Simmons University
Improving Digital Inclusion and Broadband Infrastructure in Native Communities

Simmons University together with the Association of Tribal Archives, Libraries, and Museums (ATALM) are requesting $749,637 to fund the National Leadership Grant for Libraries project, titled "Improving Digital Inclusion and Broadband Infrastructure in Native Communities." The research in service to practice seeks to update ATALM's 2014 study on the role of tribal libraries in promoting digital inclusion in Native America. Our project proposes to build on these findings by working with tribal libraries to examine how upgraded public access computers, wireless hotspot devices, broadband measurement tools, and digital literacy training can improve digital inclusion and broadband infrastructure in Native communities.

National Need: The 2014 report, "Digital Inclusion in Native Communities: The Role of Tribal Libraries" presents findings from a national needs assessment survey conducted by ATALM and funded by IMLS (award #RE-56-13-0080-13). Results from the report provide a stark contrast between the percentage of public libraries that provide their communities with access to computers, Internet, and digital literacy training and tribal libraries that provide these same services. For example, while 100 percent of public libraries in the 2011-2012 Public Library Funding and Technology Access Survey offered public Internet access to their patrons, only 68 percent of tribal libraries in ATALM's study reported providing free public Wi-Fi that patrons with personal laptops or wireless devices could use to access the Internet (p. 7). Only 50 percent of tribal librarians reported that their libraries' Internet connections were either "very good" or "extremely good," and only 15% of tribal library Internet connection speeds were reported at 100 Mbps or greater (p. 14). In terms of digital literacy training, more than 80 percent of respondents in ATALM's study reported that it was either "extremely important" or "important" to provide access to online and in-library digital literacy training. However, only 58 percent of the respondents reported that they offered digital literacy training of any type. The top three priorities that resulted from ATALM's survey included the following: (1) more funding for updated equipment and software; (2) faster and more reliable/affordable broadband connections; (3) training for staff and patrons (p. 25). Unfortunately, many of the recommendations in the report are still yet to be acted upon.

This research in service to practice initiative will update and respond to ATALM's 2014 report by pursuing the following research questions: (1) What are the characteristics of tribal library network infrastructures, including service quality, costs, and location? (2) How can broadband measurement tools be employed and further developed with Native communities to understand the speeds and quality of service of tribal library broadband networks? (3) How can tribal libraries obtain the computers, tablets, and wireless hotspots needed to address the digital device needs of their communities? (4) How can culturally relevant digital literacy training be developed and implemented for tribal librarians and patrons?

Answers to these questions can assist Native communities in addressing the top priorities outlined in the 2014 ATALM report, as well as additional priorities determined through this research initiative. The project will also help to inform funders and policymakers to ensure that tribal libraries have the financial resources necessary to facilitate access to digital technologies, including sufficient broadband connections, adequate public computers, access to culturally relevant digital literacy materials, and training and support for tribal library staff. Further, the data collected through the research can help to inform key public policy issues and programs, including the Federal Communication Commission's E-Rate program and other state policies aimed to improve digital inclusion and broadband connectivity in Native communities.

Project Design: Our proposed research seeks to build on lessons learned and findings from ATALM's 2014 report, along with the following additional IMLS funded projects: (1) Internet2's "Toward Gigabit Libraries"[1] toolkit; (2) "At the Edges of the National Digital Platform: Rural Library Hotspot Lending Programs"[2] project, and (3) more recently, "Measuring Library Broadband Networks for the National Digital Platform"[3] led by Simmons University with Measurement Lab and Internet2 to

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[1] http://www.dlib.org/dlib/may17/spellman/05spellman.html
[2] http://www.dlib.org/dlib/may17/strover/05strover.html
[3] https://slis.simmons.edu/blogs/mlbn/

develop a broadband measurement platform with and for public libraries across the U.S. Our project proposes to build on these findings by working with tribal libraries to learn how broadband measurement tools, public access computers, wireless hotspot devices, and digital literacy training can provide strategies for improving digital inclusion in Native communities.

Simmons University will closely work with ATALM, Native Nations Institute, tribal librarians, and Native researchers to develop a culturally appropriate research framework, which will build upon the methodology used in ATALM's 2014 needs assessment. This approach will include co-designing the actual recruitment scripts, interview protocols, as well as any decisions about how to understand the characteristics of tribal library network infrastructures. The team will work to implement the open source Internet measurement platform, which includes the device management and data visualization components, with tribal libraries. The team at Simmons will work closely with ATALM and its members to ensure that findings from the study will be made available throughout the project to benefit Native communities.

Stage 1: (Year 1) Evaluating and Updating Existing Research
- During the first year, the team will update findings in ATALM's 2014 report. The research findings will provide updated information on computer equipment and software, broadband connectivity, and digital literacy training for staff and patrons and will be used to make decisions about which tribal libraries are in most urgent need of new digital equipment and software. The updated report will be informed by a survey of tribal libraries followed by a national (virtual) summit to discuss findings, share model programs, and prioritize needs. A National Planning Council of tribal librarians, digital inclusion experts, and stakeholders will be recruited to help oversee the activities and implement the recommendations.

Stage 2: (Year 2) Expanding Broadband Connectivity and Digital Inclusion Training
- Broadband measurement devices will be installed at five participating tribal libraries and data will be shared with the libraries to assist them with broadband planning and advocacy. The team will develop and deliver digital literacy training for tribal library staff and patrons, which will be informed by findings from Year 1 research. The curriculum will build on previous initiatives to offer culturally relevant digital literacy training in Native communities. The trainings will be recorded and made available on ATALM's website.

Stage 3: (Year 3) Developing Models of Digital Inclusion in Native Communities
- Building on Year 1 and 2 activities, the team will develop and test digital inclusion models that can be implemented in Native communities. Five additional tribal libraries will serve as pilot sites.

National Impact: The project will have national impact by helping tribal libraries better meet their digital inclusion goals, which are outlined in the 2014 "Digital Inclusion in Native Communities" report and which will be built upon through this research. More concretely, the research project will work to provide much needed updates to computer equipment and software, broadband connectivity, and digital literacy training for staff and patrons in Native communities. The research will not only provide updated data on broadband connectivity in tribal libraries, which are often left out of national surveys, but it will also gather data to understand the impacts of public access to broadband measurement data on a national scale. In addition, the project will help to advance open source broadband measurement technology with and for tribal libraries, which can be further scaled and replicated in other tribal libraries. Findings may also have implications for the E-Rate program and could help to determine the appropriate speeds and quality of service of tribal library broadband connections. The research findings will also be used to produce a How-To-Guide to assist other tribal libraries with installing and using the broadband measurement platform, as well as a digital literacy training guide for tribal librarians and staff. These deliverables will be presented during annual ATALM conferences and should be useful to Native communities, state library agencies, and federal agencies interested in strengthening tribal libraries as leaders in digital inclusion across Native America.

Budget Summary: Our proposed total project cost is $749,637. Direct costs comprise of: $95,444 in Salaries and Wages and Fringe Benefits, $5,000 in Travel, and $603,754 in Subawards. Indirect Costs $45,439.