The School of Information and Library Science at the University of North Carolina at Chapel Hill is requesting $336,649 for a three-year Laura Bush 21st Century Early Career grant to further development of an updated model of information poverty and access in local communities that builds on previous theory and empirical research, and grounds theory to library practice; to develop and disseminate an online toolkit that describes and facilitates community assessment processes for librarians and library staff who want to engage with local communities to reduce information poverty among marginalized groups; and to develop and conduct a webinar and interactive workshop to teach practitioners how use the toolkit in a local library or system. The proposed study, which will be conducted from October 2017-Septmber 2020, engages the Durham and Charlotte Public Libraries, and the Autism Society of North Carolina (ASNC) as project partners. This proposed community based participatory study (Wallerstein & Duran, 2006) aligns with the IMLS Community Anchors goal. It builds on the PI's current research on information poverty and disability, and focuses on development and testing of theoretical, empirical, and process models in two library contexts.

The proposed study furthers development of theory that relevant to the field of LIS, and provide librarians with theoretically and empirically based tools for thinking about and collaboratively engaging in community assessment from a transformative perspective, in order to mitigate some of the complexity of engaging in transformative inclusion in local libraries. The proposed study uses interviews, focus groups, and surveys of people with ASD and their families, and library staff to describe information access and poverty in the study communities. Data is used as a basis for collaborative program planning and evaluation. This process of community evaluation and program planning will be used to create a process model for community assessment and program evaluation. The study will accomplish the following goals:

Goal #1: **Develop an empirical model of information poverty and access in the study communities** as well as specialized expertise (among librarians/staff and members of the ASD community).

Goal #2: **Develop and disseminate an online toolkit for librarians and library staff** and process model for identifying and exchanging specialized knowledge with members of the local Autism communities (people with ASD, their families, and service providers).

Goal #3: **Develop and conduct an interactive workshop and webinar to teach practitioners how use the toolkit** in a local library or system (including instruction on the theoretical model as a basis for thinking about community needs and outreach).

This study has potential impacts on LIS theory, education, and practice, as well as people the Autism community. The proposed study will impact researchers and practitioners who are interested in library programming, collection development, information access and poverty issues, socio-cultural diversity in LIS theory, or community. The researchers will present theoretical/empirical research at academic conferences and conduct interactive workshops to share the model and toolkit at professional conferences. This study will benefit members of the local ASD study communities by helping to improve information access and literacy, expanding access to information and improving information seeking skills. It will help the participating libraries by connecting them to the knowledge stored in their local autism communities, thus increasing its usefulness as anchors in their communities. SILS students will also be impacted through development of a graduate level course on community assessment, and opportunities for involvement in library program planning during the third year of the project. The course syllabus will be made freely available via a project website.

Deconstructing Information Poverty: Identifying, Supporting, and Leveraging Local Expertise in Marginalized Communities

The School of Information and Library Science at the University of North Carolina at Chapel Hill is requesting $336,649 for a three-year Laura Bush 21st Century Early Career grant to further develop an updated model of information poverty and access in local communities that builds on previous theory and empirical research, and grounds theory to library practice; to develop and disseminate an online toolkit that describes and facilitates community assessment processes for librarians and library staff who want to engage with local communities to reduce information poverty among marginalized groups; and to develop and conduct a webinar and interactive workshop to teach practitioners how use the toolkit in a local library or system. The proposed project, which engages the Durham and Charlotte Public Libraries, and the Autism Society of North Carolina (ASNC) as project partners, engages the concept of the library as community anchor from the perspective of the patron (or non-patron/potential patron). It examines the potential for the library to help people with Autism Spectrum Disorders (ASD) and their families (referred to collectively as "ASD communities") fulfill their information needs and reduce information poverty in local ASD communities, and the potential for members of local ASD communities to act as self-advocates, and take an active role in library programming, planning and collection development. Although this proposal focuses on ASD specifically, the study has implications for improving the way that libraries assess the needs of their local communities and interact with other marginalized groups in local communities. The study asks the following main research questions:

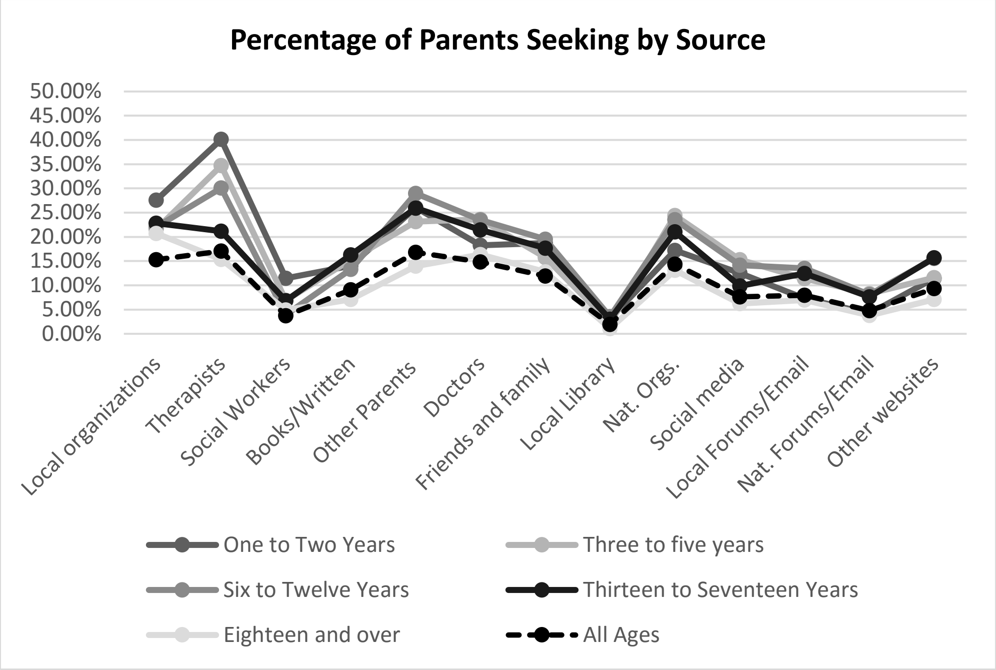
1. *Defining information needs:* What are the information needs of the local ASD communities studied? How do the information or service needs of members of the local ASD communities differ from other local community members?
2. *Describing information seeking*: Where and how do members of the ASD community currently look to fulfill their information and service needs? What local information systems (human, organizational, and ICT) currently support the information needs of the local ASD communities studied? How does the library currently fit into the information worlds/horizons of people with ASD and their families?
3. *Describing information access/poverty:* What gaps exist between information resources and ASD community member information needs? Do information values, social norms, information needs, information access, and specialized knowledge in local ASD communities differ from those assumed by library staff? If so, how? What social interactions/dynamics help or hinder library access?
4. *Describing current theory/practice*: What previous and current models for assessing and meeting the needs of local disability communities exist in LIS practice and research? To what extent has critical disability theory been integrated into LIS theory, research, and practice?
5. *Building a new model*: How can a richer model of information poverty be used to inform more inclusive local library programming and reduce information poverty in the local community?
6. *Developing practical applications:* What steps can be taken to engage successfully in collaborative programming with a local disability community?

Statement of Need

If libraries are to be community anchors, they must have tools for proactively understanding the complex social structures and information needs of their local communities, and a willingness to engage those groups as partners in collection development, program planning and space design. Research in this vein should build from and into ongoing theory to ensure that continued efforts continue to move this work forward (rather than stagnating, or replicating). This applied theoretical development (and corresponding theory-based practice) requires development of tools for transformation of the library itself, and tools for transformational engagement with all segments of the community – even those that are difficult to access. Despite much of the hard work that goes into serving local communities, many libraries continue to be, for many already marginalized groups of people, unwelcoming places that, technically, allow them in the doors, but in actuality do not attempt to meet their information needs (c.f. Furner, 2007; Gonzalez-Smith, Swanson, & Tanaka, 2014; Pawley, 2006). Much of the work that goes into librarianship for people with disabilities has focused on *diversity* - making library spaces more welcoming for people with disabilities (enabling access to current collections) through changes to service, and less on *transformative inclusion* - changing the library collections, spaces, programming, and planning to fit their *information* and service needs. In our zeal to create libraries that transform communities, we have overlooked the need for communities to transform the library. Diversity and inclusion efforts of any kind can be difficult without the understanding that comes from a grounding in critical thought and conversations. Providing librarians with theoretically and empirically based tools for thinking about and actively engaging in community assessment from a transformative perspective can help mitigate some of that difficulty, and give librarians and communities practical means for combatting information poverty in their communities, together.

This project will focus on *further development of theory,* and building *theoretically grounded materials* for engaging local ASD communities. This grounding is important, as the resulting tools focus on a process and a way of thinking about engagement (rather than building an end product for replication that could become quickly outdated) , which can be used to create different outcomes in different types of marginalized communities, rather than on a prescriptive set of programs or actions. The outcomes include guidelines and tools for understanding what peer-to-peer information networks exist among local ASD communities, their information needs, their expertise and special knowledge, and how to engage that knowledge. Focusing the project on local ASD communities builds on past IMLS-funded work that improved *basic* library access and service (such as Project ENABLE and Project PALS) to people with ASD. Without this previous work, which provided guidance on making libraries safe spaces for people with autism, it would not be possible to work toward making them useful, practical, and inclusive spaces.

Preliminary Work. Information poverty (or chronic lack of information access) is a problem in many communities of people with ASD, despite strong local peer-to-peer networks. The importance of local peer-to-peer networks (which have great potential for information sharing, but can also amplify misinformation) among this population (Gibson, 2014; Gibson & Kaplan, 2015) makes the library an ideal community anchor for addressing issues of information poverty widely in ASD communities through engagement with key community members. As part of a needs assessment for the proposed study, the PI conducted **a mixed method study of 935 parents of individuals with Autism** (935 surveys, and 13 interviews) in North Carolina (Gibson & Kaplan, 2015). The study found that participants generally **felt excluded from the library space, and viewed the library as designed to meet the needs of "typical" families**. Most interview participants saw the library as a social space for their very young children, but limited their library use to library sponsored story time programs. In a series of questions on information seeking in areas parents cited as important, **fewer than 5 % of parents cited libraries as a useful source of information** (see Figure 1: percentage of Parents Seeking by Source).



At the same time, many participants described a lack of confidence in their own ability to assess the quality of information on the Internet. One mother said, "First of all, there's a bunch of garbage on the Internet…there's a lot of crazy information out there on the Internet about autism, and I fear… for people who don't know better." Although parents were uncomfortable with their lack of access to information, and had concerns about their own information literacy, they did not believe that librarians knew or cared enough about ASD to offer informed guidance, and generally did not trust their ability to judge the quality of information found on the internet. Because of the need to provide current, carefully selected information to parents**, many formally organized ASD support groups hold physical and digital collections of recommended materials (books, audio and digital materials)** and provide information services[1]. Although support organizations do their best to provide information services to their constituent communities, they often lack the expertise to make full use of these collections and resources, and **do not have the expertise to teach information literacy**. Likewise, **libraries that could benefit from the knowledge of these resources are often unaware of them. Collaboration could benefit both groups**.

Theoretical Foundation: Information Poverty. The term "information poverty" has been used to describe various types of information inequalities (e.g., chronic information illiteracy, lack of education, lack of broadband access, or lack of information resources due to financial inequality) that are the combined result of structural power imbalances and mismatches in the embedded epistemologies and information values of actors within an information world (Haider & Bawden, 2007; Yu, 2005). Chatman's (1991, 1996) work on the subject of information poverty is seminal in the context of LIS research, and marks one of the most prominent theoretical approaches to acknowledge information poverty as a complex social problem. Because of the importance of trust, political and social power, and stigma, relationship-building is necessary, if the library is to understand and to be able to access local knowledge needed to match the needs of the local community. Chatman introduced contemporaneous critical theory into her development of more formally structured theories of information poverty, life in the round, and normative behavior. She adopted critical theoretical frameworks of the time to build models that described how information behavior manifested marginalization, intersectionality (Crenshaw, 1989) and power imbalances. Applied to library practice, the concept has the potential to inform an evidence-based approach to collection development, program and service planning for local communities that is inclusive of the information values, needs, and knowledge of marginalized groups within local communities. It also has negative potential implications. The deficit approach to understanding information poverty encourages practitioners to conceptualize service deficits (e.g., not recognizing, acknowledging, understanding, or attempting to meet the specific information needs of certain groups of people) as cultural deficits (e.g., information poverty, information illiteracy, or general "lack of interest in the library"). Haider and Bawden write, "By characterising distinct groups of individuals, organisations or even countries by their perceived lack of information, the underlying assumption has to be that there is a "right kind" as well as a "right amount" of information." (Haider & Bawden, 2007). By framing certain groups *as lacking* in the "correct" information values (Jaeger & Burnett, 2010), we fail to acknowledge different types of information needs, different ways of knowing (Belenky, 1986) and mismatches between marginalized groups and the systems that serve them (Bourg, 2014; Galvan, 2015; Haider & Bawden, 2007).

Research Gap. A richer model of information poverty that incorporates recent critical theory (emergent within the last 25 years) would support development of tools for more inclusive community assessment, collection development, library programming, and service planning. After Chatman's death, examination of the complex social interactions related to identity, privilege and place were largely filtered out of LIS research and ceded to other fields of study (Honma, 2005). More recently, integration of critical theory into LIS education and research has seen a resurgence in some areas of the field (Cooke, Sweeny, & Noble, 2016), and some have introduced community-focused models with social justice as an explicit goal (e.g., Mehra & Robinson's (2009) Community Engagement Model). This study continues in this tradition, engaging critical disability theory (CDT), critical race theory (CRT), and critical gender theory (CGT) in the re-examination of

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[1] i.e., autism resource specialist finder launched by ASNC https://autismsociety-nc.org/index.php/get-help/resources/families/autism-society-of-north-carolina-parent-advocates

"neutral" information science and information spaces. This change marks a fundamental shift toward explicitly incorporating diverse voices and values into the research, theory and practice of information science, and to encouraging community ownership over (rather than just access to) the library. This study focuses on translating a critical theory of information poverty into community assessment and service planning tools that are accessible to practicing librarians. The resulting critical model of information poverty would enable libraries to plan and provide more services for people who are marginalized.

Why Autism? The ASD community **is one of the largest (and fastest growing) populations in the United States**, and provides a diverse, relatively organized community with which to partner. North Carolina has a higher prevalence of Autism Spectrum Disorders than the rest of the United States, with 1 in 58 children diagnosed with ASD, as opposed to the ration of 1 in 68 across the country (CDC, 2014). Although some libraries have begun to expand their services to include programs for people with ASD, many still do not know how to provide services for their patrons with ASD beyond sensory friendly story time activities, and most do very little community-building with local autism communities. When they do, **they meet basic service needs, and not functional information needs. As such, many people with ASD and their families use libraries in very limited ways**, if at all (Gibson & Kaplan, 2015; Mansell & Morris, 2004).

Related/Previous IMLS Funded Projects. The proposed project is different from previous projects in that it focuses on local community assessment, relationship building, and developing processes grounded in critical theory, rather than documenting best service practices (that are grounded in other fields of study) for duplication. It engages critical theory (critical theories of place and place-making, critical disability theory, critical race theory, and critical gender theory) as frameworks for centering the voices and experiences of people with ASD and their families within their local communities, and examines ways that intersections among ability/disability, race, gender, and place inform information access and information poverty. It explores the information worlds and information needs of people in the local study communities (people with ASD primarily, and their families, secondarily), and library staff, and uses those findings to help program test sites plan programs. This focus on the patron/potential patron engages the library as conducive to lifelong learning rather than a space primarily for children, and engages questions about local, service and process-oriented information.

IMLS has funded several grants focused on granting basic access to, improving customer service for, and collection development for people with ASD. "Libraries and Autism: We're Connected" and "Quality Services for the Autism Community" at the Queens Public library both focus on ASD-related customer service and collection development. The Autism Resource Center in Lancaster, PA served as a model for ASD-focused collections. Project ENABLE (along with partner programs, such as the Illinois State Library and Project PALS at Florida State University) focuses on providing web based basic training on library service to ASD communities, and best practices for service and programming to local librarians in the form of web modules. These programs provide much-needed and timely examples of generally applicable best practices in programming, service provision, and lists of resources for patrons with ASD and their families, but they focus on generating products and customer service best practices for patrons with ASD. These programs will be surveyed as part of program planning and theory development.

Impact

This study has potential impacts on LIS theory, education, and practice. It involves development of theory, online toolkits and in-person workshops for library practitioners. It will also impact education through expansion of a current course syllabus, which will be made freely available to other LIS educators.

Deliverables for this project include a critical theoretical model for information poverty in local communities, an empirical model describing the local, library-oriented information worlds and needs of people with autism, and a process model (and associated planning toolkit and open source resources) for library community assessment and program planning for marginalized communities. Planning toolkit will include question sets, instructions and resources for community assessment, and examples of community exchange programs. Library programming will be documented and publicized, and findings will be communicated to the public and library community as the project progresses. Theoretical, empirical, and process models and materials will be communicated to librarians via face to face workshops and a project website.

Alignment with IMLS Goals

The proposed community based participatory study (Wallerstein & Duran, 2006) aligns with the IMLS Community Anchors goal. It is focused on development and testing of theoretical, empirical, and process models in two library contexts. The proposed project would accomplish the following project goals:

Goal #1: Develop an empirical model of information poverty and access in the study communities (defining information poverty as a set of social processes, mismatches in services and needs, and gaps in information access/literacy) as well as specialized expertise (among librarians/staff and members of the ASD community).

Goal #2: Develop and disseminate an online toolkit for librarians and library staff and process model for identifying and exchanging specialized knowledge with members of the local Autism communities (people with ASD, their families, and service providers). Toolkit will build on findings from this study as well as previous IMLS-funded research.

Goal #3: Develop and conduct an interactive workshop and webinar to teach practitioners how use the toolkit in a local library or system (including instruction on the theoretical model as a basis for thinking about community needs and outreach).

Project Design

This multi-method CBPR study captures data on information access and poverty in the study communities (Project Goal 1) and formative evaluation data on the community assessment and program planning process associated with resolving information access and poverty issues in those communities (Project Goal 2).

Community Partners/Study Sites. In addition to the Autism Society of North Carolina (ASNC), two library systems have agreed (for the second year in a row) to serve as partners for this study. The two sites have been selected in consultation with ASNC, and represent different current levels of engagement with the autism community. The **Charlotte-Mecklenburg Library** system was recommended by ASNC members (people with ASD and their families) as a strong community anchor for members of the autism community, as having a strong record of programming for people with ASD, and a strong relationship with the active local ASNC chapter. The **Durham Public Library System** was recommended as a library system with a strong record of programming, as having an interest in expanding its service to marginalized communities in general (and for people with ASD in particular), in a county with a less-active autism community. The different levels of current programming and engagement with members of the autism of community will offer the researchers some variation in context as they develop theoretical, empirical, and process models, and increase the transferability of findings to other settings.

Procedures

Goal 1 data collection activities include: Web survey, semi-structured interviews, and focus group data from local libraries and ASD community members.

Goal 2 data collection activities include: Research memos, program evaluation surveys, Program agendas and materials (e.g., LibGuides, resource guides, social media campaign materials, photography), Project partner feedback/reports.

Year 1. Data Collection (October 2017 – September 2018)

Activity 1: In-person interviews with 14 families of people with ASD (7 in Durham/7 in Charlotte; 1 person with ASD and 1 family member per interview; approx. 1.5 hrs. each = 28 people total).

Activity 2: 14 library staff interviews (7 in Durham/7 in Charlotte)

Activity 3: 4 focus groups: 2 family focus groups per community (Durham/Charlotte; 7 people each = 28 total) (year 1 & 2)

Family interviews and focus groups will focus current information needs and information access of ASD community members. They will build on previous interview instrument used by the PI (see appendix) to ask specifically about comfort with information literacy, library use (or nonuse), and participant perception of the library and its role in information seeking. Participants will be recruited through ASNC and other non-library institutions (so as to avoid biasing the sample with a large number of regular library patrons). Library staff interviews and focus groups will focus on staff perceptions of/knowledge about the ASD community, their comfort level with providing services for this community, their understanding of their information needs, and their thoughts on possibilities for community partnership. Interviews will take approximately 1 hour and will be will be audio recorded and transcribed. Participants will be allowed to select interview location and times to reduce burden on families/workplaces (Researchers will travel to Charlotte for interviews and focus groups). Focus groups will be face to face and will be audio and video recorded and transcribed. Focus groups will be conducted at the partner libraries. Because of limitations in language, focus and interviews groups will be limited to English-speaking parents only.

Data Analysis Iterative inductive analysis of interview and focus group data (initial open, axial, and selective coding, but compared to existing coding data from the PI's current and previous studies on disability and information poverty) will allow for the researchers to build on previously developed models and theories, while allowing for emergent concepts and phenomena. Coding will follow a Grounded Theory approach (Charmaz, 2014), in that it will begin after the collection of initial data and inform subsequent data collection. Initial open coding will be done independently by the PI and post-doctoral researcher, with consultation to clarify/negotiate drastic differences in interpretation as the project proceeds. Interview data will be used to build specific focus group guides and protocols. Both sets of data will be used to design surveys and programs.

Year 2. Data Collection (October 2018-September 2019)

Activity 4: Library use and information seeking survey (web administered) for local ASD community members (year 2)

Activity 5: Library staff survey (web survey) on planning for ASD communities and perceived information needs (sent to libraries statewide).

Web surveys of families and library staff will be developed based on findings from interviews and focus data. They will be used to quantitative data on library use and expectations from parents in the study communities (survey will be publicized through local organizations) and from librarians and library staff statewide through email contact to state libraries (via members of SILS board of visitors and direct emails).

Survey Data Analysis. Survey data will primarily be used for descriptive purposes. Correlations between age and diagnosis (or other factors), and library use may be investigated. Survey data will be shared with the local community and library staff, and will be factored into program planning. Survey datasets and survey questions will be made through the project website, and will be stored in perpetuity on the Odum Dataverse.

Year 2-3. Program Activities and Data Collection (October 2019-September 2020)

Activity 6: Development and implementation of 3 new events/programs at Durham Library and 2 new events at Charlotte-Mecklenburg Library in conjunction with library staff, SILS students, local ASD community, and advisory board members. The researchers use qualitative and quantitative analysis of triangulated interview, focus group, programming, and survey data collected during years 1 and 2 to build a theoretical and an empirical model of the information access and information poverty in the local community. During this time, a guide/rubric for evaluating local library programs will be designed using data collected about the local community and three conceptual categories from Jaeger and Burnett's (2010) theory of information worlds (see Table 1 for categories), which is based on Chatman's (1999) theory of life in the round (a model of the information worlds of people experiencing information poverty). Each conceptual category is mapped to a series of questions (labeled Report Summary) that will be answered using data collected during Year 1. Programming Rubric Questions will be used by the researcher and library staff to evaluate newly developed library programs (in addition to participant evaluation surveys).

Conceptual Category	Report Summary	Programming Rubric Question

Social Types/Actors/ Stakeholders	Community demographics/descriptions: Who are the members of the local autism community? Who are the members of the local library community? What different social/information roles do they inhabit?	*Planning:* Who (in this community) is this program intended to serve? Who, in the community, can help plan/execute this program? How can we ensure that we meet the needs/leverage the expertise of this particular group? How can we attract members of this particular group?
		Evaluation: Who attended this program? Did it serve our intended audience? Who did it serve?
Information Values	What does this group want to know? What do they already know? What specific kinds of information are important to them? What do they know/do well? What format do they want their information to take?	*Planning:* Does this program match stated information needs? If not, is this a newly identified need? Does it meet stated preferences for information formatting, or is it an attempt to introduce a new format?
		Evaluation: How well did the subject matter meet stated preferences? If the goal was to try/introduce a new format, topic or element, how well did it work? Should the new element be added to the rubric for future programming?
Social Norms	What cultural/social norms are influence information seeking/sharing/access in this community? For example, are there language or behavioral norms (such as people first language, or other preferences) that influence exchange of information or library participation?	Planning: What social norms should the library be aware of in planning this program?
		Evaluation: Did the program highlight any social norms of which the library staff was unaware? How will this inform planning of future programs?

Table 1:Preliminary Conceptual Categories for Program Evaluation

The researcher will communicate results to the autism community (via the project website, email from ASNC, roundtable meetings at the Durham and Charlotte Mecklenburg libraries, and direct email) and to the library community (via direct email, and internal library email listservs). The advisory board will decide on the topic and timing of four new library programs (and associated written materials) based on expertise and needs identified during data collection.

Basic Training: ASNC will conduct training for 15 library staff members per system on working with people with Autism in the library, and public training on “How To Be a Friend to a Person with Autism.” Library staff (in collaboration with researcher and graduate students) will conduct training on web information literacy, focusing on personal safety and quality judgments, and a tour of the public library for ASNC members and interested members of the public (these initial topics of interest were identified during previous research, and provide a basic foundation for further collaboration).

Activity 7: Library program evaluation surveys will be done via anonymous paper evaluation surveys given out at newly designed programs, and will collect data on who attends (ASD community member or other) and their evaluation of the program attended. After all programs have been completed, summative evaluation of the relationship-building process, and the effectiveness of the programming (in terms of increasing trust, improving perception, sense of belonging, and increasing library use rates among a diverse demographic) will be done through focus groups (1 per library/2 per autism community), analysis of program participant demographics and program evaluation survey scores in year 3.

Diversity Plan

Site Selection. Study sites with diverse populations were chosen to increase the possibility of recruiting a diverse ASD community and library sample. See Figure 2 for a summary of racial and ethnic composition of Durham and Mecklenburg counties as compared to the U.S. averages[2].

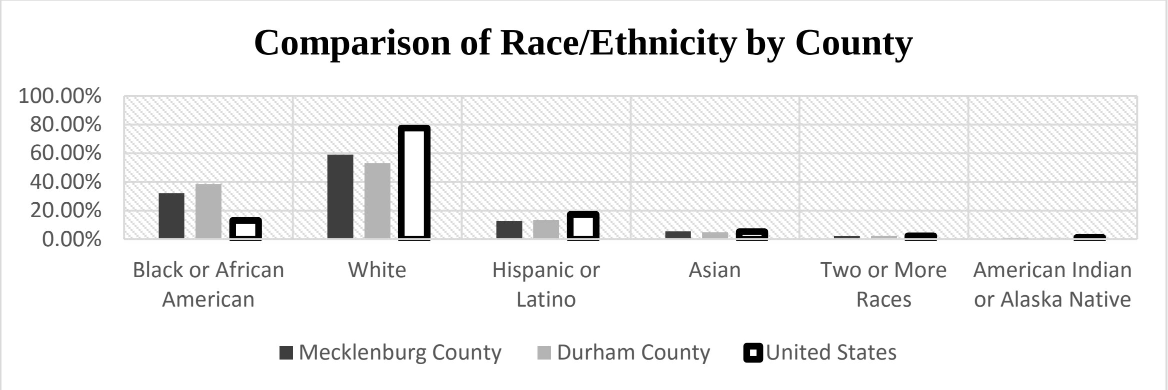

Figure 2: Race and ethnicity in Durham and Mecklenburg Counties in North Carolina as compared to national averages

1 in 58 children living in North Carolina have been diagnosed with ASD[3]. This percentage is higher than the United States average. Although children diagnosed with autism spectrum disorder (ASD) occurred in all racial and ethnic groups, the rate of diagnosis is not even across all racial and ethnic groups, with lower rates of diagnosis for black children (1 in 64) and Hispanic children (1 in 103), than for white children and Asian or Pacific Islander children (1 in 53). It is unclear whether these differences are a result of differences in incidence or disparities in health and availability of diagnoses, but research has shown that children of color are often undiagnosed or misdiagnosed (Mandell, et al., 2009).

Sampling. The researcher will attempt to recruit a racially and ethnically diverse group of participants from both communities for data collection and library programming, and to invite participation from community members across a range of income levels. Strategies to accomplish this include snowball sampling, translation of advertising and simultaneous interpretation of programming into Spanish, recruiting through community organizations such as local ASNC chapters, the Arc, churches, community centers, and homeschool groups (North Carolina has a higher number of homeschooled students than private school students). Incentives that help reimburse participants for time spent and travel costs, and planning adult data collection and programming during times when the library has programs available for children will help reduce the childcare burden associated with participation. The researcher will attempt to recruit interview and focus participants from among staff in different positions at the participating libraries, and to reflect the diversity of the library staff.

Research Team. The PI and the doctoral student leading the study are both African American women who have experience working with diverse communities (in research and practice), and with using inclusive recruiting practices. They will use this knowledge to help recruit diverse participants in the library and autism communities, and to ensure that programming meets the needs of diverse groups. Additional funds have been sought to include master's level SILS students on a program by program basis, according to their practice or research interests. Dr. Gibson will attempt to recruit a diverse group of program assistants to work on library programming over the period of the grant.

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[2] http://www.census.gov/quickfacts/table/SEX255214/37119,37063,00

[3] http://www.cdc.gov/ncbdd/autism/states/addm-north-carolina-fact-sheet.pdf

Project Resources: Personnel, Time, Budget

Project Responsibilities

The PI for this project will be Dr. Amelia N. Gibson, Assistant Professor at the School of Information and Library Science at the University of North Carolina at Chapel Hill. Dr. Gibson received her MLIS (2007) and Ph.D. (2013) from Florida State University. Dr. Gibson will oversee the management, progress, and evaluation of all aspects of the research; direct the activities of graduate student assistants and coordinate with project partners; design, carry out and report findings of the research; oversee administrative and financial aspects and reports of the project; and publicize and disseminate the project and its findings and products. Dr. Gibson's research focuses on the influence of intersections of place, community, and identity (dis/ability, race, gender) on information behavior and access. She is specifically interested in information poverty. Her recent work has focused on families of individuals with disabilities, and how trust, power and privilege inform their access to information and information practices. The proposed Early Career project would further Dr. Gibson's work on developing richer theoretical and empirical models of information poverty and communities as social and information systems, understanding the influence of identity and place on the development of those systems, and developing practical tools for applying that knowledge in community organizations. Dr. Gibson teaches Human Information Interactions, Information Ethics, and Local Contexts and Information Behaviors at the UNC School of Information and Library Science (SILS). She will incorporate the findings of this study into a 3-credit course at SILS. Additionally, she is a member of the North Carolina Autism Alliance.

Post-Doctoral Research Assistant. A post-doctoral research associate will be hired for this project. The postdoctoral researcher would assist with data collection, analysis and publication, and would be able to travel independently to help disseminate the research and conduct workshops for the toolkit. I have elected to request a postdoctoral researcher, because a postdoctoral researcher allows for 40 hours/week of work time (as opposed to 20 hours for a doctoral graduate assistant), without the additional costs of tuition. Additionally, the study community in question is one in which personnel stability and flexibility is necessary for long-term relationship-building, and (practically) for meeting the demanding schedules of the study participants. A postdoctoral researcher would offer additional stability and flexibility, which might not be possible for a doctoral student with other primary obligations. Although the exact person cannot be named, a strong potential candidate for this position would be Dana Hanson-Baldauf, a graduate of UNC SILS whose dissertation work focused on individuals with developmental disabilities, and who has spent her time since graduation working in a clinical capacity in a peripheral field. This has given her excellent skills, knowledge, and connection with the proposed study communities. A post-doctoral position such as this would give a person like Dr. Hanson Baldauf the training and opportunities necessary to engage in research beyond her doctoral program, and to move back toward research and LIS.

Project Partners: The Autism Society of North Carolina (ASNC), the Charlotte Mecklenburg Public Library, and the Durham Public Library have agreed to serve as project partners. Partners will assist with recruiting participants and help coordinate community events. Each *Library partner* will assist in recruiting library staff for interviews/focus groups; co-plan, and execute six joint programs with autism community members; participate in the design and distribution of written materials; volunteer one member for the project advisory committee. *ASNC* will help recruit parents for interviews/focus groups; co-plan, and promote, and execute six joint programs with library over the three-year grant period; participate in the design and distribution of written materials/pathfinders/local guides related to the local community; volunteer two members of the project advisory committee (one parent and one staff member).

Research Mentors: Sandra Hughes-Hassell (UNC SILS) and Mega Subramaniam (University of Maryland) have agreed to serve as mentors for this project, and to serve on the project advisory board. Both have strong histories of research and publication; experience with community based participatory research with children and families; experience with managing IMLS funded projects that require syllabus, toolkit design, and public components, and both have done work on public library service innovation, diversity in libraries, and equitable access. Sandra Hughes Hassell (Professor, University of North Carolina at Chapel Hill) is Frances McColl Term Professor at the University of North Carolina at Chapel Hill School of Information and Library

Science and YALSA president. Mega Subramaniam is an Associate Professor at the iSchool - College of Information Studies at the University of Maryland. She is also the Associate Director for the Information Policy and Access Center (iPAC) at the University of Maryland.

Budget Summary (see Budget Narrative for further detail). The estimated budget for this project is $336,649. This includes $69,288 for 3 years of PI summer support (including fringe benefits); $178,676 for 3 years of postdoctoral trainee support (including fringe benefits and healthcare); $12,019 for travel support for the PI and Postdoctoral Trainee to make site visits to conduct study activities and present research at domestic conferences; $750 for supplies (printing, program materials); $12,389 for consultant fees (including advisory board stipends), $825 to support training and grant programming; $2,715 for participant incentives; $6,000 for SILS IT costs (this covers web development, maintenance, and support, and SILS IT support and a percentage of project-associated software licensing/support fees). Other costs are outlined in the budget narrative.

Communication Plan

Communication to the public and the autism community will be done via the project website, twitter, a project email list, and periodic emails from ASNC.

Communication of Process Model and Planning Materials. The PI will conduct three roundtables/workshops to communicate findings and planning processes, and to discuss/demonstrate transferability of project findings to other library sites (one workshop per year). Options for workshop venues include the American Library Association (ALA) annual and midwinter meetings, National Diversity in Libraries Conference (NDLC), the Public Library Association (PLA) annual meeting. Planning materials, question guides, and a guide to open source software and data useful for community assessment will be made available through a program website hosted at the University of North Carolina at Chapel Hill. Survey data, planning toolkit and documents will be disseminated through the Dataverse archive at the Odum Institute at the University of North Carolina at Chapel Hill.

Communication of Theoretical and Empirical Models. The researchers will disseminate theoretical and empirical models via journal publication (e.g., Library Quarterly, the Journal of the Association for Information Science and Technology, Library and Information Science Research, and Government Information Quarterly). Research outcomes will also be communicated as the project progresses via conference papers, presentations (e.g. ASIS&T; ALISE), workshops, and webinars.

Communication through Education. One of the goals of the proposed project is to encourage a shift in libraries' approach to planning for and interacting with marginalized communities. Education of future librarians is an important part of meeting this goal. The researcher has recently designed a half-semester project course on information behavior in local contexts at SILS (see supporting documents for syllabus). The theoretical and empirical models developed as part of this course will support expansion of the half semester course to a full-semester project course focused on critical approaches to community assessment and service planning. Links to the course syllabus, with readings, assignments, and examples of course projects will be freely available on the project website. **Master's Student Involvement**. The program development portion of this study offers many for SILS masters students to participate in planning and implementation of grant-related programming through coursework, independent study, library field experiences, and required Master's papers (thesis alternative) and projects.

Storage/Dissemination of Datasets. Quantitative (survey) data, coding schema, and associated materials for qualitative data will be made publicly available. Interview and focus group transcripts and original qualitative survey data will not be made publicly available (for the purposes of confidentiality). An embargo period of one year will be placed on survey data to allow the project team to retain first use rights of the data. After the one-year embargo period, the data will be made publicly available via the Odum Institute Dataverse. There, the data will be preserved and made publicly available online via the Odum Institute Dataverse virtual archive. The Odum Institute Data Archive has been awarded the internationally recognized 2014-2015 Data Seal of Approval by meeting quality guidelines for trustworthy digital repositories. As a member of the Data Preservation Alliance for the Social Sciences (Data-PASS), the Odum Institute Data Archive is recognized as a trusted and well-established data archive in the social science research and archiving communities. As such, it provides a strong archival and data dissemination resource to the proposed project.

	Year 1											
	Oct	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
Activity 1: 14 family interviews (2 people per interview, 7 in Charlotte, 7 in Durham)												
Develop Interview questions	▨											
IRB approval	▨											
Pre-test interview questions		▨										
Recruit interview participants		▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	
Conuct interviews			▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Initial analysis of interview data			▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
	Oct	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
Activity 2: 14 libray staff interviews (7 in Charlotte, 7 in Durham)												
Develop Interview questions	▨											
IRB approval	▨											
Pre-test interview questions		▨										
Recruit interview participants		▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	
Conuct interviews			▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Initial analysis of interview data			▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
	Oct	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
Activity 3: Focus Groups (2 family focus groups in Charlotte, 2 in Durham) (4 focus groups)												
Develop focus group questions	▨								▩	▩	▩	
IRB approval	▨											
Recruit participants		▨	▨	▨	▨	▨	▨					▩
Conduct focus groups						▩	▩					
Initial analysis of focus group data						▩	▩	▩				

	Year 2											
	Oct	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
Activity 3: Focus Groups (2 family focus groups in Charlotte, 2 in Durham) (4 focus groups)	■	■	■					■	■	■		
Develop focus group questions												
IRB approval												
Recruit participants	▒	▒										
Conduct focus groups	▒	▒										
Analysis of focus group data	▒	▒	▒					░	░	░		
	Oct	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
Activity 4: ASD Community Library Use Survey			■	■	■	■	■	■	■	■		
Design Survey Questions & Materials			░									
IRB approval			░		░							
Pretest survey questions				░								
Open/Run Survey						░	░					
Analysis of survey data								░	░	░		
	Oct	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
Activity 5: Library Survey (sent to libraries statewide)	■	■	■	■	■	■	■	■	■	■		
Conduct literature review on ASD related programming and outreach in libraries	░	░										
Design Survey Questions & Materials			░									
IRB approval			░									
Pretest survey questions				░								
Open/Run survey					░	░	░					
Analysis of survey data								░	░	░		
	Oct	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
Activity 6: Program Planning, Execution, and Evaluation								■	■	■	■	■
Program #1: Basic Training											░	
New Program Planning								░	░	░	░	░
Designing Program Evaluation Surveys								░	░	░	░	░
New Program 1 (Durham and Charlotte)												░

Year 3												
	Oct	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
Activity 6 & 7: Program Planning, Execution, and Evaluation	■	■	■	■	■	■						
New Program 2 (Durham and Charlotte)	▨	▨										
New Program 3 (Durham Only)				▨	▨							
Program Evaluation Analysis/Feedback From Partners			▨	▨	▨	▨						
	Oct	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
Final Toolkit Development/Summative Evaluation*						■	■	■				
*toolkit development will be done iteratively throughout the project.												
	Oct	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
Workshops/Dissemination/Practitioner & ASD Community Feedback									■	■	■	■

DIGITAL PRODUCT FORM

Introduction

The Institute of Museum and Library Services (IMLS) is committed to expanding public access to federally funded digital products (i.e., digital content, resources, assets, software, and datasets). The products you create with IMLS funding require careful stewardship to protect and enhance their value, and they should be freely and readily available for use and re-use by libraries, archives, museums, and the public. However, applying these principles to the development and management of digital products can be challenging. 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

You must provide answers to the questions in Part I. In addition, you must also complete at least one of the subsequent sections. If you intend to create or collect digital content, resources, or assets, complete Part II. If you intend to develop software, complete Part III. If you intend to create a dataset, complete Part IV.

PART I: Intellectual Property Rights and Permissions

A.1 What will be the intellectual property status of the digital products (content, resources, assets, software, or datasets) you intend to create? Who will hold the copyright(s)? How will you explain property rights and permissions to potential users (for example, by assigning a non-restrictive license such as BSD, GNU, MIT, or Creative Commons to the product)? Explain and justify your licensing selections.

Datasets and planning materials published on the project website will be published under a Creative Commons Attribution 4.0 International license (http://creativecommons.org/licenses/by/4.0/). This will allow libraries and other community organizations to freely access and build on the published assessment materials (e.g. publishing multi-year planning documents, or community assessment profiles). This license will allow users to:
• Share — copy and redistribute the material in any medium or format
• Adapt — remix, transform, and build upon the material
for any purpose, even commercially.

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.

The PI will publish website content under a Creative Commons Attribution 4.0 International license . Users will be notified through a Creative Commons-generated license document embedded on the project website. Users who download documents from the planning toolkit published via the project website will be asked to fill out a brief questionnaire that asks about their occupation, position, organization (if applicable), and how they heard about the planning materials. This will help the PI to track use of the materials.

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.

Qualitative data (interview, focus group transcripts, and qualitative survey responses) may involve privacy concerns as participants might reveal personal information about themselves and their children. As such, transcripts will be de-identified, and transcripts will not be published in their entirety to reduce the possibility of deductive disclosure. Instead, the PI will publish coding schema resulting from inductive analysis of qualitative data (done using Nvivo software). Quantitative survey responses will be published as aggregated datasets.

Part II: Projects Creating or Collecting Digital Content, Resources, or Assets

A. Creating or Collecting New 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 format you will use.

1. “State of the Community” - Community assessment datasets/report – two written reports/interactive maps (built with ArcGIS Online, ArcGIS, and/or ArcStoryMap) that will combine demographic data, GIS/spatial data, and qualitative findings from autism community and library focus groups to describe the local place-based study communities from the perspective of the autism community and the library. The information infrastructure of the local community, including local places and organizations where individuals with ASD and their families regularly seek and find information, information needs, and expertise.
2. “State of the Field” - Summary of survey data on community assessment and outreach, and one survey dataset.
3. Process model and planning toolkit – collection of planning guides and materials (including community assessment guides, step-by-step descriptions of planning processes, outreach document templates, examples of documents created during community assessment and program planning, and links to datasets that would be useful for assessment and planning, such as publicly available GIS data, open source software, etc.)
4. Photographs – digital photographs of program participants and members of local autism community and library staff may be published on the library, UNC SILS, or project websites. For the protection of photo subjects, the PI and will reserve all rights to photos (photos will not be covered by the Creative Commons license). Subjects will be asked to sign a photo release before publication of photos.
5. Twitter account - the PI and research assistant will maintain a twitter account to publicize project activities and to spur conversation about project-related news.

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

ll the hardware and software necessary for creation of this content will be provided by the University of North Carolina School of Information & Library Science (UNC SILS). The PI will be using a workstation and laptop provided by the UNC School of Information & Library Science. The University licenses Microsoft Office products and Adobe Acrobat, which will be used to produce the learning modules. The project website and accompanying technical documentation will be produced by the project team at UNC.
The following software will also be provided by UNC SILS:
ArcGIS – The PI will use ArcGIS desktop, ArcGIS Online and ArcMap to create GIS content and community maps.
QSR Nvivo - The PI and research assistant will use Nvivo to do qualitative coding of interview, focus group, and qualitative survey data.
Qualtrics/SPSS - The PI will use Qualtrics to create and administer the public library survey, and use SPSS and Qualtrics to do quantitative analysis of survey data.

A.3 List all the digital file formats (e.g., XML, TIFF, MPEG) you plan to use, along with the relevant information about the appropriate quality standards (e.g., resolution, sampling rate, or pixel dimensions).

File formats associated with this project will include: .pdf, .docx, .pptx, .tiff, .shp, as well as data files and website files. When possible, printable map files will be saved as vector layers or exported at 600 dpi or greater. Website support and guidance will be provided by the University of North Carolina School of Information & Library Science's IT Services team, and GIS support will be provided by the GIS librarians at UNC Davis library to ensure quality standards are appropriate, that longevity and stability of file types are maximized, and that appropriate metadata standards are applied to documents as they are produced.

B. Workflow and Asset Maintenance/Preservation

B.1 Describe your quality control plan (i.e., how you will monitor and evaluate your workflow and products).

The PI will keep track of proposed deliverables, review all data and project products prior to release. The graduate assistant at UNC and our partners at the Durham Public Library, the Charlotte Mecklenburg Library, and the Autism Society will review all products products prior to release and will monitor the website and address any issues that arise. Usability of the website and project products will be tested by project partners during development and upon launch.

B.2 Describe your plan for preserving and maintaining digital assets during and after the award period of performance. Your plan may 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).

The School of Information and Library Science at UNC-Chapel Hill is strongly committed to advancing research and education in the areas of health information, and will continue to support the maintenance of, and provision of public access to, products resulting from this project well after the grant period of performance. The project website will be hosted by Web@UNC, which is supported by UNC IT, and datasets will be stored on the Odum Dataverse. The Odum Institute Data Archive has been awarded the internationally recognized 2014-2015 Data Seal of Approval by meeting quality guidelines for trustworthy digital repositories. As a member of the Data Preservation Alliance for the Social Sciences (Data-PASS), the Odum Institute Data Archive is recognized as a trusted and well-established data archive in the social science research and archiving communities. As such, it provides a strong archival and data dissemination resource to the proposed project. The Carolina Digital repository represents an option for open access archiving of written reports and articles. The UNC faculty has recently adopted an open access policy, and the UNC library offers support for researchers who wish to negotiate access and copyright issues with journal publishers.

C. Metadata

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

Metadata in the form of topics and subject tags, suggested and tested by our library partners, will be used to provide access to toolkit items. A site map and menu on the project website will aid in navigating site content, as well as an integrated search option. We will consult other library websites for common terms and metadata structures during construction of the project website. GIS librarians at UNC Davis library will be consulted for GIS metadata best practices.

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

Metadata standards will be recorded in written form, and used by the PI and research assistant during production of documents, datasets, and coding schema. Documents will be periodically reviewed by the PI at least annually after the grant period of performance, and the PI and research assistant will update terms and the metadata schema as needed to ensure the site continues to be useful and navigable.

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).

To support widespread discovery of the site and the learning toolkit, we will integrate search engine optimization principles into the design.

D. 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).

The content will be openly available online via a public website that will be accessible via standard web browsers.

D.2 Provide the name(s) and URL(s) (Uniform Resource Locator) for any examples of previous digital content, resources, or assets your organization has created.

n/a

Part III. Projects Developing Software

A. 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.

n/a

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

n/a

B. Technical Information

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

n/a

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

n/a

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

n/a

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

n/a

B.5 Provide the name(s) and URL(s) for examples of any previous software your organization has created.

n/a

C. Access and Use

C.1 We expect applicants seeking federal funds for software to develop and release these products under open-source licenses to maximize access and promote reuse. What ownership rights will your organization assert over the software you intend to create, and what conditions will you impose on its access and use? Identify and explain the license under which you will release source code for the software you develop (e.g., BSD, GNU, or MIT software licenses). 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.

n/a

C.2 Describe how you will make the software and source code available to the public and/or its intended users.

n/a

C.3 Identify where you will deposit the source code for the software you intend to develop:

Name of publicly accessible source code repository:

URL:

Part IV: Projects Creating Datasets

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

The PI will conduct an anonymous Qualtrics web survey of library staff, librarians, and administrators to collect data about library size, location, and how and how frequently public libraries do assessment that focuses on needs of marginalized and/or traditionally underserved groups in their local communities (and specifically library patrons with disabilities). Data will be collected during year 2 (February-April 2019).
A short Qualtrics web survey will also be sent to families in both communities asking about the frequency and purpose of their library use (and for status as an individual with autism, or a family member, and demographic data). This survey will be open during February-April 2019.

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?

Yes, IRB approval is required. An IRB application will be submitted after grant approval, prior to beginning data collection.

A.3 Will you collect any personally identifiable information (PII), confidential information (e.g., trade secrets), or proprietary information? If so, detail the specific steps you will take to protect such information while you prepare the data files for public release (e.g., data anonymization, data suppression PII, or synthetic data).

Personally identifiable information will not be collected, other than to arrange interview and focus group participation. This administrative data will not be stored with researcher notes, transcripts or memos, and will be deleted after data collection is complete.

A.4 If you will collect additional documentation, such as consent agreements, along with the data, describe plans for preserving the documentation and ensuring that its relationship to the collected data is maintained.

Verbal consent for participation will be recorded before the start of interviews and focus groups. Surveys will require consent before survey questions will be offered to participants. Anonymous consent responses will be stored with other survey data.

A.5 What methods will you use to collect or generate the data? Provide details about any technical requirements or dependencies that would be necessary for understanding, retrieving, displaying, or processing the dataset(s).

Coding schema, reports and planning toolkit documents will be generated as .pdf and .docx documents. NVivo will be used to create coding schema.

A.6 What documentation (e.g., data documentation, codebooks) will you capture or create along with the dataset(s)? Where will the documentation be stored and in what format(s)? How will you permanently associate and manage the documentation with the dataset(s) it describes?

Codebooks and coding schema will be generated for qualitative data and be stored together. Documentation will be made public after a one-year embargo period, and be stored on the Odum Dataverse with associated quantitative datasets.

A.7 What is your plan for archiving, managing, and disseminating data after the completion of the award-funded project?

Data and datasets will be stored on the Odum Dataverse archive in perpetuity, and will be made available via the project website.

A.8 Identify where you will deposit the dataset(s):

Name of repository: Odum Institute Dataverse Network

URL: http://arc.irss.unc.edu/dvn/

A.9 When and how frequently will you review this data management plan? How will the implementation be monitored?

The PI will review the data management plan annually.