

Title: Accessibility in Making: Perspectives from Disability Self-Advocates

Co-PIs: Dr. Amelia Anderson and Dr. Abigail Phillips

Lead Applicant Organization: Old Dominion University Research Foundation on behalf of Old Dominion University

Collaborating Organization: University of Wisconsin-Milwaukee

Statement of National Need

This exploratory project seeks to discover approaches to support more inclusive and equitable maker programming and makerspaces within public libraries. Although the maker movement has grown and makerspaces have demonstrated themselves as a learning environment (Halverson & Sheridan, 2014), there has been little research into the barriers and inequitable practices individuals with disabilities experience engaging in making (Jennings, Coley, Boklage, & Kellam, 2019; Seo, 2019). Public librarians must take the needs of all users into consideration when designing library spaces, and activities within these spaces, for making. To ensure that library patrons with disabilities, both those disabilities that are visible and those that may be hidden, do not have barriers when using makerspaces, it is important to first understand what those barriers might be. This study will explore the broad concepts of makerspaces in public libraries with disability self-advocates; findings will be shared with library practitioners such that makerspaces and maker activities can be developed and conducted with equitable access and inclusive practices in mind.

Makerspaces have grown in popularity as public libraries across the United States sought to design spaces for children, teens, and adults to tinker, collaborate, and create (Willett, 2016). As makerspaces in libraries have become increasingly visible as an educational tool, many librarians find themselves tasked with creating and maintaining such a space with little knowledge or training (Rogowski, Recker, and Lee, 2018).

Despite laws that require equitable access (Americans with Disabilities Act (ADA), 1990) and initiatives by some libraries and interest groups to provide accessible services (Association of Specialized Government and Cooperative Library Agencies (ASGCLA), 2019), library users with either visible or invisible disabilities often find their needs unmet by public libraries (Green, 2020; Lloyd, 2020). Makerspaces are quickly becoming a normal feature in public libraries, but are they designed to be accessible to all (LSSPCC, 2014)? Public libraries should serve all members of their communities, and with 26% of the US population living with some type of disability (CDC, 2019), it is clear that most, if not all, communities have members with some type of disability. However, for library patrons with disabilities, barriers exist that hinder access to libraries. If makerspaces are not accessible, members of all ages of a community's population are unable to access and benefit from the services their libraries provide (Klipper, 2014; University of Washington, 2020).

Co-PIs Anderson and Phillips identified the need for this study based on previous work. Both have worked at the intersection of libraries and disability for multiple years, and Phillips completed a post doctoral fellowship project studying youth makerspaces and Science

Technology Engineering and Mathematics (STEM) maker-gearred programs in public libraries. Both have work experience as public librarians, and an intimate knowledge of designing and implementing public library services. Through an initial literature review, it became clear that makerspaces are no longer simply a trend but are now being implemented broadly. Librarians are often asked to design, staff, and maintain makerspaces sometimes with little training, and there is potential for many marginalized user groups to be left out of the resulting makerspace.

This project builds on what is currently known about disability and makerspaces by providing a critical voice - the voice of people with disabilities - and by surveying perceptions about makerspaces broadly, rather than assessing one organization's particular makerspace. Though we are able to identify a potential need for creating more inclusive spaces, it is unacceptable to identify barriers individuals may face without talking directly to them. Librarians should not guess about what practices to implement to create accessible, equitable makerspaces without first hearing from members of the disability community themselves.

Theoretical Framework

This project outlines an important first step in exploring the views of disability self-advocates about potential for, and barriers to, using library makerspaces as a whole. It builds upon scholarship at the intersection of libraries and disability, namely critical disability theory which respects and amplifies the voices of people with disabilities; universal design; and the social model of disability which notes that we should not expect people with disabilities to adjust, but we should instead make space and services more accessible. It also builds on work that has been done to assess and evaluate individual makerspaces for accessibility, while broadening the conversation to explore more general concepts in makerspace accessibility. This exploration is a critical next step that will help to inform future makerspace design and implementation.

Phase of Maturity

This project is submitted as a Planning Grant, which we believe is the appropriate stage. We are not implementing training or conducting a large-scale study, but instead are interested in exploring perceptions from the disability community. This is what we believe to be a necessary step before determining what additional work should be done in this area.

Project Category

IMLS Planning Grants "allow project teams to perform exploratory activities, such as analyzing needs." This project seeks to collect data and analyze the needs of an underserved community - library users with disabilities. The researchers are currently working on IRB approval from both institutions, and expect to have this in place prior to potential funding allocated. As these researchers have collaborated on a number of projects, they have experience with this procedure.

National Impact and Projected Outcomes

This project is highly exploratory - we do not approach this project with anticipated findings, but will let the data speak for itself. While we have assumptions regarding potential barriers which could be identified, we are also allowing the possibility that disability self-advocates already view makerspaces as accessible or even highly accessible. If this is the case, we will be pleased to share the results that little further work should be done. It is also possible that barriers are identified, and this is what we anticipate project outcomes to be. In which case, practical implications will be drawn and suggestions made for next steps. Dissemination of these findings will have both practical and theoretical impact. First, librarians will gain a better understanding of how to provide more inclusive makerspaces and activities, leading to immediate and practical benefits for members of the disability community across the nation. Additionally, future research may use this project as a model for assessing marginalized community needs before implementing what might be assumed as “good services” for a particular community.

Risks and Process for Tracking and Adjustment

The project is not without risk, but the potential for innovation is greater than the risks posed. As noted, it is possible that members of the disability community are already pleased with makerspaces. While this would be a positive finding, it would also change the shape of future work. Instead of sharing ideas for improvement, the researchers would instead share ideas for replication based on success stories. A greater risk, with less positive implications, is recruiting members of the disability community to participate. Recruitment is never without risk, and reaching members of a marginalized community only adds an additional layer to this already challenging task (Anderson, 2019; Haas et al., 2016). To better mitigate this risk, the researchers will begin participant recruitment early and provide multiple avenues for participation, including reaching out to conferences participants may already plan to attend, an online open-ended survey, providing options for participation over the phone, and/or through video chat. Researchers will also use convenience and snowball sampling methods to reach members of their personal networks, as both have built strong networks at the intersection of disability and libraries. Advisory board members, each with their own connections in the intersecting fields, will do the same. Having low participant counts could significantly negatively impact the project, and the researchers will work aggressively to draw participation.

Team Member Expertise

The project is submitted as a Leadership Grant. As previously discussed, the project has national impact with current significance. Additionally, in alignment with NLG standards, the research team has demonstrated expertise, and strong collaborations are in place. Co-PIs Anderson and Phillips are both experienced researchers with skills, experience, and knowledge to effectively conduct this project. Having both served on multiple IMLS grants (as research assistants, a project coordinator, and postdoctoral researchers), the researchers understand the

realities of implementing a grant funded project, and how they must be able to both create a strict project outline while also allowing for room to shift and adapt if unforeseen circumstances arise.

Anderson is an expert on the intersection of disability and public libraries, and in particular has focused research on autism. She has a strong record of success in publication and presentation for national audiences about her work, much of which focuses on working with self-advocates (see CV for detail). Anderson has experience in working collaboratively with librarians to create inclusive services (Project PALS and Project A+). As a graduate assistant for Project PALS, Anderson worked on a team in collaboration with public librarians in the Florida Panhandle to translate research to practice for serving library patrons on the autism spectrum. She is currently under contract to publish the second edition of an ALA editions book with Barbara Klipper, *Programming for Children and Teens with Autism Spectrum Disorder*, which will be complete in summer, 2020.

Phillips is an expert on makerspaces and also neurodiversity, focusing on invisible or hidden disabilities. She has experience in working collaboratively with public librarians to assess what has the potential to work within their library setting and in developing instructional supports to build librarian confidence and knowledge to create small scale, low cost, STEM-g geared maker young adult activities. See *Making in Small Town Libraries* (<https://slli.usu.edu>). She co-edited a book with Dr. Victor Lee, *Reconceptualizing Libraries: Perspectives from Information and Learning Sciences*, and has also published and presented her research to national and international audiences.

The most impactful piece to this project lies in the people involved, as the collaborations throughout the scope of the project are what speaks to its potential success – from collaboration between researchers through their respective universities, to collaboration with an expert advisory board, to collaboration with members of the disability community themselves through research participation. Drawing from a national audience of participants and advisors also allows the project to have broad reach. Their collective knowledge and expertise will help to shape the outcomes of this project. Focus group questions are included within this application; should the proposal be accepted these questions will be refined with the help and guidance of advisory board members. The advisory board members will also help to recruit participants and provide insight into potential implications based on the study’s findings. Finally, the advisory board members will help to disseminate the project’s results through their own professional networks and through potential presentation opportunities. Anderson and Phillips also plan to work with ASGCLA to collaborate in recruiting, host focus groups, and share findings through their organization.

Project Design

Goals

The ultimate goal for this project is to hear from members of the disability community about their perceptions of public library makerspaces, and to use this data to both inform librarians about opportunities for improvement and inspire more work that involves participation

from members of marginalized communities. Data alone is not the goal; instead the findings from this project will encourage movement towards greater inclusivity in both research and practice. There is a need for greater attention to inclusive makerspace design and maintenance, and this study will help to influence change.

Audience and Strategic Collaborations

Collaborators across the United States throughout the year-long project will help to ensure national impact and success. The advisory board consists of researchers, librarians, and self-advocates across the country who have vested interest in the success of this project as well as sharing project findings throughout their networks. Though not adhering to a true participatory design (as no product is being created or designed), this study does place high value on the input from participants and members of the disability community across the United States, and will engage these participants even after data has been collected through member checks of initial findings. These member checks will allow participants to confirm or correct the researchers' initial transcriptions and findings. Participants will be encouraged to share results from the study with their own networks, both within the disability community and beyond. These collaborations will help us share findings and practical guidance with a broad, national audience.

Consensus Building through Engaging with Members of an Underserved Community

Collaborations also lend to the projects' capacity for external input, validation, and consensus building. By working with members from the disability community, the research team will learn directly from those who live with a disability. Another key benefit is that Anderson and Phillips will also seek out guidance from participants as a source of validation, correction, and explanation. Through these collaborations, consensus building will emerge as both the research team and participants work together to describe what is needed for equity and accessibility in making.

Data Collection

Co-PIs Anderson and Phillips will conduct a series of five focus groups and to collect data from disability self-advocates and stakeholders in the maker movement. First, the researchers will recruit participants through a variety of sources (as discussed earlier, conference attendees, existing disability groups in public libraries nationally, advisory board members' recruitment, etc.). Only individuals who are already planning to attend these conferences will be recruited for focus group participation; Anderson and Phillips will not coerce individuals to attend focus groups if they will not already be planning travel for conferences. To supplement this, the researchers will disseminate an online data collection method (e.g. survey) to those who will not be attending conferences but still wish to participate. They will then attend conferences to conduct focus groups. Data analysis will be concurrent with data collection and an iterative qualitative process. Co-PIs will analyze qualitative and quantitative data taken from these

multiple focus groups and online surveys guided by grounded theory and critical disability theory, draw conclusions, consult with the advisory board, and disseminate the information.

Time and Resources

This one-year planning project requires time from both co-PIs, time from advisory board members, and time from participants. Anderson and Phillips are expected to conduct research as part of their job duties as assistant professors, and will allot time each week for focused grant research. Over the period of this grant, their research focus will be on meeting the expectations of this funded project, from study design to information dissemination. Funding requested during the academic year does not supplement their salaries, but instead covers the basic costs of travel and registration for conference attendance for data collection. Both Anderson and Phillips are out of contract during summer months; they will use summer 2021 to finalize data analysis, write up results, and disseminate findings. A small stipend has been built into the budget to account for this time. Advisory board members will be compensated with a stipend to recognize the time and expertise they provide, and participants will be compensated with reimbursement for conference registrations.

Data collection and analysis resources needed are those associated with qualitative research studies, including Qualtrics, NVivo. Project management software will be utilized such as Box cloud storage for data, and emailing services. All are already provided by the researchers' institutions.

Conferences identified for focus groups are: TASH (an international voice for disability advocacy), ALA Midwinter, and the Arc (a disability rights advocacy organization). Anderson and Phillips will identify and recruit participants from these conference groups - and will focus on these participants who are not just disability self advocates, but are also active library users. Focus groups for librarians with disabilities and librarians involved in maker activities will be held at the ALA Annual Conference. The researchers will incorporate semi-structured questions during the focus group sessions providing opportunities for participants to voice their experiences and opinions while reflecting upon those of others.

To ensure the research questions are fully addressed and to reach saturation, the researchers will also extend online opportunities for participation from individuals at the intersection of disability and libraries. This also supports inclusion for participants who may be unable to travel to targeted conferences.

The target community for this project is library users with disabilities - by the very design of this project, their perspectives will be incorporated throughout project implementation. Members of the disability self-advocacy community serve as advisory board members, and will help to shape interview questions. Participant data will be presented through rich, thick, descriptive, qualitative data. As interviews will be semi-structured, participants will have the opportunity to steer some of the conversation while still guided by the researcher. The target community's contributions are of utmost importance to this project's design, and the project

would not be possible without their input. Grant funding supports their contribution by paying for conference attendance.

As noted, there are risks associated with the project design, particularly with recruiting participants. These risks are far outweighed by the potential benefit of the study, and researchers will actively work to recruit both creatively and methodically to mitigate these risks.

Qualitative data will be collected to address the following research question: How do disability self-advocates and stakeholders describe practices that relate to, hinder, or support disability inclusion in maker activities?

With both methods of data collection, online and focus groups, participants will come in with some knowledge of makerspaces and making activities. To ensure that all participants have a shared understanding of what we mean when we talk about makerspaces, the researchers will share a set of photographs, written descriptions, videos, and verbal descriptions of typical public library makerspaces. These will be shared electronically with all participants prior to their session, allowing for ample time to process this information through the method that works the best for each person. These materials will be shared once more at the focus group session itself. Focus group design suggests that no more than eight participants are involved in a group at one time (Krueger & Casey, 2009); the researchers plan to invite 10 to each group with the expectation that there may be some participant attrition.

While the researchers have crafted 10 open-ended interview questions for each focus group (or in each individual online interview/survey), these sessions will be semi-structured, in alignment with qualitative research standards. These questions will guide the conversation, but there will be opportunity allowed for additional follow up questions, or probes. To allow for this flexibility in online surveys, a question included at the end will allow participants to provide additional information they would like to share that they have not been asked about yet.

Qualitative data will be transcribed and analyzed concurrent with data collection, and coded by theme through an iterative process. To ensure validity and that experiences are accurately portrayed from members of the disability community, the study will institute member checks and provide initial findings electronically to participants before publication or presentation.

Communicating Results and Sharing Findings

Project findings will be shared through multiple avenues. Both Anderson and Phillips have a record of publication and presentation for national audiences, and will share results from this project widely to reach library practitioners, researchers, and members of the disability community. A presentation will be submitted for the ALA conference in June, 2022, to share with membership, and advisory board members will be invited to join in the presentation. Blog posts will be composed and shared to Public Libraries and American Libraries. Both researchers will have the opportunity to share through their respective universities through research symposiums such as ODU's Faculty Summer Conference and presentations at UWM research brown bag lunches and the university's main campus library scholar presentation series. A

qualitative manuscript will be submitted for publication at the conclusion of this grant at a journal with wide readership such as the *Library Quarterly*, along with presentations at LIS and additional field-related conferences (e.g. learning sciences, education).

It is important that these findings be shared not just within the library field, but also with members of the disability advocacy community as well. A true measure of the field's worth is when the members of the communities served can see the efforts put into understanding these communities. As such, an opinion piece will be submitted to the ARC online, and informational pieces submitted to American Libraries and other practitioner publications. Advisory board members will share these through their personal and professional networks (eg. posts on social media, and a post to professional LISTSERVs such as Public Library Association (PLA)). The researchers will share progress and results through their own online networks on Twitter and Wordpress. Artifacts from the project will largely consist of research instruments, including data collection instruments and codebooks created for analysis. These will be made available as appendices in publications.

Measuring Success

Success for this project will not be in addressing a hypothesis, but instead in presenting perspectives from a broad, intersectional sample of the disability community that have clear and immediately implementable implications for both librarians and researchers. Throughout the one-year project span, researchers will check in with the advisory board to ensure the project is still on track for meeting its goals. As data collection will occur at multiple sites, the researchers will adapt and improve upon each one based on previous experiences. For example, if it is clear that some questions do not generate thoughtful or relevant answers, the researchers will adjust for future focus groups, with input from the advisory board. Success for this project would be a large group of participants from diverse subsets of the disability community and dissemination of those findings to a broad audience. The dissemination of this project's findings is a strong indicator of success. When findings are shared to a national audience, bringing more awareness to the need for accessibility in public library spaces, the researchers will deem the project to be a success.

Diversity Plan

By the very nature of this project, members of the disability community are given a platform to share experiences and perspective. The conferences and online recruiting areas were identified in particular because they are organizations that provide agency to individuals with disabilities - these are groups of self-advocates, who are speaking for themselves rather than through parent or caregiver (which is all too common for members of this community). In this study, we want to hear directly from members of the community themselves, so these organizations were thoughtfully and purposefully selected.

Engaging with Members of Underserved Communities

Broad demographic representation will be sought for focus group and online participation. Disability is intersectional. By holding a series of focus groups with multiple disability stakeholder groups, the researchers will work to ensure that no one person is being asked to speak for the disability community as a whole. By providing funding for conference participation, the researchers are ensuring no one is barred from participation due to financial disadvantages. By offering the option to participate virtually or by phone, the researchers are ensuring there are opportunities to engage potential participants who may face barriers in travel, or need options for alternative communication. The researchers will strive to reach members of the disability community across socioeconomic status, gender identity, and racial or cultural identity. By attending a broad array of conferences and calling for participation from a wide online participant pool, the researchers will work with individuals of varying abilities and representing various disability categories.

Members of the disability community will be involved in implementation of the project through creation of knowledge - from self-advocate advisory board members helping to shape interview questions to participants providing their own perspectives in response. Through online communication, advisory board members will help to track progress as the researchers will present updates and ask for guidance in moving forward. Participants themselves will track progress through members checks, as described previously.

Makerspaces have become increasingly popular in libraries, supported by a growing body of literature to highlight their implementation. While inclusion is a value held within librarianship, how can we be sure that we are using inclusive practices in makerspaces without hearing from users who may experience barriers themselves? A common saying in disability self-advocacy is “nothing about us without us.” The needs of members of this community are relatively unknown on a broad scale, and this study seeks to address that in allowing them to define their own needs and opportunities. This study will work to ensure that members of the disability community have a voice in shaping the future of inclusive making and makerspaces in libraries.

National Impact

The focus groups in this project will offer the researchers profound insights into what may prevent patrons from participating in making and how libraries can enhance efforts to be inclusive of all members of their communities. This proposal for a planning grant is an exploratory project; at this point, we are interested in better understanding perspectives from the national community. By sharing our findings, and implications these findings have, for practice and research, the project carries potential to inspire change in national conversations about how we as a professional design, implement, and maintain makerspaces in our public libraries to ensure accessibility.

Work has been done as needs assessments at individual library makerspaces (Moorefield-Lang, 2015; Koh & Abbas, 2015), but to our knowledge, there is no national data to shape general makerspace accessibility from members of the disability community themselves. This

project operates in reverse of many studies in librarianship; instead of studying a community and making generalizations about how a project could be replicated in other communities; it begins on a national scale, with implications for local communities. By understanding the perspectives from a broad sample across the nation, local libraries can learn from these findings how to better implement accessible practices in their communities.

Stakeholders from a national audience will be involved in this study as focus group participants and advisory board members. Advisory board members who have agreed to provide consulting support include disability self-advocates, librarians, and makerspace researchers.

- Heather Moorefield-Lang, EdD., associate professor at UNC-Greensboro, is a well-regarded researcher with much of her recent work focusing on youth making and makerspaces in school and public libraries;
- Zachary Tumlin, librarian and disability self-advocate; is an activist and scholar for disability rights who has published and presented about his experiences at the intersection of libraries and disability;
- Bryce Kozla, youth services librarian and disability self-advocate, is a strong voice within the library community, a frequently invited speaker about disability rights and accessibility and instructor on accessibility in libraries at the University of Wisconsin-Madison; and
- Victor Lee, PhD., associate professor at Stanford University, is an expert in making, makerspaces, and the maker movement. Additionally, he received an IMLS grant to investigate needed librarian supports to provide maker activities in small libraries.

Findings from this study are an important first step in understanding how members of the disability community experience makerspaces in libraries. Though exploratory in nature, results from this project will stand alone as an important contribution to knowledge about library spaces, services, and access to those spaces and services. Once more knowledge is gained from participants about how they view barriers or opportunities within makerspaces, work conducted to aid in educating public librarians about inclusivity. This will be presented in this study's discussion to ensure that while the project is exploratory, it will also provide immediate implications for practice. These implications will be shared through multiple methods of dissemination (see plan as previously detailed).

While findings in this study may be used to quickly influence library practices and promote inclusive study design through this work's dissemination, this study also has potential to guide future work. Based on project results, future studies could be built upon this project to develop training and education for librarians to improve makerspace accessibility, to pilot and test universally designed makerspaces, or highlight particular inclusion success stories that other public librarians might replicate in their own libraries. However, first, we must understand the perspectives of the disability community of how they experience these public library spaces.

Schedule of Completion

Grant activities will take place over one calendar year, from September, 2020 through August, 2021. Prior to grant implementation, IRB approval will be obtained through Old Dominion University as the lead institution to ensure project activities can occur as scheduled. Data will be collected and analyzed throughout the year. Online surveys with the same questions as focus groups will be available to individuals who cannot travel to conferences but still wish to participate. Online surveys will also be implemented if conferences are moved online, due to COVID-19 precautions. Conferences have set time frames, while online surveys will be open for a four-month period in which all conferences take place. Dissemination of findings will occur at the conclusion of the grant in summer of 2021.

Work with Advisory Board to Refine Protocol	x												
Recruit Participants	x	x	x	x									
Conduct Online Survey		x	x	x	x								
Focus Group: ARC Conference		x											
Focus Group: TASH Conference				x									
Focus Group: ALA Midwinter					x								
Data Analysis						x	x	x					
Write up Findings									x	x	x		
Dissemination of initial findings: ALA Annual Conference										x			
Dissemination: Manuscript Submission											x	x	
	S	O	N	D	J	F	M	A	M	J	J	A	



DIGITAL PRODUCT FORM

INTRODUCTION

The Institute of Museum and Library Services (IMLS) is committed to expanding public access to digital products that are created using federal funds. This includes (1) digitized and born-digital content, resources, or assets; (2) software; and (3) research data (see below for more specific examples). Excluded are preliminary analyses, drafts of papers, plans for future research, peer-review assessments, and communications with colleagues.

The digital products you create with IMLS funding require effective stewardship to protect and enhance their value, and they should be freely and readily available for use and reuse by libraries, archives, museums, and the public. Because technology is dynamic and because we do not want to inhibit innovation, we do not want to prescribe set standards and practices that could become quickly outdated. Instead, we ask that you answer questions that address specific aspects of creating and managing digital products. Like all components of your IMLS application, your answers will be used by IMLS staff and by expert peer reviewers to evaluate your application, and they will be important in determining whether your project will be funded.

INSTRUCTIONS

If you propose to create digital products in the course of your IMLS-funded project, you must first provide answers to the questions in **SECTION I: INTELLECTUAL PROPERTY RIGHTS AND PERMISSIONS**. Then consider which of the following types of digital products you will create in your project, and complete each section of the form that is applicable.

SECTION II: DIGITAL CONTENT, RESOURCES, OR ASSETS

Complete this section if your project will create digital content, resources, or assets. These include both digitized and born-digital products created by individuals, project teams, or through community gatherings during your project. Examples include, but are not limited to, still images, audio files, moving images, microfilm, object inventories, object catalogs, artworks, books, posters, curricula, field books, maps, notebooks, scientific labels, metadata schema, charts, tables, drawings, workflows, and teacher toolkits. Your project may involve making these materials available through public or access-controlled websites, kiosks, or live or recorded programs.

SECTION III: SOFTWARE

Complete this section if your project will create software, including any source code, algorithms, applications, and digital tools plus the accompanying documentation created by you during your project.

SECTION IV: RESEARCH DATA

Complete this section if your project will create research data, including recorded factual information and supporting documentation, commonly accepted as relevant to validating research findings and to supporting scholarly publications.

SECTION I: INTELLECTUAL PROPERTY RIGHTS AND PERMISSIONS

A.1 We expect applicants seeking federal funds for developing or creating digital products to release these files under open-source licenses to maximize access and promote reuse. What will be the intellectual property status of the digital products (i.e., digital content, resources, or assets; software; research data) you intend to create? What ownership rights will your organization assert over the files you intend to create, and what conditions will you impose on their access and use? Who will hold the copyright(s)? Explain and justify your licensing selections. Identify and explain the license under which you will release the files (e.g., a non-restrictive license such as BSD, GNU, MIT, Creative Commons licenses; RightsStatements.org statements). Explain and justify any prohibitive terms or conditions of use or access, and detail how you will notify potential users about relevant terms and conditions.

A.2 What ownership rights will your organization assert over the new digital products and what conditions will you impose on access and use? Explain and justify any terms of access and conditions of use and detail how you will notify potential users about relevant terms or conditions.

A.3 If you will create any products that may involve privacy concerns, require obtaining permissions or rights, or raise any cultural sensitivities, describe the issues and how you plan to address them.

SECTION II: DIGITAL CONTENT, RESOURCES, OR ASSETS

A.1 Describe the digital content, resources, or assets you will create or collect, the quantities of each type, and the format(s) you will use.

A.2 List the equipment, software, and supplies that you will use to create the digital content, resources, or assets, or the name of the service provider that will perform the work.

A.3 List all the digital file formats (e.g., XML, TIFF, MPEG, OBJ, DOC, PDF) you plan to use. If digitizing content, describe the quality standards (e.g., resolution, sampling rate, pixel dimensions) you will use for the files you will create.

Workflow and Asset Maintenance/Preservation

B.1 Describe your quality control plan. How will you monitor and evaluate your workflow and products?

B.2 Describe your plan for preserving and maintaining digital assets during and after the award period. Your plan should address storage systems, shared repositories, technical documentation, migration planning, and commitment of organizational funding for these purposes. Please note: You may charge the federal award before closeout for the costs of publication or sharing of research results if the costs are not incurred during the period of performance of the federal award (see 2 C.F.R. § 200.461).

Metadata

C.1 Describe how you will produce any and all technical, descriptive, administrative, or preservation metadata or linked data. Specify which standards or data models you will use for the metadata structure (e.g., RDF, BIBFRAME, Dublin Core, Encoded Archival Description, PBCore, PREMIS) and metadata content (e.g., thesauri).

C.2 Explain your strategy for preserving and maintaining metadata created or collected during and after the award period of performance.

C.3 Explain what metadata sharing and/or other strategies you will use to facilitate widespread discovery and use of the digital content, resources, or assets created during your project (e.g., an API [Application Programming Interface], contributions to a digital platform, or other ways you might enable batch queries and retrieval of metadata).

Access and Use

D.1 Describe how you will make the digital content, resources, or assets available to the public. Include details such as the delivery strategy (e.g., openly available online, available to specified audiences) and underlying hardware/software platforms and infrastructure (e.g., specific digital repository software or leased services, accessibility via standard web browsers, requirements for special software tools in order to use the content, delivery enabled by IIIF specifications).

D.2. Provide the name(s) and URL(s) (Universal Resource Locator), DOI (Digital Object Identifier), or other persistent identifier for any examples of previous digital content, resources, or assets your organization has created.

SECTION III: SOFTWARE

General Information

A.1 Describe the software you intend to create, including a summary of the major functions it will perform and the intended primary audience(s) it will serve.

A.2 List other existing software that wholly or partially performs the same or similar functions, and explain how the software you intend to create is different, and justify why those differences are significant and necessary.

Technical Information

B.1 List the programming languages, platforms, frameworks, software, or other applications you will use to create your software and explain why you chose them.

B.2 Describe how the software you intend to create will extend or interoperate with relevant existing software.

B.3 Describe any underlying additional software or system dependencies necessary to run the software you intend to create.

B.4 Describe the processes you will use for development, documentation, and for maintaining and updating documentation for users of the software.

B.5 Provide the name(s), URL(s), and/or code repository locations for examples of any previous software your organization has created.

Access and Use

C.1 Describe how you will make the software and source code available to the public and/or its intended users.

C.2 Identify where you will deposit the source code for the software you intend to develop:

Name of publicly accessible source code repository:

URL:

SECTION IV: RESEARCH DATA

As part of the federal government's commitment to increase access to federally funded research data, Section IV represents the Data Management Plan (DMP) for research proposals and should reflect data management, dissemination, and preservation best practices in the applicant's area of research appropriate to the data that the project will generate.

A.1 Identify the type(s) of data you plan to collect or generate, and the purpose or intended use(s) to which you expect them to be put. Describe the method(s) you will use, the proposed scope and scale, and the approximate dates or intervals at which you will collect or generate data.

A.2 Does the proposed data collection or research activity require approval by any internal review panel or institutional review board (IRB)? If so, has the proposed research activity been approved? If not, what is your plan for securing approval?

A.3 Will you collect any sensitive information? This may include personally identifiable information (PII), confidential information (e.g., trade secrets), or proprietary information. If so, detail the specific steps you will take to protect the information while you prepare it for public release (e.g., anonymizing individual identifiers, data aggregation). If the data will not be released publicly, explain why the data cannot be shared due to the protection of privacy, confidentiality, security, intellectual property, and other rights or requirements.

A.4 What technical (hardware and/or software) requirements or dependencies would be necessary for understanding retrieving, displaying, processing, or otherwise reusing the data?

A.5 What documentation (e.g., consent agreements, data documentation, codebooks, metadata, and analytical and procedural information) will you capture or create along with the data? Where will the documentation be stored and in what format(s)? How will you permanently associate and manage the documentation with the data it describes to enable future reuse?

A.6 What is your plan for managing, disseminating, and preserving data after the completion of the award-funded project?

A.7 Identify where you will deposit the data:

Name of repository:

URL:

A.8 When and how frequently will you review this data management plan? How will the implementation be monitored?