

Library Connect Digest 2014

Elsevier's Library Connect program thanks the librarians, information professionals and scholars from around the world who contributed to the webinars and newsletter in 2014.



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What are researchers looking for in corporate and academic library services?

OLIVER RENN | APRIL 16, 2014

Where have all the corporate “libraries” gone?

What expectations do researchers have for library support in a corporate setting? The answer is very simple: There are no expectations. Libraries no longer exist in the corporate space, at least if you consider libraries a place where books and printed material are acquired, catalogued and shelved.

Where have all these libraries gone? They still exist, but they have new roles, and subsequently, new names — like the library of Novo Nordisk, which was one of the last to change when it was renamed “glia” for global information & analysis.

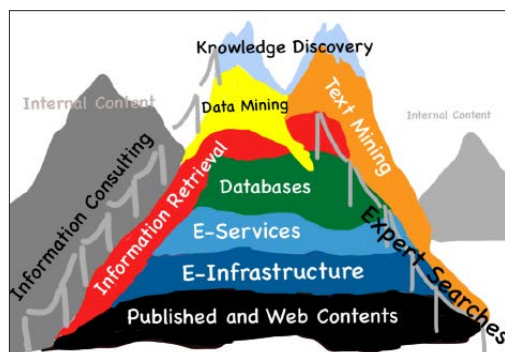


Figure 1: Expectations for library support

12 core elements of an ideal corporate information center

In industry, the lower part of the information and knowledge mountain is highly outsourced and automated. Companies want to keep the number of full-time equivalents in information services to a minimum. Therefore, it becomes critical to define and prioritize areas of service. In a recent paper in *Nature Reviews Drug Discovery* entitled “Blueprint of an Ideal Corporate Information Center,” I and my co-authors outlined the 12 core elements of an ideal corporate information center.¹

Information Access

1. Information Acquisition & Vendor Relations
2. Information & Library Services
3. Community Management

Information Research

4. Awareness & Training
5. Information Consulting
6. Information Retrieval & Analysis
7. News Intelligence
8. Text Analytics
9. Knowledge Discovery

Information Technology

10. IT & Informatics
11. Technical Information Management

Knowledge Management

12. Knowledge Management Services

Information Access covers the known library, while Community Management is another term for advertising and marketing services and dealing with the stakeholders and funding bodies.

Information Research includes the function of increasing awareness and training, which I fervently believe is the most important element. Via Information Consulting, information professionals are ideally embedded within research projects as integral parts of the research team. In this manner, they can enhance research via a more expert level of Information Retrieval & Analysis.

News Intelligence (or Competitive Intelligence) is essential. Every company needs to know what their competitors are doing or what is going on in their research area. The corporate information

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OLIVER RENN
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Libraries no longer exist in the corporate space, at least if you consider libraries a place where books and printed material are acquired, catalogued and shelved.

center also needs to provide Text Analytics (Text Mining) platforms and services for both journal, including databases, and web content. Scientists need to find patterns in data, and also mine external and internal data simultaneously using workflow tools and customized taxonomies and ontologies.

With the rise in importance of translational research, sophisticated IT services to link data and information are essential. An information center must have state-of-the-art development capabilities to create custom searches, tools and databases.

With the rise in importance of translational research, sophisticated IT services to link data and information are essential.

Last but not least, there's a need for knowledge management services to organize company knowledge and make it accessible via tools like SharePoint and electronic lab notebooks.

Meanwhile, within academia ...

The corporate researcher expects automated transport to the top of the mountain, while within academia researchers are more accustomed to finding their own paths. The academic researcher tends to focus more on the generation of knowledge rather than discovery like researchers in a corporate setting. Therefore, there's a natural stop at a certain information management level. And, of course, academia also has other mountains to climb such as teaching.

So, how does this translate into services provided by the academic library? I believe that most of the 12 core services are needed also in academia. News Intelligence may not be needed, but benchmarking among universities is gaining importance, along with the need for text mining.

Library services in academia will also include:

- the library as place — for study, relaxation and collaboration
- communicating research — including altmetrics and open access publishing support
- teaching — educating students on how to retrieve and manage knowledge

Librarian skill sets

From the description of the 12 core elements, it is obvious that librarians need to have not only knowledge of information management, but also the disciplines they support. To talk about workflow solutions to a chemist, you need to be a chemist. To talk to a biologist, you need to be a biologist. Librarians without these backgrounds will want to think about the best ways to become more fluent in the disciplines they support such as attending conferences or taking courses.

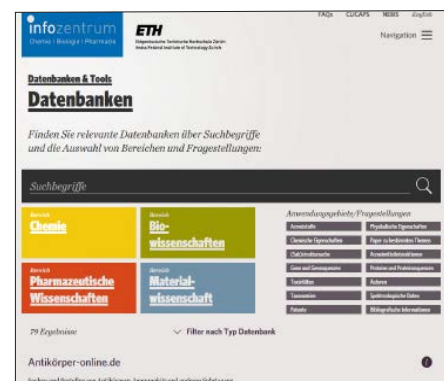
And librarians today must have information technology skills. Ideally, all of these elements will combine in one person with a mixed skill set. But this is still not enough. Finally, you need to be able to communicate and make researchers excited about the possibilities of today's information and knowledge management solutions.

Communication

At ETH Zürich we have instituted programs to engage with students and researchers, in addition to regular information literacy instruction. For example, last year we began a series "coffee lectures": 10-minute talks on tools, databases and services, accompanied by free coffee. To advertise the service, we produced a funny, 50-second video clip that can be found on YouTube.

We publish Infozine, an internal newsletter that introduces users to the many possibilities of today's information management tools and services in an entertaining style. We also developed a new website, available in a version for

mobile devices, where the catalog is no longer the entry point. Instead, we instituted a more intuitive approach where users narrow down to the right database or tool by selecting their research area and their research questions.



www.infozentrum.ethz.ch/datenbanken-tools/datenbanken/

Constantly learning

A library or information center must constantly evaluate and update tools, services, information solutions and databases. At the ETH Zürich Chemistry | Biology | Pharmacy Information Center, we use WordPress blog software as an internal content management system to stay tuned to new developments. We monitor listservs, news groups, and other venues for sharing, and place everything that looks interesting into the mix for future investigation.

Having worked in both industry and academia, I can say that this constant learning and evolution are a part of the LIS professional's world in both environments.

1. Oliver Renn, Michael Archer, Carmen Burkhardt, Jeannette Ginestet, Henning, P. Nielsen, Joanna Woodward and the P-D-R Library Affairs & Copyright Group: A blueprint for an ideal corporate information centre. *Nature Reviews Drug Discovery*, published online 18 May 2012; doi:10.1038/nrd2973-c1. An extended, open-access version is available at P-D-R's website: <http://www.p-d-r.com/content/publications>

This article is based on Oliver Renn's Library Connect webinar presentation Compare and contrast: The evolution of academic and corporate library services available online at <https://www.brighttalk.com/webcast/9995/99575>. LC

A role for the library in awakening to the power and potential of institutional metrics for research

INTERVIEW WITH PREMA ARASU | DECEMBER 8, 2014

A land grant institution established in 1863, Kansas State University (KSU) opened its Olathe campus in 2011 to engage more deeply with the commercial hubs and community of the greater Kansas City metropolitan area. The flagship campus is located in Manhattan, Kansas.

Please tell me a bit about your transition from researcher to administrator.

I began my career as a biomedical research scientist and built my program at North Carolina State University studying the interaction of parasites and their hosts during pregnancy. In 2002, I went to Washington, DC as an American Association for the Advancement of Science (AAAS) congressional fellow and had the opportunity to work on international health issues in Senator Ted Kennedy's health office. That was a turning point in my career as I engaged with lobbyists and world organizations and saw firsthand how policy and legislation are developed and impact our activities as individuals and institutions. I returned to NC State feeling like I wanted to continue on a more holistic global path, taking a broader approach to higher education, and so I started my administrative career. I eventually became Vice Provost for International Programs at Washington State University (WSU) and then joined KSU Olathe as CEO and Vice Provost in October 2013.

What has been your experience of working with the library during these transitions?

Quite honestly, as a researcher I didn't interact much with the library except for accessing journals. As faculty members, we focus on our individual teaching, research and service obligations, and the priorities of our department, first, and our college, second. And it's not just the library that's not on our radar. Until I was an administrator at NC State, I didn't really have much need or opportunity to interact with the university's senior administration or understand

institutional priorities and challenges. This makes me think that libraries are an underutilized and perhaps underappreciated resource. They need to establish stronger channels of communication with their institution's constituents to override older mindsets of libraries as collections of "dusty books and journals" and to brand themselves in more engaging and interactive ways, exposing the vast and diverse expertise residing in librarians.

At the Olathe campus, we are focused on building a very business-centric environment targeted at the regional community and private sectors. We want to provide working professionals with the technology skills and the personal, transferable skills and know-how to address real, complex issues in the local work setting. Our campus is a two-hour drive from the library's physical location in Manhattan, so our faculty and students engage with the library largely through online resources, and by this I mean not only library resources, but the librarians as well. I don't see the library as a repository of books anymore, but rather as a repository of people with tremendous expertise who can support faculty and students in any number of innovative ways from technology, tools and textbook requirements to research, article preparation and publication.

How did you become interested in institutional performance metrics?

My academic career has mostly been in land grant institutions which have long histories of international engagement. But the predominant focus of this engagement has been sending students for study abroad, recruiting foreign students, and transferring aid and knowledge through development projects in developing countries. As WSU's Vice Provost for International Programs, I started to assess the opportunities for international collaborations and opportunities that aligned with strategic institutional research priorities. In partnership with the [More ►](#)

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PREMA ARASU
CEO and Vice Provost
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Libraries need to brand themselves in more engaging and interactive ways, exposing the vast and diverse expertise residing in librarians.

Office of Research, we studied the publication and funding record of WSU's faculty and noted a substantial amount of papers involving international coauthors.

Delving deeper, we discovered there was very little internationally earmarked extramural funding (approximately two percent), but publication output showed that about 30 percent of peer-reviewed publications involved international coauthors. At the same time, we had national data indicating that US research output is going down and that we are losing our global competitiveness. But we had no *institutional* basis for judging the global impact or productivity of our international collaborations. At that point, I felt like I was raising questions that should also have been asked in the domestic context many, many years ago. Or if this was being done, the information was not easily available to either university administrators or the researchers themselves.

At WSU we were awakening to these questions and using Elsevier's SciVal tool to analyze and help answer: Who is funding these collaborations? Can we deepen these relationships? Are we building the right strategic partnerships in the international arena? And though I didn't realize it at the time, the library had capability in these types of tools including subscriptions to other research platforms. Seeing the potential to help us address some of these challenges, the library took the lead on the SciVal software renewal and training, positioning itself as a center of expertise for this current and growing need in analytics.

The work we were doing at WSU engendered an NSF-funded project to determine which metrics are helpful in determining the impact of strategic international collaborations. We are in the middle of a multiphase project to develop a blueprint for institutions to use data that they are already mining and metrics that can help in decision-making and resource allocation. Elsevier's SciVal team also contributed to this project by providing an analysis of WSU and four other comparator public research universities.

Why did you become involved in Snowball Metrics?

Last February I went to an AAAS presentation and met John Green, a life fellow of Queens' College, Cambridge and the retired chief coordinating officer of Imperial College London, who helped found the Snowball Metrics group in the UK. He was presenting alongside others from the UK who support this university-driven initiative. They were asking some of the same questions as my NSF project team and had already made progress on defining metrics to help them to make decisions based on the data. I joined the US Snowball Metrics group to advance the dialogue, bring the perspective of a researcher and administrator to the table, and serve as a liaison between our various teams working on this related topic.

These projects on metrics, including others such as UMETRICS (<http://www.cic.net/projects/umetrics>), etc., interest me because it's a way for different entities to validate and decide upon a set of metrics that we can all aspire towards and use as appropriate benchmarks. In July 2014, the Association of Public and Land-grant Universities (APLU) convened the summer meeting of research officers and vice presidents at the same time as the meeting for international officers to enable joint sessions and discussions on metrics in international research. This was another strong signal toward more alignment and convergence.

I joined the US Snowball Metrics group to advance the dialogue, bring the perspective of a researcher and administrator to the table, and serve as a liaison between our various teams working on this related topic.

What is Snowball Metrics?

www.snowballmetrics.com

Snowball Metrics is a university-led global initiative in which universities agree how they want to understand their own strengths and weaknesses. The universities agree on methodologies to calculate metrics that are robustly and clearly defined, and draw on all data sources they have available, so that they enable the confident comparison of apples with apples. These metrics are data source- and system-agnostic, meaning that they are not tied to any particular provider of data or tools; the methods are free and can be implemented in any system. The resulting benchmarks between research-intensive universities provide them with reliable information to help understand their research strengths, and thus to establish and monitor their institutional strategies.



Is there an opportunity for the library here?

Absolutely! Everyone is so understaffed and overworked, and we need more expertise in this area. You need to ask, "Where should the expertise to mine, collect, analyze and interpret the data reside?" That may be the library. Also, the library may be a neutral and central resource among the various data generators, including the Provost's Office, Institutional Planning and Research, the Research Office (where pre- and post-award information may be in separate subdivisions), the Foundation, the Technology Transfer Office, the International Affairs Office, and the list goes on. **LC**

Going beyond bibliometric and altmetric counts to understand impact

BY KRISTI HOLMES | MAY 27, 2014

Why do we need to talk about research impact?

Research impact and productivity are important considerations for promotion and tenure activities, but their influence and use within the academic community extend far beyond these specific applications. Researchers are increasingly called on to demonstrate the impact of their efforts in a variety of circumstances and settings:

- Discover how research findings are being used
- Identify similar research projects
- Identify possible collaborators
- Confirm that research findings were properly attributed/credited
- Discover community benefit as a result of research findings
- Compile progress reports
- Justify funding requests
- Quantify and document research impact

Across research institutions, librarians are increasingly called upon to help researchers meet this need to better understand the greater impacts of research funding toward the advancement of science and (in the case of biomedical research) improved human health. Librarians are responding through traditional approaches, as well as through good old fashioned detective work.

Where do we start?

We can't escape it: counting is incredibly important. Papers, citations and grants are all widely recognized, easy-to-count artifacts of the scholarly process. We often find ourselves locked in a cycle around these objects (especially papers and citations), with the typical research workflow seeming to be a linear process. Going from "get grant" to "do research" to "write paper," we may not take the time to reflect upon the complicated series of loops and relationships that span the research process and ecosystem.

Publication data is a critical piece of the puzzle, and there is a great deal to be learned about researcher productivity from this information. Citations can facilitate a better understanding of the breadth and depth of dissemination and diffusion of research results globally, and they frequently play a role in individual and institutional ratings and rankings.

Like citation data, the rich publication metadata reveal deeper insights that may not be easily discernible otherwise. Some of the more interesting stories that can be teased from bibliographic metadata include identification of scientific networks in this era of team science, better understanding of funding opportunities and how they are being leveraged, and even a way to gauge the ebb and flow of research trends over time. While publication metadata contribute to the assessment of researcher productivity, alone they cannot tell the whole story.

It can be tempting to use aggregate counts from various sources (publication data or alternative metric providers) as an easy way to assess value. Whether we look at citation counts or examine attention via social media, we must remember that the numbers are not themselves impact, per se. However, relative numbers that result from attention paid to a particular article, person, codebase, and so on can serve a valuable role, and help us find and more fully characterize and understand impactful efforts.

Going beyond the counts to assess research impact

A number of alternative indicators and outputs (beyond journal articles) can help us to understand the more meaningful picture of research impact on the micro and macro levels. For example, building upon existing software code, reuse of research datasets, advancements in technology that lead to new devices and instrumentation or new experimental

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KRISTI HOLMES

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Whether we look at citation counts or examine attention via social media, we must remember that the numbers are not themselves impact, per se.

protocols, and even oral testimony which leads to policy change are all examples of going beyond the counts to find the interesting stories beneath the surface. These few examples (and many others!) can yield valuable insights into meaningful impact. By going beyond the counts, it becomes possible to see how research efforts helped to accelerate a discipline or improve human health or change the way society works.

A number of alternative indicators and outputs (beyond journal articles) can help us to understand the more meaningful picture of research impact on the micro and macro levels.

Where do you find this information? It isn't always easy, but information can be found in a variety of places. Faculty profiling systems, institutional research information systems and even a researcher's CV can disclose indicators of meaningful impact. These sources contain a richer representation of one's scholarly profile than what can be captured by bibliographic metadata alone. Consider the typical curriculum vitae detailing research grants received and new lines of research, conference presentations, committee and society memberships, and awards — all of which can help tell a story.

Let's not be limited by these few resources. We should challenge ourselves to look for other good indicators such as policy documents, curriculum materials and guidelines, professional practice guidelines, and grey literature. We should also be open-minded, but maintain focus on issues, motivations, and the particular pathways of dissemination that are important in a particular discipline of interest.

Specific pathways of dissemination have been identified within the biomedical research community which can facilitate a better understanding of impactful outputs:

- Advancement of knowledge
- Clinical implementation
- Legislation and policy enactment
- Economic benefit
- Community benefit

These and other pathways can help us uncover and characterize new and emerging indicators of impact, including new ways of carrying out diagnoses; improvements in clinical care or the actual physical clinical environment; application of cost-effective interventions that can benefit not only the economy, but the health of the community; and even materials and improvements related to how doctors are educated in the practice of medicine. The definition of these pathways can be easily adapted to cover other disciplines beyond biomedicine.

The Becker Model

Cathy Sarli and I developed the Becker Model for the Assessment of Research Impact.¹ This library-based framework for understanding meaningful research impact serves as a guide for libraries wishing

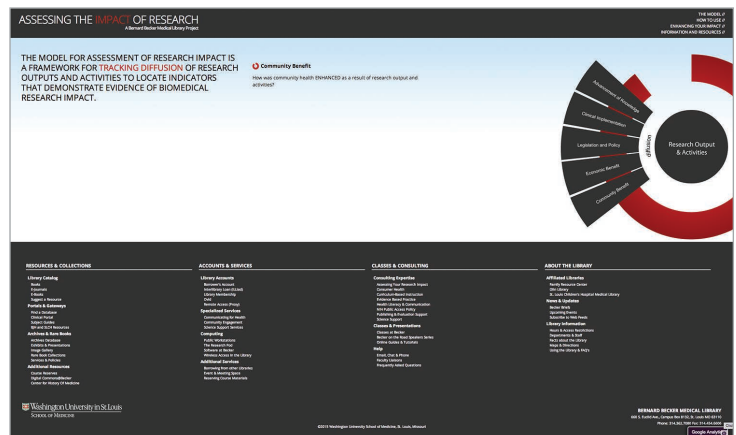


Figure 1: Website for The Becker Model, a library-based framework for assessing research impact.

to carry out this type of impact analysis. This evolving framework supplements publication analysis to provide a more robust and comprehensive perspective of biomedical research impact. We furnish tools to support this process, including reporting templates, glossaries, information about indicators, and suggested readings to help put things into context. The Model also provides guidance for quantifying and documenting research impact and suggested resources for tracking the diffusion of research outputs and activities and locating the evidence of impact. The framework can be applied at the micro (item or individual), meso (group or center), or macro (institution or greater) levels.

An important aspect of our work is providing our research community with strategies to enhance the impact of research. These strategies focus on three areas:

- Preparing for publication
- Dissemination
- Keeping track of your research

Repetition, consistency and an awareness of the intended audience underlie these strategies, and they can be incorporated into workshops to help researchers understand practical steps that they can take to maximize their impact.

How do we operationalize the process using research networking and discovery systems?

Research information systems can play a big role in helping to operationalize this process. Librarians are heavily involved in these types of projects on campuses around the world — from data acquisition and clean up, to development and implementation work, to outreach, education, and ontology development efforts.

Research networking and discovery systems (RNS), like VIVO, Profiles, and SciVal Experts, showcase achievements and expertise. They can be leveraged to uncover research impact across multiple sites en masse in an automated fashion by making VIVO-compatible

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Going beyond gathering altmetric data to assessing research or researcher impact requires a sophisticated set of tools and expertise and a huge amount of tenacity, but the benefits are enormous.

data publicly available as linked open data, as recommended by the Clinical and Translational Science Award Consortium.² The standard VIVO-ISF ontology³ allows a wide variety of alternative research outputs and other information to be represented in the RNS in a platform-agnostic manner. Furthermore, the machine-readable data help to disseminate this information, as the results from these types of profiles tend to rank very highly on Google and other search engines.

The individual researcher profile page can also be an important discovery space for representing information about a person and can be enhanced by incorporating social media data from well-known

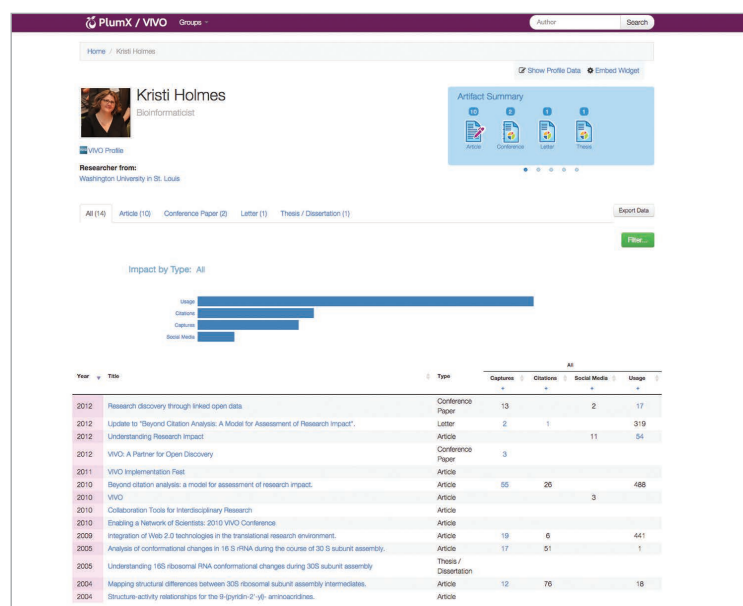


Figure 2: PlumX/VIVO profile of Kristi Holmes

and reputable services such as Plum Analytics and Altmetric. This altmetric data can be easily displayed on the individual researcher's page in the form of a widget. Moreover, these services can leverage the richly structured data afforded by the RNS for information and visualizations. These counts aren't impact, but they do allow a researcher to track and display the attention that s/he is receiving across a variety of social media platforms and information services to augment content and value. The counts can also help raise awareness of the use and dissemination of research outputs.

Perhaps, most importantly, not only do RNS provide visibility, they give the institution a way to accomplish higher-order tasks such as comply with open access mandates, leverage the data at the enterprise-level for benchmarking, perform analyses, and facilitate strategic planning efforts.

Tying it all together

Going beyond gathering altmetric data to assessing research or researcher impact requires a sophisticated set of tools and expertise and a huge amount of tenacity, but the benefits are enormous. Libraries have a real role to play in this space and more libraries are working in this area every day. This work really reflects some significant strengths of libraries, namely our personnel and resources, and also our understanding of scholarly practices, long-standing tradition of service to all, and a commitment to privacy. Providing services and support in this area of assessing and understanding research impact can be a terrific launch pad for libraries to be involved in critical strategic efforts on campus as we begin to understand and appreciate the true impact of a single paper, individual, research center or an entire institution. **LC**

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Altmetrics tell a story, but can you read it?

BY MIKE TAYLOR | MAY 27, 2014



Where does altmetric data come from?

Altmetric data are compiled from the usage, recommendations, shares and reuse of a common document, which is identified by its DOI, URL or other ID. So when people tweet about a paper, upload it into Mendeley or write a blog post about it and use the reference, they are generating altmetric data.

Different data have different characteristics

Different kinds of data have very different characteristics. The intention of a person tweeting a reference to a paper isn't going to be the same as that of someone who is uploading a paper to Mendeley. It's not the same as somebody who is downloading a dataset from Dryad. Nor is it the same as someone writing a newspaper article or a blog post. So although all of these items are classified as altmetrics, one type of data cannot necessarily be equated with another. Likewise, different platforms also have different characteristics including discipline bias.

Tweets tend to be summaries of serious scientific papers that have been written about in the mass media, but volume can be driven by "hot button" topics or contentious issues like policy and gender, stem cell research and climate change. Papers that are highly shared on Mendeley tend to refer to primary research.

Can altmetrics be boiled down to a single number?

No canonical source of altmetric data exists. It may be tempting to think about applying some kind of algorithm to altmetric data derived from multiple sources and coming up with a single number, as an *h*-index or an Impact Factor. However, altmetrics are not one thing; attempting to express them as one thing will inevitably fail.

Bringing sources together

At Elsevier we believe that it makes more sense to cluster similar kinds of activity intelligently — social activity, mass media, scholarly activity, scholarly comment and reuse — because this more accurately represents similar behaviors and intentions. It tells a better story. We group together social networks like Twitter, Facebook, Pinterest and Delicious. Likewise blogs, F1000 reviews and other kinds of scholarly activities would constitute another group.

The gaming of altmetrics: Will people cheat?

As altmetrics continue to gain acceptance as viable and valuable metrics, the likelihood of cheating also increases. People may try to manipulate the figures to their advantage. This type of behavior has been observed previously within the scholarly environment as evidenced by attempts to manipulate Impact Factors.

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MIKE TAYLOR
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Elsevier Labs

At Elsevier we believe that it makes more sense to cluster similar kinds of activity intelligently — social activity, mass media, scholarly activity, scholarly comment and reuse — because this more accurately represents similar behaviors and intentions.

As altmetrics continue to gain acceptance as viable and valuable metrics, the likelihood of cheating also increases.

The scientific, publishing and library communities have taken these issues very seriously. Although monitoring these activities is complicated because pattern analysis, usage analysis and network analysis have to be taken into account, expertise in detecting fraudulent downloads and tweeting is growing. Working to identify fraudulent activity, the Social Science Research Network has already encountered a situation in which the same paper was downloaded a hundred times to boost its ranking on the site.

In looking at this problem, a key question emerges: Is this generating any impact? I think it is one thing to go onto a website and pay a few dollars to get a thousand tweets or buy 10 blog posts, but is anybody following those Twitter accounts, particularly people within the scholarly community? This is research that can and will be done.

From the trivial to the pursuit of knowledge

One of the biggest criticisms of altmetrics is that they can highlight something deemed worthy of mass media attention, such as a paper published last year about left-handedness in tail-wagging dogs. Although a serious scientific study, the title made it attractive for tweeting and retweeting, so there was a lot of activity generated. But analysis showed that those types of stories don't tend to hit headlines in the same way that really serious articles do.

Should librarians buy in or build their own?

Librarians and the communities they serve can access altmetrics and make good use of them. There are several options:

- Free-to-use applications like ImpactStory
- Relationships with corporate entities like Plum Analytics and Altmetric.com (higher service levels with large numbers of DOIs and robust analytics)
- Build your own

When it comes to building your own, one approach is to use resources like PLOS and ImpactStory, which have open source code available to download, edit and install on library servers. It's not something for the faint hearted, but it's certainly something that a competent techie can manage. Another option is for the library to build its own from scratch using APIs and connections to the servers. Libraries can sign up to these for free and then query those servers for links through to papers of interest. Again, it's not easy, but it's a relatively comprehensive thing to undertake if this route will serve the library's objectives.

Telling the story

Identifying and rewarding reuse of research outputs are essential components of the scholarly communication environment. This will increase in importance over the next few years. Altmetrics data reveal what scholars are using to research and what kinds of research outputs are being reused. They tell us the story of what people in society are talking about. **LC**

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Altmetrics: A librarian's outlook on potential applications

BY JENNY DELASALLE | MAY 27, 2014

Altmetrics are here

Librarians cannot ignore altmetrics. They are turning up in subscription products that we buy and open access sources and tools we recommend. Librarians need to assess the potential for altmetrics to properly support researchers, particularly the younger generation.

Researchers are noticing the altmetric buttons, badges and scores embedded in articles and asking what they are, whether to pay attention to them, and how to use them. There is an opportunity here for librarians to provide guidance in user education or information skills sessions.

Because librarians have connections across their universities, they can help to steer appropriate use of altmetric scores beyond the library. Some librarians are involved with the research office, providing support for writing grants and outcome reports to funders, or with central administration, carrying out performance measurement and quality assessment activities. Librarians can advise on whether to purchase products and tools that use altmetrics and on how to showcase university research using altmetrics.

Should altmetrics appear in institutional repositories?

The answer to this question depends on what the library wants to accomplish and how the data are intended to be used. Altmetrics in the institutional repository could provide insights to help inform collection development and to encourage depositors to send more material.

Which article-level measures could be implemented in an institutional repository? Options include:

- Page views, downloads, citations
- Saves on Mendeley, Delicious, CiteULike, etc.
- Shares through Twitter, Facebook, blog posts, Mendeley, etc.

If these types of measures appear in a repository, it's a good idea to place share buttons on the article records and on the articles in the repository. Lack of activity should be discreet, so that if there is no activity, the buttons will not display. We might consider allowing authors to decide whether they would like the altmetric score to be visible on their article records.

The following example from the University of Pittsburgh's institutional repository shows that 29 readers on Mendeley have interacted with this paper. Clicking on the number in the live record takes you to a list of the Mendeley readers. Likewise clicking on the "cited by" from Scopus or Microsoft Academic Search provides additional contextual information.



JENNY DELASALLE
Freelance Consultant / Librarian

The screenshot shows a repository record for a publication. At the top, there is an abstract. Below it, the following metadata is displayed:

- Date: July 2010
- Date Type: Publication
- Journal or Information Processing and Management
- Publication Title:
- Volume: 46
- Number: 4
- Page pp. 383-402
- Range:
- DOI or 10.1016/j.ipm.2010.02.001
- Unique Handle:
- Institution: University of Pittsburgh
- Referenced: Yes
- ISSN: 0306-4573
- Schools: School of Information Sciences > Information Science and Programs
- Date: 27 Jun 2011 11:29
- Deposited:
- Last: 27 Jun 2011 11:29
- Modified:

Under the 'Actions (login required)' section, there are three buttons:

- View Item
- Mendeley - Readers: 29 (highlighted with a red arrow)
- Scopus - Cited by: 4
- Microsoft Academic Search - Cited by: 2

Figure 1: University of Pittsburgh's institutional repository with altmetrics using Plum Analytics [More ►](#)

Because librarians have connections across their universities, they can help to steer appropriate use of altmetric scores beyond the library.

Altmetrics in the institutional repository could provide insights to help inform collection development and to encourage depositors to send more material.

Another example, this time from the University of Warwick e-prints repository, shows how Altmetric.com has been used. The classic donut depicts the score and the information below it adds data and puts it in context. And the tabs to the right — Blogs, Twitter, Facebook, etc. — allow an even deeper exploration. Altmetrics are more than a score: context is what makes them valuable.



Figure 2: Altmetrics on the University of Warwick's e-prints repository

Spaces to watch ...

Crowdsourcing projects or citizen science-type methodologies involve reaching out to a broader community for investment of cash, expertise or resources. This approach is becoming increasingly popular in academia. Contextual information in altmetrics can help measure, investigate and evaluate interest in an institution's research to identify and understand the right crowd(s).

Working with publishers and societies, Kudos (www.growkudos.com) is helping authors and institutions maximize impact and visibility of their publications. It features a collection of lay summaries, impact statements, short titles and multimedia items, and partners with others to provide altmetric data.

ORCID encourages researchers to sign up for a unique identifier, allowing authors to create linkages and enable a comprehensive overview of their work. Researchers can use tools from ImpactStory or Altmetric.com to see for themselves what the altmetrics of their papers and other outputs are.

In summary

Liaison librarian, research support specialist or institutional repository manager — librarians have different roles and will have a different perspectives on altmetrics. The commonality among them is that they all need to consider the potential of altmetrics and begin to pilot some applications within their institutions. **LC**

Library Connect

Partnering with the
Library Community

Exploring common ground for alternative metrics

INTERVIEW WITH TODD CARPENTER | JUNE 18, 2014

The National Information Standards Organization (NISO) is exploring a framework for alternative metrics (altmetrics). A US-based nonprofit with global members, NISO is a standards-setting body in the community of libraries, publishers and automation vendors.



How does NISO differentiate between a recommended practice and a standard?

In the language of standards there are a lot of “musts” and “shalls.” Recommended practices focus more along the lines of what community members “should” or “may” do, so they are less prescriptive. Because of this flexibility, recommended practices provide an opportunity to advance consensus in technology areas that are still developing. They are also meant as a starting point for something that could become more formal as practices develop.

Tell me more about the NISO Almetrics Project and why NISO got involved?

NISO has a long history of being involved in assessment. One of NISO’s oldest standards, Z39.7 — Information Services and Use Metrics & Statistics for Libraries and Information Providers — Data Dictionary, dates back to the 1950s. It is a data dictionary that describes activities that can be measured for assessment purposes within a library. Over the last 15 years, we have been involved in the COUNTER and MESUR — a project led by Johan Bollen at Indiana University and Herbert Van de Sompel at Los Alamos National Laboratory — initiatives. For Project COUNTER, NISO maintains the data model and has supported the exchange of COUNTER data with the SUSHI standard. Within the MESUR initiative, NISO

has supported exploration of new forms of measuring network behavior.

During the 2012 “unconference” Almetrics 12, I asked the participants whether anyone would like to talk about standards around altmetrics. It turned out to be one of the largest discussion groups, and one of the action items was to continue the conversation. NISO formed an advisory steering committee and invited individuals who were at the meeting and having conversations around altmetrics to participate. Then we asked them to reach out to their communities for increased participation and input.

We approached the Alfred P. Sloan Foundation, which was involved in funding Almetrics 12, with an idea about developing community consensus around alternative assessment metrics. Fortunately the Sloan Foundation decided to fund this work and last June we received a grant to undertake a two-phase project. We are just wrapping up Phase 1.

What did Phase 1 comprise?

Phase 1 was a brainstorming initiative consisting of three in-person meetings: San Francisco in October, Washington, DC in December, and in Philadelphia at the ALA Midwinter Meeting. We also conducted 30 one-on-one interviews.

The goal of the first phase was to get community input about what is necessary to create an environment where alternative metrics can be successful. Questions around altmetrics abound, including:

- How do we apply article-level download counts to social media use?
- What are, and how do we measure the impact of, nontraditional scholarly outputs like datasets or software?
- How do we quantify the use or application of software?

[More ►](#)



TODD CARPENTER
Executive Director
NISO

First let me say that I'm not sure the term “altmetrics” is such a good thing; however, I think for now we are stuck with it. One day these will all be considered metrics ... period.

*I think if librarians had access to article-level data, they would use it.
I'm sure researchers would use it.*

After gathering this input, we compiled a list of 9 major themes and 25 potential action items, culled out of more than 200. These have recently been made public in the Altmetrics White Paper Draft released on June 9, available on the NISO Altmetrics Project web page.

We are now asking for public input and feedback, comments and criticisms: "How come you have forgotten this?" "This sounds like a great idea, do this." And we are interested in this input from a worldwide audience. The commenting feature will be available until July 18, 2014.

Are there any action items you are particularly interested in pursuing?

To be honest, there are. But I absolutely don't want to prejudge the interests of the community. One of the challenges of being the head of NISO is people often ask me what I think. While I have my own opinions, it's more important to get the opinions of the community. I'm not making funding decisions based on someone's portfolio and what might that person need, or what might a dean need when reviewing for promotion and tenure. These use cases are much more important than what I think.

As a group, we have talked a lot about use cases. For example, have you shopped on Amazon? At the bottom of the page it says, "People who viewed this, also viewed this." That's an application of altmetrics. It's tracking network behavior to expose what the system thinks you might be interested in based on your behavior. We could do similar things with library data to expose content to subsequent patrons.

What are you seeing in the library community? Is there widespread adoption of altmetrics?

First let me say that I'm not sure the term "altmetrics" is such a good thing; however, I think for now we are stuck with it. One day these will all be considered metrics ... period.

So it's a more difficult question than it appears as it gets to what is the definition of a traditional metric and an altmetric. Strictly speaking, a traditional metric would be citation use, citation tracking and the impact factor. People use that data all the time. Download counts and COUNTER reports are relatively new, but I would say most librarians are using them.

If we take a step further and look at article-level data instead of journal-level data, at what point does it start becoming commonplace? I think if librarians had access to article-level data, they would use it. I'm sure researchers would use it. Those publishers that have begun including more robust and granular data have had a positive response. On a broader scale, I think we'll continue to move further along the lines of providing a suite of potential metrics; there is never going to be one number to rule them all. It's all about context.

What happens next with the initiative?

Phase 2 involves a community effort to prioritize these 25 different potential action items since NISO won't be able to take on 25 new projects. We want the community to tell us which ones they think which would make the most difference. With this input, the NISO leadership committee, the Business Information topic committee that oversees this work, and the NISO membership will decide which projects NISO moves forward with.

NISO will likely decide on three to five potential projects and move forward with them on the continued funding for Phase 2 from the Sloan Foundation. We anticipate by the end of 2015 or mid-2016 we will have some developed some recommended practices or standards.

We also might hand some of these project ideas off to another organization, such as a library or publisher association, for them to pursue. NISO is certainly not the only organization working in this space. We are always looking for opportunities to partner with and collaborate with other related organizations.

About NISO

NISO is a membership-based organization with approximately 80 voting and 120 non-voting Library Standards Alliance members. It is officially accredited by the American National Standards Institute to create US national standards in the space of information and documentation. Many of these standards are applied broadly around the world, and NISO is involved in international activities in partnership with the International Organization for Standardization (ISO) and several other international standards organizations. Within ISO, NISO serves as the secretariat of the technical subcommittee responsible for identification and description (TC 46/SC9), where like ISBN, ISSN, DOI and a variety of other information standards are created and maintained.

Are all the topics NISO looks at as broad as this?

This is bigger than most because it does touch on so many different things, but I would say one challenge NISO faces is that we touch on so many diverse communities. We are simultaneously at 30,000 feet and the microscopic level. For example, when you talk about metadata around ISBN numbers or research objects, you get nitty gritty very quickly. But if you talk about the broad application of DOIs across all digital objects, the discussion gets very big very quickly. It certainly provides an opportunity to engage at all levels of the publishing and scholarly communications chain. **LC**

Infographic | Librarians and research impact

LIBRARIANS AND RESEARCH IMPACT

A story of measurement, insights and action

RESEARCH OUTPUTS

- articles
- books/book chapters
- conference proceedings
- theses and dissertations
- datasets
- patents and other IP
- multimedia
- software

BEYOND BOOKS AND ARTICLES

Though scholarly publishing is still the primary measure of academic research, other forms of output are now more widely recognized, described in repositories and included in assessments. Librarians and information professionals are helping to raise awareness of the breadth of outputs and systems for tracking these new measures.¹

BEYOND CITATION COUNTS

Citations and associated indices (bibliometrics), once the sole measure of research impact, are now being augmented by public, social and mass media measures (altmetrics) to do-it-yourself mashups or prepackaged tools. Librarians are showing researchers what metrics and tools are available, as well as how to assess their strengths, limitations and relevancy.²

MEASURES OF RESEARCH OUTPUTS

h-index
g-index
m-index

CITATIONS

OTHER CITATION-BASED INDICES³

NUMBER OF PUBLICATIONS

SHARES
CLIKES
TWEETS

DOWNLOADS
RECOMMENDS

SKILLS
FAST

PERKS

CAUTION
ASK A LIBRARIAN

Todo list

- Find collaborators for phase 2 study.
- Update manuscript and review file.
- Identify relevant funding agencies.
- Register file on ORCID ID.
- Push latest article to evidence repository.
- Cross check h-index on conference, database and networks.

BEYOND TENURE DECISIONS

Researchers can apply such evidence to influence collaboration, funding and promotional opportunities. Librarians are working with researchers on raising the visibility and impact of their research and enhancing research and career opportunities, and with the research office on performance measurement and quality assessment activities.⁴

Never Underestimate the **{IMPACT}** of a Librarian

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- The Queensland University of Technology and The University of Queensland libraries recommend researchers speak to librarians about discipline-specific metrics and data sources that can measure and highlight the impact of publications and research outputs. <http://www.library.qut.edu.au/services/research/impact.jsp>
- http://guides.library.usyd.edu.au/research_impact
- <http://blogs.warwick.ac.uk/research/high/index/>
- The Becker Medical Library Model for Assessment of Research Impact recommends a three-pronged strategy with activities around Preparing for Publication, Dissemination, and Keeping Track of Your Research. <https://becker.wustl.edu/impact-assessment/strategies>


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Webinar | Librarians and altmetrics:
Tools, tips and use cases


Librarians & altmetrics: Tools, tips and use cases – February 20, 2014



Kristi Holmes
Bioinformaticist
Washington University in St. Louis



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Mike Taylor
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Elsevier Labs

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Research data management at institutions: Visions, bottlenecks and ways forward

BY ANITA DE WAARD, DANIEL ROTMAN AND MIKE LAURUHN | FEBRUARY 7, 2014

Introduction

Research data has always been at the core of much scientific research, though the primary conduit of scientific communication has been the peer-reviewed journal article. The article summarizes, synthesizes and interprets the raw data; places the data in the context of theory and hypotheses and mechanisms; and provides an interpretation of the data. However, in its current form, the article alone does not provide sufficient details of the data to facilitate integration within larger data contexts, or to allow for reconstruction of the experiment or alternative analyses, syntheses or interpretations.

The era of Big Data launched with advances in technology power and analytic software¹ and propelled a fast-growing trend, resulting in great demand for open data programs² and influential studies highlighting the problems and challenges with the current informal data practices.^{3,4} Many have argued that the value of the journal article will decrease⁴ as the value of available research data increases over the next few years, and recommendations abound for what needs to be done.^{3,5,6,7,8}

As a result, there is increased pressure in the research community to make research data (raw and summarized) available, both linked to publications and directly into open repositories, for preservation and use by other researchers. At present, in most scientific disciplines (genomics, astronomy, physics are notable exceptions), little research data are made available to other scientists. Reasons for the low participation by researchers include a fear of being scooped and a sense of a lack of rewards for storing and sharing data. In the big picture, many researchers feel they do not currently have proper incentives for sharing their research data compared

with the long-term, career-related incentives (i.e., tenure) of having articles published. In the day-to-day picture, many fear it being a time sink and are not clear on what is required from funding body mandates. Presently many systems and tools are in place to store research data in domain-specific, institutional, local and global repositories. However, no coordinated set of practices or even instructions exist to enable the majority of researchers to incorporate effective modes of research data management into their workflow.

Funding agencies are increasingly concerned with improving the reproducibility of research and allowing the public to hold scientists accountable for the results of their experiments. They are implementing policy statements to improve data storage, curation and sharing.^{9,10} It is not clear yet where the burden for compliance will ultimately land. At many research institutions, libraries, IT departments, and offices of research are increasingly preparing to meet that obligation, on behalf of and in collaboration with the institution's scientists, engineers and scholars.

The goal of this article is to sketch a view of the various aspects involved in managing, describing, preserving and making research data available and accessible to appropriate audiences, and to propose a series of projects to tackle issues preventing their effective implementation. After sharing our views of the current state of research data management inside institutions, we propose pilot projects with a number of institutions to explore how to provide research data management designed for the needs of each specific institution. Each engagement will be unique, but together these projects can paint a landscape of needs and solutions. Each party can reference this landscape in determining how best to contribute value to the most effective and efficient solution, and how to jointly move forward.

More ►



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As a result, there is increased pressure in the research community to make research data (raw and summarized) available, both linked to publications and directly into open repositories, for preservation and use by other researchers.

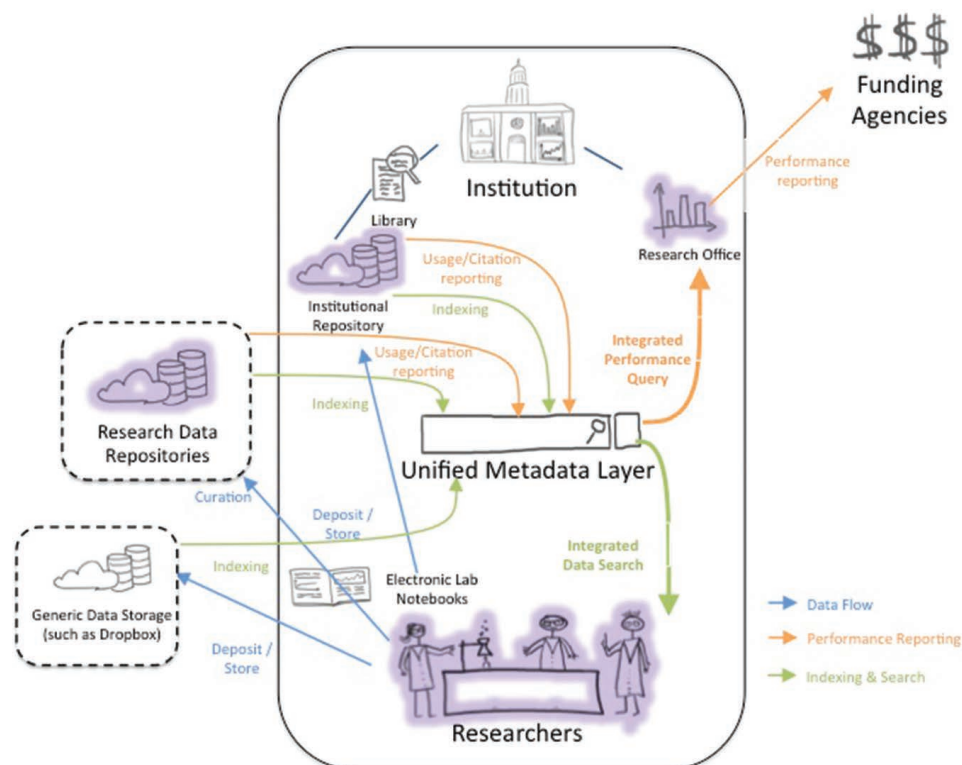


Figure 1: Overview of the parties involved in RDM within an institution and the research data information flow among parties

Source: Image created by Victor Henning and Anita de Waard, © 2013 Elsevier.

A. Research data management in institutions: Stakeholders and information flows

Technical and policy changes herald a brave new world of linked research data, but different participants in the research data management workflow feel the pressure to bring about this change. Figure 1 sketches the various stakeholders within the institution and the flows of information involved. In particular:

- Researchers have to conform to reproducibility requirements for their data, and need safe, efficient and policy-compliant tools and processes for storing and annotating their research data.
- Data Repositories are asked to deliver more cost-effective ways to dramatically increase the volumes of data they curate and store. Though usually separately funded, these repositories are technically located inside an institution, and share physical and technical infrastructures with the campus.
- Libraries run the risk of being disintermediated in an open access world, and are looking for ways to use their skills and systems to connect research data to the repositories and knowledge management systems they curate.

- Offices of Research Administration are anticipating the need to track the full set of digital artifacts created inside the institution to ensure compliance with contractual data sharing policies.

Several types of information flows connect these parties:

- The data flow: As data is created by researchers it gets deposited and curated in one (or more) of a multitude of possible repositories: the institutional repository (IR), external (whether domain-specific, e.g., Protein Data Bank, PetDB, or domain-agnostic, e.g., DataDryad, Figshare) research databases, or cloud-based storage facilities such as Dropbox.
- The indexing flow: To allow cross-repository search, these data must be indexed.
- Usage reporting: For compliance and merit assessment purposes Research Offices are interested in usage and viewing data for the deposited research data.

B. Bottlenecks

Although clearly interconnected, these different stakeholders and these complex interdependent information flows are not centrally managed or manageable. Funding and technical requirements are independently

driven, and there are no platforms for these groups to connect, either organizationally or technically. Before we can arrive at an optimal flow of information for research data within and between institutions, the following bottlenecks need to be addressed:

1. Researchers: Ensure that research data is stored and curated during creation

Current assessments agree that, depending on the domain, between 70–90 percent of the research data created is currently not stored outside of a researcher's own lab.¹¹ To overcome this bottleneck, research data needs to be captured together with the environmental, process and protocol details that are critical for understanding provenance or reproducibility, using standardized (taxonomic or controlled-vocabulary) names where possible. Much of the documentation happens after the collection, but tools to capture metadata at the time of data collection allow for a quicker and more accurate way to capture experimental circumstances.

When raw data are captured or created in research, they often have to be transformed or normalized before they are useful for comparison with other similar experiments. Any transformations or adjustments in data from raw form, as well as any workflows for handling or manipulating the data, need to be documented in detail using standard nomenclatures as much as possible. The data need to be labeled with standard nomenclatures from subject-specific vocabularies to allow greatest discoverability, comparison and use by other scientists. Any standardized entities (reagents, animal species and strains, antibodies) used or produced in the research need to be unambiguously defined as part of the research metadata.

2. Data Repository: Increasing amount and decreasing cost of manual curation

Over the past 10 years many domain-specific databases have been set up that, mostly through the manual curation of papers, provide a processed summary of research results. The contents of these databases are usually of a very high quality and they are invaluable assets in a given field.¹² They risk losing funding and are looking for sustainable models to maintain their services. Developed in relative isolation, many of them are created on dedicated technology platforms not optimized for

More ►

integration with external search and indexing services. Also, the curation process is usually manual and might benefit greatly from text mining and other semi-automated approaches.

3. Institutional Repository/Library: Keeping track of all data created by researchers

Because of researchers' reluctance to share their data and the multitude of places to store it, most IRs are only storing a small portion of the data produced at the institution. To improve the awareness of data produced at the institution and maintain an index of it, interoperable metadata layers are needed that track where and how data was stored and shared, and therefore allow at least institutional cataloguing of data outputs (akin to a publication index). To make this possible the role of the IR in research data management must be clearly defined and the IR must track where data was created and is stored. This requires an increased level of interoperability with other parts of the institution, in both organizational as well as technical systems.

4. Research Office: Enable usage reporting on all data created by researchers

Apart from compliance with funding requirements, obtaining credit for shared data is probably the biggest driver to motivate researchers to increase the amount of research data shared. The use and impact of shared data are tracked by a few services, but no good definitions or interfaces as yet combine statistics on all the repositories where data originating from a specific institute ended up. And there are no agreed metrics on what constitutes a good impact assessment for a dataset. Standards and systems are needed to enable such cross-repository tracking of deposits, usage and downloads; these would provide scientists, the institution and the funding agencies a wide set of mechanisms for usage and impact reporting.

C. Potential Pilot Projects

To help academic institutions to prepare for the future of data-driven science, Elsevier's Research Data Services team is interested in establishing a series of pilot projects with a number of universities.

We are especially interested in pilots where different departments from the same university are involved, including research

Libraries run the risk of being disintermediated in an open access world, and are looking for ways to use their skills and systems to connect research data to the repositories and knowledge management systems they curate.

units, the IR, the library and the Office of Research. We are proposing the following pilot projects that will connect various stakeholders within the institution:

1. Researcher/Repositories: Data management tools

To help researchers capture data in a more effective and efficient format, tools are needed that map to the researchers' workflow and allow them to store, retrieve and process their data, including an easy means to reference protocols as well as enable direct capture of data. The ideal Electronic Lab Notebook allows researchers full freedom to model and capture their workflow and manipulate the data, while keeping all data under their control. In a perfect tool, an export function would allow the data to be shared or uploaded into either an external repository or a publishing system, and the heritage of the data will let (re)viewers of the data examine the steps undertaken to prepare it.

We are interested in exploring systems that would allow researchers to decide where to store and whether to share their data on a granular level: in an external data repository if appropriate (and, if so, in a format that minimizes tedious curation tasks on behalf of the repository), in the institute's IR or an external cloud-based solution as appropriate. The metadata created during the process of data creation and curation is similar for each of the options to minimize duplication of effort and optimize cross-repository search.

2. Institutional Repository/Office of Research Administration: Integrated compliance reporting

We would be interested in exploring standards and systems to report on the deposition, viewing, downloads, citation and use of research data created by scholars in the institution. Optimally we would explore a

wide range of data to report on, as stored in external repositories and cloud-based solutions or in the institution's IR. We would want to explore the types of reporting and compliance measures required or anticipated by a series of funding agencies and experiment with reporting standards and tools.

3. Researcher/Library: Integrated data search

Because of the variety of metadata standards, discovery of what is in these repositories is tedious, especially for those who have to check several repositories for several records. We are advocating the development of a unified metadata layer for repositories to make querying much more efficient for the general types of requests outlined in the prior use cases. We see the librarian as a key specialist to help develop the standards and practices of curation of the data with such metadata.

Working with existing standards and curation efforts, such a "Unified Metadata Layer" could be incorporated into the researcher's workflow and connect to the IR and domain-specific or agnostic research databases. A shared layer of metadata components will not only make it easier for researchers to record and annotate their experiments and the data generated, it can also leverage access to standard vocabularies and to automatically create the metadata needed to accompany experimental results. **LC**

Please contact the authors if you have any further questions or comments about this effort, or are interested in arranging a meeting to discuss research data at your institution in more detail.

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Data Scientist Training for Librarians: A course and a community

BY JEREMY GUILLETTE AND JAMES DAMON | NOVEMBER 13, 2014

The authors of this article have attended Data Scientist Training for Librarians: Jeremy Guillette — course 1 and course 2 (TA), and James Damon — course 2. Visit the DST4L blog (<http://altbibl.io/dst4l/>) and participate on Twitter using #DST4L.



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Artist Dirk Tiede created the DST4L badge

Introduction

A course called Data Scientist Training for Librarians (DST4L), held at Harvard University for librarians in the Boston area, has led to a community of librarians who work on data-driven projects.

During the first DST4L offering in the spring of 2013, students went from data extraction and cleanup to forging links between data items by API queries and, finally, creating visualizations and presenting a coherent narrative for a data-driven story. Students were divided into teams and each team took on a data-driven project that they worked on for the duration of the course. A series of instructors introduced tools such as Python, Git, OpenRefine, R, and Tableau during weekday lessons, and the

students put them to use on weekends when they met to work on projects.

The second offering of DST4L, held in the fall of 2013, started with a two-day boot camp for a new cohort of data savvy librarians in training, taught by Software Carpentry. Subsequently students met for three hours each Tuesday morning for 14 weeks. In addition to covering Python, Git, and OpenRefine, the course covered some of the finer points of Excel and introduced Gephi, a network analysis and visualization tool. Students then developed their own projects and collaborated for a two-day hackathon. The course concluded with presentations and a panel discussion led by participants.

DST4L in Context: Russian Gazetteer

(Note: In this section, “we” refers to the project participants Jeremy Guillette, an LIS student at Simmons Graduate School of Library and Information Science, and Hugh Truslow, Fung Head Librarian and DST4L alumnus).

One project to come out of DST4L is the construction of a Russian gazetteer, a geographical dictionary used in conjunction with a map or atlas, at Harvard’s Fung Library. In this project, we took a document that had already been digitized by the Hathi Trust and put it through an OCR program to extract the text with formatting intact. With the text and formatting in a machine-readable format, we could extract particular parts of the text — in this case, the names, types, and administrative units of places mentioned in the text. We then sent the names to a geolocation API, specifying the approximate areas based on our knowledge of the administrative areas. However, the late-1700s text uses letters and spellings that are not part of modern Russian, meaning that some transformations had to be applied before the names can be used. Fortunately, the project is structured so that the tools to locate places in this [More ►](#)

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We didn't become librarians because we lack the creativity, passion, talent or ambition to pursue our own interests.

text can be applied to other Russian texts and, with a bit of modification, to texts and location data in any language.

The most difficult part of the project — and the part where the DST4L tools, skills and ways of thinking have been most helpful — is reconciling older place names with current ones. The text uses archaic spellings, as well as letters that went out of use when Russian spelling was reformed in the early 1900s. By creating simple rules in Python to update those instances and applying them to the place names before asking an API for their locations, we can automatically replace them with modern equivalents.

Sometimes, the API doesn't return results for a place name or it returns multiple possible matches in an area (meaning we didn't find an exact match). By consistently applying increasingly sophisticated transformations to the text, we aim to automate as much of the process as possible before doing research by hand. When we have every place mentioned in the text georeferenced, we will put the

results into an existing interface at the Center for Geographic Analysis so that others can build them into their own workflows.

Why take data science for a spin?

One of the great things about DST4L is its hands-on approach to data-driven projects. Even for librarians who don't intend to work directly on these kinds of projects, the class engenders a different mindset. After working directly with messy data, oddly formatted websites that are resistant to scraping, unavailable or difficult-to-access data, or any of the dozens of other headaches that can plague researchers, you start to think about things a bit differently. You see the benefits of opening up access to your own data, potential connections between datasets, and perhaps an idea of what everyone's talking about when they say "big data."

The specific lessons, tools and projects of DST4L provide participants with valuable skills and knowledge. However, DST4L's greatest benefit may be the sense of

continued growth and development in our profession. We didn't become librarians because we lack the creativity, passion, talent or ambition to pursue our own interests. We didn't replace our goals with those of our patrons. The success of a service mission is measured by the quality of the service provided. Ultimately, the quality of a librarian's work is determined by his or her ability to understand and manage connections.

At face value, DST4L is a technology course that teaches librarians to script, extract, wrangle and visualize. At its heart, it reminds librarians to push themselves, each other and the profession. In searching for relationships between sets of data and building the ways to visualize them, we can make connections. Linked data becomes an open door. The potential of the Web becomes that much more visible. In class, we even got to know our neighbors. There is certainly no substitute for the colleagues you meet and the community you create in pursuit of knowledge. **LC**

At face value, DST4L is a technology course that teaches librarians to script, extract, wrangle and visualize. At its heart, it reminds librarians to push themselves, each other and the profession.

Addressing data science's big bell: UC Berkeley I School's Master of Information and Data Science program

INTERVIEW WITH ANNALEE SAXENIAN | NOVEMBER 13, 2014

In 2014, the University of California, Berkeley School of Information launched its Master of Information and Data Science (MIDS) program. The multidisciplinary curriculum was designed to be completed in 20 months via live online classes ranging from Applied Machine Learning to Field Experiments.



UC Berkeley Master of Information and Data Science program students in front of I School

Why did your I School develop the MIDS program?

The Bay Area technology community, our alumni and members of our advisory board were all saying data science is the future and you should consider it. On our end, we felt "data science" had not yet been clearly defined, and we wanted to play a leadership role in defining it.

We are educating people who can work with data, starting with asking good questions and understanding research design. They need to be able to find and pull together data in a form that makes it usable, store it in databases, and then apply either statistical tools or some of the new computational tools to analyze it. They will have to clearly communicate the story that the data tells to nonspecialists using words or visualizations. And they should be aware of the privacy and ethical issues associated with using data.

We have explicitly made our degree program much broader than statistics or computer science. Much like an I School, it is a mix of the social and the technical.

We launched this degree in January 2014 after a three-year gestation. Recently our chancellor came to us and said, "We think all freshmen should have exposure to data and data literacy." This confirmed our insight that this was going to be important.

How do you differ between a data scientist and a data librarian?

A data librarian has a special set of responsibilities around stewardship and curation that other data scientists do not. These responsibilities include defining standards, storing data, ensuring data stays in a usable format, and organizing data in a way that makes it more accessible. And it may be a bit of an uphill battle.

UC Berkeley recently got a grant to set up the Berkeley Institute for Data Science. They wanted to create an infrastructure on campus to support data science in the sciences, and we put in a proposal to work on data curation, stewardship and policy issues around privacy and ethics. While we believe these are critical issues, they still have not become part of the mainstream discussion among the scientists on campus.

Tell me about your students and where they will end up.

We have been flooded with applications and currently accept less than one third of the students. Ninety-eight percent of our 126 students are working, and they represent a wide range of industries. The class tends to skew toward male students (80 percent); we think that might have something to do with the technical skills requirement, as we expect students to come in with quantitative competence and some programming skills. [More ►](#)

Library Connect

Partnering with the Library Community



ANNALEE SAXENIAN
Dean, UC Berkeley
School of Information

A data librarian has a special set of responsibilities around stewardship and curation that other data scientists do not.

I believe every organization — from the library to the public sector, from multinational corporations to mom-and-pop shops — is going to be transformed by the ability to use data in interesting and new ways.

We envision the field of data science as a bell curve. At one end are the PhD statisticians, computer scientists and physicists who are on the leading edge creating new algorithms. LinkedIn, Google and other technology companies are hiring these types of PhD data scientists or computer science graduates. At the other end are data analysts doing the simpler tasks. We are preparing our students for the big bell in the middle, which might include healthcare, finance and any number of other industries. Many of our students are not looking to change careers, but rather to rise within their existing organizations.

How important is the location of this degree (online and offered by a Bay Area powerhouse)?

We benefit from being in the Bay Area because a lot of the new data science tools and technology are developed here — there's an ecosystem of data science. And we benefit from the Berkeley brand.

Physically, the School of Information is bursting at the seams, so we decided to make it an online degree. That makes sense as well for most of our students, who wish to rise within their current companies. There is also a natural tie-in to the curriculum: using technology to attain a technologically oriented degree.

Is this interest in data science a flash in the pan, or is it here to stay?

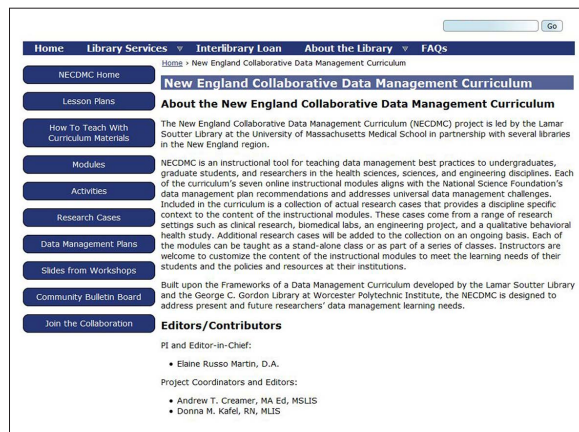
There is a great deal of unwarranted hype out there about “big data” and “machine learning.” That said, I believe every organization — from the library to the public sector, from multinational corporations to mom-and-pop shops — is going to be transformed by the ability to use data in interesting and new ways. I'm in the camp that believes this is a big change. **LC**

A collaborative effort to develop a data management curriculum

NECDMC serves the data management needs of researchers, students and librarians

BY REGINA RABOIN, ANDREW CREAMER, DONNA KAFEL AND ELAINE MARTIN |

OCTOBER 23, 2014



<http://library.umassmed.edu/necdmc/index>

The New England Collaborative Data Management Curriculum (NECDMC) is an educational program for teaching faculty/researchers, students and librarians best practices in research data management (RDM) for the STEM disciplines. The National Networks of Libraries of Medicine, New England Region (NNLM NER) initially conceived the curriculum as a response to recent United States government mandates regarding data management, data sharing, and open access to data supported by federal funding. The NECDMC teaching materials are openly available on the web for information professionals to take and customize to meet the needs of their researchers, supporting new and rapidly evolving teaching and service roles for librarians — services that align libraries with their institutions' strategic goals in research and development.

Seven libraries in the New England region initially developed this case-based, modular curriculum. The efforts were funded by the National Library of Medicine and led by:

- Principal investigator, Elaine Martin, Director of Library Services, Lamar Soutter Library, University of Massachusetts Medical School
- Project coordinator, Donna Kafel, New England e-Science Coordinator, University of Massachusetts Medical School
- Project coordinator, Andrew Creamer, Scientific Data Management Specialist, Brown University

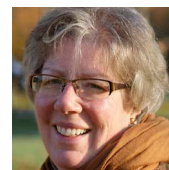
Exploring the curriculum

The curriculum addresses universal data management challenges and aligns with the National Science Foundation's (NSF) data management recommendations. Each of the curriculum's seven modules includes a lesson plan, teaching slides, and activities that can be used "out of the box" or customized for a particular institution or audience. The curriculum has a CC-BY license, one of the most permissive of the Creative Commons licenses.

The NECDMC website has teaching advice, case studies, data management plan (DMP) examples, information on how participating libraries are using NECDMC, and links to resources used and developed by the partner and pilot libraries. [More ►](#)

Library Connect

Partnering with the Library Community



REGINA RABOIN
Tufts University



ANDREW CREAMER
Brown University



DONNA KAFEL
University of Massachusetts
Medical School



ELAINE MARTIN
University of Massachusetts
Medical School

The NECDMC teaching materials are openly available on the web for information professionals to take and customize to meet the needs of their researchers, supporting new and rapidly evolving teaching and service roles for librarians...

Table 1 — NECDMC Modules and Authors

MODULES	AUTHOR(S)
Module 1: Overview of Research Data Management	Regina Raboin, Tufts University Andrew Creamer, Brown University, and Donna Kafel, University of Massachusetts Medical School
Module 2: Types, Formats and Stages of Data	Jen Ferguson, Northeastern University
Module 3: Contextual Details Needed to Make Data Meaningful to Others	Elizabeth Coburn, John Furfey and Jen Walton, Marine Biologic Laboratory and Woods Hole Oceanographic Institution Alexander May and Alicia Morris, Tufts University
Module 4: Data Storage, Backup and Security	MJ Canavan, Steve McGinty and Rebecca Reznik-Zellen, University of Massachusetts Amherst
Module 5: Legal and Ethical Implications of Research Data	Donna Kafel and Lisa Palmer, University of Massachusetts Medical School Lynne Riley, Worcester Polytechnic Institute
Module 6: Data Sharing and Re-use Policies	Matt Sheridan, Laura Quilter and Aaron Rubinstein, University of Massachusetts Amherst Elizabeth Coburn, John Furfey and Jen Walton, Marine Biologic Laboratory and Woods Hole Oceanographic Institution Regina Raboin, Tufts University
Module 7: Repositories, Archiving and Preservation	Introduction: Andrew Creamer, Brown University David Lowe, University of Connecticut Darla White and Emily R. Novak Gustainis, Harvard University

Piloting the curriculum

The NECDMC team has provided several forms of support for pilot libraries, including a webinar to introduce librarians to RDM and the process of writing DMPs. US and Canadian librarians who attended the webinar could follow up by attending an in-person Train-the-Trainer workshop, which introduced the course materials and provided teaching instruction.¹ The NECDMC training team then identified librarians who were interested in piloting the course at their universities. Afterward, the librarians did two evaluations: a self-evaluation that described their pilot course and their participants, setting

and methods, and one that evaluated students' perceptions of the course's content and methods, and how it was conducted. The NECDMC researchers analyzed these results and conducted qualitative follow-up interviews with the pilot librarians.

Of the 18 institutions that have enlisted, nine are currently piloting the curriculum. The institutions have implemented the curriculum in various ways: a semester-long, for-credit course; librarian professional development; workshops for graduate and undergraduate students, professional organizations and conferences; a library school for-credit course; and a series of weekly modules for researchers. Module 1

was recently translated into French and presented at the University of Montreal.

The curriculum has also become a credit-bearing course called "Scientific Research Data Management" at Simmons College School of Library and Information Science, a class for the University of Massachusetts Medical School's Clinical and Translational Science Awards team, and in April 2014, a class for the National Network of Libraries of Medicine (NN/LM) Mid-Atlantic Region.

Gathering feedback and lessons learned

Some of the early feedback from pilot sites included:

- Module 1 can be easily adapted for a 90-minute class.
- Content is more relevant to students when it is customized with local resources.
- Students prefer having lecture content interspersed with activities.
- Do not try teaching all seven modules in a one-day workshop!

Broadening the scope beyond STEM

RDM issues are not limited to librarians in the STEM disciplines. Librarians from the social sciences and the arts and humanities have attended E-Science and NECDMC symposia and workshops, and there is interest in developing NECDMC modules for digital humanities' data management requirements. The NECDMC project team's goals include expanding the content to encompass broader disciplines and creating self-paced, interactive online modules. **LC**

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Library Connect

Partnering with the Library Community

Learning about research data in the lab at the Pitt iSchool

BY LIZ LYON | OCTOBER 23, 2014

Skilling up for RDM

Today's research environment features data-intensive science, funding mandates for enhanced research data management (RDM), and high-level policy directives towards a more open sharing of data products from research projects. This has led many university and college libraries to take on new responsibilities; libraries are repositioning, restructuring and reskilling their staff to take on RDM roles.^{1, 2}

In response, iSchools and library schools are introducing data curation and RDM courses into the curriculum to prepare the next generation of information professionals and to retrain existing librarians for these new roles.

Highlighting a domain disconnect

Many of these new roles embrace elements of data stewardship, data management, data science and data visualization.³ Job titles vary from data librarian, data archivist and data steward to data analyst, data engineer and data journalist. While

some of these roles may not immediately be considered applicable to libraries, others have potential to become mainstream library positions.

It is also important to recognize the diversity of data in terms of standards, formats, ontologies and cultural practices that characterize different disciplines or communities. One challenge for librarians is how to best address this breadth; there is a real risk of a domain disconnect between the data requirements and support services offered. New courses for MLIS and doctoral students and librarians in the iSchool at the University of Pittsburgh seek to bridge this disconnect by taking an innovative, immersive approach — placing students within an active research environment such as a science laboratory.

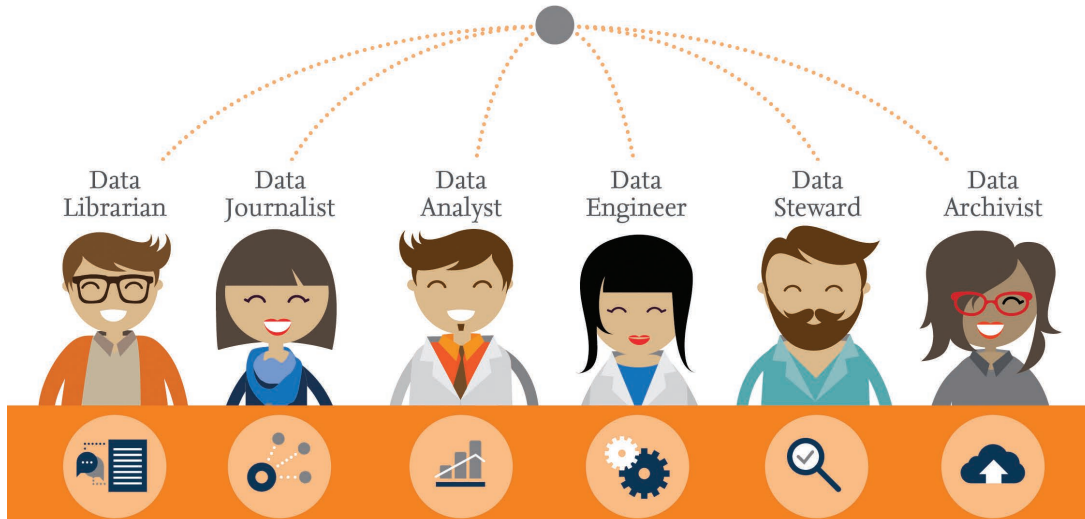
Heading to the lab

Pitt's new RDM courses are based on an immersive informatics pilot study, a novel RDM training course that was developed and delivered by a partnership between UKOLN Informatics, University of Bath and the University of Melbourne.⁴ [More ►](#)



LIZ LYON
Visiting Professor, School of Information Sciences
University of Pittsburgh

DATA SCIENCE ROLES



The first new data course, "Research Data Management," focuses on funder requirements, data management plans, legal and ethical issues, data centers, data advocacy and data sustainability. The second, "Research Data Infrastructures," explores data storage, data publication and citation, data discovery, data standards, data repositories, data preservation and data science.

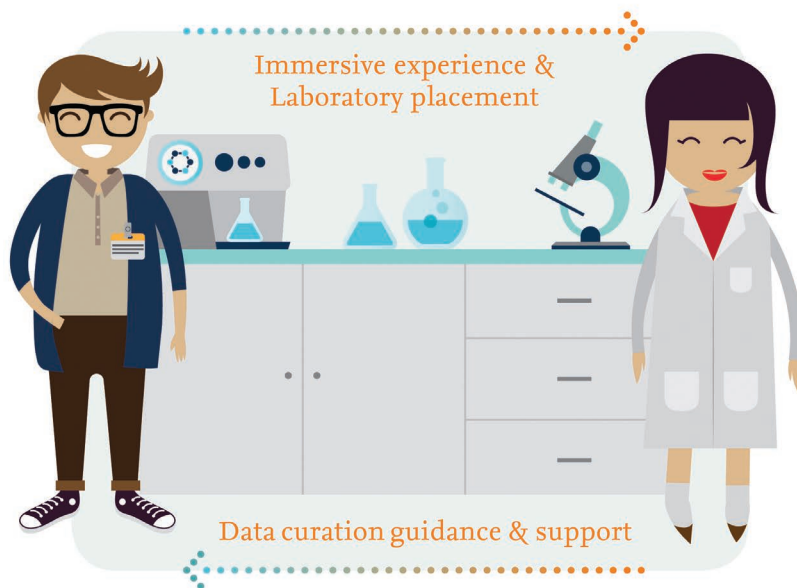
As part of these courses, the iSchool students have immersive placements in a range of labs at the University of Pittsburgh, including the Departments of Public Health and Medicine (specifically, the Renal-Electrolyte and Epidemiology laboratories) and the Swanson School of Engineering (at the RFID Center of Excellence, which studies radiofrequency identification technology). The students work in pairs and are assigned to a doctoral student, instructor or post-doctoral researcher. In the lab, students can observe day-to-day research workflows and have access to live datasets, laboratory notebooks and sophisticated instruments — experiences most MLIS students would not otherwise encounter in their curriculum.

One challenge for librarians is how to best address this breadth; there is a real risk of a domain disconnect between the data requirements and support services offered.

Bilateral learning

The goal is an exchange of RDM experience, questions and knowledge between the iSchool student and the research scientist. Feedback from both students and researchers has been positive.

BILATERAL LEARNING



From students:

"It was great to see a real-life example of how a lab generates and uses data."

"We learned not only about the specifics of their research but also about the lifecycle of data."

"This was a valuable experience. It was very practical and illuminated some of the struggles that one may encounter in discussing data as its own area of research."

From researchers:

"Showed them data backup on three drives — they asked a question about fire risk."

"Explaining what one does to a new person is instructive, since it shows you what you do not understand and cannot explain. Discussion with the (LIS) student exposed some weaknesses in my own thinking."

Realizing the value and benefits for libraries

Immersive RDM courses have many potential benefits:

- Library-faculty partnerships deepen by having library and informatics experts bring their knowledge into the laboratory and work alongside researchers.
- Librarians gain firsthand understanding of the laboratory setting, bench-based workflows, instrumentation outputs and researchers' day-to-day data challenges.⁵
- Faculty researchers learn from library students about data mandates, software, methodologies and data handling.
- The enhanced knowledge and new data skills, which are in short supply, empower LIS students and library staff to adopt new RDM roles.⁶
- Library senior managers gain intelligence about how to structure their organization to deliver research data services.
- LIS students enter the job market better positioned for new career opportunities working with data. **LC**

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Infographic | Research data management and the library: Five starter steps for research libraries

RESEARCH DATA MANAGEMENT AND THE LIBRARY

Five starter steps for research libraries

Funding agencies want to improve access to and reproducibility of research, and are implementing requirements for data storage, curation and sharing. The library is well positioned to play a leadership role. Here are 5 steps libraries can take to become partners in research data management.

- #### 1 Prepare a use case for management

Many argue that the value of the journal article will decrease as the value of available research data increases over the next few years*

 - The library must adapt to remain relevant
 - Internal
 - External
 - The library brings skills and expertise to the table
- #### 2 Get to know the landscape

 - Funding body requirements
 - Internal and external repositories

CHALLENGES, RISKS, AND EVEN ROADBLOCKS...

 - Talk to Research Data Services teams at other libraries and discover their opportunities and challenges
- #### 3 Coordinate the stakeholders
- #### 4 Adapt current skills to research data management

 - PRESERVATION
 - CURATION & DESCRIPTION
 - ACCESS
- #### 5 Initiate a pilot project

 - Index data for cross-repository search
 - Investigate tools for data storage, retrieval and processing
 - Develop guidelines and workflows
 - Create usage reports
 - Add metadata layer to repository

Content from Elsevier Research Data Services. *See the complete article at: <http://libraryconnect.elsevier.com/articles/RDM>

If you are interested in discussing research data at your institution, email ResearchData@elsevier.com.

Join the conversation: @library_connect | libraryconnect

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<http://libraryconnect.elsevier.com/articles/2014-03/download-infographic-research-data-starter-steps-libraries>

Webinar | Beyond data management plans, Creative data services in libraries

Beyond data management plans, creative data services in libraries – Nov. 13, 2014



Mike Mertens
Deputy Director and Data Services Manager, Research Libraries UK



Kimberly Silk
Data Librarian, Martin Prosperity Institute at Rotman School of Management, University of Toronto



Joel Herndon
Head, Data and Visualization Services, Duke University

Library Connect Webinar

ELSEVIER

<https://www.brighttalk.com/webcast/9995/119049>

Webinar | Rise of the databrarian

Rise of the databrarian – October 16, 2014



Jeroen Rombouts
Managing Director
3TU.Datacentrum



Margaret Henderson
Director for Research Data Management
Virginia Commonwealth University



Jennifer Clark
Junior Data Scientist
Benefitfocus



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<https://www.brighttalk.com/webcast/9995/119039>

Connecting researchers with their research through community adoption of ORCID

BY REBECCA BRYANT | JUNE 19, 2014

ORCID
Connecting Research and Researchers

FOR RESEARCHERS FOR ORGANIZATIONS ABOUT HELP SIGN IN

DISTINGUISH YOURSELF IN THREE EASY STEPS

ORCID provides a persistent digital Identifier that distinguishes you from every other researcher and, through integration in key research workflows such as manuscript and grant submission, supports automated linkages between you and your professional activities ensuring that your work is recognized. Find out more.

- 1 REGISTER** Get your unique ORCID Identifier. Register now! Registration takes 30 seconds.
- 2 ADD YOUR INFO** Enhance your ORCID record with your professional information and link to your other identifiers (such as Scopus or ResearcherID or LinkedIn).
- 3 USE YOUR ORCID ID** Include your ORCID Identifier on your Webpage, when you submit publications, apply for grants, and in any research workflow to ensure you get credit for your work.

LATEST NEWS

Fri 12/12/2014
New Feature Friday: New ORCID record interface

Thu 12/11/2014
Fueling your CNS - ORCID: Orca - a tool for research intelligence

Mon 12/08/2014
Round the World in 25 days Different Experience. Record

How publishers, organizations and universities use ORCID

Publishers are requesting ORCID iDs during manuscript submission, and passing the iDs through the publication production process in the article metadata. ORCID iDs are being included in metadata submitted to PubMed and to CrossRef, and appearing along with authors' names in online and print publications.

Scholars and researchers also can link past works to their ORCID iD through a growing number of search and link wizards. For example, researchers can link their ORCID iD to their publications in Scopus, Europe PubMed Central and ResearcherID, simultaneously posting publication metadata to their ORCID record and disambiguating their records in the external databases.

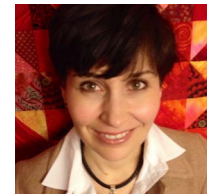
We are also collaborating with the Consortia Advancing Standards in Research Administration Information (CASRAI) to determine how ORCID can support the acknowledgement of peer review activities.²

While journal articles are an important part of an individual's research or scholarly contributions, other types of activities also play a critical role. ORCID supports connections with datasets, theses, book chapters, funding, education and organizations.

[More ►](#)

Library Connect

Partnering with the Library Community



REBECCA BRYANT
Director of Community ORCID

Todd J Vision

iD <http://orcid.org/0000-0002-6133-2581>

Country: United States

Keywords: plant biology, genome evolution, bioinformatics, scholarly communication

Websites:

[Research group website](#)

Other IDs:

ISNI: 0000000042272312

ResearcherID: B-4867-2010

Scopus Author ID: 6603368605

Rapid adoption and integration worldwide

In the 18 months since ORCID's launch in October 2012, more than three quarters of a million researchers have registered for an ORCID identifier (iD). In addition, more than 140 organizations have become ORCID members and are integrating ORCID iDs into their systems using our open APIs. Membership and adoption is international, with all sectors of the community engaging: publishing, funding, universities and research institutes, and professional societies. (See the list of ORCID member organizations.)

Institutions that become ORCID members and use the member API can:

- Read information from ORCID records
- Send data such as publications to ORCID records
- Integrate a search and link wizard to enable researchers to link to their works
- Link ORCID iDs to other IDs and registry systems
- Create ORCID records on behalf of their employees or affiliates¹

The success of ORCID — and with it, correct attribution — depends on people and organizations throughout the research community using the registry and embedding ORCID iDs in research workflows and systems.

Funding organizations including the US National Institutes of Health, US Department of Energy and the Wellcome Trust have integrated ORCID iDs into their systems.³ Researchers can link to past grant support using the search and link Uberwizard for ORCID.⁴ Some funders are also beginning to require ORCID iDs during grant submission, including Autism Speaks, Fundação para a Ciência e a Tecnologia (Portugal) and soon the Swedish Research Council.⁵

Universities are incorporating ORCID iDs into numerous campus systems, including institutional repositories, campus directories, researcher information systems and human resources.⁶ Texas A&M University recently created ORCID iDs for its 10,000 graduate students and is requiring the ORCID iD for dissertation deposit.⁷ Having an ORCID iD is rapidly becoming a must for managing one's scholarly identity in the 21st century.

University adoption has been encouraged and supported by the Alfred P. Sloan Foundation in the United States and by Jisc and ARMA in the UK.⁸

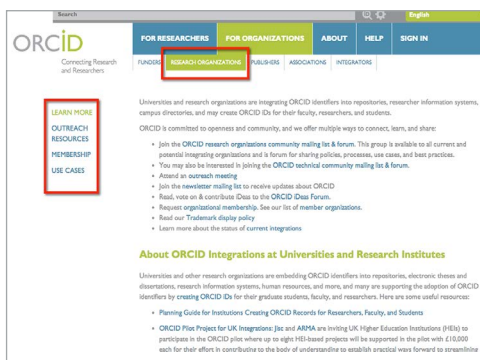
Professional societies like the Society for Neuroscience, IEEE and the American Anthropological Association are also incorporating ORCID iDs into their systems for membership renewal, abstracts, conference registration and, of course, publications.⁹

Documentation and outreach

ORCID provides outreach and technical resources through our website: integration use cases, handouts, open source code¹⁰ and more. Handouts, posters, slide decks, video and other materials are available in multiple languages.¹¹ In addition, ORCID

provides a comprehensive Knowledge Base of documentation and an open developer's sandbox.

We host twice-yearly outreach meetings and annual CodeFests to provide updates on ORCID, and to work with the community to explore and test integration of ORCID iDs. A list of upcoming meetings and archived presentations is available on our events page.



<http://orcid.org/organizations/institutions/learnmore>

Keeping in touch and new developments

Follow us at @ORCID_Org and subscribe to our blog (<http://orcid.org/about/news>) to stay up to date on features we will roll out soon, including:

- ability to validate links
- updates to users' records with information on published manuscripts
- ability to assign account delegates

The success of ORCID — and with it, correct attribution — depends on people and organizations throughout the research community using the registry and embedding ORCID iDs in research workflows and systems. Thank you for your help in achieving this vision. **LC**

What is ORCID?

ORCID (Open Researcher and Contributor ID) is an independent nonprofit organization dedicated to solving name ambiguity and attribution problems in research and scholarly communications. ORCID provides a free registry of unique, persistent identifiers for individual researchers and an open and transparent mechanism for individuals to link their identifier with their organizations and research contributions. ORCID iDs help researchers establish and maintain their scholarly identity throughout their career, across disciplines, research sectors and national boundaries.

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Academic librarians supporting applied research at the University of Michigan

BY YE LI | APRIL 16, 2014

Library support of applied research in academia is growing, and academic librarians are developing more comprehensive services to support the whole research life cycle from generating ideas to applying results. In this article I will highlight some of the associated challenges, and resources and services developed by the University of Michigan Library to tackle those challenges.

What underlies the librarian's ability to deliver these services is our core expertise in finding, managing and evaluating information, data and knowledge — and also in making connections among people, resources and organizations. Collaboration is key.

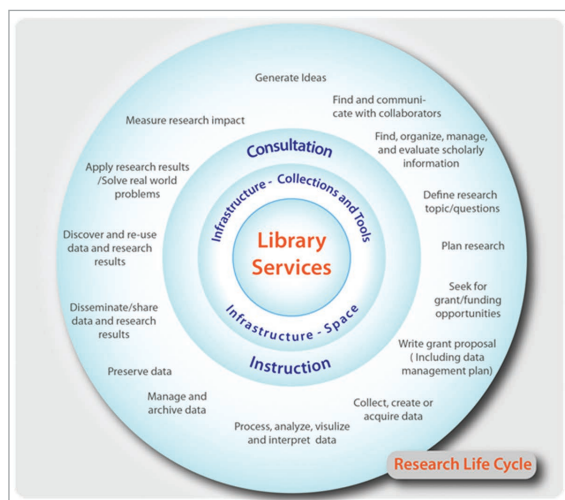


Figure 1: Library services around the research life cycle

Rethinking my research community

Applied research is about converting innovative research output into real-world applications. For many economic and social reasons, applied research is getting more and more attention in academia. It is nothing new in the engineering and medical fields, but in recent years it has grown beyond those two traditional areas. When I first

started my job as the chemistry librarian, I did not realize how fast applied research was growing. More than half the faculty members in the university's Chemistry Department have some sort of joint appointments in other units, mostly with engineering and medicine, as well as pharmaceutical sciences.

This made me rethink the community I was serving and realize that I need to support applied research in chemistry. Fortunately, the university has developed many initiatives and service units to support applied research, such as U-M Tech Transfer, Business Engagement Center, Center for Entrepreneurship, and so on. Beyond the university, the local community has also formed many partnerships and nonprofit organizations to assist the business and economic engagement of our university. One example of this is the University Expertise Portal of the Michigan Corporate Relations Network. Built upon Elsevier's SciVal solution, this research network has made it much easier to connect local businesses with the resources and expertise at major Michigan universities.

Identifying and tackling the challenges

1. Funding and legal issues

University of Michigan is a public school though less than 20 percent of funds come from the state budget. From a legal perspective, we do need to ask if we can use those funds for education to support business development. People may argue that business development gives back to the local community and we can justify the use, but we still need to be very cautious.

2. Resource accessibility

Many licenses for our literature resources, like publications and databases, specify academic use only. However, sometimes the boundary between

More ►

Applied research is about converting innovative research output into real-world applications.

For many economic and social reasons, applied research is getting more and more attention in academia.



YE LI

Chemistry Librarian
Shapiro Science Library
University of Michigan

pure academic research and business development is blurry, especially for startups initiated by our academic researchers. We need to work with vendors to find realistic solutions to this issue, including discounts for startups that may have no revenue. We also recommend open access resources to researchers, although sometimes it's hard to find good open access alternatives for chemists. Finally, we encourage use of a local document delivery services with reasonable prices for startups.

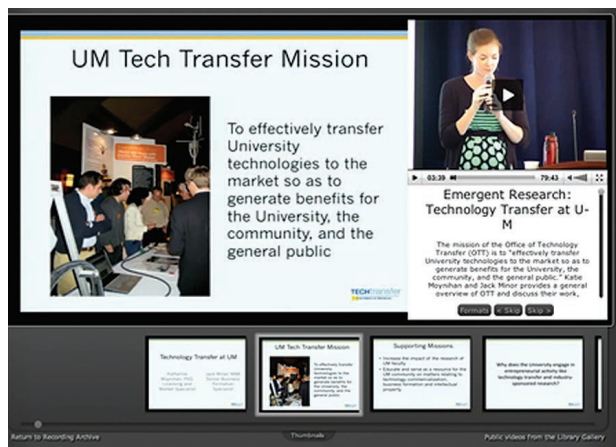
Beyond traditional literature collections, the library also provides tools that inspire more innovation and assist knowledge discovery; 3D technology is one example. UM's 3D lab is now part of the library, and researchers can use 3D scanning, visualization and printing to materialize their prototypes with very minimal to no cost.

The library is also a neutral space for collaboration with access to resources and technology. We created multiple spaces in the library for the Center for Entrepreneurship where students can discuss, initiate and get advice on startup projects. We also opened a satellite library co-located with our Venture Center.

3. Confidentiality and trust

When an idea has patent and/or business potential, researchers can become wary of sharing information. Oftentimes we need to build trust before they feel comfortable seeking help from us.

We can build trust by reaching out to researchers through workshops and seminars on areas of concern. For example, academics often need to balance between scholarly publications and their business interests. Planning when to publish and when to file a patent is really crucial for their success, as both a tenure track professor as well as an entrepreneur. To help answer this question, we asked our colleagues from Michigan Publishing and U-M Tech Transfer, as well as subject specialists, to speak with our researchers and librarians.



4. The right background

Librarians interested in supporting applied research need to learn more about legal, business and regulatory resources. As a chemistry PhD, I didn't have a background in this area, but I am fortunate to work in an institution where I can draw upon many resources.

Additional resources for librarians interested in supporting applied research and chemistry

- CHMINF-L — general questions about chemical information or cheminformatics, <http://www.indiana.edu/~cheminfo/network.html>
- SLA-DCHE — members of Chemistry Division, Special Library Association (both corporate and academic chemistry librarians), <http://chemistry.sla.org/>
- ARL-Chem (librarians from academic libraries with Association of Research Libraries)
- Chemical information for chemists: a primer. Edited by Judith N. Currano and Dana L. Roth, Cambridge, UK: Royal Society of Chemistry, 2014 ISBN 9781849735513, <http://www.rsc.org/shop/books/2013/9781849735513.asp>
- Chemical Information Sources — Wikibook, https://en.wikibooks.org/wiki/Chemical_Information_Sources
- eXplore Chemical Information Teaching Resources (XCITR), <http://www.xcitr.org/>
- Entrepreneurship Research Guide, <http://guides.lib.umich.edu/entrepreneurship>
- Resources for Chemical Economics, <http://guides.lib.umich.edu/ChemE>

Unlike corporate researchers, most academic researchers would not choose to talk to a patent lawyer when they've just started their research, so they often need to determine if what they are working on is novel. In chemistry, structure search and Markush structure search in patent databases are primary methods to determine the novelty of a newly designed chemical substance. This is prime example of when we need to work with researchers and our colleagues in U-M Tech Transfer to really dig deeply into the patent databases. Sometimes it may be necessary to consult a patent lawyer as well to make sure that we are relatively safe to proceed.

5. Clarity

Many publishers, including Elsevier, are instituting text and data mining polices. However, the terms for use are still not yet clear, even for academic use only, not to mention applied research. We will continue to work together with researchers and publishers on that front.

Opening up the pipeline

Though many of my examples are from chemistry, the principles apply to a broad spectrum of disciplines. I have found the key to successfully supporting the university's researchers in applied research and within my discipline is to connect, learn and collaborate. And the outreach should not be limited to colleagues in library and information science, but open to others on campus and in supporting communities who have the legal, business, technology or entrepreneurship expertise. What's more, working closely with publishers, vendors, and broader research communities, such as professional associations, ensures our continuous success in providing resources and services as well as facilitating a healthy culture of development in both basic and applied science research. **LC**

Web accessibility: Educating librarians means empowering users

WITH RANTI JUNUS + DEBRA RILEY-HUFF | AUGUST 25, 2014

Library users with disabilities don't want to have to ask for help. They want to be empowered and do it themselves, affirm Ranti Junus and Debra Riley-Huff, two librarians who ensure the accessibility of their libraries' resources.

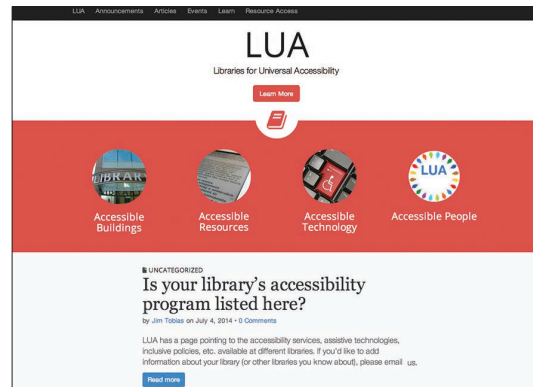
"The help is there," says Ranti, the Electronic Resources Librarian at Michigan State University (MSU) Libraries, "but it should also be built into the online tools and services so that it is seamless and imperceptible to the user."

Ranti is responsible for adding electronic resources to the library collection and establishing easy access to subscription databases and other data sources. To determine whether these resources are accessible to users with disabilities such as sight impairment, she asks questions like: Are items on the page labeled correctly? Can users find the search box easily? After the search results come up, how easy is it to get to the first search result when you are listening to a screen reader?

"The organization of the content itself on the page becomes crucial," Ranti explains. "Do they have to listen to a multitude of extra links before they can hear their search results? If so, that's a problem."

Elsevier's Ted Gies, a UX expert, concurs. "Good design is accessible design," says Ted, Principal User Experience Specialist and Accessibility Lead for Reed Elsevier. "When you take accessibility into consideration you build a tool with greater usability. And it all starts with having a user-centric point of view."

"I have always strongly felt that web services are public services," says Debra Riley-Huff, Head of



Libraries for Universal Accessibility blog
(<http://uniaccessig.org/lu/>)

Web Services in the JD Williams Library and Associate Professor at the University of Mississippi. "A lot of people think because it involves programming, we should be part of IT or technical services. And though we are closely connected to information technology, it's about who we serve."

Debra takes a broad view of the library website and everything it encompasses. "I am responsible to the library, of course, but I am also responsible to campus web and integrated applications teams to make sure that everything that we build or interface with is both useable and accessible. These could include third-party applications, custom content, and things we would build off of an API, such as that of our discovery system."

She also plays a role in educating other librarians on her campus — for example, ensuring they post written transcripts of videos on the library website. As she notes, the university won't get sued for not having the video up, but it might if the video is there with content that is inaccessible to someone with a hearing impairment. [More ►](#)

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RANTI JUNUS
Systems/Electronic Resources Librarian
Library Science Collection & Museum Studies Liaison
Michigan State University Libraries



DEBRA RILEY-HUFF
Head of Web Services & Associate Professor
JD Williams Library
University of Mississippi

"The help is there, but it should also be built into the online tools and services so that it is seamless and imperceptible to the user."

“There have been a record number of lawsuits against universities around accessibility in the last few years. Unfortunately the library is almost always implicated,” says Debra. Thus, it becomes even more important to consider accessibility in programming and design. “People get discouraged,” Debra continues, “because an accessibility checking tool might tell them their webpage has 50 errors, when in reality fixing three important errors might make all the difference. So becoming involved in a group — on campus or within the greater library community — focused on learning and effecting change can be critical.”

Debra participates in Libraries for Universal Accessibility (LUA), a voluntary group of librarians, vendors and community members committed to information access. Sponsored by ALA and ACRL, LUA launched a blog in the spring and is growing its content and membership.

At MSU a cross-section of the campus community interested in accessibility issues meets monthly in an informal practice group.

“We have people from the Resource Center for Persons with Disabilities, the Usability & Accessibility Center, online course management, the IT department, the library, students and others. We use it as a forum for discussion, awareness raising and to make recommendations on

related technology, policy, etc.,” says Ranti. “I’m also a member of the web developers group, and accessibility continues to be a key theme for this group.”

“At the University of Mississippi, the Office of Disability Services is very, very good,” says Debra. “It has arranged a few webinars on accessibility, starting with some very basic knowledge. If it’s too technical, a broader audience can get hung up and they miss the opportunity to make fast improvements.” Debra also wants to encourage librarians to make an ongoing commitment. “Tools, technology and requirements change,” she explains. “It’s important to keep up to date.”

Vendors like Elsevier also offer the opportunity to become involved. Gies leads an Accessibility Collaboration Group with representatives of academic institutions to ensure the usability, accessibility and compatibility with assistive technology of Elsevier products, including ScienceDirect, Scopus and Engineering Village.

Take a first step in learning more about accessibility and connecting with others who are interested in this issue, encourage Ranti and Debra, because educating yourself will translate into empowering your library users. Recommended resources to get started are provided below. **LC**

Join Elsevier’s web accessibility and usability collaboration

Are you a library leader in assistive technology and web accessibility? You are invited to join Elsevier’s web accessibility and usability collaboration. The group meets twice a month to apply accessibility best practices to Elsevier products and improve overall usability and accessibility for all users, regardless of disability. For more information, contact accessibility@elsevier.com.

For more on Elsevier and accessibility, view:

Elsevier’s Accessibility Policy
<http://www.elsevier.com/about/policies/accessibility-policy>

Accessibility on ScienceDirect
<http://www.elsevier.com/online-tools/sciencedirect/using#accessibility>

Resources for librarians interested in accessibility and digital resources

Libraries for Universal Accessibility
<http://uniaccessig.org/luu/>

ARL Web Accessibility Toolkit
<http://accessibility.arl.org/>

WebAIM
<http://webaim.org/>

ASCLA Library Accessibility – What You Need to Know Toolkit
<http://www.ala.org/ascla/asclaprotocols/accessibilitytipsheets>

Accessibility Checklist – Elsevier’s User Centered Design (UCD) group and Accessibility Working Group
http://romeo.elsevier.com/accessibility_checklist/

Web Accessibility Initiative – World Wide Web Consortium (W3C)
<http://www.w3.org/WAI/>

Accessible Web Design – W3C
<http://www.w3.org/standards/webdesign/accessibility>

Bringing the library to first-year students: The Halls of Residence Librarian Programme

BY THE UNIVERSITY OF THE WEST INDIES AT MONA CAMPUS

HALLS OF RESIDENCE LIBRARIANS | NOVEMBER 14, 2014

First year is usually challenging for many new university students. Adjusting to campus life and university classes can be an overwhelming and frightening experience. Librarians recognize that many first-year students have “library anxiety” — they shy away from using the library, approaching a librarian, or visiting the reference desk.

The University of the West Indies at Mona (UWI Mona) Library has participated in a number of campus-wide and library-specific initiatives to mitigate this sense of fear and familiarize students with an academic library. For the 2013-14 academic year, the library implemented a novel outreach initiative called the Halls of Residence Librarian Programme. Under the theme “Bringing the Library to You,” it provided students with research and reference assistance in residence halls, or for students who do not live on campus, the commuting students’ lounge.

Program goals and the librarian’s role

The library assigned a librarian to each of the eight undergraduate residential facilities at the UWI Mona campus. The objectives of the program were to:

- Foster academic success among first-year students
- Help first-year students maximize the use of the library and its resources
- Create positive outreach experiences for first-year students
- Lower the attrition rate at UWI



Pauline Nicholas, HvRL for Irvine Hall, making her introductory presentation

The role of the Halls of Residence Librarians (HRL) was to:

- Provide personal research assistance to first-year students living in residence halls as well as commuting students who are attached to a hall
- Communicate information about helpful research tools and library events and services
- Seek opportunities for first-year students to attend special events
- Direct students to the relevant liaison librarian for assistance
- Be the first point of reference in the library for first-year students

Program Launch

To ensure the program received the support it needed, the library sought management buy-in. The campus librarian was on board [More ►](#)

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Library Community

Halls of Residence Librarians,
The University of the West
Indies at Mona Campus:

PAULINE NICHOLAS
ROCELLE DAVIS
FAITH MCKOY-JOHNSON
JESSICA LEWIS
KARLENE NELSON
JERDAINE STERLING
YOLANDA TUGWELL
KAREN TYRELL

Librarians recognize that many first-year students have “library anxiety” — they shy away from using the library, approaching a librarian, or visiting the reference desk



Top row (L-R): Jessica Lewis, HRL for Mary Seacole Hall; Karlene Nelson HRL for Taylor Hall; Yolanda Tugwell, HRL for Chancellor Hall. Bottom row (L-R): Jerdaine Sterling, HRL for Preston Hall; Karen Tyrell, HRL for Elsa Leo-Rhynie Hall; Faith McKoy-Johnson, HRL for ABC Hall

By connecting the UWI Mona Library to first-year students in a personal way, we can minimize library anxiety among these students and set them on the path to academic success.

and convened the initial meeting with the residence halls' student services managers, who arranged for each librarian to make short introductory presentations in the halls and in the commuting students' lounge.

These casual sessions were the first step in developing a relationship between the students and the librarian. The program was also promoted on social media and through email, fliers and posters.

Research Rescue Days

Finding resources in the library for academic purposes can be daunting for first-year students, so the highlights of the year were two Research Rescue Days. Librarians armed with laptops, library brochures, giveaways and other library documents set up branded reference desks in the commuting students' lounge and on each residence hall so that reference services could be provided beyond the physical walls of the library. Students came with research questions, and librarians used these opportunities as teaching

moments. They taught students how to use the UWILINC (the UWI information portal), online public access catalog, databases and other research tools to locate information. Some of the comments the librarians received included:

"When are you coming back?"

"This kind of intervention by the library is to be commended and continued."

"Why wasn't this kind of service offered to me when I was in first year?"

The Halls of Residence Librarian Programme is the first of its kind at UWI Mona. By connecting the UWI Mona Library to first-year students in a personal way, we can minimize library anxiety among these students and set them on the path to academic success. **LC**

Kazakhstani librarians explore emerging global trends in university library development

BY ALIYA SARSEMBINOVA | AUGUST 7, 2014



Prof. Dr. Cem Sarac, Vice President of Hacettepe University and Ex-President of ULAKBIM, Turkey

To advance its research base, Kazakhstan is actively working to enhance international standards and practices within its academic libraries. In support of this mission, Nazarbayev University and Elsevier hosted the second annual Library Connect event on June 11-12 in Astana devoted to the issues of developing academic libraries.

This exchange of professional experience at Nazarbayev University took place within the framework of the Eurasian Higher Education Leaders Forum, which explored cooperation between institutions of higher education and publishers, vendors, subscription agencies, and commercial companies.

The Library Connect seminar, attended by 95 librarians from 42 Kazakhstani universities, was augmented by an online webcast, a service requested by librarians from Kazakhstan who could not attend the conference in person. As a result, 22 librarians from 11 cities of Kazakhstan received an opportunity to stream the video sessions and ask questions online to speakers from Saint Petersburg State University, Kazan State University, University of Wisconsin-Madison and Hacettepe University.

Librarians from Kazakhstan discussed changes taking place in educational processes, and how they affect the current state and the development of libraries. They also shared advice on strategic planning, as well as research findings reflecting the needs of library patrons.

Of particular interest were sessions that covered academic library experiences from the perspective of scientometrics, the promotion of academic journals by a university, and conducting training on academic writing. Librarians learned more about how to assume the role of a research advisor, providing assistance in selecting a journal, indicating its impact, and using citation management tools.

During the seminar, Nazarbayev University staff ran several master classes on how to use bibliographic management tools and bibliometric indicators for research evaluation and evaluation of websites, and how to use social media to the advantage of the library.

For the second year running, the program included the interactive session "Ask-A-Librarian: professional dialogue." In a professional speed dating format, library staff and invited guests from overseas sat at tables around the reading room, while the seminar participants moved from one table to another to ask questions. Within two hours, everyone had a chance to make inquiries on their topics of interest, to ask for a piece of professional advice, and to share their own experience.

Another session highlighted Elsevier products, including the breadth of tools within Scopus to track, analyze and visualize research, and new scientific research.

Participants provided feedback that the event was a great way to exchange ideas and information, and suggested organizing such meetings several times a year. The participants especially valued the practical workshops and master classes. The organizing committee will use the feedback provided to plan follow-up events. **LC**

Library Connect

Partnering with the Library Community



ALIYA SARSEMBINOVA
Director, Nazarbayev University
Scientific Library

Librarians learned more about how to assume the role of a research advisor, providing assistance in selecting a journal, indicating its impact, and using citation management tools.

