ASCENDING TO NEW HEIGHTS:
A Jumpstart Program to Prepare Students for Careers in Library Technology

Tori Culler, Kevin Beswick, and Robin Davis*

INTRODUCTION

The Library Technology Career Jumpstart Program is a new initiative from NC State University Libraries held for the first time virtually August 3–7, 2020. The program is a free, immersive, week-long experience that helps to prepare first-year library school students for a career in library technology upon graduation. Program components include technical skills workshops on topics such as version control with Git and GitHub, coding in Python, and web development, as well as a variety of other professional development opportunities including résumé and interview preparation and one-on-one mentorship.

The impetus for this program stemmed from observations we made in our organization as well as what we were hearing from our colleagues at peer institutions: recruiting for technical positions in libraries is difficult. Library and Information Science students have differential opportunities to build the skills they need to be successful in technical roles, and we wanted to help fill the gap.

Though our university does not offer an LIS degree pathway, we recognized that our library system is uniquely positioned to offer a program like this. In not having a graduate program in LIS, we have the freedom and bandwidth to provide supplemental opportunities to enhance students’ education. NC State University Libraries are well regarded for their unique spaces and services, their commitment to emerging technology, and their spirit of experimentation and innovation. Offering a program such as this is one way for us to invest in the future of library school graduates.

PROGRAM DESIGN

Environmental Scan

Beginning with an environmental scan was instrumental in giving direction to our original vision. The environmental scan consisted of conversations with key stakeholders including current library school students, library school administrators, and our colleagues who hold technology-related positions. The goal of these conversations was to

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explore the problem space and identify the ways in which a program like Jumpstart might be able to contribute effectively.

In speaking to students, we were interested in learning more about their career interests and expectations as well as which skills they were currently building in their graduate program and opportunities they would like for additional growth. When speaking with library school administrators, we wanted to know whether or not they thought this program would be valuable to their students and, if so, which components they would like to see included. We also had high-level logistical questions, including how to market the program to students, what the best time of year to hold it would be according to the academic calendar, etc. And in speaking with our colleagues, we were curious to know what skills they used most in their day to day work and how they built those skills. Had they had the opportunity to build these skills in school or on the job? Or were they self-taught? What would they have found most helpful to be included in a program like this when they were still in school?

Taken together, these conversations led to key insights that informed the rest of our program planning. We learned that library schools really vary in terms of what their curricula cover: some students have ample opportunity to take technical courses in coding or data wrangling, while others have none of these types of classes available to them. Relatedly, those that currently work in technical roles in our Libraries generally reported having built their skill set outside of their formal library school coursework, either through internships, part-time jobs, or other extracurricular opportunities. Given this, both library school students and administrators indicated a desire for additional opportunities to build up a technical skill set. Students want a roadmap to help guide them along the process of figuring out the technical career options available in libraries and how to get there.

**Honing Our Vision**

The things we learned from our environmental scan informed our vision and guiding principles. Articulating our ethos allowed the planning committee to cohere around a shared understanding of our desired outcomes and also served as marketing copy we used on our program website and in outreach to potential applicants.

**Jumpstart Program Vision Statement:**

“We seek applicants who share our Libraries’ strategic values that include Diversity, Access, Experimentation, Agility, Collaboration, and Delight. As you answer the short questions in this application, we encourage you to share how these values play a part in your experiences and professional goals. You may also want to review our Libraries’ Diversity & Inclusion Statement.”

**Jumpstart Program Guiding Principles:**

The Jumpstart Program seeks to...

- Increase awareness of technology careers in libraries
- Increase diversity (broadly defined) in this area of the profession
- Impart strategies for learning technical skills
- Provide concrete steps forward towards a career pathway in library technology
- Create a welcoming and inclusive space where a diverse cohort can learn from each other
- Foster a community of professional and interpersonal support

**Application & Recruiting Process**

We aimed to build a cohort of 6–10 highly motivated candidates with a demonstrated interest in pursuing a career in library technology, a commitment and willingness to learn technical skills, and a persistent and creative approach to solving problems. Because we knew that some LIS programs do not offer a wide range of technical courses, we agreed to prioritize a candidate’s motivation to learn about library technology over any past experience with it.
Application

We kept the application short in length in order to keep it as welcoming and inclusive as possible. A long web form could be intimidating to some applicants, so we limited ourselves to asking four short answer questions and for a résumé. We made use of help text to ensure that applicants understood what we were asking for. The goal of our form design was to encourage an applicant's best application, rather than designing a form to trip them up or ask trick questions. To see our full 2020 application form, please refer to Appendix A.

We wrestled the most with the final short-answer question: “Please tell us about your commitment to diversity, equity, and inclusion.” We asked this question because we wanted to know how much applicants themselves valued being a part of a diverse cohort, and we wanted to give applicants space to tell us the ways in which they could bring their own unique perspectives to the program. Because this question could feel like an intimidating test question, particularly if applicants had never encountered anything similar before, we included help text: “We would like to know how you would contribute to fostering a learning environment that prioritizes diversity, equity, and inclusion. This can include specific things you have done or plan to do to further your knowledge. For more information about writing a diversity commitment statement, we recommend The Effective Diversity Statement (it is aimed at faculty members, but the suggestions are generalizable).” We included a link to “How to Write an Effective Diversity Statement” by Tanya Golash-Boza, who illustrates how to write about one’s own identities and experiences in answering this kind of question. For students who may have felt pressure to “whitewash” other kinds of applications, we specifically wanted to point out that we welcomed hearing about their backgrounds, if they wanted to discuss it. Including this question in our application was somewhat effective, but as we examined all submissions, it was clear that some applicants struggled to answer it. We therefore decided to remove the “diversity commitment” question from the 2021 application, replacing it with a different required short-answer question: “How have your personal experiences shaped your perspective on libraries, technology, or both?” We included help text: “We aim to foster a learning environment that draws from a wide variety of perspectives and experiences. Optionally, you can include your perspective on how diversity, equity, and inclusion relate to library and technology work.” Additionally, we included two optional free-text fields: “Your race or ethnicity,” and “Is there anything else you would like us to know in considering your application?” the latter of which included help text: “Tell us here if there are aspects of your identity that you would like us to know about—for example, if you are a first-generation college student or a veteran. You can also use this space to ask questions, voice a concern, or add something that you think we should have asked about.” We hope that these more straightforward, open-ended questions, with their specific examples, will be more effective and welcoming for our applicants.

Recruiting Process

We relied on a variety of outreach methods to spread the word about this brand-new program: campus visits, webinars, email blasts, social media, and our library website. In late Fall 2019 and early Spring 2020, several members of the Planning Committee visited local LIS programs to give an in-person presentation about the Jumpstart Program. These were successful—students from each of these graduate programs applied to Jumpstart. For applicants farther afield, Planning Committee members held live informational webinars that were open to the public. We sent emails promoting the Jumpstart Program to LIS graduate program coordinators; LIS diversity, equity, and inclusion programs and group listservs; and direct contacts at various institutions. In order to build interest early, we sent save-the-date emails in Fall 2019, followed by an announcement that applications were open and a final reminder toward the end of the application period. Before the application was officially open on our website, we encouraged anyone who was interested in the program to sign up for updates about the program with a short web form. Once we were accepting applications, we sent reminders to the 16 people who signed up. We also utilized social media to promote the program via NC State University Libraries’ Twitter and Instagram accounts Additionally, some Planning Committee members shared information on their personal accounts, making use of existing professional networks. By taking advantage of a variety of outreach methods, we hoped to market the program to as large and diverse a population as possible.
We assessed the effectiveness of our outreach effort by including an optional question on our application form, “How did you learn about the Jumpstart program?”, which most applicants elected to answer. Nearly half reported that they had heard about the program through a professor, instructor, or advisor. (We were unable to assess how those referrers heard about our program themselves, but guessed that it was through email and, to a lesser extent, social media.) Applicants also reported that email blasts had been effective. Social media, webinars, and the Fellows presentation were less effective, according to applicants’ self-reported answers to this question. In total, 49 people applied to the Jumpstart Program, representing 23 different graduate programs. With those numbers, for a program in its first year of existence, we considered our marketing and outreach efforts to be successful.

How did you learn about the Jumpstart program?

<table>
<thead>
<tr>
<th>Method</th>
<th>Number of Applicants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor, instructor, or advisor referral</td>
<td>22</td>
</tr>
<tr>
<td>Email blast</td>
<td>9</td>
</tr>
<tr>
<td>Other personal referrals</td>
<td>6</td>
</tr>
<tr>
<td>Webinar or presentation</td>
<td>4</td>
</tr>
<tr>
<td>Social media</td>
<td>3</td>
</tr>
<tr>
<td>Online listing</td>
<td>2</td>
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<tr>
<td>NC State University Libraries website</td>
<td>2</td>
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After the application period closed, the Planning Committee read through each application and résumé. We invited 13 applicants to a 20-minute interview over Zoom video conferencing. In this interview, two members of the Planning Committee asked to hear more about candidates’ graduate programs and career interests, as well as the question, “What’s a technology that you find exciting right now? (It doesn’t have to be related to libraries.)” Candidates were also invited to ask us any questions they had about the program. The Planning Committee met again to discuss the 13 candidates, ultimately selecting eight to invite to participate. Our acceptance rate was 16%. All eight finalists accepted our invitation and took part in the program.

The Inaugural Cohort

Our cohort represented a range of racial backgrounds, genders, sexualities, and abilities. For some participants, LIS was a second career and represented a return to school after working for a number of years. Geographically, half of our cohort attended programs in North Carolina. Other participants hailed from nearly every other time zone in the continental United States. Six participants had already begun their LIS graduate programs; one had been accepted to an LIS program but had not yet begun; and one had applied but had not yet been accepted by the time they submitted their application.

LIS graduate programs represented in the Jumpstart cohort:
• University of North Carolina, Chapel Hill (two)
• University of North Carolina, Greensboro
• North Carolina Central University
• University of California, Los Angeles
• San Jose State University
• University of Illinois, Urbana-Champaign
• University of Tennessee, Knoxville

Participants’ career and research interests were diverse: systems librarianship; metadata; knowledge management; diversity, equity, and inclusion in libraries; web accessibility; human-computer interaction; user experience; digital archives; digital scholarship; and digital humanities.

**PROGRAM IMPLEMENTATION**

**Schedule**

We designed our schedule to be accommodating to participants across all mainland US time zones. We began at 12pm Eastern time, and ran until 5:15pm (with an optional 30 minute office hour), and included lots of breaks throughout. This is what our final schedule looked like:

<table>
<thead>
<tr>
<th>Time</th>
<th>Monday August 3, 2020</th>
<th>Tuesday August 4, 2020</th>
<th>Wednesday August 5, 2020</th>
<th>Thursday August 6, 2020</th>
<th>Friday August 7, 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:00–12:30pm ET</td>
<td>Jumpstart welcome! Overview of the program, introductions, &amp; norm-setting</td>
<td>Daily check-in</td>
<td>Daily check-in</td>
<td>Daily check-in</td>
<td>Daily check-in</td>
</tr>
<tr>
<td>12:30–12:45pm</td>
<td>Break (15 minutes)</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>12:45–1:45pm</td>
<td>Welcome, continued</td>
<td>Career Paths in Library Technology</td>
<td>A Day in the Life of a Tech Librarian</td>
<td>Applying to Your First Library Tech Job</td>
<td>Technology Showcase</td>
</tr>
<tr>
<td>1:45–3:00pm</td>
<td>Break (1 hour 15 minutes)</td>
<td>Workshop: Intro to Git &amp; GitHub</td>
<td>Workshop: Intro to Python (Build a Twitter Bot)</td>
<td>Workshop: Intro to Web Development</td>
<td>Workshop: Intro to Machine Learning</td>
</tr>
<tr>
<td>4:00–4:15pm</td>
<td>Break (15 minutes)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4:15–5:15pm</td>
<td>Workshop, continued</td>
<td>Workshop, continued</td>
<td>Workshop, continued</td>
<td>Workshop, continued</td>
<td>Closing Reflections</td>
</tr>
<tr>
<td>5:15–5:30pm</td>
<td>Break (15 minutes)</td>
<td></td>
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<td></td>
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<tr>
<td>5:30–6:00pm</td>
<td>Optional office hour</td>
<td>Optional office hour</td>
<td>Optional office hour</td>
<td>Optional office hour</td>
<td></td>
</tr>
</tbody>
</table>

**TABLE 1**

2020 Jumpstart Schedule
Session Types

We wanted to strike a balance between the hands-on workshops that participants may expect from a program like this with sessions about the library technology profession itself. Our program content was largely divided into three categories: hands-on workshops, panels, and big-picture sessions. We also included a set of asynchronous content that participants could review after the program.

Hands-on Workshops

In developing our menu of technical workshops, we acknowledged upfront that we wouldn’t be able to go in depth with any given topic in the span of one week. Our goal, therefore, was to introduce participants to a range of technologies and leave them with next steps for delving deeper after the program wrapped. We selected a variety of technologies that were focused on skills that we would like to see in applicants to our entry-level positions at the Libraries, but also ones that are broadly applicable across the different areas of library technology. Workshop leaders met as a group several times leading up to the program to ensure that the workshops had some connection and flow between them.

Day 1: Intro to Git & GitHub—We began with an introduction to version control using Git software and the GitHub service so that participants could develop an understanding of the type of collaborative workflows they might encounter in library technology positions. Starting with Git and GitHub also allowed participants to get used to saving their work in a repository early on so that they might continue to practice using these tools for their work throughout the rest of the workshops. Our hope was that GitHub could serve as a portfolio for participants that they could continue to add to and build up after the program ended as well.

Day 2: Intro to Python with Twitter Bots—We chose Python as the programming language to use throughout the rest of the workshops. Because participants were mostly in the early stages of their journey of building their tech skills, we thought staying consistent was important. Python is a common first language for beginners and one that is widely used in the field. In this workshop, we introduced participants to Python by walking them through the process for how to create a Twitter bot (a program that generates automated tweets)—a challenging but accessible and engaging exercise with clear outputs that left participants feeling accomplished.

Day 3: Intro to Web Development—Much of the work we do in libraries and archives involves discovery and delivery of resources and information to end users. The foundation of how we do that work is the web. In this workshop, we built on some of the Twitter bot work to create a web application via which users could add, display, edit, and remove content generated by their bots. Participants were introduced to how information flows on the web, and they gained hands-on experience creating web applications that stored and retrieved information from a database and displayed it back to users using technologies like HTML and CSS.

Day 4: Intro to Machine Learning—The first three days of the program covered foundational skills, but we chose one that would be a “stretch” day, giving participants a glimpse of an up-and-coming area in library technology. In this workshop, participants were introduced to machine learning and how it is being applied in the LIS context as well as tools commonly used in this type of work, such as Jupyter Notebooks. They gained hands-on experience creating a machine learning model using real library data.

Panels

In addition to our technical workshops, we thought that it was important for participants to hear from current library technology professionals about how they arrived in their current role and what it is like to work in the field. We created the “Day-in-the-Life” and “Career Path” panels to touch on these topics and to include perspectives from a wide array of staff at various levels, from early career, to mid-level management and administration, to a range of technical departments and roles across the library. Our goal with these panels was to draw connections between the skills we were introducing the participants to and the work that actually happens in libraries. We wanted to make it clear to participants that you don’t necessarily need a computer science background to get into library technology, and that you can begin the process of setting yourself up for success as a library technologist.
early in your graduate program. By curating a diverse set of panelists, we hoped that participants could make connections with some aspect of their own background or experience, and that the panelists’ messages would resonate with them.

In a similar vein, the Technology Showcase panel was a chance for participants to get a better sense of the types of projects that they might get to work on someday as library technologists. Participants were introduced to projects that spanned a wide array of topics and departments—from a IIIF annotation project out of our Digital Library Initiatives department, to a workflow automation project from Collections & Research Strategy, and a web accessibility project from User Experience. Participants reported that this session in particular allowed them to truly envision what a career in library technology might look like and how the skills they were learning with us fit in with that.

**Big Picture Sessions**

We held two big-picture sessions led by Libraries HR and administration. In the “Applying to Your First Library Tech Job” panel, Jennifer Garrett, then our Director of Talent Management, and Jason Ronallo, the department head of Digital Library Initiatives, covered topics such as resumé dos and don'ts, what to expect from a technical interview session, what a sample in-person interview schedule and set of questions might look like. The Q&A session with Greg Raschke, Senior Vice Provost and Director of Libraries, and Jill Sexton, Associate Director for Digital and Organization Strategy, was a chance for participants to learn about the organizational structure of a library system from a high-level perspective and to gain insight into what Libraries administrators see as the future of library technology.

**Asynchronous Content**

Given that the program was originally scheduled as an in-person event but had to be converted to a virtual format, we had to cut several of our planned sessions. Rather than cutting them entirely, however, we organized a bundle of asynchronous content and offered participants this material in a variety of mediums. We included additional “Day-in-the-Life” and “Career Path” profiles in the form of one-page summaries of each of our panelists’ job duties and career advice for students and early-career professionals. We also created “Technology Showcase” content, including links to the presentations that were part of the synchronous panel as well as links to slide decks and video presentations highlighting additional projects. “Building A Portfolio + Your Web Presence” discussed how to control how you appear in a web search and how to showcase yourself and your work. This slide deck covered the pros and cons of joining academic social networks and walked participants through the process of writing a reusable bio and sketching out a plan for their web presence. Finally, we included “Navigating the Profession,” a video showcase in which panelists answered questions about navigating the profession as an early career librarian. Participants reported that having access to this content to refer back to later, perhaps when they are looking to begin the job application process, was an added bonus that they appreciated.

**Virtual Delivery**

Originally, the Jumpstart program was meant to be an in-person event, but the COVID-19 pandemic forced us to rethink the delivery and format of the event. We were initially disappointed that we couldn’t offer the all-expenses-paid event in Raleigh we had envisioned, but found that the online format was in many ways more inclusive. Being online meant that people didn’t need to travel, which may have disadvantaged those who couldn’t be away from home for a full week. Delivering our program remotely over Zoom meant that we needed to condense our schedule to minimize Zoom fatigue as well as accommodate participants joining from other time zones, which had the added bonus of giving participants more time to process what they were learning and giving the Planning Committee more preparation time each day. Finally, being online, we were able to offer live captioning to all of our sessions, as well as easily record them so participants could re-watch at a later time.
Delivering the program online posed several challenges that necessitated different approaches than we might have taken with an in-person program. We used Zoom to deliver our program, and while the popularity of Zoom has taken off due to the pandemic, we couldn't assume everyone would be familiar with that platform. We offered introductions to Zoom, and the particular features we would be using during the program such as breakout rooms for those who wanted it. Leading up to the program, we sent out a pre-program tech and accommodations survey to learn more about participants’ computing environments, whether they needed to borrow a computer from us, and accessibility needs. We also sent emails over the few weeks leading up to the program explaining program logistics, the mentorship component, and solicitations for participating in our research study.

Being online and having a condensed schedule, we wanted to ensure that we could front-load the setup for technical workshops to minimize the amount of time participants had to spend troubleshooting setup issues related to their computing environment during the workshops themselves. We offered an “install-fest” in the weeks leading up to the program: we sent participants directions to install all prerequisite programming languages and tools, and scheduled one-on-one meetings with each participant. In these meetings, we either went through the directions with participants, or if they had done it on their own, we used the time to answer any questions they had, troubleshoot any issues they ran into, or just answer general questions about the program. The extra time we spent helping participants get set up ahead of time meant that we could spend more time on the content of the workshops rather than setup or troubleshooting environment issues. We therefore found the “install-fest” to be a critical part of preparations for the program.

We facilitated cohort building by kicking off the program with a group norm setting exercise, starting each day with an icebreaker and a reflection session, and encouraging participants to engage with one another in a Slack community that they created and maintained. We also used Padlet, an anonymous bulletin board application, as a catch-all board where participants could ask questions, provide feedback and prompt discussion on any topic. Had we been in-person, there would have been the opportunity to host social events and prompt more casual conversations, but the strategies we used in lieu of these options were a decent stand-in.

To help participants stay organized and keep track of all the resources we provided them with throughout the program, we used a shared Google Drive folder. We organized this folder into three subfolders.

1. “Pre-program Materials”, where we included the workshop setup instructions, informed consent to the assessment, and code of conduct for the program.
2. “Program Support Materials”, where we put session materials including slides, recordings and transcripts, as well as our asynchronous content.
3. “Post-program Materials”, which included a document of potential next steps for anyone who wanted to delve further into anything we covered in the program.

**Mentorship**

We approached mentoring and networking by setting up a formal one-on-one mentorship program and hosting daily office hours. We referred to participants’ application materials and notes from our interviews with each participant to ascertain their interests and career goals so that we might pair them with a mentor with a similar background from within our organization. We gave each mentor a guide with which to establish the relationship, and set the expectation that each mentor and mentee would meet at least once during the week of the program and at least once sometime afterwards. As a further opportunity for networking and learning, the daily office hours were an optional half-hour at the end of each day of the program where the day’s workshop leaders as well as the planning committee were present to answer any additional questions they may have had that weren’t able to be addressed during the day. In addition to the formal mentorship program and the optional office hours, we were also sure to consistently reiterate that participants should consider any person that they met during the week as a new professional contact that they could feel free to reach back out to when needed. We wanted to establish a friendly atmosphere in which participants felt part of a supportive professional community.
ASSESSMENT

In terms of assessment, our intentions were to garner feedback on ways to improve the program for future cohorts and to measure what sort of short- and long-term impacts participation in the Jumpstart Program may have had on participants’ perceptions of and intentions to pursue careers in library technology. To meet these objectives, we designed a post-program general satisfaction survey as well as pre- and post-program knowledge and attitudes surveys. We also conducted a series of six-month post-program interviews. Please refer Appendix B to see our surveys and interview protocol in full.

General Satisfaction Survey

One of the most notable findings from the post-program general satisfaction survey was that all seven participants who completed it strongly agreed with this statement: “I am likely to recommend the Jumpstart Program to other LIS/IS students.”

There were also several open text fields on the survey that solicited both positive and constructive feedback. In terms of positive feedback, participants reported that hearing from technologists at our Libraries helped to demystify careers in library technology, that the various Q&A sessions allowed them to begin to make connections about how the technical skills they were building might be applied on the job, and that they appreciated the structure of the program, including, for example, all of the asynchronous content that was provided. One participant wrote:

“The workshops provided enough direction for me to identify possible interests in lib tech and explore things further on my own. I also really value the mentorship and getting to know the librarians at State. I plan on staying connected with them as I build toward a career in lib tech. There is a huge need for exactly what Jumpstart is offering so I would definitely recommend this program to other LIS students and am really excited to see the program hopefully continue in future years and expand.”

In terms of constructive feedback, common sentiments included a desire to have more opportunities for cohort building, the need to have more pre-work or contextualization before arriving, and suggestions on how to streamline the troubleshooting process. It was also suggested to us that in the future, the program should be “born accessible” as much as possible, as opposed to relying on accommodation requests alone. This is a great suggestion and something we are better prepared for next time. Instead of waiting for someone to request captioning or longer break times, for example, we plan to offer these things as the default, acknowledging that accessible practices benefit everyone.

Pre- and Post-Program Knowledge and Attitudes Surveys

The pre- and post-program knowledge and attitudes survey included the following statements, which were rated on a five-point Likert scale ranging from “strongly disagree” to “strongly agree”:

I know what technical skills I need to learn to be successful as a librarian.
I’m not sure how to learn the technical skills that I need.
I am confident in my ability to learn the technical skills that I need to know.

Participants’ answers to these questions saw at least one degree of improvement across all the respondents (four of eight total participants).

In addition, participants either agreed or strongly agreed with these statements on the post-program survey: “I learned a lot about technical careers in libraries” and “I learned a lot about the technical skills I will need to be successful as a librarian.” All participants strongly agreed with this statement: “The Jumpstart Program felt like a valuable use of my time.”
Six-Month Follow-Up Interviews

Our hope with the six-month follow-up interviews was that they would reveal any potential long term shifts in thinking or career planning that may have occurred. What we heard from participants was that the Jumpstart Program both confirmed for them their interest in library technology careers and introduced them to career opportunities in library technology they hadn't considered before. They also reported that it did have some impacts on the types of courses and internships they pursued and the confidence with which they approached them.

Participants reiterated that they would recommend the program to other library school students. They were also asked to describe the program in their own words. One participant’s description of the program was heartening in how closely it aligned with our original program vision and objectives:

“I don’t think it’s like a boot camp… it’s more like a space to introduce students to this world so that they make better choices about what they want to learn and how they want to spend their time in grad school.”

Limitations

One major limitation of our assessment measures is their informality: these results were not statistically rigorous by any means. In addition, while our participation rate was high for the general satisfaction survey (seven of eight), our participation rate for the pre- and post- program knowledge and attitudes surveys was low, with only four of eight participants completing both. Similarly, only three participants completed the six-month follow-up interviews. While feedback was generally positive and indicates that the program accomplished many of its objectives, it’s hard to draw any strong conclusions given the low participation rates. In the future, we are considering requiring participation in our assessment measures as a condition of acceptance to the program.

NEXT STEPS

Based on the positive response to the first iteration of the program, NC State University Libraries is planning to offer the virtual program again on August 2–6, 2021. We will use the lessons learned from our inaugural offering and our assessment efforts to improve the program for the incoming cohort. Additionally, we are interested in collaborating with other organizations to expand this program and have created a how-to guide for hosting a program like this across contexts. This how-to guide can be accessed at lib.ncsu.edu/jumpstart/framework.

ACKNOWLEDGEMENTS

The authors would like to recognize two other planning committee members whose work continues to be invaluable in seeing this program through: Natalia Lopez, Lead Librarian for Data Instruction; and Jennifer Garrett, Associate Director for Organizational Design, Equity, and Talent. We would also like to thank the many other colleagues of ours who helped to see this program through by facilitating workshops, participating in panel discussions, and creating asynchronous content.

NOTES

APPENDICES

APPENDIX A. APPLICATION TEXT

The application deadline is March 31, 2020.

Eligibility requirements:
- Must be enrolled or accepted to an ALA-accredited graduate degree program
- Must have an anticipated graduation date of December 2020 or later

If you have questions or concerns, please contact Tori Culler (tculler@ncsu.edu).

Tell us about yourself

Your name [______________________]
Your email address [______________________]
Your phone number [______________________]
Upload your resume [__Upload__]

Tell us about your graduate program

Are you currently enrolled in an ALA-accredited library & information science (LIS) graduate degree program? [Yes / No, I’ve been accepted into an LIS program but I am not yet a current student / No, I’ve applied but have not yet been accepted]

Which school do you attend or plan to attend? [______________________]
When is your anticipated graduation date? [______________________]

As a reminder, the Library Technology Career Jumpstart Program seeks to:
- Increase awareness of technology careers in libraries
- Increase diversity (broadly defined) in this area of the profession
- Impart strategies for learning technical skills
- Provide concrete steps forward towards a career pathway in library technology
- Create a welcoming and inclusive space where a diverse cohort can learn from each other
- Foster a community of professional and interpersonal support

We seek applicants who share the Libraries’ strategic values, which include Diversity, Access, Experimentation, Agility, Collaboration, and Delight. As you answer the short questions in this application, we encourage you to share how these values play a part in your experiences and professional goals. You may also want to review the Libraries’ Diversity & Inclusion Statement.

Short answer questions

Why are you interested in the Jumpstart program? What do you hope to gain from this experience?

Please share any experiences that you’ve had or any projects you’ve worked on that might help us to understand what inspired you to apply to this program. (150-word limit.)
[______________________]

Tell us about a time when you solved a challenging problem. Your example does not have to be related to libraries or technology. (150-word limit.)
[______________________]

What are your professional goals? What would your ideal job entail? (150-word limit.)
[______________________]
Please tell us about your commitment to diversity, equity, and inclusion.

We would like to know how you would contribute to fostering a learning environment that prioritizes diversity, equity, and inclusion. This can include specific things you have done or plan to do to further your knowledge. For more information about writing a diversity commitment statement, we recommend The Effective Diversity Statement (it is aimed at faculty members, but the suggestions are generalizable). (150-word limit.)

[______________________]

Optional questions

Your gender pronouns (optional)  [______________________]

How did you learn about the Jumpstart program? (optional)  [__Select__]

Is there anything else you would like us to know in considering your application? (optional)

[______________________]
APPENDIX B. ASSESSMENT TOOLS

Pre-Program Knowledge & Attitudes Survey

Please list the job titles you associate with librarianship:

__________________________

Please list the job titles you associate with technical librarianship:

__________________________

Each of the following questions were rated on a five-point Likert scale ranging from "strongly disagree" to "strongly agree":

1  Strongly disagree
2  Disagree
3  Neither agree nor disagree
4  Agree
5  Strongly agree

I know what technical skills I need to learn to be successful as a librarian.
I'm not sure how to learn the technical skills that I need.
I am confident in my ability to learn technical skills.
I feel intimidated at the thought of learning technical skills.
I am aware of my options for careers in library technology.
I am likely to pursue a career in library technology.
I think of myself as the type of person who would do well in library technology.
I have people in my personal and/or professional life who have encouraged me to build a technical skill set.
I know someone working in library technology who I would feel comfortable turning to when I have questions.
I'm not sure how to best present myself in a resume, cover letter, or interview for technical positions in libraries.

Please list/describe any coursework, projects, and jobs/internships you have completed that are relevant to developing technical skills in librarianship:

__________________________

Post-Program Knowledge & Attitudes Survey

Each of the following questions were rated on a five-point Likert scale ranging from "strongly disagree" to "strongly agree":

1  Strongly disagree
2  Disagree
3  Neither agree nor disagree
4  Agree
5  Strongly agree

How much of the material covered in the Jumpstart Program was new for you?
I learned a lot about technical careers in libraries.
I learned a lot about the technical skills I will need to be successful as a librarian.
The Jumpstart Program felt like a valuable use of my time.
I plan to keep in contact with my mentor and others that I met while in the program.
I know what technical skills I need to learn to be successful as a librarian.
I'm not sure how to learn the technical skills that I need.
I am confident in my ability to learn technical skills.

Please list the job titles you associate with librarianship:

[______________________]

Please list the job titles you associate with technical librarianship:

[______________________]

Post-Program General Satisfaction Survey

Overall, how satisfied were you with your experience with the Jumpstart Program?

1  very dissatisfied
2  dissatisfied
3  neutral
4  satisfied
5  very satisfied

Please rate the following components of the program:

Each of the following questions were rated on a five-point Likert scale ranging from "very unsatisfactory" to "very satisfactory":

1  very unsatisfactory
2  unsatisfactory
3  neutral
4  satisfactory
5  very satisfactory

Technical skills workshops (Intro to Git & GitHub, Intro to Python with Twitter Bots, Intro to Web Development, Intro to Machine Learning):
Panel presentations (career path panel, day-in-the-life panel, tech showcase, Q&A with Libraries admin)
“Applying to Your First Library Tech Job” session
One-on-one mentorship
Program content overall
Communication leading up to the event
Live captioning services
Attention paid to accessibility concerns
Handling of troubleshooting during technical workshops
The flow and schedule of events
The application process

Do you have any additional comments concerning the content of the Jumpstart Program?

[______________________]

Do you have any additional comments concerning the logistics of the Jumpstart Program?

[______________________]

What was your favorite part of the Jumpstart program experience?

[______________________]

What was your least favorite part of the Jumpstart program experience?

[______________________]
Overall, did the Jumpstart program meet your expectations? Explain.

[______________________]

Do you have any suggestions for improvement to the Jumpstart program?

[______________________]

I am likely to recommend the Jumpstart Program to other library school students.

1  Strongly disagree
2  Disagree
3  Neither agree nor disagree
4  Agree
5  Strongly agree

**Six-Month Follow-up Interview Protocol**

- Did your participation in the Jumpstart Program help inform you in planning for the rest of your graduate school experience? If yes, how so?
  - Did it influence the types of courses, jobs, and internships you took up? How so?
    - What technical coursework have you taken/do you plan to take?
    - What sorts of jobs and/or internships have you had/do you plan to have?
- Have your career goals shifted since you started your graduate school program to now? How so?
  - Has your perception of what technical librarianship is changed since you began your graduate school program?
  - What role, if any, do you think the Jumpstart program had in any shifts?
- What kinds of jobs do you plan to apply to after you graduate?
  - What sorts of job titles are you looking at? (Are you looking for jobs with more of a technical bent, or are you seeking other types of positions?)
- Have you continued to work on building up your technical skills? If yes:
  - What skills have/are you trying to develop?
  - What is going well?
  - Are you experiencing roadblocks? What are they?
  - What resources are you using to advance your skills?
- Have you kept in contact with other attendees?
  - If yes, what has this looked like?
- Have you kept in contact with your mentor?
  - If yes, what has this looked like?
- Would you recommend the Jumpstart Program to other library school students?
  - How would you describe this program in your own words to other library school students?
  - What, if anything, surprised or confused you about the Jumpstart program?
  - What changes might be made to the program to make it more beneficial to future library school students?