

## **EAST CAROLINA UNIVERSITY (ECU) LAUPUS HEALTH SCIENCES LIBRARY**

The proposed applied research project addresses National Leadership Grants for Libraries Program Goals, including Goal 1 Objectives 1.2 and 1.3; Goal 2 Objectives 2.1, 2.2, and 2.3; and Goal 3 Objective 3.1. East Carolina University (ECU) Laupus Health Sciences Library requests \$747,322 with no cost share. Partner organizations are North Carolina (NC) State University Agromedicine Extension, NC Area Health Education Centers, NC Farmworker Health Program, Student Action with Farmworkers, and a 30-member coalition—the NC Agriculture Digital Alliance. **NEED:** There are profound barriers to digital inclusion for migrant and seasonal farmworkers (“farmworkers”), which limit civic and economic participation and adversely impact health and educational attainment. **IMPACT:** The project will provide a model for how libraries lead digital inclusion efforts for vulnerable populations and community-engaged research that advances digital equity.

**Project Justification.** We propose the ECU Laupus Health Sciences Library as a model hub for community-engaged, applied research to advance digital equity in rural agricultural communities across NC. Our community partners include community health workers, farmworker advocates, Extension agents, state agencies, and libraries with the goal of addressing digital inclusion and promoting the ability of agricultural workers and agricultural communities to engage civically and to improve their health, education, and economic status with broadband access. The applied research described below is designed to provide information to support policy change that advances digital equity, to ensure the inclusion of agricultural workers in broadband infrastructure and information literacy, and to inform how libraries lead digital inclusion efforts.

Agricultural communities experience isolation from family, barriers to education, and inaccessible healthcare and social services. Farmworkers, who are vulnerable yet essential workers, additionally face language barriers and physical isolation as they are often dependent on housing and transportation provided by farm owners. According to the NC Department of Commerce, there are approximately 80,000 farmworkers in the state each year. Farmworkers have been left out of digital inclusion efforts due to persistent discrimination. Inaccessible internet, which limits farmworkers’ information literacy, deters civic participation and educational attainment. Even with growing investment in rural broadband, farmworkers are at risk of being “left out” of infrastructure through exclusion from broadband planning, omission of farmworker housing in broadband infrastructure, inadequate or inappropriate educational programs and resources to improve information literacy.

Our prior work in this area is longstanding but has focused on the delivery of resources instead of on research. We are founding members of the NC Agriculture Digital Alliance, which additionally includes representatives from NC Community Health Center Association, NC Cooperative Extension, NC Department of Commerce, NC Broadband Infrastructure Office, NC Farmworker Health Program, NC Migrant Education Program, and Student Action with Farmworkers. Our *implementation and resources* projects have included a State Library of NC/IMLS Migrant Education Program Laptops Program grant (LS-246551-OLS-20), a National Library of Medicine Health Disparities Resources grant (G08LM013198), and a National Network of Libraries of Medicine Information Resources Project (UG4LM012340). Our work with farmworker communities in NC has taught us the critical need for applied, engaged research that fills existing gaps in evidence and informs policy and programming to address digital equity. The pandemic has made that need even more critical.

**Project Work Plan.** Using an information literacy framework, we propose a model in which an academic health sciences library is at the center of a community-engaged, applied research project to adaptively respond to community-partner “research needs” and addresses the following aims:

**Aim 1. Identify information literacy levels and needs of (a) farmworkers and (b) farmers to inform library resources, programming, and educational materials.**

Our *working hypothesis* is that there are large gaps in available information resources and literacy skills among both groups that could be addressed by libraries. Our approach is to conduct focus group discussions with farmworkers (5 discussions with 6-8 individuals each) and farmers (3 discussions with 6-8 individuals each) and implement a community survey with 150 farmworkers and 100 farmers. Professional facilitators will lead focus group discussions. Community health workers and county Cooperative Extension agents will survey farmworkers and farmers, respectively. Our team of librarians and social scientists will work with community partners to develop focus group discussion guides and the survey instrument.

**Aim 2. Assess the role of NC libraries in serving agricultural communities and the extent to which NC county broadband plans include libraries and agricultural workers’ specific needs.** Our *working hypothesis* is that there are opportunities for libraries to expand their reach to agricultural communities, and farmworkers specifically, and maximize their engagement in county broadband planning and implementation. Our approach is to interview (n=15) and survey (n=100) public librarians and key state librarians regarding

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interest, resources, and needs related to addressing digital equity and to conduct a content analysis of all completed NC county broadband plans. A graduate student in library sciences will participate in the development of the interview guide, survey, and codebook for content analysis of broadband plans, in consultation with community partners. The student will conduct interviews and administer surveys.

**Aim 3. Determine the key sources of information for farmworkers and the accessibility of online information by estimating the proportion of farmworkers in NC with internet access in agricultural housing, the devices available to farmworkers, and the average cost of internet access.** Our working hypothesis is that there remain major gaps in access to online information for farmworkers. Our approach is to conduct time- and location-based sampling across outreach sites and the agricultural season. We will leverage our partnership with community health workers, who will conduct the assessment in all farmworker housing visited during outreach for one week during the peak season for the geographic area.

As a community-engaged, applied research project, we will respond to questions prioritized by our community partners and share the answers to the research questions underlying our aims. Specifically, we will use a framework, the Advocacy Coalition Framework (ACF), which suggests scientific information must be shared broadly across the project and be designed for multiple stakeholders who can influence digital equity. The ACF approach recognizes that different stakeholders have different information needs to advance policy change. We will work across our team and with our partners to create dissemination materials for specific audiences. For example, dissemination materials for libraries will inform programming for Laupus Library and other libraries across NC and beyond, fact sheets and policy briefs will be provided to broadband policymakers, and farmworker information literacy materials will be provided to community health workers. We will work with the libraries and professional designers to make materials more accessible, including translation into Spanish, use of digital repositories, and Creative Commons licensing, as appropriate.

The proposed project is a partnership between ECU and North Carolina State University (NCSU). The applied research project will be implemented by an interdisciplinary team with formal training in library science, public health, and science education. Team members have expertise in data management, information literacy, community engagement, health outreach, policy, quantitative and qualitative research, and evaluation. The team has a long history of work with community health workers, farmers, and farmworkers.

**Diversity Plan.** To ensure a diversity of perspectives and authentically engage with farmworker communities, we will continue a six-person community advisory board consisting of students from farmworker families, farmworker advocates, and experts in information literacy that has guided the work of our National Library of Medicine Health Disparities Resources grant. We will also have our research approach, questions, and methods be informed and driven by the needs of the 30-member NC Agriculture Digital Alliance, which includes farmworker advocates. This project represents direct engagement of library science with digital inclusion and the reduction of inequities in civic participation, education, and health.

**Project Results.** Our findings will provide the necessary evidence to transform how libraries expand their reach to agricultural communities and promote digital equity for vulnerable populations. Achieving our research aims will mean libraries are positioned to develop and disseminate appropriate information literacy materials for farmworkers and farmers. Libraries will be equipped to maximize their engagement in local broadband planning and implementation. With knowledge of the information, technology, and internet needs of farmworkers, libraries will be prepared to collaborate with partner organizations to advocate for a more equitable digital inclusion for farmworkers. The knowledge gained from this applied research project will support farmworkers' access to health information, participation in the modern economy, civic engagement, and educational opportunities. It will also inform broadband planning and implementation.

In summary, this three-year applied research proposal by ECU Laupus Health Sciences Library requests \$747,322 in Total Costs. No cost share is provided. Costs are allocated to personnel (\$226,711), contracts with community health workers (\$30,000), contracts with service providers for translation/interpretation/graphic design (\$30,000), a contract with Student Action with Farmworkers for dissemination (\$15,000), technology supplies for community health workers (\$6,000), publication and dissemination costs (\$10,000), travel (\$4,500), and other direct costs-research incentives (\$6,900). A \$237,614 subcontract with NCSU supports personnel, county Cooperative Extension agents, and the Cooperative Extension Broadband Access and Education Coordinator, as well as NCSU's indirect costs. Indirect costs (MTDC) are included under a federally-negotiated agreement at 51% for ECU (\$180,597).