the UIC Libraries focuses on the new NIH Data Sharing policy, there will be focus on community engagement with the data

generated by our organization. As a health science institution, UIC will collaborate on the reuse of patient records and increased community access of patients to their own health information and patient participation in research.

Conclusion

Research libraries are well-positioned and prepared to serve as facilitators for connecting openness to community engagement. The building blocks are laid, from global consensus to shifting policy landscape to local initiatives. The socio-political challenges for academic research to affect real change remain, but following a two year shared global experience like the COVID-19 pandemic it feels that there is a will to address these challenges. Additionally, few institutional entities within universities have the broad, disciplinary-agnostic reach into the community that the research library has, by virtue of physical spaces, programming, partnerships, and professional ethos. These strengths represent a powerful contribution to public or social impact research.³⁰

Institutionalizing support and recognition of public impact research, community engaged scholarship, and open research remains the common labor of university administration. Research library leaders and practitioners are supporting this recognition through collaborative projects, documenting the intellectual labor, and building, promoting, and disseminating the products of these partnerships. Throughout, the library community continues to serve as a connector, situating community advocates in proximity to researchers embracing openness.

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