PARTNERSHIP

The Canadian Journal of Library and Information Practice and Research
Revue canadienne de la pratique et de la recherche en bibliothéconomie et sciences de l'information

vol. 14, no. 2 (2019)
Innovations in Practice (peer-reviewed)
DOI: <https://doi.org/10.21083/partnership.v14i2.4623>
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Aligning the stars: Understanding digital scholarship needs to support the evolving nature of academic research

Christie Hurrell, MA, MLIS
Digital Initiatives and Scholarly Communication Librarian
Taylor Family Digital Library
University of Calgary, 2500 University Drive
Calgary AB T2N 1N4
christie.hurrell@ucalgary.ca
403-210-6103

Abstract

Digital scholarship centres located within academic libraries are proliferating. This project gathered feedback from library staff and researchers at the University of Calgary to inform the development of a physical space and associated services to support the evolving nature of academic research. Semi-structured interviews were conducted, and the results were analyzed thematically. Common needs identified included access to interdisciplinary collaborators, technologies, and space. The library was beginning to renovate an existing space to support collaboration and, informed by this research, re-configured and realigned services and expertise to support digital scholarship in a more cohesive manner. This study will be of interest to other academic libraries wishing to develop a digital scholarship centre that is responsive to the needs of their local community.

Keywords

digital scholarship centres, needs assessment, library renovations, service delivery

Literature Review

Digital scholarship centres located within academic libraries are proliferating and were included in the Association of College and Research Libraries' 2016 top trends in academic libraries (ACRL Research Planning and Review Committee, 2016). Digital scholarship has been defined as "the use of digital evidence and method, digital authoring, digital publishing, digital curation and preservation, and digital use and reuse of scholarship" (Rumsey, 2011). Hensley and Bell (2017a) used digital scholarship as a verb and a noun to include both the act of creating digital outputs as well as the analysis of those outputs. A recent systematic review of the literature on digital scholarship suggested that the research described by this term has distinct strands, is approached from a wide variety of perspectives, and is defined in different ways. The review also suggested that digital scholarship is not yet a cohesive research area (Raffaghelli, Cucchiara, Manganello, & Persico, 2016).

Despite the broad and perhaps inconclusive definition of digital scholarship, digital scholarship centres generally share common features: they are administered by a central unit such as the library or IT; they serve the entire campus community; and are relevant to the needs of diverse disciplines (Lippincott, 2014). In 2016, Association of Research Libraries (ARL) institutions were surveyed to get a sense of the range and scope of support they were offering to the research community via digital scholarship centres. The results showed that libraries, either alone or in partnership with other campus units, were providing 19 categories of support for digital scholarship activities. Even though the most prevalent forms of support such as digitization, digital preservation, metadata creation, and digital exhibits reflect the activities and practices of digital humanities scholars, digital projects are increasingly crossing disciplinary boundaries. This shift is reflected in library support, and ARL member institutions are now supporting activities as diverse as software development, spatial data, and data visualization (Mulligan, 2016). Another survey conducted by the ACRL Digital Scholarship Centers Interest Group specifically looked at the types of physical spaces being offered by digital scholarship centres and found that the majority of spaces were designed to support consultation, collaboration, and meetings (Ippoliti, 2016).

Both surveys are also useful in outlining the typical staffing complement of a digital scholarship centre. Typically, librarians are most commonly engaged in digital scholarship activities, but archivists, other professionals (e.g. software developer, data science specialist), support staff, and student workers are also involved in staffing and/or contributing to work occurring in digital scholarship centres (Mulligan, 2016). A smaller number of centres include postdoctoral fellows, interns, faculty members from outside the library, and volunteers as part of their staff complement (Ippoliti, 2016).

Many digital scholarship centres contain or are co-located with makerspaces and/or technologies for prototyping and fabrication, and often align themselves with disciplines including science, technology, engineering, art, or entrepreneurship (Bergstrom, 2016; Nichols, Melo, & Dewland, 2017). Others centres focus on activities such as text analysis or digital exhibit building, which have been typically associated with the digital humanities (Vandegrift & Varner, 2013). Digital scholarship centres also specifically aim

to serve many disciplines within the institution and facilitate interdisciplinary collaborations (Tzoc, 2016). Some authors underly the importance of physical space in the context of digital scholarship, while others argue that the focus on specialized spaces, services, and staff members serves to unnecessarily seclude digital scholarship activities from the larger mission of libraries (Head, 2016; Moritz et al., 2017). As might be expected for such a broad and diverse range of services, naming practices for these entities vary; this paper uses “digital scholarship centres” as a generic term.

The existing literature on digital scholarship centres also provides useful information about the types of educational programming and events they offer. Although programming varies widely due to campus needs and library staff expertise, some similarities emerge. Discussion groups, networking events or brownbag lunches on relevant topics are common, as are workshops and consultation services on topics including data management and visualization, scholarly communication, and programming languages (Hensley & Bell, 2017; Ippoliti, 2016).

Although the literature provides valuable information about the makeup and activities of library-based digital scholarship centres there is less research about how these centres were planned and built or how they have responded to the research needs of their particular institutions. Of the literature that exists, some common themes emerge. For example, a number of authors state that the development of their digital scholarship centre was informed by meetings or focus groups involving relevant faculty and students, although the process is not described in depth (Been, Lee, Hilyer, Malizia, & Thompson, 2016; Dallis, 2016; McCullough, 2014; Tzoc, 2016). Miller (2016) provided more detail about how one academic library nurtured campus partnerships and expanded infrastructure to create a digital scholarship centre. Common in the discussion is the sense of an organic evolution with spaces, technology, staffing, and collaborations changing and growing in response to institutional priorities, available resources, and researcher needs. However, there are few in-depth discussions of the consultation processes undertaken by library staff to ensure that the design and implementation of spaces and services associated with a digital scholarship centre are responsive to the expressed needs of the research community.

The present paper describes just such an initiative. The University of Calgary opened its new central library, the Taylor Family Digital Library, in 2011. The library is a technology-rich space, featuring a data visualization studio, media production studios and workstations, and collaborative and technology-enhanced workrooms. Since the library opened, additional key staff members have been hired or re-positioned to support these spaces including data visualization, digitization, research data, spatial and numeric data, and digital media. However, the services and programming supporting these connected but distinct areas had not yet been brought together in a cohesive, programmatic service offering, nor was there a dedicated physical space in the library for patrons to access these services, participate in instruction, or to engage in more long term research or project development in collaboration with library staff. I joined the library in the new role of Digital Initiatives and Scholarly Communication Librarian in February 2016 with a mandate to coordinate and implement just such a space and associated services. The library had already engaged in a strategic research

consultation with faculty members from three research areas that, through a series of workshops, identified six common research support needs: data and data repositories, digitization, space, skills training, funding for collaboration, and associated staff expertise (Hickerson, Lippincott, Ruddock, & Sadler, 2016). However, the workshops had primarily engaged faculty members in three research clusters (Arctic studies, smart cities, and visual analytics) that represented the disciplines of physical sciences, engineering, computer science, public health, social science, and environmental design. To accomplish the dual purpose of gathering feedback and opinions from additional humanities and fine arts researchers and to establish my presence on campus and meet future collaborators, an information-gathering exercise was undertaken. A timeline showing the sequence of activities described in this paper is shown in Figure 1.

Figure 1. Project timeline.

Methodology

This initiative gathered feedback from library staff and the research community at the University of Calgary to inform the development of a physical space and associated services that would support a wide range of disciplines and researcher profiles across the campus community. Because my position was new, I wanted to gather together the experiences and opinions of already established library staff members whose work intersected with digital scholarship. Additionally, I wanted to target researchers in fine arts and humanities whose needs for centralized infrastructure and technology support may be especially well-served by the library but whose feedback had not yet been systematically collected (Keener, 2015). As these meetings also served the purpose of establishing relationships between myself and the research community, I also wanted them to be relatively casual and open-ended. As such, I elected to design semi-structured interview protocols—one each for library staff and researchers—to elicit a consistent set of responses and allow interviewees to bring up other areas of concern or interest.

To develop an interview protocol other studies that interviewed faculty members were consulted. A report produced by the University of Colorado, Boulder was particularly helpful (Lindquist et al., 2013), as was a report from Ithaka S+R (Maron & Pickle, 2015). Although these two projects focused more specifically on digital humanities, the questions they asked researchers were easily adapted to the broader area of digital scholarship. This project employed two interview protocols: one to understand the current level of support that staff within Libraries and Cultural Resources were providing to researchers engaged in digital scholarship; and the other to understand the current activities and service needs of researchers engaged in digital scholarship (Appendix 1). For library staff, questions covered the scope of digital scholarship support provided, the

nature of digital scholarship collaborations between researchers and library staff, the way support is advertised and how skills are developed, and needs and gaps across campus for digital scholarship support. For researchers, some questions were similar but the protocol also asked about how researchers put together the necessary team to get their research done, how and where they find resources and services to support their research and teaching, how they keep current in digital scholarship, and what kind of local community or network they would like to see develop to support digital scholarship. Though the questions posed to the researcher group were built off of questions included in the 2015 strategic research consultation, they were broad and open-ended to avoid biasing feedback towards earlier conclusions.

The first interviews were conducted with colleagues in a technology-focused unit whose functional roles intersect most specifically with digital scholarship topics. Interviews were also conducted with other library staff members who self-identified as having been exposed to digital scholarship projects via liaison responsibilities, special collections, or collection development. Interviews were then conducted with faculty members, staff from other units, and students who were either already engaged in digital scholarship or teaching, or who were interested in applying digital scholarship methodologies to a future project. Initially, researchers were identified for participation in the study by library colleagues. A snowball sampling technique was also used where interviewees were asked to forward the researcher's contact information on to other interested researchers. This technique was successful in recruiting otherwise unknown participants, particularly graduate and undergraduate students whose research interests are often less visible to the library but are known to faculty members. In total, 15 participants from the library were contacted, and 23 participants from the researcher group.

To ensure the interviews were not intimidating for participants they were not recorded; instead, handwritten notes were used. The study was approved by the Conjoint Faculties Research Ethics Board at the University of Calgary, and interviews were conducted between February and August, 2016. The interview notes were transcribed and organized, and analyzed for overarching patterns and themes.

Results

Demographics

As shown in Figure 2, the study included 15 participants from the library group (100% response rate), and 20 participants from the researcher group (87% response rate). Participants were very open to the interview and generous with their time. Within the library group, there were nine participants with the job role of librarian, three participants who managed technology service units within the library, and three other professional staff with job roles relating to the university press, copyright services, and research data and data visualization. Within the researcher group, there were 11 faculty members, five PhD students, three recently graduated BA students, and one staff member. The researchers represented the following departments: English, Philosophy, Communication, Media and Film, Art, Creative and Performing Arts, Geography, Law,

History, and Languages, Linguistics, Literatures and Culture. Each interview lasted between 30 and 90 minutes, and all interviews took place in person, either in the interviewee's office, in the researcher's office, or in another on-campus location such as a coffee shop or faculty lounge.

Figure 2. Demographics of participants.

Themes

Notes from the interviews were read, coded, and sorted to reveal thematic similarities. Analysis of the interview notes from the library group revealed that while a sizable portion of library staff members were actively involved in digital scholarship projects to some degree, a more programmatic approach to supporting these initiatives was desired. While almost all staff interviewed had engaged in some level of formal outreach to promote digital scholarship related services and/or programming, the most common form of outreach mentioned was word of mouth. Many respondents indicated lack of effective communication channels as a barrier. Library staff members noted a number of gaps regarding lack of library capacity to respond to digital scholarship-related requests, such as metadata, text analysis, digitization (particularly of audio-visual materials), and a variety of statistical methodologies and tools. They cited a number of successful workshops and training initiatives, but noted the struggles of promoting and sustaining ad hoc events.

Other challenges mentioned by library respondents included technological challenges such as unstable software and defunct equipment, staffing challenges including lack of capacity, and some staff members' hesitation to occupy a service-oriented role. Related to this was the feeling that the library's vision of and commitment to digital scholarship projects was not well defined, and that this had hindered work in the area.

Analysis of the interview notes from the researcher group revealed three dominant themes: space and community, access to interdisciplinary collaborators, and training/consultation on digital scholarship tools.

Space and community

The highest volume of comments related to the desire for collaborative space where researchers could engage with and learn from others working on digital scholarship projects. There was a high level of recognition among respondents that digital projects are highly interdisciplinary yet the campus does not provide interdisciplinary work spaces for this purpose. Respondents voiced the desire for collaborative, creative, social, and supportive space that would act as a hub for researchers across campus. This space would allow researchers to develop their skills in digital scholarship and brainstorm with one another. Five respondents reflected on past experiences where projects suffered due to the fact that collaborators were not co-located, and as a result did not benefit from informal learning and communication opportunities. Respondents commented on the need for both casual, drop-in spaces as well as formal office space for longer-term projects. Many respondents also noted that learning new technology tools or research methodologies is easier in a group setting.

While the desire for collaborative, interdisciplinary space within the library was unanimous from respondents, many also recognized that interdisciplinary communities must be developed and nurtured for them to be successful. Nine respondents suggested events that would help build a community of researchers interested in digital scholarship. Suggested initiatives included a speakers series of outside experts, brownbag lunches to present works-in-progress or case studies, a monthly coffee hour, or a mentorship program between established and new digital scholars. Respondents voiced the opinion that social events had to be purposeful in order to attract and retain participants; as one scholar put it, “there has to be a point.”

Access to interdisciplinary collaborators

Closely related to the desire for interdisciplinary work spaces was a wish to find and develop relationships with potential collaborators from other disciplines including librarians and other library staff. Many respondents expressed the feeling of lacking the necessary vocabulary or knowledge to begin the conversation with a potential collaborator. As one humanist noted, “How would I find a research assistant who has data visualization experience? I don’t even know what to ask for.” Respondents recognized that in order to carry out a successful partnership with a scholar from another discipline they would need to develop shared vocabularies and understandings, and a model for mutually beneficial collaborations. Some respondents expressed confidence in the library’s ability to help develop these collaborations: for example, by developing an intake process for new digital projects that would formulate requests for collaboration or technical support in a fulsome manner. One respondent noted, “If someone could help me ask the key questions and formulate my request in an articulate way, that would help.” Three respondents also asked if the library could develop and maintain a pool of scholars who were interested in cross-disciplinary collaborations or provide funding to nurture nascent interdisciplinary projects.

Training and consultation on digital scholarship tools

All respondents expressed the desire to establish or develop skills in areas such as computer programming, web design, data cleaning, spatial data, metadata, and research project management. Some respondents simply wanted a better understanding of how particular tools could contribute to their research. As one respondent said, “I’d like to learn enough about Python and Java to be able to ‘speak the language’ with more technical collaborators.” However, others wanted to learn and master technical skills themselves. Respondents suggested that these needs could be met through a combination of consulting services and instruction offered through the library. Some participants stated that the library could host communities of practice centered around technical skills development.

Respondents mentioned the need to access tools or equipment that were unavailable to them such as scanners, audio-visual digitization tools, web hosting services, and certain media editing software programs. However, accessing tools was not a primary concern for researchers. Instead, respondents noted the tools they needed were available to them, but they needed to develop skills to understand and/or use them more effectively.

Minor themes that were also identified were funding and preservation. Two respondents expressed a desire for small pilot project grants that would help them develop a research concept to increase their chance of receiving larger external grants. Two other respondents expressed concern for the preservation of digital projects, wondering if the library had a plan for long term preservation and access to digital projects created by University of Calgary researchers.

Implementation

The issues brought up by participants in the interview process shared a number of similarities with the themes raised in the 2015 strategic research consultation (Hickerson et al., 2016). The findings from both consultation processes provided the library with a clear direction for advancing digital scholarship efforts. Through the renovation of existing library space and re-alignment/re-positioning of existing services the library established a new digital scholarship space and associated services called Lab NEXT. Lab NEXT has been conceptualized as “a constellation of services designed to support the evolving nature of academic research” (Libraries and Cultural Resources, 2016). Much of the work involved in developing this service constellation has involved aligning or better coordinating existing “stars” in terms of areas of expertise, services, and spaces. Focusing on improving communication and delivery of existing library services gave the library team a way to prioritize initial work in the digital scholarship space while working within budgetary constraints and operationalizing a newly renovated part of the library.

Renovation of library space

An existing library space of approximately 1800 square feet was renovated over the course of about 14 months to provide the type of flexible, collaborative space requested

by the community and desired by library staff. The renovation process was already underway when the interviews took place but the implementation, furnishings, and details were influenced by the interview data. The space consists of two bookable project rooms, a consultation office where library staff can meet with researchers, six high-performance computers for data analysis and workshop use, and flexible seating (Figure 3). The space combines both advanced and traditional technologies, such as large mobile display screens and moveable white boards. All furniture is on wheels to facilitate multiple uses of the space, and additional wiring and data cables were added to ensure adequate connectivity. A large visual display consisting of six digital screens installed together can be used for high impact presentations, data visualizations, and promotion of library services (Figure 4). Lab NEXT also includes a makerspace and a service desk. Student staff with expertise in digital media creation, computer programming, and makerspace technologies staff this desk, and circulate a variety of media creation tools and computer peripherals.

Figure 3. Floor Plan of Lab NEXT

Figure 4. Digital Display; photo credit Dave Brown

The project rooms in Lab NEXT are bookable through the library website, similar to other group work rooms, but can be booked regularly for an entire term as opposed to only by the week. This allows for research groups to guarantee regular meeting times. When not in use for this purpose the rooms are available for drop-in use. The renovation sought to create the collaborative, social, and flexible environment that researchers discussed in the interview process.

Alignment of services

Eight areas of library expertise and infrastructure are organized within Lab NEXT: digitization, geographic information services, metadata services, data management, repositories and publishing, measuring research impact, and data visualization. The staff with functional responsibilities in these areas are all in the same organizational unit making this alignment easier to accomplish. For some, the alignment was primarily a change in the way services were promoted to the campus community. For others, such as metadata services, the shift was a more fundamental repositioning of what had been a traditionally “back of house” role to a more outward facing source of expertise and consultation. This shift was explicitly reflected in the job description of a new metadata librarian hired in 2017.

The functional areas reflected in Lab NEXT respond to the needs expressed by the campus community for expertise and training in particular areas as well as other infrastructure and expertise that support different components of the digital scholarship lifecycle.

Training and consultation on digital scholarship tools

Before the space was operational, library staff members whose areas of expertise aligned with Lab NEXT's service areas began to offer and promote workshops in a coordinated fashion during the University of Calgary's "Block Week." Block Week occurs at the beginning of both fall and winter semesters and is designed for the compressed delivery of regular courses. Because not all faculty and students are involved with Block Week, this period proved to be popular for elective library workshops. Library staff offered workshops organized around three major parts the research lifecycle: research planning, working with data, and scholarly communications. Staff continued to offer well-established classes, but where possible new classes were added to respond to researchers' expressed interests and preferences. A partial list of workshops, which were also offered during other parts of the year, are listed in Table 1:

Table 1

Workshops offered via Lab NEXT

<u>Title of Workshop</u>	<u>Category of Workshop</u>
Creating a data management plan	Research planning
Research project management (new)	Research planning
Qualitative data analysis using nVivo (new)	Working with data
A gentle introduction to GIS and spatial data (new)	Working with data
Tableau	Working with data
Cleaning data with Excel and Open Refine (new)	Working with data
Tools for Digital Pedagogy: Omeka and Scalar (new)	Working with data
Introduction to programming with Python (new)	Working with data
Manage your research identity with ORCID (new)	Scholarly Communications
Manage your research identity and track your impact	Scholarly Communications
PRISM Digital Repository Upload-a-thon (new)	Scholarly Communications

The workshops were promoted via partnerships in the Faculty of Graduate Studies, the Postdoctoral Office, via liaison librarians, and through social media channels. Additionally, the library's 2017 website redesign organized information under the Lab NEXT banner, making workshop opportunities easier to find.

When Lab NEXT opened in November 2017 staff held open office hours every afternoon to offer walk-up assistance in the eight functional areas. The consultation

service was promoted during workshops, on the library website, and via social media. These initiatives were undertaken to respond to researchers' desire for training and advice on digital scholarship tools, although the library was not able to respond to all needs identified by both researchers and library staff due to lack of staff expertise and knowledge.

Cultivating interdisciplinary research and community

The library is also responding to researchers' needs pertaining to access to interdisciplinary collaborators, community, and library expertise through an externally-funded research project. The project entitled *Academic Research and University Libraries: Creating a New Model for Collaboration*, involves providing subgrants for interdisciplinary research projects that engage with the library in new and innovative ways. Subgrants incentivize research collaborations between disciplines and must engage with the library's digital scholarship expertise. The goal of this project is to explore and receive input on the necessary components and mechanisms for academic libraries to provide a research platform supporting multidisciplinary research. Preliminary results have demonstrated new and deeper collaborations between library staff and researchers, in particular in metadata, digitization, web development, and data visualization (Hickerson et al., 2018). The flexible, collaborative nature of Lab NEXT and affiliated spaces has enabled the library to host regular project meetings as well as special events such as project launches for some of these subgrants.

Evaluation

An initial evaluation of Lab NEXT spaces shows that the implementation of two bookable project rooms has been relatively successful, with the rooms being occupied about 30% of the time they are available. Usage has come from ongoing research projects and students engaged in collaborative research projects. Both the collaborative screens and the whiteboards are used heavily. It is anticipated that use will increase as the spaces continue to be promoted and word spreads across campus.

The combination of technology and a relatively enclosed space where food and drink are permitted has made Lab NEXT popular for special events such as research project launches, technology-intensive workshops, and networking events. Inviting campus groups to use the space in this way brings diverse members of the campus community into the library and has served as a way to learn about unmet needs that library expertise may be able to fill. An example of this occurred when an interdisciplinary paleography working group discovered library staff's expertise in text encoding at a library-hosted event.

Instructors have also requested to use Lab NEXT to facilitate technology-enriched group learning; however, not all proposals have aligned with the priorities and expertise of the library. As a result, the library has had to develop policies for using the Lab NEXT space in order to ensure that it is used in a manner consistent with Lab NEXT's aims and goals. For example, an English class that covered topics such as text encoding and text analysis using library collections was permitted to use the space, while a

psychology class that primarily needed the space to use the large number of digital screens was not.

The staffed consultation office was not successful, with staff receiving very few walk-in consultations. Consultation services have been adjusted to be offered on-demand and opportunities to make an appointment with staff in a specific functional area are advertised on the library website and through staff members' email signatures.

Consolidating workshops into a single week and promoting them together under the Lab NEXT banner has been a success for both library staff and participants. One of the primary benefits is that library staff do not have to expend effort promoting individual classes, and overall attendance in workshops has risen. For example, the number of registrants in data visualization workshops has increased since 2016, the year they were consolidated with other workshops (Figure 6). Newly-developed workshops have also been well attended. Library staff are also beginning to partner with other university units (e.g. Teaching and Learning, Office of Institutional Analysis, Research Services Office) to deliver workshops collaboratively. This has allowed the library to provide a wider range of instruction relating to digital scholarship topics, and benefits other units that do not have space or infrastructure to host or manage events. In addition, library staff have noticed that many library patrons attend multiple workshops during the Block Week period, and in post-workshop surveys participants have indicated that they appreciate the opportunity to enroll in workshops over the course of a week rather than over an entire semester.

Figure 5. Average number of attendees per data visualization workshop, 2014-2017.

Once the *Academic Research and University Libraries: Creating a New Model for Collaboration* research project is complete the library expects that many of the outcomes will be reflected in changes to service offerings, modes of research collaborations, and methods of nurturing interdisciplinary communities. For example,

web development was not initially identified as a core component of the research platform, subsequent researcher demand has shown that this service is a valuable asset to the research community on this campus (Hickerson et al., 2018). Additional evaluation and assessment will be required to at this time to prioritize future work in the digital scholarship space.

Recommendations

For other libraries considering renovating an existing space, or developing a new space for a digital scholarship centre, this project offers some lessons learned in terms of physical space design and service planning and delivery. Based on results from the strategic research consultation, the interviews, and initial operationalization of a physical space, recommendations include:

- Pay close attention to seemingly small details in the physical space. Features such as ample electrical outlets, acoustically effective wall panels, and placement of doors can have a large impact on the usability of the resulting space.
- Learn from other libraries but also be responsive to the needs of your local community. The decision to hold regular office hours in Lab NEXT was made due to other libraries' reports of this being an effective strategy, but when it was not effective in Lab NEXT, it was discontinued.
- Be prepared for unexpected use cases. The library did not expect to be approached by instructors to use Lab NEXT for regular classroom use. We quickly developed a policy for fielding these requests in a way that is consistent with our primary aims.
- Think through access and use policies of your space carefully. The Taylor Family Digital Library is heavily used by students; as such, Lab NEXT is open for anyone who wishes to use it. This can create tensions between undergraduate students using the space as a study area and research teams using the space for digital scholarship activities.
- Be responsive to the expressed needs of your community while leveraging the library's existing strengths. As might be expected, this consultation process resulted in a long and diverse list of services requested by scholars. Instead of trying to respond to all of these, Lab NEXT has focused on adapting and extending programming in existing areas of strength. This approach makes better use of limited staff resources.

Conclusion

The goal of this project was to inform the creation of a digital scholarship space and associated services that would respond to the articulated needs of University of Calgary scholars. By conducting interviews with a wide range of arts and humanities scholars as well as library staff members, this project gathered additional evidence about scholars' research support needs to complement the 2015 strategic research consultation that gathered feedback in a workshop format. The library used this evidence to inform the renovation of library space, and to realign and add to an existing consultation and instruction service. Conducting casual and yet systematic interviews with a range of scholars was a successful way to gather evidence about scholar needs and preferences, and generated a valuable dataset from which a number of consistent findings emerged. An equally important result was the ability to learn about a broad range of campus scholars already engaged with or interested in the broad area of digital scholarship. As such, this technique may be of interest to other academic libraries who are interested in developing spaces or services oriented towards digital scholarship.

The library has responded to the needs and preferences expressed in interviews and consultation with Lab NEXT, a physical space and associated service model that spans eight functional areas common to many digital scholarship centres. Offering workshop series using consistent outreach messaging and branding has helped to increase the impact of these educational offerings. An externally-funded research project has provided opportunities for interdisciplinary partnerships. The library has been able to experiment with new types of collaborations and relationships with researchers, and is positioned to help shape and inform the direction of interdisciplinary collaborations. Both of these initiatives are contributing towards the formation of interdisciplinary communities interested in digital scholarship. Consultation and partnerships on digital scholarship projects are resource intensive, and scaling them up to serve projects beyond those with dedicated funding is a well-documented challenge (Vinopal & McCormick, 2013). Additional research on how digital scholarship centres adapt, build, and sustain communities and collaborations are beginning to appear, and makes clear that flexibility and adaptability will be required from these centres as research needs change over time (Green et al., 2017).

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