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Public Scholarship

As implied by the title of this book's first section, digital scholarship is a term that implicates not only a set of practices but also a set of values—values that must be exposed and exercised in order for digital scholarship to grow and thrive. In this chapter, I plan to interrogate one of these values in particular: public scholarship, or what it means for a library to support its faculty and students in the cultivation of (more) public impacts and identities with regard to research and digital scholarship work.

BACKGROUND

As the head of Instructional Design and Outreach Services at the University of Washington Libraries, I find myself often thinking about the relationship between digital scholarship and the larger academic values of scalability, accessibility, and diversity. On a fundamental level, this is because my unit's purpose within the Libraries is to help improve the relevance, delivery, and effectiveness of information literacy instruction to students enrolled in online and professional programs, which often involves taking advantage of tools,

projects, services, and pedagogies that fall under the broad umbrella of digital scholarship. That said, my current work with instructional design is not the only reason that I became involved in the culture of digital scholarship. Rather, like many mid-career librarians, I am deeply influenced by my previous professional roles—in my case, serving as the librarian liaison to a School of Communication, and, before that, working as a graduate student in a digital humanities-focused research center.

Instructional design, communication studies, and the digital humanities all have strong overlapping interests with digital scholarship, not only because they all embrace technology, but because they each advocate in their own ways for a broader understanding of the audience of research. Is the purpose of conducting research simply to reach other researchers, or is it something greater and more inclusive? Each of these fields argues strongly for the latter viewpoint, and for an intentionality around the benchmarks of research that is not only well beyond the training of most faculty but also outside of their comfort zones.

But let us pause here a moment and return to this idea of public scholarship, and what that concept means in relation to the larger topic of research impact.

RESEARCH IMPACT AND PUBLIC SCHOLARSHIP

Just as digital scholarship is a field that has come to embrace a surprisingly wide range of digital tools and practices, research impact is an area whose default mode has grown to include, rather than exclude, the practices of scholars and behaviors of their outputs. This is because at its core, research impact is essentially driven by a set of questions: What does it mean for a scholar to produce “meaningful” research? What is the real or intended impact of a piece of research, and how can we tell if this impact has occurred? Last, but not least, can different types of impact be compared, or cultivated, or controlled—and if so, what responsibility do researchers have for managing the impacts of their work?

Defining, tracing, and understanding the impact of research is, as one might guess, a tricky business. No two specialties do this quite the same way, which makes having productive conversations about impact across departments, let alone disciplines, a little like discussing politics with extended family at Thanksgiving dinner. It’s a mess. At the same time, the subject of research impact does have its own distinct and fascinating history, one which is heavily based on the twentieth century’s record of scientific research and publication.

In the nineteenth century, an explosion in the volume of scientific research created a new and desperate need on the part of scholars, students,

and librarians for better ways to filter, organize, and prioritize scholarly information. Of particular importance was a way to cope with the sudden prominence of professional scientific periodicals, which rose in number from roughly 100 at the beginning of the century to an estimated 10,000 by its end.¹ Scientific journals and journal articles therefore became the focal point for early twentieth-century questions of scholarly communication, including “which print journals are the most essential to read, or subscribe to, or to keep on the shelf?” For decades, personal, anecdotal, and highly subjective answers abounded—much as they continue to do today. However, in the early twentieth century, a new type of answer to this question also began to appear, one based on the application of statistical methods to sets of written publications, especially journals and journal articles. The result was a new field of study: statistical bibliography, which later filtered and evolved into relatively catchier names, including *bibliometrics*, *scientometrics*, *librametrics*, and a bit later, *informetrics*. Of these, *bibliometrics* is the best known by far, and the one we’ll use for the rest of this abbreviated history.

For those of us invested for whatever reasons in the topic of research impact, it is hard to overstate the influence of bibliometrics on how today’s academic institutions view and evaluate “meaningful” research. Because of their overwhelming focus in practice on academic journals, the oldest and best-known bibliometrics are all inevitably based on the analysis of article citations—citations derived mostly, and for many years exclusively, from large sets of science-focused journals. Take, for example, the mega-metric of Journal Impact Factor. Journal Impact Factor (often just called Impact Factor, or J/IF) was invented around 1955 by Eugene Garfield, an entrepreneurial scholar with credentials in chemistry, library science, and (in later years) structural linguistics, who also founded the Institute for Scientific Information (ISI).² Its original purpose, according to Garfield, was to help select journals to be included in the first Science Citation Index—a revolutionary research discovery and retrieval tool published by ISI in 1963, which later became the basis for the internationally recognized Web of Science database. To determine which journals were influential enough to be included in the first Science Citation Index, Garfield suggested a metric that would start with the number of citations a journal received in a specific year for articles it published in the previous two years, and then divide that number by the total number of articles published by the journal during the same two previous years.³ Thus, if a journal generated 1,000 citations in 1960 for articles published in 1958 and 1959, and published 100 total articles in 1958 and 1959, then it would have a 1960 Journal Impact Factor of 10 ($n = 1,000/100$). In 1976, following the success not only of the Science Citation Index but also its follow-up project, the Social Sciences Citation Index, ISI published the first edition of *Journal Citation Reports*, a stand-alone resource that ranked scientific journals according to their latest Journal Impact Factors. Today, *Journal Citation Reports* is the

preeminent tool for ranking and comparing academic journals in the sciences and social sciences, although it has since grown to include other bibliometric indicators, and now offers the option to filter its journals into approximately 235 disciplinary sub-categories.

Not shockingly, the new availability of these completely quantitative, seemingly objective means of comparing the influence of different journals was something of a revolution within the halls of mid-to-late twentieth century academia. Researchers, for their part, had at last an alternate means of understanding patterns in scholarly communication to simple word of mouth. Librarians, mindful of their users' needs, had a new set of tools for managing their collections and connecting scholars with relevant research. But it was academic institutions, ever hopeful of increasing the influence of their departments, that took the next significant step, which was to apply statistical methods like those behind Impact Factor to the records of individual faculty, either literally by using Impact Factor as a proxy for faculty publication quality, or by assessing faculty potential through an analysis of their article citation counts over time. The result was, for many research stakeholders, a frustrating oversimplification of what it meant for scholarship to be impactful. Scholars in fields that primarily produced monographs, policy documents, creative works, and other non-article outputs were left looking weak in relation to those in fields that thrived in a world of journal citations. Researchers with continuing ties to professional practice were frequently counseled to pivot their portfolios toward outputs with a higher likelihood of generating academic citations and accolades. To this day, many students and faculty, especially in the sciences, feel pressured to design their careers around citation-based notions of research impact, rejecting opportunities that better match their interests and those of their communities.

Although it would be convenient to blame this turn of events on the existence of bibliometrics, or at least on the popularity of Impact Factor, the reality is, of course, more complicated. "Impact factor is a mixed blessing," Garfield himself was known to say in the decades following his metric's success. "Like nuclear energy . . . I expected it to be used constructively while recognizing that in the wrong hands it might be abused."⁴ The question of what it means to use research impact metrics constructively is still a matter of debate institutionally as well as across the disciplines. That said, many major professional organizations have issued explicit statements over the last ten years cautioning institutions and researchers against the use of bibliometric indicators as the primary means of evaluating research; among them the American Society for Cell Biology, IEEE, and the American Mathematical Society.⁵ One factor in this pushback is certainly the "abuses" alluded to by Garfield—which tend to occur most egregiously in situations where quantitative indicators of impact are encouraged without mitigating evidence of research or impact quality. However, the other major factor—arguably the more influential of

the two, given the timing—is the advent of the internet and subsequent social networking platforms, which have expanded and energized conversations about impact in ways that were unthinkable even at the beginning of the twenty-first century. As society’s daily practices of information-seeking and sharing have changed to include digital platforms, peer networks, and nontraditional voices, so too have we seen the infusion of openness, access, interdisciplinarity, individuality, and informality into our mental models of research and impact. It is no accident that the same innovations that gave birth to the field of digital scholarship were also instrumental in reinventing the topic of research impact, giving scholars permission to propose new answers—or re-propose those that had previously been dismissed—to the original question of what makes research meaningful.

One special beneficiary of what I will call this “digital era” of research impact is the concept of public scholarship, which is also sometimes called publicly engaged scholarship, community-engaged scholarship, or community-based scholarship. Its definition, like its name, varies noticeably across the academy—but it is commonly understood to suggest a type of scholarship that has both a serious and intentional connection to public groups, public practice, public outcomes, or all three of these combined. For example, an often-cited 2008 report by the Imagining America consortium of arts and humanities-focused colleges and universities describes public scholarship as follows: “Publicly engaged academic work is scholarly or creative activity integral to a faculty member’s academic area. It encompasses different forms of making knowledge ‘about, for, and with’ diverse publics and communities. Through a coherent, purposeful sequence of activities, it contributes to the public good and yields artifacts of public and intellectual value.”⁶

One important feature of this definition, which is expanded upon in the full report, is the idea that public scholarship cannot be assigned by default to a specific field or department. “Not all scholarship is public scholarship, and not all creative work in the arts is public art or public design,” the report explains.⁷ And although it’s fair to say that the arts, humanities, and social sciences do tend to get the lion’s share of attention when it comes to the locus of public scholarship projects, there are enough examples of public scholars in the sciences, particularly the health sciences, to make the term genuinely interdisciplinary in scope.⁸

So why is public scholarship so intertwined with the digital era of research impact—and why is it a core value of the field of digital scholarship? Looking at our working definition, there is nothing especially new or tech-savvy about the idea of public scholarship—and yet instinct tells us that something about its recent manifestation qualifies it as a growing movement.

The first answer, as you are probably already thinking, is that we are living in a critical moment in which both information and technology are viewed by most people as having vast public dimensions, and in some cases, public

responsibilities. In the library world, where terms like “open access” and “net neutrality” are both familiar and common, we know this argument well, and have embraced it as our own via our professional organizations, marketing campaigns, and institutional mission statements. At the University of Washington Libraries, for instance, we strive to “advance intellectual discovery and enrich the quality of life by connecting people with knowledge.”⁹ Thirty years ago, that might have meant helping face-to-face patrons learn to use an OPAC terminal to more quickly locate journal issues in the stacks. Today, however, the bar for “connecting people with knowledge” is considerably higher, and patrons understandably seek information—including research—that conforms to their expectations for instant, cheap, ubiquitous access. For librarians at public institutions and visitor-friendly private entities, these expectations have real repercussions for our purchases and policies, as we strive to make research not only available but convenient for members of our communities, including the nonaffiliated, nonexpert public.

This first answer to the “why now?” question of public scholarship is certainly important—but taken by itself, I would say it slightly misses the point when it comes to the reason public scholarship matters to digital scholarship and to the latest developments in research impact. The real deal—the juicy stuff—comes when we reflect what it means if today’s researchers are no longer exclusively confined to producing outputs that one must go to or through, a library to access. Indeed, as *Imagining America’s* definition points out, public scholarship can denote *any* scholarly or creative activity, so long as it is both integral to its academic area and purposeful in its connection to diverse publics. Such a statement is, I think, a direct reflection of the variety of outputs and options that characterizes research—and research impact—in the digital information age. Faculty and students are now able, if not encouraged, to share insights and information not only by publishing in subscription journals but by adding preprint manuscripts to online academic networks, creating project websites, writing for scholarly blogs, sharing recordings on YouTube, posting to Twitter, uploading data to repositories, sitting down for interviews with online publications—basically extending their scholarly footprints in ways that not only make digital discovery of their work more likely, but also public digital discovery. What’s more, self-identified digital scholars are better situated to take advantage of this landscape, as their voluntary engagement with digital tools and methods suggests a higher probability of producing “artifacts of public and intellectual value,” that is, research outputs that will translate well to at least one publicly accessible online space, and hopefully more than one.

Thanks to these opportunities, and the benefits they imply, it is a much smaller leap for modern-day researchers to imagine the public as an audience for their research, and thus to see their research as potentially part of the project of public scholarship. What differentiates those who do from those

who don't is sometimes as basic as the presence of a catalyst—an encouraging policy, a positive role model, an appropriately themed research venue, or simply access to information about the tools, technologies, and methods of planning one's scholarship with community in mind. As academic librarians, we have the power to create some of these catalysts, particularly when it comes to teaching faculty and students about the diverse impacts of digital public scholarship, and how such impacts can be identified, traced, and communicated to stakeholders for maximum understanding.

CASE IN POINT: TWO APPROACHES TO METRICS-BASED IMPACT

To illustrate better what I mean by the diverse impacts of public scholarship in the digital age, I will briefly walk through an example that I have used occasionally to educate faculty and students about the significance of different outputs from a single research project. I'm fond of this example for many reasons, but primarily because (1) it traces the work of a prominent UW researcher, (2) it focuses on research that doesn't appear at first glance to be unconventional for its field, and (3) it closely mirrors my own real-life approach when consulting with researchers about their impact. For librarians looking to create a similar test case for audiences at their own institutions, I recommend searching a database like Scopus or Web of Science for research affiliated with your university or a specific sub-department, and then selecting an article from the results that has a relatively high citation count. This is the exact sequence of actions I performed in 2017 when preparing an example for a talk about impact for the UW Biomedical Research Integrity Program. The result that caught my eye was a 2009 article titled "Effect of Early versus Deferred Antiretroviral Therapy for HIV on Survival"—a scholarly output on a topic with clear potential for public health and public good.¹⁰ Its primary author, Mari Kitahata, is listed as affiliated with UW's Harborview Medical Center—but I was unfamiliar with her record of research and scholarship.

When tracing the impact of an unfamiliar piece of scholarship, it is usually wise to begin with a traditional metrics approach—which is to say, a quick check for citation-based evidence of impact via amenable online indexes like Web of Science, Scopus, and Google Scholar. Thanks to my initial method of discovery, I had already surfaced a record for Kitahata's article in Scopus, which indicated that the work had been cited 747 times, placing it in the ninety-ninth percentile (i.e., compared to Medicine articles of the same age and document type within the Scopus database).¹¹ By contrast, when I searched for the same article in Web of Science, the article was listed as having 640 citations—still an impressive number, but noticeably lower than Scopus's due to key differences in indexing between the two sources. Bearing this reason in

mind, it was not surprising to find that Google Scholar gave an even higher citation count for the article than Scopus: 1,202 citations according to my search at the time, or nearly double what was listed in Web of Science.

Although numbers do not themselves tell the full story of an article's impact, knowing that such high citation counts existed for Kitahata's article was a promising start for its impact profile. Were this article part of an actual researcher consultation, I would have counseled Kitahata to further parse and analyze her citations, using the indexes in question to learn more about the authors who have built on top of her work, including their disciplines, fields, and specific interest in her original research. For most faculty, this blend of qualitative and quantitative information would be more than enough to satisfy their academic curiosity—certainly a more satisfying stopping place than simply regurgitating a journal's Impact Factor on a grant proposal or tenure file.¹² However, let us pretend that having completed this first approach for collecting evidence of impact, we were motivated to try another: in this instance, a check for less traditional “altmetric” impacts of Kitahata's research.

Altmetrics is a term that was coined in 2013 by Jason Priem, who was then a doctoral student in North Carolina but has since become an entrepreneur and vocal advocate of digital public scholarship. Initially a simple portmanteau for “alternative metrics,” altmetrics has come to refer to a wide range of digital indicators, all related to scholarly work, but uniquely “derived from activity and engagement among diverse stakeholders and scholarly outputs in the research ecosystem, including the public sphere.”¹³ In the twenty-first century, virtually every piece of scholarship leaves some sort of a digital trace, whether or not this is the researcher's intention. As a field, altmetrics embraces this shift in scholarly communication and looks to shed light on how different communities of users come across, filter, and use digitally discoverable research to meet their needs, regardless of whether those needs feed back into academic discourse.

To test the likelihood of major altmetric impacts of Kitahata's research, I began by performing a series of experimental Google searches on her name, affiliations, and keywords from her article. These online searches quickly uncovered an impressive number of popular news stories related to the 2009 study, several of which dated back to late October 2008, a full six months before the official article first appeared on the *New England Journal of Medicine* website.¹⁴ As it turns out, Kitahata presented data from her team's study at a major international medical conference in Washington, DC around that time—a presentation which she followed up with a press conference, at which she answered questions for a group of reporters about the study's implications for HIV patients and medical specialists.¹⁵ The date of this press conference corresponded exactly to the earliest of my online news stories, making clear that Kitahata's efforts to share her pre-published research were successful not only by basic scholarly standards, but from the standpoint of public

scholarship as well. Indeed, by the time *NEJM* released the full study online in April 2009, stories about Kitahata's research had already appeared in multiple major news venues, including the *New York Times* and *Time.com*. It is worth noting that the 2008 circulation of the *New York Times* alone was approximately 928,000, making the print *and* online publication of these non-scholarly articles arguably the most significant outputs of Kitahata's research from a pure numbers perspective, and an important indicator of her study's probable public impact.¹⁶

Following this tentative exploration of the broader outputs of Kitahata's 2009 research, I performed some formal searches on the altmetrics generated specifically by the publication of the *NEJM* article. In the altmetrics world, nearly any online community space has the potential to collect data about users' engagement with a digitized research output, from institutional repositories to Twitter and Facebook. That said, there are only a few major tools available for aggregating these metrics into convenient categories of engagement, which gives librarians interested in altmetrics a fairly stable place to start a consultation if asked. Of these tools, the two most popular are the Altmetric Bookmarklet, a free browser plug-in available from Altmetric, and PlumX Metrics, an Elsevier-owned product that is employed most frequently inside of Scopus. Together, these tools gather, organize, and vaguely attempt to interpret third-party digital usage and engagement metrics from select scholarly blogs, social media, video sites, repositories, popular media, online reference managers, Wikipedia, and more. However, in the same way that it's important to search multiple indexes when gathering citation counts for a given scholarly article, it's essential to check multiple tools and sources when tracing the altmetrics of a given scholarly output.

For instance, when I compared the Altmetric bookmarklet data about Kitahata's article to data gleaned from its PlumX profile in Scopus, I found numerous discrepancies, such as the number of times the article had been saved by Mendeley users (thirty-five "readers" according to Altmetric; six according to PlumX). To resolve this, I went directly to the Mendeley online network, which led to me to discover that, due to variations in how the article's citation had been entered by different Mendeley users, the actual metric should have been closer to 121 readers, dwarfing the estimates of both Altmetric and PlumX. As this anecdote illustrates, the current value of altmetric aggregators is not so much the specific numbers they show as the breadcrumbs that open up further qualitative and quantitative investigation across larger online spaces. Not only did these tools inspire the idea of searching community-driven reference managers like Mendeley, they pointed me toward mentions of the article in nineteen international health policy documents, nine clinical database citations, and the Wikipedia page for the "Management of HIV/AIDS." Each of these source types points toward a different key audience for Kitahata's findings and underscores the value of making one's research

widely available on digital platforms outside of proprietary databases, either through open access publishing or alternative research outputs.

Based on these extensive altmetric traces, it seemed safe to conclude that Kitahata's article had a huge impact all across the public web, as great as (or arguably greater than) what we saw in our citation-based approach to determining its impact. It is thus an excellent example of how far public scholarship can go, particularly when researchers put in additional effort toward marketing their work to a variety of audiences. That I as a librarian had the ability to surface these impacts is an equally important takeaway. Expertise in navigating impact-focused tools is not the sole provenance of LIS professionals, but it is a skill we consistently bring to the table, and an ability much appreciated by researchers who may be uncertain about metrics and how to use them.

ACADEMIC LIBRARIANS, RESEARCH IMPACT, AND DIGITAL PUBLIC SCHOLARSHIP

Just as each academic library has its own approach to how it supports faculty and students' research goals and pursuits, no two libraries are exactly the same in how they understand and promote research impact services to patrons, and especially to digital and public scholars. At the Washington University in St. Louis (WUSTL) School of Medicine, for example, a team of librarians in the Bernard Becker Medical Library not only offer patrons tailored "publishing and evaluation services" via a robust "research impact" subject guide, but they also coauthored an original online tool for the assessment of biomedical research impact.¹⁷ This tool, widely known as the Becker Model, is a free and downloadable framework for tracking research diffusion and locating indicators of biomedical impact, including benefits to community health, the economy, clinical practice, legislation, and interdisciplinary research areas.¹⁸ By contrast, Virginia Tech (VT) University Libraries offers patrons assistance via its creatively titled "Tell Your Story: Impact and Engagement" online guide, which focuses on basic information about professional identity, how to make one's work available, and a variety of both traditional and alternative research metrics.¹⁹

As an aside, it is interesting to note that VT is one of a small but growing number of academic libraries—including the University of Washington—that has hired or is in the process of hiring a dedicated "research impact librarian" or equivalent.²⁰ As VT's job advertisement explains, "The [Research Impact Librarian] position supports the VT community in discovering, tracking, and communicating the impact of research, scholarly, educational, and creative works in increasingly open environments."²¹ One can easily see a nod to digital and public scholarship in its reference to "increasingly open environments," although no explicit mention is made of these fields within the posting.

Although resources at WUSTL and VT help illustrate some of the nuances in how whole libraries are choosing to develop and promote diverse research impact services, it is fair to say that many academic libraries are not at the stage where they are ready to invest institutionally in research impact as a service, nor digital public scholarship as a topic. Reasons for this hesitance often involve what a library lacks: a lack of time on the part of staff, a lack of funding to purchase certain research impact tools, or a lack of support from library leaders who do not see one or both of these areas as a priority for public services. Whatever the reasons, the practical result is that the work of kick-starting impact services and digital public scholarship conversations may fall heavily on a small and eclectic group of motivated library staff—or even just one staff member, who may, unfortunately, turn out to be you. The good news is that individuals can and do make a huge difference when it comes to advocating for expanded impact services and digital public scholarship. The bad news is that such work is usually time-consuming, is not included in one’s job description, and can be lonely work without the solid bolster of collegial or supervisory support.

For example, when I first started getting interested in broader forms of academic scholarship and impact, I was working as a communication librarian in a mid-sized academic library with a colleague who was equally (or more!) passionate about these areas from the disciplinary perspective of the sciences. However, when I left my job in 2013 to become the instructional design librarian for the UW Libraries, I suddenly found myself part of a much larger department, without a designated partner to aid in promoting research impact services to faculty and students. Indeed, it took me over a year of working at UW before I began to see inklings of how I might practically contribute to research impact in the context of my new university. By then, I had gained a better understanding of the formal and informal structures at work within UW Libraries—but more importantly, I had made stronger connections with my colleagues, which let me imagine new, more appropriate ways of approaching the topics of impact and scholarship that matched their needs and interests as much as my own.

BRINGING IT ALL TOGETHER: RESEARCH IMPACT AND DIGITAL PUBLIC SCHOLARSHIP AT UW LIBRARIES

The UW Libraries’ activities in the realm of research impact and digital public scholarship are obviously personal to me—but they also form a useful snapshot of what a library looks like when it is in the process of transitioning to a more visible investment in impact services and public scholarship. That said, as other chapters in this book make clear, UW Libraries is a highly complex

organization, with multiple different campuses, branches, subcultures, priorities, and challenges that add twists and turns to our particular path toward a culture of digital public scholarship. Consequently, I will focus the next portion of this chapter on three types of efforts that have successfully been piloted or adopted within the Libraries' largest branches on the UW Seattle campus—and less on those efforts that may exist in our smaller branches, or on our more community-specific campuses of UW Bothell and UW Tacoma.

1. Student-Focused Events and Workshops

The most significant way that UW Libraries has incorporated impact and digital public scholarship into its services is via its portfolio of cosponsored campus events, which are frequently targeted at students who self-identify as active researchers. Cosponsored events are especially attractive venues for promoting emerging topics in research to students, not only because of the marketing advantages they offer over purely Libraries-based events, but for the focus they tend to lend such topics by positing them in the context of a discipline, program type, or other specialized identity realm. Student-focused events also have another distinct advantage: they seed interest in digital public scholarship among researchers who are open to developing their practices and priorities (a quality that is far less common in faculty researchers, even those who are still considered “early career”). Functional (e.g., non-liaison) librarians in our two largest library branches—the Suzzallo and Allen Libraries and Odegaard Undergraduate Library—have been instrumental to creating and furthering both these one-off and recurring opportunities, because their activities tend to work across disciplinary lines, and thus connect the Libraries to other campus units with equally broad interests in student learning, research, or success. In addition to my participation as head of Instructional Design and Outreach Services, other contributing librarians have included the head of the Research Commons, the head of Teaching and Learning, and the digital scholarship librarian, who are themselves experienced collaborators with one another.

Example @ UW: Research Smarter, Not Harder

“Research Smarter, Not Harder” was a graduate-student-focused library workshop developed by a team within the Suzzallo and Allen and Odegaard Libraries as part of the UW Center for Teaching and Learning’s (CTL) annual pre-fall TA/RA Conference.²² Clocking in at seventy-five minutes, this well-reviewed and popular workshop—it regularly drew more than 100 conference attendees, with others waitlisted—promised to introduce students to “research and information management tips and tools,” including “how to use key databases,

evaluate citation managers, and set up email and RSS alerts for new research publications.”

In 2013, when I first joined the Libraries’ planning team for the conference, we proposed adding a short section on the basics of research impact and online research visibility to the conference outline. The proposal was accepted, and in 2014 I taught a new twelve-minute segment on how to Discover Top Sources, including Web of Science’s *Journal Citation Reports*, the Scimago research group’s free Journal and Country Rank tool, Google Scholar Profiles, and the scholarly online network Academia.edu.²³ The next year, in 2015, I was invited to repeat this segment, at which point I expanded its content to include more nuanced information about the difference between traditional citation-based impact indicators and more publicly amenable digital indicators of research engagement (i.e., bibliometrics versus altmetrics). I also got consent from my fellow presenters to upload a copy of the revised 2015 workshop slides to the LinkedIn-owned hosting service SlideShare, where they have since been viewed over 620 times.²⁴

In the end, content about the ways that different stakeholders discover and prioritize research continued to be included in the Research Smarter, Not Harder workshop until 2017, when the CTL staff decided to sunset the TA/RA Conference’s focus on research (and instead offer conference programming exclusively related to TAs’ teaching needs. By then, however, the precedent of promoting information to students about research impact and digital public engagement had been effectively set, opening the door to other library events and opportunities.

2. Online Guides and Support Portals

Online guides and portals represent another key way that UW Libraries has begun to more seriously invest in research impact and digital public scholarship. Although most portals are not particularly interactive or dynamic, they do have certain advantages over student-focused events: they are inherently scalable, require much less work and maintenance, and allow users opportunities to engage with research resources, skills, and issues at an individual pace and point of need. Reusability is another notable benefit of using online portals as a means of promoting impact and digital public scholarship issues, as many portals are published via platforms that specifically allow for the instant duplication of select content across guides, or even the sharing of whole guides across otherwise unaffiliated institutions. Indeed, thanks to strong affinities with the open access movement, it is relatively simple for librarians interested in impact, public scholarship, and digital scholarship to find examples of online guides and portals that are already licensed for use with attribution by their authors.²⁵ The University of Pittsburgh’s University Library System, for

example, has created a highly detailed online guide on altmetrics under a Creative Commons Attribution 4.0 International License, while at the same time acknowledging its debt to the creators of four other impact-focused guides, including staff at Iowa State University, Duke University Medical Center, and the University of Waterloo.²⁶

Example @ UW: Impact-Related LibGuides

At UW Libraries, we use Springshare’s popular LibGuides platform to publish our online guides, which we further subdivide into five community groups: “UW Libraries,” representing the main Seattle campus’ subjects and departments; “Tacoma” and “Bothell,” representing programs and needs on UW’s two non-Seattle campuses; and “Law” and “HSL,” representing the more specialized research needs of users of the UW Law Library and UW Health Sciences Library.

Searching these groupings for page hits related to keywords like “metrics,” “research impact,” and “digital scholarship” reveals a surprisingly accurate portrait of how these topics have permeated each of the different segments of the UW Libraries organization. For instance, the relatively high number of impact-related hits in the HSL grouping are the result of an Impact Factors research guide that was created by biomedical and translational sciences librarian Diana Loudon to support health sciences faculty, students, and researchers.²⁷ The guide is by far the UW Libraries’ most comprehensive source of online information about research impact, with pages on Journal Impact Factor, Author Impact Factor, Article Impact, and Documenting Your Research Impact—the last of which specifically discusses the Becker Model, altmetrics, and the advantages of making one’s work more visible online, à la digital scholarship if not digital public scholarship. Likewise, the high number of digital scholarship-related hits in the UW Libraries grouping is indicative of a handful of specific online portals, including a robust digital scholarship research guide managed by our digital scholarship librarian, a scholarly publishing and open access guide managed by our director of scholarly communication and publishing, and a digital humanities guide managed by our digital collections curator. Together, these resources illustrate how the librarians on UW’s main campus have sought strategically to position digital scholarship not only as a subject in its own right, but as a sister issue to scholarly publishing, the humanities, and other academic areas in which faculty may already have established interests.

3. Assessments and Related Pilots

The third major way that UW Libraries has started to upgrade its position relative to both research impact and digital public scholarship is via our

assessment activities, an area for which we are well-known within the academic libraries world.²⁸ Assessments can be powerful tools for both individual librarians and whole departments that are hoping either to test the waters or enhance buy-in for digital scholarship and its implied values. Targeted surveys and needs assessments, for example, are often deployed by libraries with budding digital research programs in order to determine the size and scope of a community and that community's need for certain categories of support. Certainly on the UW Libraries' main campus, we have employed a variety of assessment methods over the last three years to better understand the direction of our digital scholarship activities, led mostly by the efforts of our digital scholarship librarian as well as the Libraries' director of assessment and planning.²⁹ There are two key reasons for the timing of this uptick, one of which was the identification of digital scholarship as a focus area within the UW Libraries' 2014–2017 Strategic Plan; the other was a series of major decisions to hire, reallocate, or otherwise retitle certain Libraries staff to make explicit their responsibilities regarding digital scholarship and digital initiatives.³⁰ This same pattern has held true on UW's two non-Seattle campuses, where increases in the number of Libraries staff dedicated to digital scholarship have translated directly to increased collection of local data about digital scholarship practices and needs.³¹

Assessment, staffing, and strategic planning have thus become something of a power triad for the UW Libraries' maturation as an active proponent of digital scholarship across the UW community. However, as in the case of online guides and portals, it remains to be seen exactly how the Libraries should translate this dynamic to the official creation of more specific digital scholarship services, including those that focus on impact and public scholarship.

Example @ UW: Research Impact Pilot Assessment Project

In 2017, I participated in a small-scale impact-focused assessment project based on the results of the UW Libraries' 2016 Triennial Survey of the relevant needs and interests of UW students, staff, and faculty.³² In the survey, 53 percent of faculty respondents indicated that they would be interested in library services to help assess the impact of their research and scholarly activities, including 61 percent of the health sciences faculty and 75 percent of the business faculty.

The resulting effort—dubbed the Research Impact Pilot Assessment Project—was a two-quarter collaboration led by our director of planning and assessment. The project team included me, a second member of the Libraries' Assessment Team, and two librarian liaisons from the Foster Business Library Health Sciences Library, respectively. Together, we successfully interviewed four UW faculty members (three in health sciences and one in business) about

their impact-related research needs and provided them with sample Research Impact and Attention reports, which I compiled for participants by running one or more of their major research outputs through a series of citation-based tools, altmetric-indicating tools, and other digital sources of public research impact. From these interviews, we learned that tenure requirements for both health sciences and business faculty are still largely focused on journal-based impact metrics, which limited faculty's interest in collecting evidence of impact in the form of altmetrics or other digital indicators. At the same time, somewhat confusingly, interviewees did express a strong desire for help "translating" research impact for grant applications, which when pressed, they described in terms of demonstrating their research's potential to impact the public through government policy, patient care outcomes, and global practices, all of which are better captured through altmetrics than through traditional journal-based metrics.

This tension between what researchers say they need in terms of impact metrics and what they say they want in terms of larger, actual research impacts is challenging for librarians to navigate. As such, institutions that wish to pursue research impact support for faculty—including the UW Libraries—must be extremely careful in how they collect information about the specific needs of researchers and be sensitive to the inherent contradictions that may exist across different departments, or even within individual departments, based on where faculty stand in their understanding of impact and digital public scholarship.

MOVING FORWARD: IMPACT, DIGITAL PUBLIC SCHOLARSHIP, AND YOU

In this chapter, I have striven to show that the cultivation of digital scholarship is thoroughly inseparable from the cultivation of digital scholarship's values—which include, but are by no means limited to, public scholarship and impactful research practices. At the same time, where such cultivation begins (or ends) is almost never easy to determine, which means some degree of frustration is likely to arise, even if support is present and interest in growth already evident among stakeholders. Consequently, it is essential for libraries and librarians who are passionate about the field to not only think intentionally about the opportunities and roadblocks that exist within their institutional landscapes for the values associated with the digital scholarship, but also to be flexible about their plans for addressing these values over time. Some aspects of digital scholarship can be addressed today, whereas others may require significant periods of waiting, experimentation, and mundane forms of advocacy that can feel suspiciously like failure.

Happily, there is a bright side, and it goes back to the underrated power of individuals to shape their own expertise when it comes to digital public scholarship, research impact, and more. Each of us has the ability to expand our skills when it comes to public scholarship, even if it's as basic an action as signing up for a one-time webinar. In the case of public scholarship, there are countless resources at your disposal, from journals to whole conferences. For impact, there are numerous free tools ready for you to download and experiment with, and online portals ready to be read or reused with a click of a mouse.

Regardless of the specifics, the point I would leave you with is this: advocacy for impact and public scholarship is a skill that can be learned and that does make a difference to the future growth and success of digital scholarship culture. And although few of us start our careers in positions where such skills are required, it is truly surprising where one's career may someday lead, and what opportunities may open up along the way when one is willing to make one's interests visible and public.

Takeaways

- Digital scholarship is deeply entwined with public scholarship values.
- Digital public scholarship is the result of researchers who think about their impactful practices in advance, not just after the fact.
- Librarians invested in public scholarship have a role to play at multiple stages in the DS process, including the planning and assessment of DS output impact.
- Although it can be hard for an individual library employee to be the first to support research impact and digital public scholarship, individuals can and do contribute meaningfully to the cultivation of new digital scholarship practices, values, and projects.

FURTHER RESOURCES

Meaningful Metrics: A 21st Century Librarian's Guide to Bibliometrics, Altmetrics, and Research Impact, www.ala.org/acrl/sites/ala.org/acrl/files/content/publications/booksanddigitalresources/digital/9780838987568_metrics_OA.pdf.

Scimago Journal and Country Rank, <https://www.scimagojr.com/>.

Altmetrics Conference, www.altmetricsconference.com/.

Metrics Toolkit, www.metrics-toolkit.org/.

NOTES

1. William H. Brock, "Science," in *Victorian Periodicals and Victorian Society*, ed. J. Don Vann and Rosemary VanArsdel (University of Toronto Press, 1994), 86.
2. Eugene Garfield, "The History and Meaning of the Journal Impact Factor," *JAMA* 295, no. 1 (2006): 90, doi:10.1001/jama.295.1.90.
3. The first edition of the Science Citation Index included 613 journals, which accounted for a whopping 1.4 million references. The whole index took up five printed volumes, with much of the information appearing in type as small as 3.5 point. See Ronald Rousseau, Leo Egghe, and Raf Guns, *Becoming Metric-Wise: A Bibliometric Guide for Researchers* (Cambridge: Elsevier Ltd., 2018), 103.
4. Eugene Garfield, "Journal Impact Factor: A Brief Review," *Canadian Medical Association Journal* 161, no. 8 (October 19, 1999), www.garfield.library.upenn.edu/papers/journalimpactCMAJ1999.pdf.
5. See, respectively, the San Francisco Declaration on Research Assessment, <https://sfdora.org/read/>; "IEEE Statement on the Appropriate Use of Bibliometric Indicators," https://www.ieee.org/content/dam/ieee-org/ieee/web/org/pubs/ieee_bibliometric_statement_sept_2013.pdf; and "The Culture of Research and Scholarship in Mathematics: Citation and Impact in Mathematical Publications," <https://www.ams.org/profession/leaders/culture/CultureStatement09.pdf>.
6. Julie Ellison and Timothy K. Eatman, "Scholarship in Public: Knowledge Creation and Tenure Policy in the Engaged University A Resource on Promotion and Tenure in the Arts, Humanities, and Design," in *Imagining America* (2008), 6, <http://imaginingamerica.org/wp-content/uploads/2015/07/ScholarshipinPublicKnowledge.pdf>.
7. *Ibid.*, 5.
8. At the same time, it is fair to say that public scholarship in the sciences can look a bit different than in the arts or humanities. For example, it is frequently categorized under the auspices of the highly disciplinary "science communication" movement, which advocates for better, clearer, more purposeful communication of scientific research to public practitioners and nonexperts in general. Another reason public scholarship looks different in the sciences is the recent implementation of federal public access policies for NIH and NSF grant recipients, which revealed challenges some scientists face (or perceive themselves to face), in making their research accessible to members of the public. As well, did I mention that faculty scientists still face significant pressure to focus on citation counts and Journal Impact Factor? Pressure to demonstrate achievement in the context of bibliometrics can make the path toward public scholarship for many academic scientists a little more complicated, depending on their access to institutional support structures. Health sciences faculty tend to receive

more support for public scholarship because of departmental missions that explicitly value public outcomes and public partnerships.

9. “Libraries Mission, Vision, and Values.” University of Washington Libraries. www.lib.washington.edu/about/intro/mvv.
10. Mari Kitahata et al., “Effect of Early versus Deferred Antiretroviral Therapy for HIV on Survival.” *New England Journal of Medicine* 360, no. 18 (2009): 1815–26, <https://doi.org/10.1056/NEJMoa0807252>.
11. Scopus provides citation benchmarking in the metrics portal of their articles whenever possible.
12. For what it’s worth, the publishing journal for Kitahata’s article is the *New England Journal of Medicine*, which in 2011 had an IF of 53.298. Whether or not Kitahata’s article achieved more than fifty-three citations in 2011 (i.e., two years following its publication, per the IF formula), I didn’t deign to check—because *it really doesn’t matter* compared to the article-specific citation counts available in 2017, eight years after publication.
13. From outputs of NISO’s 2015 Alternative Assessment Metrics Project. See *Outputs of the NISO Alternative Assessment Metric*, National Information Standards Organization, <https://www.niso.org/publications/rp-25-2016-altmetrics>.
14. Examples of popular and trade-focused news sites that reported on the study in October 2008 include NBCNews.com, FOXNews.com, MedPageToday.com, and WebMD.com. By comparison, Kitahata’s scholarly article first appeared on the *New England Journal of Medicine* website on April 30, 2009.
15. An edited transcript of this press conference can be found online at “Starting HAART: Should 500 Become the New 350?,” *The Body*, October 26, 2008, www.thebody.com/content/art49164.html.
16. Numbers are from an Audit Bureau of Circulations report on newspaper circulation for the six-month period ending September 30, 2008.
17. Bernard Becker Medical Library, “Research Impact: Home,” Washington University St. Louis, <https://beckerguides.wustl.edu/impact>.
18. Bernard Becker Medical Library, “Accessing the Impact of Your Research,” Washington University St. Louis, <https://becker.wustl.edu/impact-assessment/how-to-use>.
19. Ginny Pannabecker, “Tell Your Story: Impact and Engagement,” Virginia Tech University Libraries, <https://guides.lib.vt.edu/TellYourStory/Home>.
20. At UW, this position is the Research Impact and Social Work Librarian, situated within our Health Sciences Library.
21. The original VT job ad was posted to <http://listings.jobs.vt.edu/postings/82228>, although it has since been closed to viewing. This text is taken from a Mid-Atlantic Medical Library Association version of the job listing, available at <https://macmla.org/research-impact-librarian-at-virginia-tech-blacksburg-virginia/>.

22. In 2017, this event was revised and rebranded by the Center for Teaching and Learning as a more teaching-focused TA Conference; see <https://www.washington.edu/teaching/programs/ta-conference/>. For a sample schedule from a previous workshop iteration, see www.washington.edu/teaching/files/2015/09/Whats-Where-When-TA-RA-Conf-20151.pdf.
23. Although similar to *Journal Citation Reports* in structure, *Scimago Journal and Country Rank* (SJR) calculates its journal rankings using a slightly different formula and using citation data collected from Scopus instead of Web of Science. <https://www.scimagojr.com/aboutus.php>.
24. University of Washington Libraries, “Research Smarter, Not Harder” (presentation at the UW TA/RA Conference September 2015), <https://www.slideshare.net/uwlibeo/uw-libraries-research-smarter-not-harder>.
25. The most common way that authors do this is by including a visible Creative Commons license icon on their guides. It can be freely downloaded from the Creative Commons website. That said, there are different types of Creative Commons licenses—some of which do not restrict reuse to noncommercial purposes, and some of which do restrict adaptations of a work, even for noncommercial purposes. Because of this variability, it’s important to double-check the conditions of a guide’s license before, for example, deciding to make it the foundation of your institution’s online portal for digital public scholarship. For more information, see <https://creativecommons.org/share-your-work/licensing-types-examples/>.
26. University of Pittsburgh Library, “What Are Altmetrics?” <https://pitt.libguides.com/altmetrics>.
27. University of Washington Health Sciences Library, “Impact Factors Research Guide,” <http://guides.lib.uw.edu/hsl/impactfactors>.
28. For a snapshot of the major assessment activities of the UW Libraries, see www.lib.washington.edu/assessment/.
29. See chapter 4 of this book for more details about how the UW Libraries has deployed such assessments in service of digital scholarship.
30. Interestingly, one of the first UW Libraries positions to be retitled in this way was our Dean of Libraries, Betsy Wilson, who was appointed Vice Provost for Digital Initiatives by the Provost in summer 2013. See www.lib.washington.edu/about/strategicplan/2014 and www.lib.washington.edu/about/news/announcements/dean-lizabets-wilson-is-appointed-vice-provost-for-digital-initiatives.
31. See chapter 10 for more details on activities outside of the main UW campus.
32. University of Washington Libraries, “Triennial Survey,” www.lib.washington.edu/assessment/surveys/triennial.