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Adding Data Literacy Skills to Your Toolkit

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Data Literacy

Librarians are ideally positioned to help their clients become data literate, and several resources are available to help them hone their data skills.

BY STUART HALES

To the list of the many ways that special librarians and information professionals benefit their organizations—helping them make better decisions, improve their productivity, and so on—we can now add reducing sick days, according to a recent survey by Accenture and Qlik.

The survey report, “The Human Impact of Data Literacy,” states that while nearly all employees recognize that data is an asset, just 25% believe they’re fully prepared to use data effectively, and only 21% feel confident in their ability to read, understand, question and work with data. While these findings may not be surprising, their implications are downright disturbing—roughly one-third of surveyed employees said they will find an alternative method to complete a task to avoid using data, and nearly as many said they had taken at least one day of sick leave due to stress caused by dealing with data and information.

These sick days and time lost to workarounds add up to lost productivity—more than \$100 billion in the United States alone. Yet rather than teach their employees how to use data, many employers have prioritized access over understanding.

“There has been a focus on giving employees self-service access to data, rather than building individuals’ self-sufficiency to work with it,” said Jordan Morrow, head of data literacy at Qlik. “Yet, expecting employees to work with data without providing the right training or appropriate tools is a bit like going fishing without the rods, bait or nets. You may have led them to water, but you aren’t helping them catch a fish.”

Librarians are uniquely situated to help their clients better understand and work with data, but they sometimes lack the skills needed to assume this role. The articles in this issue of *Information Outlook* can help fill this void. From advice about websites that offer training courses about data to an overview of the seven baseline competencies for data-literate employees to a tool that can help librarians identify which skills to learn, the articles in this issue offer an abundance of useful advice to librarians and information professionals interested in becoming—and helping their clients become—data literate. Following are excerpts from those articles:

Identifying, Accessing and Evaluating Data

Jennifer Huck, MS, MLS

“One little-discussed but very sig-

nificant concern about supporting data in the library has nothing to do with discovery at all. Finding the right data can be challenging, to be sure, but real problems can arise regarding access. I frequently work with patrons who know exactly what data they need, but they are having trouble using it for a variety of reasons.”

Adding Data Literacy Skills to Your Toolkit

Megan Sapp Nelson, MLS

“The Data Engagement Opportunities Scaffold builds upon the existing skills of librarians and projects them into data literacy and data management, thereby pointing the way for librarians to extend their skills base to build discrete services. Rather than attend trainings to learn generally, librarians can use this tool to discover how building up skill sets in specific areas can result in concrete service offerings.”

Seven Baseline Data Literacy Competencies for Employees

Wendy G. Pothier, MS, MSLS, and Patricia B. Condon, PhD

“Sets of competencies for data literacy began to emerge in the 2010s and were mapped to the Information Literacy Competency Standards for Higher Education developed by the Association of College and Research Libraries. While these competencies are designed to be flexible and adaptable, translating them to skills needed in the workforce is not necessarily straightforward. In our 2019 article, we matched extant data literacy competencies to workplace needs and distinguished seven baseline competencies for data-literate employees.”

Promoting Information Literacy in Corporate Research

Joe Tragert, MBA

“As the Association of American Colleges & Universities’ annual survey of employers notes, one of the largest functional skill gaps of new employees

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(according to managers) is their inability to collaborate and their reluctance to reach out to colleagues when seeking information... One way to mitigate these deficiencies is to meet researchers halfway. To do this, librarians need to recognize the researcher's persona at that time and for that task."

Becoming Data Literate: A Review of Selected Sites

Wendy Mann, MLS, MPP

"As a library professional who works in an academic library helping students and colleagues of all skill levels, I often recommend resources or tutorials based on the individual's skill level or the problem they are trying to solve. I suggest taking this approach when determining where to start your self-directed training."

Using Data for Civic Good

Stephen Sherman, MSLS

"Libraries are uniquely positioned to lead data literacy programming and

coordinate open data initiatives in their communities. Cities and research institutions can partner with libraries to not only boost the visibility of their data collections but also to provide access to data through a trusted, third-party intermediary. Moreover, librarians and information professionals have the knowledge and experience to be able to provide data literacy training that is clear and practical."

Search Engines and Algorithms are Biased. Here's Why That Matters

Jasminder Bains, BS

"Similar to how people need evidence and information to draw conclusions, algorithms need data to be able to make decisions and judgments. There is, however, one key difference between people and algorithms. Algorithms will make the same decision 100% of the time—unless adjusted by a computer programmer—while people may make exceptions or get distracted by other variables."

Want more? This issue also contains the second installment of a two-part column on diversity and inclusion by Amanda Fernandez of Inclusify as well as an "On Leadership" column by SLA Past President Cindy Hill on using your strengths to enhance your leadership skills. Read, reflect, and rethink!

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Identifying, Accessing and Evaluating Data

FINDING AND ACCESSING DATA CAN BE PROBLEMATIC, BUT MANY OF THE SKILLS USED IN TRADITIONAL REFERENCE CAN BE APPLIED TO DATA DISCOVERY.

BY JENNIFER HUCK, MS, MLS

Helping patrons find data is notoriously difficult and frustrating. Common difficulties include the lack of a single place to look for data, difficulty finding data specific to a time period or place, and having to manage patron expectations (Kubas and McBurney 2019). Fortunately, many of the skills used in traditional reference can be applied to data discovery.

I am the data librarian at the University of Virginia Library, an academic library at an R1 research institution. I most frequently help students, faculty and staff in the social sciences, commerce, and education, and less frequently in law, health sciences, and hard sciences. I am also fortunate to have the support of liaison librarians dedicated to these schools and departments.

In this article, I will review the tech-

niques I use when responding to data requests. I will address the questions you should answer before you begin your search, where to look for data, potential access issues, and how to evaluate data.

Get Answers to These Questions First

In my experience, patrons will most often reach out about a topic, but with widely varying levels of specificity. You will save yourself a lot of time and effort if you learn the details upfront, so be sure to ask for clarification on the following topics as soon as you receive a request.

Unit of analysis. Let's say a researcher tells you she needs data to study elections. The unit of analysis could be voters, precincts, districts, countries,

and so on. A researcher studying a broader unit (e.g., a country) might be satisfied with data using a smaller unit of observation (e.g., districts), but the reverse is unlikely to be true.

Geographic coverage. What kind of geographic coverage does the researcher need? For example, does she need data only for a local state or province, or for several specific countries?

Time period. How many years' worth of data is she seeking? Does she want only the most recent year available, or as many years' back as possible?

Data or statistics? Is the researcher trying to find data to use for her own secondary analysis? For example, a researcher studying retail purchasing behavior may need scanner data from individual retailers. This researcher might then run a regression or some other statistical analysis. Alternatively, a student studying market trends may only need general statistics about best-selling grocery items to create a simple bar chart in a report. Since no secondary analysis will be conducted, only general statistics are needed.

It is helpful to become acquainted with data-related terms. For a further explanation of "data jargon," see



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“Chapter 1: Data Reference Basics” in Bauder (2014) and also check out the Inter-university Consortium for Political and Social Research’s Glossary of Social Science Terms (ICPSR n.d.).

Find the Data

Just as you rely on subject expertise in a regular reference interview, you should also build up your data expertise to support data in the library. Start by familiarizing yourself with the terminology of the field. You can do this by reviewing methods textbooks and journals in the discipline. It’s also useful to review the kinds of data that researchers at your institution are using. For a useful listing of specific discovery techniques, see Bordelon (2016).

It is critical to familiarize yourself with the key sources of data in your field. The key question to ask yourself is: Who would care enough to collect and disseminate data on this topic?

Government agencies. Government agencies are an essential source of data for a variety of disciplines. In the United States, the Bureau of the Census, the Bureau of Labor Statistics, and the National Center for Education Statistics are examples of federal agencies that disseminate a wide variety of data (Office of Management and Budget 2018). At the international level, there are government agencies in other countries as well as intergovernmental organizations such as the United Nations (and its many programs, funds, and specialized agencies), the Organisation for Economic Co-operation and Development (OECD), and the World Bank. At the local level, it is becoming more common for states and localities to share data through open data portals.

Data repositories. Another useful tool in your arsenal is knowing which data repositories might host data of interest to your stakeholders. This is especially useful knowledge when you are looking for data created and shared by other researchers. The Inter-university Consortium for Political and Social Research (ICPSR) is a classic example of a data repository, as it is one of the

oldest data repositories anywhere. It hosts a very well-curated collection of social science data, and the quality of the metadata is high. Dataverse is another example of a data repository—it hosts academic research data submitted directly by researchers.

Note that datasets found within Dataverse and other research data repositories will vary widely in the quality of their metadata, data dictionaries, and codebooks. A great way to find data repositories is to explore re3data.org, which has detailed information about more than 2,000 repositories. You can browse repositories by subject, content type, or country.

Non-repository data hubs. The “Wild West” of data discovery encompasses author websites and sharing platforms such as GitHub and Kaggle. It is considerably harder to find useful data through these websites, because your best search tool is a regular web search. Unlike a data repository, which is designed to preserve data at the end of the research cycle, data on a website or platform could be in active development and could easily disappear in the future.

You can also try Google Dataset Search, which recently came out of beta. The beta version lacked facets or advanced search features, which I found frustrating. Now that it is out of beta, there are minimal filters available by date and format, which is an improvement. It remains difficult to tell what is and, just as importantly, what is not captured in a Google Dataset search.

Use Your Usual Research Tools and Techniques

Fortunately, you can rely on some traditional library reference tools and techniques. One of the best things you can do when searching for data is to review the research literature with a relevant indexing platform, such as Google Scholar or Web of Science. What do scholars who study a similar topic use for data? Use their articles to track down the data source. Similarly, you can use Worldcat or library catalogs to discover

books and articles related to your topic, then search for data from there.

You can also use statistical abstracts or databases, such as ProQuest Statistical Abstracts or Statista, to track down data. These platforms will often point you to the original data source via citations or source notes, and from there you can keep tracking down your dataset.

Print indexes and reference books are extraordinarily useful if you ever need to search for historical data and statistics. (In my experience, anything before the mid-2000s is a good candidate for this treatment.) Become familiar with federal and state government documents and the print indexes and documents that governments produced, as these will be very helpful when looking for historical statistics. Two titles to know are the American Statistics Index (ASI) and Statistical Reference Index (SRI), both published by the Congressional Information Service and generally covering the late 20th century.

You should also search your library catalog or Worldcat for statistics indexes. Conduct a subject search for “statistics” in combination with “serials” or “periodicals.” Note: you are more likely to find historical statistics rather than data.

Remember that you can rely on the library community’s resources as well. I particularly like to search LibGuides; you can simultaneously search all LibGuides at <https://community.libguides.com/>. I also like to search the data pages at university libraries, such as Princeton Data and Statistical Services (<https://dss.princeton.edu/>) and Duke Data Sources (<https://library.duke.edu/data/sources>). These are especially helpful for discovering licensed data that my library does not already receive through subscription.

When in Doubt, Reach Out to Real People

Sometimes the above techniques still will not deliver the desired results. If you think certain data exist and you are simply having trouble finding or accessing them, it is best to reach out directly to

government agencies, archives, special libraries, and/or researchers.

I especially value my communities where we help each other find data. I particularly recommend the International Association for Social Science Information Services and Technology (IASSIST), which essentially is an association of social science data librarians. Their listserv is especially helpful when you have reached the limits of your data discovery skills but are not sure you have exhausted all possibilities. Finding a community of librarians who provide similar discovery services is especially important if you have few or no colleagues at your library.

Manage Access Issues

One little-discussed but very significant concern about supporting data in the library has nothing to do with discovery at all. Finding the right data can be challenging, to be sure, but real problems can arise regarding access. I frequently work with patrons who know exactly what data they need, but they are having trouble using it for a variety of reasons. Access problems include the following:

Data are restricted. Some datasets are restricted, often because they include sensitive or personally identifiable information. If researchers are lucky, they may simply have to apply for access, which will take time. If they are unlucky, the data will not be available for use.

Data must be licensed and are expensive. Unlike journals or booksellers, many data vendors are unaccustomed to working with libraries. You may sometimes need to explain how and why your library needs to license materials, and that process can be time-intensive. Licensed data products also tend to be very expensive, often pricing them out of reach. If your library successfully licenses the data, you will need to find a place to securely store and distribute the datasets. For more information on libraries licensing data, see Hogenboom and Hayslett (2017) and Hogenboom et al. (2011).

A researcher has an idea about what

she wants to use, but is not clear how to actually work with the data.

For example, I sometimes work with researchers who realize they need to use the census for their research, but are not at all certain about the limits of the census and how it should be treated.

Data come in a format with which the researcher has no experience.

Sometimes data are available but only in unusual, deprecated, or proprietary formats (truer of historical data) or emerging formats such as APIs (truer of contemporary data). The researcher may not be comfortable with such formats, thus adding a layer of inaccessibility. An even simpler example is the researcher who has very little statistical training and needs help with basic file formats and statistical analysis.

In all these cases, it is apparent that supporting data in the library is not only about discovery—researchers may come to the library knowing exactly what data they need. Libraries can be useful to these patrons by helping them understand and solve their access issues.

Evaluate the Data

Once you find and access your data, you will need to evaluate it. Fortunately, many of the typical ways librarians evaluate information apply to data and statistics as well. Tests like CRAAP still hold. Questions unique to evaluating data and statistics relate to collection methods and documentation such as codebooks (Carleton College Library n.d.; North Dakota State University Libraries n.d.; University of Washington University Libraries n.d.). Being able to evaluate collection methods and documentation requires a deeper understanding of the discipline you serve and will be different for every discipline.

Conclusion

Even seasoned data librarians encounter difficulties and roadblocks when conducting a data reference search (Kubas and McBurney 2019). It is essential to have some subject expertise

and a baseline understanding about how data is used in the discipline you serve. Finding a community of librarians who can help you build your skills will be beneficial. Although it can be challenging to provide data discovery services, your expertise will grow with practice. **SLA**

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Seven Baseline Data Literacy Competencies for Employees

LIBRARIANS CAN TAKE THE LEAD IN TEACHING EMPLOYEES TO BE DATA-LITERATE AND HELPING EMPLOYERS ACHIEVE BUSINESS VALUE.

BY WENDY G. POTHIER, MS, MSLS, AND PATRICIA B. CONDON, PHD

Recently, we published a paper about the need to incorporate data literacy competencies into undergraduate business curricula and the role that librarians can play (Pothier and Condon 2019). Our goal was to start a conversation about how baseline data literacy competencies can help foster data-savvy professionals across all areas of business. In this article, we summarize the seven baseline data literacy competencies presented in our paper, focusing on how employees can benefit from developing skills in these competency areas and how librarians can assist.

Workplace Needs

We live and work in an era where data skills are not limited to specialized positions in data science, data analysis, or

business intelligence; rather, the need for data literacy skills reaches into positions throughout an organization. In short, to address the needs of a modern workforce, all employees require baseline data literacy skills to equip them to meet the varied demands of a data-centric workplace. However, data literacy skills within an organization are uneven, and there are few standards for assessing competencies or attaining fluency.

According to a 2018 survey by the Winterberry Group that looked at the progress organizations are making toward becoming data-centric, just 9% of companies surveyed described themselves as “extremely data-driven,” while 44% projected they would reach that level by the end of 2019. Overall, most companies in the survey felt they were below their desired target. The compa-

nies noted that their investments in this area have been largely in technological infrastructure to support gathering, storing, and analyzing data (Winterberry Group 2018).

Another recent and notable report on data literacy states that only 32% of executives are viewed as data literate (Qlik 2019). The report notes that this fact is “potentially holding senior leaders back from encouraging their workforces to use data to their advantage” (Qlik 2019). But the findings are not, as some might guess, strictly generational—the report also observed that “just 21% of 16-to-24-year-olds rate themselves as data literate” (Qlik 2019). This suggests that issues with data don’t reside in the amount of exposure to, and familiarity with, technology; instead, they are deeply rooted in literacy.



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Businesses trying to advance the use of data within their organization reach a roadblock because, despite their investment in technology, they lack employees who are data-literate. A recent Gartner Trend Report predicted that “by 2020, 80% of organizations will initiate deliberate competency development in the field of data literacy, acknowledging their extreme deficiency.” The report added that “by 2020, 50% of organizations will lack sufficient ... data literacy skills to achieve business value” (Panetta 2019). Knowledge and skills development in data literacy for employees is needed to close the gap.

A recent *Fortune* magazine article suggests that librarians might be the right leaders at this pivotal time in developing a data-literate workforce. However, we librarians can’t do it all, and certainly not all alone.

Baseline Data Literacy Competencies

Data literacy is “the ability to ask and answer real-world questions from large and small data sets through an inquiry process, with consideration of ethical use of data” (Wolff et al. 2016). Sets of competencies for data literacy began to emerge in the 2010s and were mapped to the Information Literacy Competency Standards for Higher Education developed by the Association of College and Research Libraries (Calzado, Prado, and Marzal 2013; Carlson et al. 2011; Schneider 2013). Most of these competency lists were focused on undergraduate and graduate students in academic research fields. While these competencies are designed to be flexible and adaptable, translating them to skills needed in the workforce is not necessarily straightforward.

In our 2019 article, we matched extant data literacy competencies to workplace needs and distinguished seven baseline competencies for data-literate employees. They are summarized below.

Organizing and storing data. Our article states that “organizing data is a foundational data management skill that focuses on logical folder structures, consistent file naming conventions, and version control” (Pothier and Condon 2019). In organizations, data is shared between people, across departments, and over time, rendering it vulnerable to

employee turnover, loss of version control by cross-departmental teams, and lost or mislabeled files. Encouraging effective data organization and version control can save time and money, prevent accidental disclosure of data, and support business continuity. While some organizations have IT departments to oversee secure storage of digital content and document management solutions to help with version control and file organization, all employees have a responsibility to help maintain well-organized, well-documented, and backed-up files.

Understanding data used in business contexts. Underlying the aim of businesses to become data-centric and promote data-driven decision making is a requirement to “understand how data has been or can be collected, the types of data available, and the applications and limitations of the data” being used (Pothier and Condon 2019). The focus of this competency is for employees to understand broadly the nature of the data being used by questioning its relevancy, sources, collection methods, and interpretations (Australian Bureau of Statistics 2010). This competency is further developed by several of the following competencies.

Evaluating the quality of data sources. Statistics are commonly used for business communication. The ability of employees to critically evaluate the

quality and credibility of data sources underlying statistics helps ensure the integrity and trustworthiness of the data and is essential to the responsible use of statistics. This competency builds on the previous competency and “sets the foundation for interpreting data, data-driven decision making, and data ethics, all of which rely on high-quality, trustworthy data to support work in an organization” (Pothier and Condon 2019).

Interpreting data. In our article, we suggest that “learning how to interpret data prepares business professionals for recommending actions based on the data analysis or making data-driven decisions,” (Pothier and Condon 2019). Often, there will be people who process and analyze data and other people who draw inferences and interpretations from that data. Having at least a basic understanding of what is involved in each step will allow these different roles to communicate more effectively with each other and produce better results.

Data-driven decision making. Understanding data, evaluating data sources, and interpreting data converge within this competency, which focuses on using data to find solutions for business challenges. A 2015 report from Dalhousie University, in which researchers synthesized the extant literature into a comprehensive data literacy matrix, described the knowledge

associated with data-driven decision making as “prioritizes information garnered from data,” “converts data into actionable information,” “weighs the merit and impacts of possible solutions/decisions,” and “implements decisions/solutions” (Ridsdale et al. 2015). While decision making is chiefly in the domain of organizational leadership, awareness of the data-driven decision-making process helps contextualize other work within the organization.

Communicating and presenting effectively with data. Communicating and presenting effectively with data is about extracting a meaningful and cogent narrative from the data. We explain that “effectively communicating stories from data requires business professionals to convey complex concepts to diverse audiences who have varying familiarity with the subject and different desired outcomes” (Pothier and Condon 2019). Data-savvy professionals need to hone their communication and visual literacy skills to help accurately represent their data in graphs, maps, and other types of visualizations as well as through verbal presentation.

Data ethics and security. Data-savvy professionals are faced with ethical challenges, including online privacy, collection of personal information, and misinterpretation or misrepresentation of data. We believe that “underpinning all of the data literacy competencies is a responsibility to approach collection, interpretation, use, and security of data ethically and with integrity” (Pothier and Condon 2019). Data breaches and misuse of personal data can lead to negative consequences for an organization’s reputation and erode public trust in the brand.

The Librarian’s Role

Because data literacy competencies align with information literacy skills, many librarians are already prepared to support their users in building strength in some of these competencies. Awareness of the data literacy needs of employees and consideration of how our collections and services support the data literacy competencies are

some initial steps. Depending on the kind of library in which you work and the mission of that library, supporting certain competencies that best align with your skills and expertise will likely take precedent.

Librarians can play an important role in improving data literacy. A recent *Fortune* magazine article suggests that librarians might be the right leaders at this pivotal time in developing a data-literate workforce (Moran 2019). However, we librarians can’t do it all, and certainly not all alone—there are many other stakeholders, including employers, individuals, and schools. Collaborating with these stakeholders is one solution to propelling data literacy forward for both individual employees and business organizations. One role in which librarians can lead is furthering the discourse about data literacy and establishing competencies in the workplace with these stakeholders.

Conclusion

Many companies are focusing on becoming data-centric, which entails more than investing in technology and hiring data scientists, data analysts, or business intelligence analysts. Becoming data-centric requires improved data literacy for employees across all areas of the organization. Librarians, who are key advocates for information literacy, can be influential in advancing data literacy competencies and improving employees’ opportunities in the workplace. With these seven baseline data literacy competencies, we hope to start a conversation about the role of librarians in supporting employees on their path to becoming data-savvy. **SLA**

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Adding Data Literacy Skills to Your Toolkit

DEVELOPING SELECTED SKILLS IN DATA LITERACY AND MANAGEMENT CAN HELP LIBRARIANS MAKE A SUBSTANTIAL CONTRIBUTION TO THE STABILITY AND LONG-TERM PRESERVATION OF DATA AT THEIR ORGANIZATION.

BY MEGAN SAPP NELSON, MLS

No one who goes into librarianship escapes getting asked, “Did you go into librarianship because you wanted to read all of the time?” I never fail to amaze my interlocutors when I tell them I rarely work with books; rather, I work primarily with digital data. Many outside of libraries have never considered that digital data is an information asset to be managed, or that a librarian is the person who would perform that job.

Many librarians are aware that this role is emerging, but they are unsure how to get started. What skills and bodies of knowledge are necessary to provide basic services in the emerging areas of data information literacy and data management? How does an individual librarian go about getting up to speed in this area?

Data Literacy and the Changing Paradigm of Librarianship

Data literacy and data management are considered by many to be related to information literacy, a traditional purview of librarians. As such, librarians have naturally sought out and built up the literature and practice in the overlapping and inter-related areas. In the literature, data literacy (also known as data information literacy), data management and research data management involve the practice of consistent and critical skills to enable the collection of data and the maintenance of good data hygiene across the data life cycle to further the publication and sharing of data.

In essence, we seek to move traditionally library-centered practices (such as the imposition of metadata and the creation of meaningful documentation)

downstream to the data creator’s computer, to enable that data to be reused in the future. We librarians have been very good at these skills for a very long time. But data literacy and data management are not limited to “traditional” library skills—they also include a host of new skills, including visualizing data, cleaning data sets, analyzing data, running repositories on servers, and any number of other highly technical skills.

Not all librarians will have the interest, time, bandwidth, or skills to engage in these services, nor is that the expectation. Neither is it possible that all librarians will be equally engaged in data literacy instruction, given the broad range of clients many libraries serve. So how does any given librarian know how to “skill up” to an appropriate level?

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Data Engagement Opportunities

The Data Engagement Opportunities Scaffold, developed jointly by Abigail Goben of the University of Illinois Chicago and this author for the ACRL Building Your Research Data Management Toolkit RoadShow, is a tool to help librarians conceptualize how they might engage in data management while simultaneously leveraging their existing strengths. The scaffold assumes that each librarian has acquired a set of skills that constitute strengths in librarianship. These skills may range from marketing to conducting reference interviews to collection development to outreach.

The Data Engagement Opportunities Scaffold builds upon the existing skills of librarians and projects them into data literacy and data management, thereby pointing the way for librarians to extend their skills base to build discrete services. Rather than attend trainings to learn generally, librarians can use this tool to discover how building up skill sets in specific areas can result in concrete service offerings. While specifically developed for the academic environment, the scaffold concept could be translated into a special library or corporate library environment, given sufficient knowledge of the strategic interests of the organization and the needs of the patron base.

The Data Engagement Opportunities Scaffold is used in one of two ways: (1) you identify a specific phase of the data life cycle that you wish to explore and then look at the skill sets relevant to that phase, or (2) you select a specific skill set you already possess and then search for potential areas of application in data literacy and research data management. Either way, you have an opportunity to identify new ways to apply your existing skills and discover potential applications of new skills should you desire to invest the time to add them to your toolkit.

Know Your Strengths

Assessing your existing strengths will help you identify areas of data literacy

While specifically developed for the academic environment, the scaffold concept could be translated into a special library or corporate library environment.

and data management that may be a good fit for you. For example, do you have evaluation or assessment experience? If so, you may be an ideal person to conduct data inventories, which are extended interviews with data creators that identify the data needs of individuals, the size and holdings of the data that the creators have, and the projected storage and archives needs into the future. Do you have strategic planning experience? Perhaps you belong on the task force that is determining options for long-term data storage for your institution. If you have project management skills, you may be the perfect person to head an environmental scan to determine the state of the documentation or data for a department or the institution as a whole.

While each of these projects requires some knowledge of basic data literacy and technical knowledge in one or more sub-specializations of data management (such as file management, data storage, technical writing, or documentation), none require you to be an expert in all areas of data literacy and data management. At the same time, you as a librarian provide experience in information science and make a substantial contribution to the stability of data and long-term preservation of data at your organization. While no one individual needs to know all things about data management, one individual can have a marked impact on the upward trajectory of the quality of data produced at an institution.

Build Your Skills

As with learning any new disciplinary specialization, the process of learning data literacy/data management involves learning new technical information,

government information, and applied technical skills. In the case of data literacy/data management, the basic data literacy skills can be acquired through online modules. The technical skills, such as file structures, naming conventions, creation of metadata, and data visualization, can be learned through tutorials and instructional video modules as well as texts. It takes discipline and extensive practice to become expert at these skills, but it is possible for an individual to move from novice to competent through independent study.

Should you decide that you want to invest your time and resources in data literacy/data management, there are a number of ways you can build your skills outside of the formal instruction environment. Goben and Raszewski have compiled a webliography of resources to assist librarians who are seeking opportunities for self-education (2015). DataOne Education Modules and the New England Collaborative Data Management Curriculum are freely available on the web and provide overviews of the foundational principles of data literacy and data management.

It is helpful to find a mentor who is an experienced data librarian. Research Data and Preservation (rdapassociation.org) is a vibrant young community of information professionals focused on the management of data. The listserv for that organization is an invaluable tool to help you both passively learn from experts and seek out mentors. It is also a place to follow to help you identify issues emerging from changing rules and regulations handed down by governments and funding agencies.

There are small regional conferences that focus on professional development

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Becoming Data Literate: A Review of Selected Sites

SEVERAL ONLINE RESOURCES ARE AVAILABLE TO HELP LIBRARIANS AND INFORMATION PROFESSIONALS LEARN DATA LITERACY SKILLS, CONCEPTS, AND TERMINOLOGY.

BY WENDY MANN, MLS, MPP

With the multiplicity of data science education websites available, deciding how you want to develop or improve your data skills can seem daunting. There are so many approaches to choose from—course modules and tracks available through MOOCs (like Coursera or Udemy), open educational resources, websites and curricula published by organizations and academic institutions, and more.

As a library professional who works in an academic library helping students and colleagues of all skill levels, I often recommend resources or tutorials based on the individual's skill level or the problem they are trying to solve. I suggest taking this approach when determining where to start your self-directed training. However, not every-

one is working on a project or trying to solve a problem, so working through a step-by-step data literacy program is another tactic to consider. The data literacy sites reviewed here will get you on your way if you want to learn a new tool or language (such as R, Python, spreadsheets, etc.), a technique like data visualization, basic statistical and data concepts and terminology, and so on.

But first, what is data literacy? Data literacy includes a broad array of skills and concepts. Calzada and Marzal (2013) identified and defined these five core data literacy competencies: (1) understanding data, (2) finding and/or obtaining data, (3) reading, interpreting and evaluating data, (4) managing data, and (5) using data.

The resources reviewed in this article

will touch on all of these aspects of data literacy. When evaluating the sites, cost was considered along with the data literacy core competencies identified above. These sites represent a small selection of data literacy programs, and with so many available, you may find another source you like better. Remember that this is meant to be a starting point to help you get started.

The Data Literacy Project (DLP)

Competencies addressed: understanding data; reading, interpreting and evaluating data; using data. *Cost:* free. *URL:* <https://thedataliteracyproject.org/>.

Qlik, a software company that provides data integration and analytics services, created the DLP (along with other organizations) to help employers build a data-literate workforce. This site promotes and explains the importance of data literacy to employers, with training modules directed at that audience. There is more substantial content in the lessons for learners—those who are building or refreshing their skills.

Lessons are accessible through the e-learning section of the site, and you

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can review the lesson modules without creating an account. Additional features of the site include a community discussion forum and white papers and reports pertinent to data literacy. If you need to use an interactive feature of the site (such as “test yourself”) or want to download a white paper, you will need to create an account.

E-learning modules include an overview of data literacy, data fundamentals, foundational analytics, data-informed decision making, and advanced analytics. When you click on any of the lesson boxes, you are taken to the Qlik Continuous Classroom. Much of what is taught through DLP is similar to what you would learn in almost any Introduction to Statistics course, but in a slicker format with leaner content. Topics such as data and variable types, how to read data, summary statistics (mean, median, and mode), and some inferential statistics (simple regression and multiple linear regression) are covered, along with selected other forms of analysis.

Advanced topics include concept and practical application videos. The practical application lessons require that you use Qlik Sense or Qlik Sense Enterprise, so one limitation of using DLP is that any data analytics can only be conducted in Qlik software. Concept learning modules do not require that you use Qlik.

Topics covered in the DLP are sparse. It seems DLP is teaching the essentials needed to become data literate rather than addressing a large number of topics, so anyone who works through these lessons would need to supplement their learning with additional resources. DLP is a good starting point on the path to becoming data literate, but you will not become a data scientist by completing only these lessons.

Unless your organization has access to Qlik, I recommend skipping the application lessons unless you want to know more about Qlik. The concept modules are useful, simplify complex topics, and make statistics and data seem less scary.

Qlik's Data Literacy Program

Competencies addressed: understanding data; reading, interpreting and evaluating data; using data. *Cost:* free. *URL:* <https://www.qlik.com/us/services/training/data-literacy-program>.

Not to be confused with the Data Literacy Project, Qlik's Data Literacy Program offers free data literacy lessons through the same Qlik Continuous Classroom. The Data Literacy Program's lessons are organized slightly differently than those in the Data Literacy Project; in addition, there are learning plans, webinars, and an online community (an online community is also available through the DLP). Since the Data Literacy Project and Data Literacy Program share content, my observations about the DLP apply here. The Data Literacy Program also provides information about Qlik's academic program, through which professors and students can apply for free access to Qlik software.

Dataversity

Competencies addressed: managing data. *Cost:* \$49.00 and up to take a class; webinars and other content are free. *URL:* <https://www.dataversity.net/>.

Dataversity is for data professionals who need to learn new concepts or stay on top of new developments. While there are lessons and modules for beginners, the target audience seems to be individuals already working in data management in the business and information technology sectors. Lessons, webinars, forums, white papers, and blogs are available. Many of the webinars are free, but the classes are not.

I focused on the Dataversity Training Center for this review. There you will find a full catalog of courses. The “what is” courses (for instance, “what is data science,” “what is data strategy,” and so forth) are the most inexpensive. Almost all of the courses focus on data management topics such as governance, architecture, quality, and metadata, but there are also courses on business intelligence and data modeling (though there are fewer of these non-data management courses).

DataCamp

Competencies: understanding data; reading, interpreting and evaluating data; using data. *Cost:* Many (not all) first chapters are free. Advancing beyond introductory materials requires a subscription. Registration is free. *URL:* <https://www.datacamp.com/>.

Of the sites I reviewed, DataCamp has the best lessons. If you want hands-on practice learning about and analyzing data, this is the resource to use. The lessons are interactive, and you can practice through their web environment—you don't need to install software or access proprietary software. The software and tools they use for analytics are open source (R, Python, SQL) with the exception of Google Sheets, which is freely available.

DataCamp provides two tracks (a skill track and a career track), or you can jump straight to a course. If you feel intimidated by learning R or Python, the lessons using Google Sheets are a good place to start. Conceptual topics—or, as DataCamp classifies them, theory—such as probability and statistics are taught through R or Python and, to a lesser degree, in Sheets, which makes sense because doing statistics in spreadsheets is not nearly as powerful as R or Python.

Novices may feel apprehensive about learning to code, even when starting with the beginner or introductory modules. But if you want to learn to use tools that are popular in data science, DataCamp has some of the best tutorials. I recommend starting out with a free lesson to see how much you like it; if it seems to be too much, try out the Data Literacy Project first.

All this being said, I do need to point out an incident that occurred last year that led DataCamp instructors to boycott their own courses and their CEO to take an indefinite leave of absence. This blog post describes what happened (<https://carpentries.org/blog/2019/04/datacamp-response/>), as does this article from *Business Insider* (<https://www.businessinsider.com/datacamp->

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Promoting Information Literacy in Corporate Research

THE ABILITY TO COLLABORATE AND COMMUNICATE IS A VITAL INFORMATION LITERACY SKILL, AND LIBRARIANS MUST SOMETIMES COMPENSATE FOR EMPLOYEES WHO LACK THIS SKILL.

BY JOE TRAGERT, MBA

In an information economy, the ability to work with information is the key to optimizing organizational outcomes. The applicable skill set is broadly termed *information literacy*, and the Association of College & Research Libraries (ACRL 2016) defines an information-literate person as one who masters this process:

1. Determines the nature and extent of the information needed;
2. Accesses needed information effectively and efficiently;
3. Evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system;
4. Individually or as a member of a group, uses information effectively to accomplish a specific purpose; and
5. Understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.

Kirton and Barham (2005) adapted the ACRL's academic-oriented definition to describe an information-literate corporate researcher this way:

1. Determines information attributes;
2. Evaluates the source of the information;
3. Estimates value and total cost of use for the information;
4. Devises an information use strategy;
5. Filters and eliminates information sources that are not relevant to the current project; and
6. Presents the findings in a workflow-

appropriate and ethical format.

This definition highlights the dual nature of information literacy in the corporate space. Using information effectively for corporate research is more a function of being able to work with data.

Tuckett (1989) argues that in the corporate market, information literacy comprises two components:

- A set of skills that build on each other to produce a higher-order outcome (called *knowledge* or *intelligence*); and
- The ability to create strategies to employ when utilizing those particular skills.

It is important that corporate information workers master both skill sets. Using a house-building analogy, information workers need to be both skilled carpenters and skilled architects. In other words, knowing *how* to use data and information is critical, but so is knowing *why*.

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The Interplay of Data, Information and Intelligence

In corporate research, we use the terms *data*, *information* and *intelligence* rather

freely. When looking at data literacy and information literacy, it is helpful to define each term in relation to the others.

- *Data* are observations about transactions or events. As a record of observed occurrences, data are factual and (should be) unambiguous.
- Data that are organized, analyzed and presented in a contextually relevant way are known as *information*. Information may have more meaning to certain users based upon their overall expertise, but, in general, anyone can be presented with the same information items.
- Data, by itself, is not information. In turn, information generates intelligence, but is not intelligence itself. *Intelligence* is the awareness that is gained when an individual combines various information elements across time and places to create a new understanding.

This process of “sense making” is the real goal of all the effort and treasure we devote to capturing data, organizing it, analyzing it, and sharing it. Enabling end users to gain intelligence, whatever that may be, is the ultimate objective of all the data capture, management and manipulation that we pursue. However, the process of capturing data and generating information should not be mistaken for the end goal of enabling intelligence. We also need to enable end-user constituencies to optimize the impact of the information-based outcomes they create. Beyond using data effectively and leveraging that skill to use information effectively, end users need to move beyond a focus on tools, applications and data sets.

Collaboration is Critical

Information workers need to collaborate with colleagues to gain the fullest understanding from the data and information available. Information workers acquire their formal data and information use skills when in school; however, the factors that make a successful information user in higher education are

not necessarily the same as those that make a successful information worker. Inskip (2015) notes three differences between the information user in higher education and in the workplace:

- In the workplace, people collaborate and optimize, whereas in higher education, they study alone and are more comprehensive in their information gathering.
- In higher education, the student can access multiple supports, including the librarian, faculty and counseling, but the workplace often does not even have a physical library.
- In the workplace, any training the employee receives tends to focus on specific operational competencies rather than on the skills of problem solving or presenting findings.

Collaboration is key. As the Association of American Colleges & Universities’ annual survey of employers (AAC&U 2018) notes, one of the largest functional skill gaps of new employees (according to managers) is their inability to collaborate and their reluctance to reach out to colleagues when seeking information. A 2015 survey by the National Association of Colleges and Employers (NACE 2015) confirms these findings—the NACE asked U.S. employers to identify the skills they wanted employees to master, and two of the top ten are (1) the “ability to work in a team structure” and (2) the ability to “verbally communicate with persons inside and outside the organization.”

In other words, the ability to collaborate and communicate is a vital information literacy skill. The American Library Association (2019) agrees, affirming that collaboration relates to digital literacy as well: “Like information literacy, digital literacy requires skills in locating and using information and in critical thinking. Beyond that, however, digital literacy involves knowing digital tools and using them in communicative, collaborative ways through social engagement.”

Peter Drucker (1995) sums it up this way: “*To be information literate, you*

begin with learning what it is you need to know. Too much talk focuses on the technology, even worse on the speed of the gadget, always faster, faster. This kind of “techie” fixation causes us to lose track of the fundamental nature of information in today’s organization. To organize the way work is done, you have to begin with the specific job, then the information input, and finally the human relationships needed to get the job done.”

Researcher Personas: Skills and Investment

One way to mitigate these deficiencies is to meet researchers halfway. To do this, librarians need to recognize the researcher’s persona at that time and for that task. We can do this by observing the interplay of two factors that combine to influence how a person looks at data and information and their ability to create intelligence: investment (i.e., how much they care) and skills (i.e., how adept they are).

Depending on the workflow, the same researcher can display a different persona (meaning different levels of investment and skill). Urgency or time constraints tend to create higher investment, even if the skills are low. In those situations, the ability of the information professional to help the end user, and the ability of the end user to reach out to subject matter experts, can be the difference between successful information use and a bad decision. Likewise, an information user who is highly skilled but not invested in the research task may not devote the time needed to devise a successful research strategy and, thus, may not achieve optimal outcomes.

Corporate Librarians as Information Literacy Enablers

Just as it is important for information-literate corporate researchers to collaborate with colleagues and communicate intentions and findings, it is important that corporate librarians collaborate with their constituents. Librarians are trained in the practice of the reference

interview. This is typically an inbound activity, whereby academic researchers come to the reference desk for guidance in their research.

In the workplace, on the other hand, employees typically do not seek out the librarian when conducting research. Librarians thus need to devise sustainable reminders of the value they can add to the research process. Proactive outreach to research groups and positioning the library in typical information-use workflows reminds end users that the library is a resource that can help them.

It is essential to keep information expertise in the online research workflow. The librarian can optimize the end user's reference interview experience by incorporating appropriate functionality into the research application interface. Simple features like "Did you mean" and "Others who searched for that also searched for this" can help end users optimize the data sets they use and the queries they generate. Consolidated

"placards" that show a consolidation of content and metadata elements from a variety of relevant sources can provide quick feedback to the end user.

A workflow-specific interface, with customized topics and segmented result sets, provides context for the end user. This is especially true when a researcher is invested (meaning their interest is high or their need is immediate)—the more useful the research application, the more credible the librarian as a critical ally in the research process. Context creates credibility and will encourage end users to seek out the librarian moving forward. **SLA**

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Using Data for Civic Good

ACADEMIC AND PUBLIC LIBRARIES AND LOCAL GOVERNMENTS ARE WORKING TOGETHER TO MAKE COMMUNITY DATA MORE ACCESSIBLE.

BY STEPHEN SHERMAN, MSLS

Like many metropolitan areas in the Southeastern United States, Charlotte, North Carolina, has experienced rapid population growth and a proliferation of new development in recent decades. The city and surrounding areas have gained nearly a million new residents in just the past 10 years. While an influx of young professionals has kept the region's economy growing, not everyone has experienced the same level of prosperity. In 2014, a well-publicized study by Harvard economist Raj Chetty ranked Charlotte last among the 50 largest U.S. cities in terms of upward economic mobility for its inhabitants.

As they look to reverse these circumstances, Charlotte's civic leaders are increasingly using data to inform their approach to community development and neighborhood improvement.

Librarians and data professionals are at the forefront of this movement, creating greater access to local data through innovative public-private collaborations.

Charlotte's current open data initiatives originated in the early 1990s, with a renewed focus on neighborhood-level planning and renewal. In 1992, the city began offering funding to neighborhood groups for local improvements and small civic projects. With this new funding, there was an immediate need to better understand the existing resources and needs of neighborhoods and to track changes over time to assess the impact of the local grants.

The following year, Charlotte published the "City Within A City (CWAC) Neighborhood Assessment" to report on the social, physical, economic, and environmental conditions in the city's 73 core neighborhoods. A few years

later, the University of North Carolina at Charlotte (UNC-Charlotte) became a partner in the project and helped develop the Quality of Life Index to serve as a benchmarking figure for overall living conditions within each neighborhood. For the initial decade and a half, the Quality of Life Study was made available to the community in printed and PDF formats.

In 2012, Mecklenburg County (which encompasses Charlotte) joined the initiative as part of an effort to expand the geographic scope of the study and help improve the infrastructure around the project. County staff provided the programming expertise to transform the existing biennial study into an interactive, online dashboard now known as the Quality of Life Explorer (<https://mcmap.org/qol/>).

As a result of this new partnership, the number of available data sets has expanded from 20 to 80 and the number of neighborhood profile areas covered has increased to more than 460. The county provides hosting for the dashboard, and the code is open source. City staff maintain the site and, along with colleagues at the UNC-Charlotte Urban Institute, provide proj-



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At the conclusion of each workshop, participants were assigned a community data project they could complete independently by using the HCDC dashboard and investigating data about their own neighborhoods.

ect management for the initiative.

Many neighborhood leaders now use the Quality of Life Explorer to establish community needs and make the case for investment in the form of city matching grants and other funding. The Quality of Life Explorer is also helping city planners work with private developers in what has been a rapidly transitioning housing market in the region. Andrew Bowen, data analytics manager for the city's Office of Data and Analytics, cited the example of the Housing Locational Scoring Tool as evidence of the initiative's impact. Using indicators from the Quality of Life Explorer, city staff created a "neighborhood change score" within the scoring tool to help developers identify areas where affordable housing is needed and to make their case for investment and collaboration with the city.

The Charlotte Mecklenburg Library, the public library system serving the city and county through its 20 locations, has in past years hosted training sessions on the Quality of Life Explorer led by presenters from the city. Offerings have included workshops geared specifically toward nonprofit organizations as well as programs for the general public. The library has now taken more of a leading role in disseminating data and is listed as a key partner in the city's open data initiatives.

In 2019, the Charlotte Mecklenburg Library and the UNC-Charlotte Urban Institute were partners in a grant to initiate the amusingly named "Civic Data Nerds United Council" to connect the many local players in the civic data ecosystem. The library system's role as convener of this project is one for

which it is well-suited and speaks to the unique place that libraries in general have come to fulfill in the civic sphere.

Cultivating Data Literacy in the Community

Another, more recent data collaborative has taken shape in Houston, involving Rice University's Fondren Library and the Kinder Institute for Urban Research. Staff from the library's Digital Scholarship Services (which houses the Digital Media Commons, GIS/Data Center, and the Kelley Center for Government Information, Data and Geospatial Services) partnered with their inter-university colleagues at the Kinder Institute to create a data literacy curriculum and offer workshops for groups hosted by local nonprofit organizations. The goal of the project was to empower workshop participants to better use the data ecosystem—to find, interpret and use the data they might require in the course of their personal, professional, and civic activities.

In 2019, project team members from Kinder and Fondren led three separate data literacy training sessions—one each at the Urban Enrichment Institute (UEI), the Smith Neighborhood Library, and the United Way of Greater Houston. The workshops centered on Houston Community Data Connections (HCDC), an online dashboard intended to facilitate the practical use of data by city and community leaders for decision making and capacity building in the region's disadvantaged communities.

The first workshop was conducted at UEI, a youth leadership and development nonprofit that serves at-risk mid-

dle and high school students. The second was hosted at a local public library, the Smith Neighborhood Library, and involved a much broader audience of both adults and students. In each case, the presenters tailored the workshop to the audience and drew upon local themes and data. For instance, the presenter at UEI used examples from the popular online games *Fortnite* and *Apex Legends* to illustrate data concepts for a younger audience.

The curriculum for the workshops included modules defining data as a concept and demonstrating best practices for using data. Participants were given a pre-training questionnaire to evaluate their existing knowledge of data and interest areas; their responses were later compared with a matching post-training assessment. Results from the first training showed that UEI participants scored 34.5% higher on the quantitative section of the questionnaire *after* the workshop, indicating significant improvement in their understanding of data. At the conclusion of each workshop, participants were assigned a community data project they could complete independently by using the HCDC dashboard and investigating data about their own neighborhoods.

Unlike the first two sessions, the third workshop was framed as a train-the-trainer program and was organized in collaboration with the United Way of Greater Houston. The audience consisted of nonprofit professionals, with a focus on the fields of workforce development and financial literacy. This last workshop drew upon lessons learned from the first two community sessions and offered insights into how participating professionals could conduct data literacy training for their own constituencies or within their organizations. The training discussed the purpose of data literacy, gave an overview of strategies and best practices for teaching data literacy, and provided examples of activities to help reinforce data concepts.

For the Fondren Library, the project offered an opportunity for staff to engage with the community in ways they had not engaged in the past. When asked

about key takeaways from the project, Katie Wang of the Kinder Institute said that “taking a collaborative approach to hosting the workshops allowed both the library and the Kinder Institute to leverage each other’s strengths; in particular, Fondren was able to tap into the Kinder Institute’s relationships with community organizations and garner a stronger level of engagement from community stakeholders.”

Other lessons learned by workshop participants included the following:

- Seeking feedback from the community or from the intended audience on the curriculum enabled project staff to offer a more tailored experience.
- Flexibility in the curriculum design allowed presenters to adapt the sessions to different audiences.
- For presenters, being personal and vulnerable and using examples from their own life made for a more authentic experience for attendees

SLA 2020 SESSION TO HIGHLIGHT CHARLOTTE DATA INITIATIVE

The SLA 2020 Annual Conference in Charlotte will feature a 90-minute session on Charlotte’s use of data to improve civic life. Titled “Data Sharing for Social Good: How Charlotte is Using Open Data to Drive City Initiatives and Create a Better Future for the Region,” the session will discuss how leaders in city government, local universities, and area nonprofits have partnered on data-led initiatives (such as the Charlotte Open Data Portal, Charlotte Mecklenburg Quality of Life Explorer, and Leading on Opportunity) to better understand current challenges, track progress toward improved outcomes, and develop paths toward a more equitable future for Charlotte residents.

and helped participants better grasp abstract data concepts.

Civic Switchboard: Expanding the Role of Libraries in Civic Data Ecosystems

Both the Charlotte Mecklenburg Library and the Fondren Library partnered on collaborative ventures that were awarded Civic Switchboard Field Project grants in 2019. Civic Switchboard: Connecting Libraries and Community Information Networks is an initiative supported by the U.S. Institute of Museum and Library Services that aims to develop the capacity of academic and public libraries in civic data ecosystems. The program was founded on the belief that libraries are a key connecting point for people seeking to discover and analyze data about their communities.

Libraries serve as repositories of data, offer workshops and resources to help users understand how to work with data sets, and host community programs where individuals often discuss issues that affect their local neighborhoods. Even so, the Civic Switchboard initiative acknowledges that many libraries are still new to this role, and therefore it is intended to accelerate and expand the positioning of libraries as conveners around civic data.

In 2018, Civic Switchboard hosted workshops in Atlanta and Las Vegas and invited library professionals, private and academic researchers, and representatives of local governments to discuss opportunities for collaboration around data dissemination and to assess the state of the civic data ecosystem. In 2019, the project awarded its field grants, with nine libraries and their partner institutions receiving funding in the range of \$3,000 to \$9,000 to implement collaborative programs designed to improve data sharing in their communities. In addition to the Charlotte Mecklenburg Library and the Fondren Library, institutions in Alaska, New York, Rhode Island, Maryland, and Minnesota received project grants.

The initiative has already had its funding renewed through early 2021,

and a second round of funding will be awarded in 2020. Civic Switchboard has created a guide to help libraries become more engaged in their local civic data ecosystems, and it will add to this resource as best practices are identified through its field projects. For libraries that wish to engage in open data initiatives, Civic Switchboard offers guidance and a list of considerations (Civic Switchboard 2019). Among the questions to contemplate:

- **What are your goals?** Any external collaboration is bound to involve multiple individuals at different levels of authority and require allocations of time and money. It’s best to be clear up front about the goals for the project to better align resources with outcomes.
- **What are the data needs of the local community?** This is best determined through direct engagement with people in the community, whether by surveys, interviews, focus groups and/or similar methods.
- **What is the state of the local data ecosystem?** Civic Switchboard offers links to resources to help organizations develop a map of the data ecosystem in their community and identify key sources of data and potential partners.
- **What level of support is the library willing to provide for a data initiative?** This may range from providing training to users and helping share information about the initiative to serving as a convener for other institutions and providing funding. It will be important to clarify the library’s desired level of engagement before approaching other partners.

Institutions that are interested in hosting data need to bear in mind additional issues, including how the library will support data publishers, how sensitive data will be protected, and how to select and maintain a data-sharing platform. However significant these considerations may be, the potential benefits for libraries in terms of building their reputation within the community are

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well worth the effort.

Libraries are uniquely positioned to
lead data literacy programming and
coordinate open data initiatives in their
communities. Libraries have been cited
again and again in surveys of U.S.
households as sources of information
that is trustworthy and reliable (Geiger
2017), more so than government
and academic institutions. Cities and
research institutions can partner with
libraries to not only boost the visibility of
their data collections but also to provide
access to data through a trusted, third-
party intermediary. Moreover, librarians
and information professionals have the
knowledge and experience to be able
to provide data literacy training that is
clear and practical. Public libraries in
particular have the capacity to provide
access and programming that reaches
a broad audience.

The initiatives in Charlotte and
Houston outlined here are just two
examples of libraries partnering with
other institutions to increase access to
data in their communities, but similar
projects are being implemented in other
cities across the United States. Libraries
and local governments will do well to
seek out such partnerships for the good
of their constituents and the communi-
ties they serve. **SLA**

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Becoming Data Literate: A Review of Selected Sites

Continued from page 13

ceo-jonathan-cornelissen-leave-sexual-
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If you like DataCamp but want
to explore other, similar options,
CodeAcademy (<https://www.codecademy.com/catalog/subject/all>) is a com-
parable alternative. Check out their
Python, R, and SQL courses. Like
DataCamp, CodeAcademy deploys its
courses and hands-on analysis through
a web environment. There is no need to
install software.

Each of the above sources takes a dif-
ferent approach or emphasis to lead you
down the path to data literacy. Because
there are so many different data literacy
resources available, I want to conclude
by suggesting a few alternatives.

If you need to get started on the fun-
damentals of working with data, I often
recommend School of Data (<https://schoolofdata.org/courses/>) to begin-
ners. Their open source lessons were
developed by the Open Knowledge
Foundation. While they are not as inter-
active as DataCamp, they do an excel-
lent job of teaching beginners how to
get started.

An alternative resource for learning
statistics is Khan Academy's Statistics
and Probability course (<https://www.khanacademy.org/math/statistics-probability>). Finally, DataCarpentry lessons
(<https://datacarpentry.org/lessons/>) are
available for free, and the curricula
cover a variety of academic disciplines.

I hope you find some of these sources
to be useful in helping you develop and
improve your data skills. **SLA**

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Search Engines and Algorithms are Biased. Here's Why That Matters

LIBRARIANS CAN TAKE STEPS TO ADDRESS INEQUALITY AND BIAS THAT RESULT FROM USING DATA HISTORICALLY WEIGHTED IN FAVOR OF WHITE MEN.

BY JASMINDER BAINS, BS

Two-thirds of search engine users believe search engines are a fair and unbiased source of information, according to a 2012 Pew Research survey (Purcell, Brenner, and Rainie 2012). The facts suggest otherwise. In 2013, the United Nations launched an advertising campaign to raise awareness of sexist and discriminatory portrayals of women and the denial of their human rights in Google searches. Some of the search results they found were that “women shouldn’t have rights” and “women should be in the kitchen” (Dubai and Ogilvy 2013).

Separately, critical library and information science scholars have conducted extensive reviews of the Library of Congress Subject Headings (LCSH) and Dewey Decimal Classification (DDC) system and demonstrated how women

and racial minorities are categorized as “the other” (Noble 2018). A criminal sentencing software called COMPAS was found to be twice as likely to misclassify black defendants as higher risks for recidivism compared to their white counterparts (Introna and Nissenbaum 2000).

Systemic discrimination is not new. Economic redlining, environmental racism, and disproportionate drug arrests are all ongoing examples of systemic discrimination. The challenge facing librarians and information professionals is that the structures that perpetuate inequality in society are replicating it online, largely without issue.

Algorithmic Bias

Similar to how people need evidence and information to draw conclusions,

algorithms need data to be able to make decisions and judgments. There is, however, one key difference between people and algorithms. Algorithms will make the same decision 100% of the time—unless adjusted by a computer programmer—while people may make exceptions or get distracted by other variables. Therefore, if an algorithm is biased, it will consistently make biased choices, which can cause even more damage than a biased human being.

This is not just a hypothetical scenario. Algorithms regularly receive biased data because they rely on historical data. For example, a technology company looking to automate its job hiring process may assign an algorithm to scan applicants’ resumes. Technology historically has been dominated by men, so the data the company feeds to the algorithm will be male-dominated. As a result, the algorithm will become biased and filter out resumes not written by male applicants.

You may think the solution is simply to remove gender from the algorithm’s decision-making protocol. However, removing data—whether biased or not—will decrease the algorithm’s accuracy. This dilemma is what computer

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programmers refer to as the “fairness over accuracy curve” (Bains 2019).

Algorithms that focus on fairness and equality are proving to be a viable method to address algorithmic bias. Themis-ml is an open-source, fairness-aware machine learning library that can help algorithms learn how to make recommendations with the highest level of accuracy and fairness possible for multiple types of models. Algorithm auditing is another possible intervention to address bias in algorithms.

Cathy O’Neil founded O’Neil Risk Consulting & Algorithmic Auditing after working as a data scientist in advertising technology. She realized the algorithms she was building discriminated against users of certain backgrounds, affecting not only the types of ads users saw, but whether they received job offers and approvals for credit cards. O’Neil’s auditing reveals the impact of an algorithm on all stakeholders, including the company deploying it as well as the people it assesses (Webber 2018). Another example of algorithm auditing is Frida Polli’s Pymetrics tool, which helps companies fill job openings based on the traits of high-performing existing employees while being as neutral as possible (Webber 2018).

On another note, it is also important to increase the representation of women and people of color in computer programming and data science fields. Their lived experience informs the work they do and can help prevent the creation of facial recognition algorithms that, for example, fail to recognize black women. Rediet Abebe co-founded Black in AI to promote African women in artificial intelligence (AI) careers and also co-founded Mechanism Design for Social Good, an initiative to spread research on how to use AI to resolve social issues (Webber 2018).

Search Engine Bias

Furthermore, while algorithms risk perpetuating bias and oppression, search engines may proliferate misrepresentation and stereotypes. Safiya Noble (2018) revealed how typing “black

girls” into Google returned results for porn websites that “dehumanize them as commodities, as products and as objects of sexual gratification” (pp. 18). The hypersexualization of black women is not new; it dates back to slavery in the American South, when the caricature of Jezebel—a hypersexual black woman who often takes advantage of men—first emerged, and it has remained in the public consciousness ever since (Epstein, Blake, and González 2017).

These search results not only perpetuate stereotypes, but cause direct harm to black women. Noble (2018) points out that marginalized people often do not possess the economic, political, and social capital to weather the effects of misrepresentation.

In some cases, misrepresentation can cause irreparable harm to one’s quality of life, as in the case of Jennifer Connell (or, as the Internet knew her, “the aunt from hell”). Connell’s nephew accidentally broke her wrist at his birthday party, and she had to sue him to receive medical insurance coverage to cover her mounting bills because of a technicality in her insurance policy. She lost her case, the media and Internet vilified her, she began losing clients to her consultancy, and companies rescinded job offers to her when they learned who she was. As it is notoriously difficult to permanently delete images and articles posted to the Internet (thus allowing false narratives to follow people for the rest of their lives), Connell had to change her identity, but her name was never fully cleared (Pogue 2016).

Clearly, then, the stakes of misrepresentation are high. This is a particularly salient issue for library discovery systems that primarily rely on the LCSH, which have been found to cater to white, middle class, Christian men by stereotyping youth and women and taking a colonialist perspective about race (Berman 1971). Sanford Berman posited 225 suggestions for the LC subject headings to make them more inclusive of people from different backgrounds, but after 34 years, only 39% of his recommendations were completely fulfilled (Knowlton 2005).

More recently, an increasing number of librarians have dedicated themselves to upholding social justice in their work, opting for “critical librarianship” instead of the long-held neutrality within the profession. One of the key tenets of critical librarianship is that neutrality is not only impossible to achieve, but harmful to marginalized groups. It recognizes that the world is still fundamentally unequal and that neutrality, by upholding that inequality, comes across as complacency. Therefore, proponents of critical librarianship may actively call out bias in subject headings, educate their patrons about search engine bias and how to critically evaluate information, and create research guides for social justice-related topics (such as Black Lives Matter) to amplify voices that are not always heard (Farkas 2017).

Librarians are not the only ones taking action against search engine bias. A couple of years ago, a group of Dartmouth students contested the use of the term “illegal aliens” in the LCSH. Initially, the Library of Congress agreed to replace the term with “noncitizen,” but conservative lawmakers voted to block this move and required the library to retain the terminology used in federal law, including the word “alien” (Aguilera 2016). In response to this conflict, the University Libraries at the University of Colorado Boulder took it upon themselves to catalog immigrant-related material under headings such as “noncitizens” and “undocumented immigrants” instead of “illegal aliens” (Lencki 2018). Their goal was to prevent students from feeling uncomfortable while searching for immigrant-related materials, but it was an important change for another reason—the subject heading was labeling a group of people.

One does not have to look much further than racial slurs to see why labels matter. According to cognitive psychology, people understand the world by placing objects into categories, or “schemas.” It helps them understand what something is and what it is not. Schemas can be structured as simply as safe or not safe, ice cream or not ice

cream, legal or illegal. Referring to people as “illegal immigrants” reinforces the narrative that their very existence is forbidden, and the repercussions of that narrative are playing out each and every day. That is why movements like critical librarianship matter, why Safiya Noble’s research matters, and why organizations like O’Neil Risk Consulting & Algorithmic Auditing matter.

Subject headings are far more than the nuts and bolts of a knowledge organization structure. They assign value and meaning to human knowledge; they have the power to invigorate or discourage people, nurture or ostracize them, and represent or misrepresent them. Likewise, search engines are far more than a quick and convenient way to seek answers—they are the first and only thing with which many Internet users interact. They have the power to inform or mislead people, counter or reinforce their beliefs, and amplify or erase their voices.

In this same vein, algorithms based on data are far more than a neutral set of rules to help people make decisions. They have the power to influence human lives for the better or worse. How will you use them? **SLA**

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Adding Data Literacy Skills to Your Toolkit

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for librarians who are interested in data librarianship. Look for information on data-related listservs such as RDaP or ResearchDataMan (hosted out of the U.K. Data Centre) to learn about the dates of those regional conferences.

No matter how you choose to invest in your skills, bear in mind that data literacy and data management are foundational skills for a data-literate society. Any skills you transfer to your patrons will be assets to those individuals in their data-enhanced day-to-day lives. Additionally, any skills you add to your toolkit will allow you to create data-enhanced services for your library, so there is a value-added reason to consider prioritizing data literacy skills that can move forward the strategic priorities of the library as a whole as well as help address patrons’ needs. Investing the time to add even a few data literacy and data management skills will give you more flexibility to serve the changing needs of library patrons and open opportunities for you to innovate in your own practice. **SLA**

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Creating an Inclusive Culture: A Call to Action

Measuring factors such as involvement in high-profile projects and access to information can help create a more inclusive environment for underrepresented groups.

BY AMANDA FERNANDEZ, MI, MBA

As part of my work, I ask clients whether they have diversity and inclusion (D&I) policies at their places of employment and, if so, whether they have operating/execution plans attached to this policy. If they say their institution has a policy, I ask how they are enacting and “living” the policy and how they gauge the success of the policy. If they do not have a policy, I ask why there isn’t one, especially considering the diverse population of North America.

Prominent management thinker Peter Drucker stated, “What gets measured, gets managed.” While this is a great place to start, measurement is not management. Measurement is a tool for tracking performance, but it is not performance itself.

So, what are we to take away from this? First, policies respond to the “say” portion of the say:do ratio. We need execution plans with measurable goals and targets if we are serious about supporting diversity and inclusion and about living and breathing our policies and strategic plans.

Second, we need to identify someone in the organization whose job it is to manage D&I and whose performance and growth in the organization are

linked to the deliverables of the execution plan. This individual will have the budget and authority to execute on these deliverables, as successful D&I practices and behaviors start at the top.

It is important to measure, but *what* we measure is more important to keep in mind. Our resources are limited, and whenever we commit to an action or program, we are turning our back on many other things. For example, if you have a library that hosts well-attended hackfests, keep offering them. If you notice they aren’t valued, redirect your resources to what is valued, like resumé workshops.

Here, a systems approach to measurement and key performance indicators does us a disservice. There’s a difference between offering services and programs (for example, hackfests) based on the skills and knowledge of your current staffing complement instead of offering meaningful value-added services and programs.

Yes, diversity takes many forms, not all of them visible. But if all of our thoughts and actions look and feel the same, and the products and services we produce are the same year after year, we do not have diversity in

offering innovative products and services. Innovative practices and outputs require plural sources of input.

Enter Inclusion

Data and statistics also do not capture what it feels like to be the only black or Vietnamese employee at the table. According to optimal distinctiveness theory, individuals feel included when they feel unique and different from others in their direct work environment as well as feel like they belong to that same work environment (Rabl, Triana, Byun, and Bosch 2018). There are two notable characteristics of this understanding of inclusion.

First, there is a clear tension between feeling unique and having a sense of belonging, such that individuals are unlikely to score high on both simultaneously and will need to find a balance or “optimal distinctiveness” between both. This suggests that there are inherent tensions within this multifaceted concept of inclusion that are not easily resolved.

Second, inclusion is a multi-level phenomenon, since it occurs within a context. This means that the inclusion of one group member depends on the inclusion of others in that group. In other words, inclusion does not happen in isolation—when others in your group feel excluded, it affects the extent to which you feel included.

More than anything else, inclusion is a feeling, a perception. When it comes to inclusion, there is a difference between intent and impact. Whether discrimination happens on a systemic level or an interpersonal level, the result and the feeling are the same for those on the receiving end. This is why, in my previous column, I stressed that our actions need to be thoughtful, deliberate, and by design. If we are to grow and fail forward effectively, we will require plenty of course corrections, because well-intentioned ideas

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and practices can lead to unintended consequences.

If you are looking for a hard number or percentage to indicate the point at which historically underrepresented groups begin to feel like they are being heard, research points to 30% (30% Club 2019). That benchmark is the goal of a group of executives and CEOs called the 30% Club that is dedicated to increasing gender diversity on boards of directors and senior management teams. The 30% Club began as a campaign in the U.K. in 2010 and has since expanded to 14 other countries. The 30% Club believes that gender balance on boards and in senior management not only encourages better leadership and governance, but further contributes to better all-around board performance and ultimately increases corporate performance for both companies and their shareholders.

If you are truly committed to reaping the benefits of diversity and inclusion, you must embrace analytics and consider developing an operating or execution plan like Deloitte's Inclusion Index, which tracks the hiring and promotion of employees across several aspects of diversity (Clark and Smith 2014). Such a plan does not have to be anything fancy—a simple spreadsheet to measure recruitment and promotion of historically excluded groups will suffice. Tracking hard data will highlight gaps and is the first step in holding your managers, directors, and leaders accountable when it comes to inclusion.

Brimhall and her colleagues (2017) have focused on perceived organizational inclusion, both conceptual and empirical. Their research suggests that if you want to measure whether you have an inclusive workplace, you can start by looking at three components:

- **Involvement in work groups:** Who gets the juiciest projects? Who decides who gets the juiciest projects?
- **Participation in the decision-making process:** This doesn't mean saying yes to everything or incorporating everything from everyone.

- **Access to information and resources:** Does everyone who works in your organization know where to look for information? If they don't, do they know whom they should ask?

Moving Forward

Change management 101 dictates that if we are going to support an inclusive community and be responsive to their needs, we need full participation and buy-in from all of our staff, including those in the dominant majority. Beneficiaries of inclusionary practices may put their hopes in beautifully written policies, but if your say:do ratio does not equal 1.0, then the effort amounts to an empty PR activity that feels even more exclusionary. It is time to start failing forward. As Candice Morgan, head of Inclusion & Diversity at Pinterest, notes, "There is no playbook for making every employee feel included. In a sense, we're all writing it together right now" (2017).

So, let's start doing. I have two calls to action, and they are simple.

Initiating change. There is a gap in our organizations when it comes to our workforce reflecting the community we serve, a worsening problem with critical long-term implications. We can no longer wait for someone else to lead; we need to get ahead if we are going to leverage all the benefits of diversity and inclusion. So, my first call to action is to initiate change.

It does not have to be anything big, just realistic. If you have formal authority, set targets for yourself and your team, complete with execution plans for accountability. An example of a target could be increasing diversity by 15% at all levels of the organization by Q4 2020. If 15% is unrealistic but you know that immigrants and minorities comprise 7% of the community you serve, your target should be to increase diversity by 7% at all levels of the organization by Q4 2020.

Non-managerial employees can also play a role. Speak to your manager about D&I initiatives and explain what D&I means to you and why it is important. Ask about targets and execution

plans, and inquire how such policies and strategic plans are enacted and implemented at your institution.

Orthogonal thinking. My second call to action is leveraging orthogonal thinking and doing. Orthogonal thinking draws from a variety of (and perhaps seemingly unrelated) perspectives to achieve new insights (Ogden 2014). It involves a momentary blurring of boundaries to see what might emerge. The benefits of orthogonal thinking speak to the importance of diversity in supporting collective intelligence and resilience.

You can start by taking a course unrelated to your job at least once a year that exposes you to new concepts and new ways of seeing and doing. What you are going for with orthogonal thinking is stretching your mind with new concepts from other industries and fields of study. Keep in mind that e-mail wasn't invented by someone who worked at the Post Office, and the light bulb wasn't invented by a candlestick maker.

The first call to action is a long-term strategy; the second is a short-term one leading to long-term benefits. **SLA**

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Jumping Hurdles: How to Build on Your Strengths

Developing your strengths as fully as possible and partnering with others who have strengths you lack can enhance your ability to lead.

BY CINDY HILL, MLIS

Have you ever faced a sports activity that initially scared the daylights out of you? If so, how did you handle it?

In high school, I was in the Girls Athletic Association (GAA), which allowed me to have my gym classes at the end of the day and choose my sport focus for the quarter. Every spring I chose track and field and attempted several of the events, including the high hurdles (not successful), track hurdles (not successful), and 100-meter and 400-meter dashes (again, not successful). Finally, I realized that my strength was in long-distance running—I could run for miles at a steady and reasonably fast pace, and I enjoyed it. While I had a lot to learn, I knew I would be successful in long-distance running, so I built on that strength and on my coach's insights and became a strong, steady, first-rate runner.

How does this experience relate to my career and my leadership roles, both within my workplace and in my volunteer activities? I've learned to focus on my strengths and work on deepening them, then use them in my projects, strategic initiatives, and tasks. While I also have to use my less-than-optimal skills, I bolster the weaker ones with my stronger skills and experience,

and (most importantly) I work with others who have the skills and strengths I do not possess.

I've also figured out that I learn faster and better by observing someone or something, then building on my observations by reading, listening to lectures, attending webinars, and so on. Many of the biggest and best lessons I have learned have come from observing other leaders, both volunteer and professional, in action.

This brings me to two examples I want to share with you.

Over the decades, I have spent countless hours “board watching” at SLA conferences. While at first blush watching the board may appear tedious and uneventful, observing the board as individuals allows us to observe their strengths as leaders.

When Judy Field was president of SLA, one of her constant requests was that we, as association representatives, spend time in the conference exhibits area talking to our information partners (the vendors). She asked that we acknowledge their participation, thank them for spending their marketing funds and time on our conference, and learn a bit more about their products—all to encourage their continued interaction

with us. In the end, we were all focused on the success of our members.

My second example is board watching at my local city council meetings. Again, while it often appears that not much is happening, over time I've picked up on the city council's cycle of decision making and learned how local residents can affect the council's decisions. (Board watching, like attending sporting events, is about endurance—can I sit on that uncomfortable chair seemingly forever?) These meetings always have an “open mic” section where the public can share their insights, comments, and suggestions and vent their frustrations. With tact and grace, a strong city mayor can “hear” the message through a cloud of negativity and angry words and move the issue forward for future consideration.

One common trait I've observed in both SLA board meetings and local city council meetings is that there is a method for “listening actively” instead of thinking about what to say or how to respond as soon as the speaker pauses. The best leaders are fully engaged in listening, analyzing the comments, and then responding. Often they enrich the dialogue, exploring other options and creating different and unexpected solutions instead of putting forth their own solutions. They have the emotional intelligence to defuse a hostile speaker and bring balance to the discussion. It is a skill that, through observation and a whole lot of practice, I have strengthened over time.

So, back to my sports analogy. Former professional football coach George Halas once said, “Nobody who ever gave his best regretted it.” For me, this applies to my many attempts to jump over hurdles in high school athletics and in my professional and volunteer worlds. What hurdles have you jumped? **SLA**

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RESTRUCTURING INITIATIVE • LEADERSHIP SYMPOSIUM •

Board OKs Proposal to 'Right-Size' Chapter and Division Structure

The SLA Board of Directors approved a restructuring plan at its December 2019 meeting that is intended to help “right-size” the association’s volunteer leadership structure.

Under the plan, each community will have only three required core leadership roles—president, vice president and secretary—who will concentrate their efforts on program planning, building connections and membership development. Communities can establish and fill additional roles on an as-needed basis.

Simplifying the volunteer leadership structure will confer several benefits, including the following:

- It will allow SLA communities to focus on providing learning and networking opportunities that appeal to today’s special librarians and information professionals;
- It will enable SLA staff to more efficiently and effectively support communities in attracting, engaging and retaining members; and
- It will make interacting with SLA a more attractive value proposition to potential members, vendor partners, like-minded organizations, and employers.

To underpin this new leadership structure, the plan includes a new financial management model that will centralize chapter and division bank accounts into one account. This will streamline the management of finances and reduce the administrative burden on SLA communities and volunteers while still supporting local delivery of programs, products and activities.

Specifically, this financial management model will—

- Eliminate the need to recruit a treasurer to create and submit financial statements to SLA;
- Eliminate the need for chapters and divisions to assume financial responsibility and liability for programs;
- Make more funds available to smaller communities that historically have lacked funding for programs and events; and
- Eliminate the costs to communities for services such as website support.

An additional benefit of the restructuring plan is that SLA members will be able to pay one fee for membership and join as many communities as they like (rather than receiving one chapter membership and one division membership free and paying to join more). This will create new opportunities for cross-pollination of ideas and joint development of programs and events.

The Board of Directors answered questions about the restructuring plan from SLA members on January 18, during its open meeting prior to the 2020 Leadership Symposium. A recording of the board meeting is available at <https://register.gotowebinar.com/recording/7672748784708606732>. The board also answered questions about the restructuring during the Leadership Symposium itself; that recording is available at <https://register.gotowebinar.com/recording/1826476135072195596>.

Details of the restructuring and its implementation are still being ironed out. More information will be shared as it becomes available.

Chapter and Division Volunteers Gain New Leadership Insights

More than 100 SLA members from the United States, Canada, and Europe came together over the Martin Luther King, Jr. holiday weekend (Jan. 18-20 in the United States) to strengthen their

leadership skills and learn new ways to use those skills in their volunteer roles and their workplaces.

The 2020 Leadership Symposium, held in McLean, Virginia, next door to SLA’s offices, took inspiration from Dr. King’s admonition that “A genuine leader is not a searcher for consensus, but a molder of consensus.” A leadership training facilitator, Karyn Nishimura Sneath, put attendees together in small groups and had them work together on projects, such as creating a group resumé. These exercises encouraged attendees to think and work as teams and adjust to each other’s personalities and work styles.

The highlight of Karyn’s presentation was the DiSC Personal Profile System, an assessment tool that analyzes behavioral characteristics across four different personality dimensions: dominance, influence, steadiness, and conscientiousness. Attendees used the DiSC tool to assess these traits and discern their personal profile pattern, such as perfectionist, objective thinker, promoter, or achiever.

“The best leaders are those who know themselves,” Karyn told attendees. “This profile will help you learn a little bit more about yourself, and it’ll help you understand and appreciate the differences of others.”

The second day of the Symposium was devoted to helping attendees better understand their leadership roles in SLA and how to use SLA resources to communicate, recruit members, partner with vendors, and more. Members of the SLA Board of Directors and SLA staff led some of the sessions; SLA members, including Clara Cabrera, David Blum, and Kristin Stutzman, also participated in leading sessions and shared best practices from their communities.

NAME CHANGE

Board Approves Proposal to Change Association's Name

At its open meeting at the 2020 Leadership Symposium, the SLA Board of Directors approved a proposal aimed at changing the name of the association as part of a larger effort to increase engagement with existing members and potential new members.

The proposal was developed by a task force that was created in December 2019 to determine whether the name and branding of SLA are in line with the value proposition for current members and potential new members. The task force drew on several resources, including a February 2019 survey of members and non-members that asked one question: *If you were creating an association of librarians, researchers, knowledge managers, information analysts, taxonomists, competitive intelligence specialists, and others who work in related roles and you wanted that association to be relevant for the next 110 years, what would you name it?*

Ultimately, the task force presented four potential names to the board to submit to members for a vote:

- The Information Association;
- Information Professionals Community (IPC);
- International Association of Librarians and Information Professionals; and
- Information Professionals International (IPI).

The task force also proposed that, after members approve a new name, a tagline should be developed that incorporates some of the following language and concepts:

- The global association connecting specialist librarians, information professionals, data specialists, and researchers;

- Bridging Disciplines, Building Communities;
- The professional home for information professionals and their strategic partners; and/or
- Our members manage, create, analyze, and solve problems with information for organizations and their stakeholders.

No decisions have been made yet with respect to when members will vote on a new name. **SLA**

Diversity and Inclusion

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