



COLLECTIONS AND ARCHIVES
UNIVERSITY OF ARKANSAS AT LITTLE ROCK

Amigos 2015 Fellowship and Opportunity Award Final Report

Project: Developing a GIS Resource Service at a Community-Engaged Metropolitan University

Awardee: Ottenheimer Library, Collections and Archives, University of Arkansas at Little Rock, J B Hill

A. Summary

In May 2015, Amigos Library Services awarded \$4000.00 to Ottenheimer Library of the Collections and Archives Division (C&A) at the University of Arkansas at Little Rock to assist in the development of technological infrastructure and staff expertise within the library to support students' use of geographic information systems (GIS) technology (Library 2015; Ottenheimer 2015). The grant money, combined with existing university infrastructure, enabled the library to create a GIS workstation and to train staff on the use of GIS technology. The library's GIS support has been incorporated within a research consultation service to support students in the identification and application of government data. Knowledge gained through the Amigos sponsored training has served as the impetus for collaboration with university faculty and the identification of map digitization/metadata projects within the university, leading to additional successful grant applications.

B. Background

The University of Arkansas at Little Rock is a metropolitan, community-engaged research university that serves a diverse population of Central Arkansas students, including a large percentage of non-traditional and first-generation students. The university seeks to connect students to the metropolitan area through a focus on interdisciplinary studies, internships, service learning, and community engagement. Data visualization techniques enhance students' research projects and undergraduate experiences, and support students in all disciplines, particularly in social science community-engaged research that the university promotes.

Geographic information systems (GIS) is an interdisciplinary research tool that enables students to manipulate data and create visual representations, as well as to think critically about spatial patterns, linkages, and relationships in data. GIS is gaining increasing importance as a research tool in the university's curriculum. The university offers a certificate in geospatial technology, and GIS methods and theory are incorporated in a wide range of disciplines, including geography, earth sciences, history, engineering, business, and environmental studies.

The university provides a site license for ArcGIS software and a few academic departments have small specialized computer labs that serve the students within the major. However, until the advent of the Amigos grant there has been no one centralized location on campus for students from multiple disciplines to collaborate and access the data, technology and support needed for GIS applications. As U.S. Federal and European Union depositories, the UA Little Rock C&A library and research centers provide access to a wide-range of data; however, previously the division had not been able to provide students with the technology and staff expertise to promote and incorporate the data into their projects.

To help address this deficiency, UA Little Rock librarians applied for an Amigos 2015 Fellowship and Opportunity grant with the goal to gain funding to help the library develop support for data-related (geospatial, numeric, and statistical) class assignments, teaching and research. It was envisioned that with additional GIS infrastructure and expertise, the university's librarians and archivists would be able to offer a new service to support student success by assisting students in the representation of datasets in new and inventive research projects

In May 2015, Amigos Library Services awarded \$4000.00 to the C&A division at the University of Arkansas at Little Rock. During the summer and fall of 2015, the university applied the grant funding to the creation of a GIS workstation at Ottenheimer Library and the initiation of professional development in the use of GIS technology.

C. Expenditures

The \$4000 in Amigos grant funds were expended on computer hardware, GIS training materials, and the services of an experienced GIS teacher and scholar. Details are as follows:

Grant Expenditures	Amount
GIS Workstation	\$1980.82
GIS Trainer Salary	\$1180.00
GIS Trainer Fringe Benefits	\$ 208.86
GIS Books/Training Manuals	\$ 630.32
TOTAL	\$4000.00

Grant funds were supplemented by university funds in the purchase of additional instructional materials, web-based instruction for one librarian (via Lynda.com and ESRI), and supporting ArcGIS software and hardware.

D. Training

For the grant-funded GIS training, the university contracted with Dr. Jess Porter, Associate Professor, Department of History, University of Arkansas at Little Rock, to serve as instructor. Dr. Porter holds a PhD from Oklahoma State University where he was awarded with the Susan Shaull Medal for Excellence in Teaching Geography. His research interests include geospatial technology education.

The initial plan was to provide training to the division's research librarians and archivists. With the availability of a campus departmental GIS computer lab, the training was expanded to also include paraprofessional staff. While it was not expected that all training participants would provide support for the use of GIS by researchers, the expansion of the training provided an excellent continuing education opportunity for C&A staff. In all, 20 librarians, archivists and library staff members participated in workshops.

All trainees were experienced library/archives professionals or paraprofessionals who could be described as having varying degrees of knowledge of census datasets, limited knowledge of maps and geography, and no knowledge or experience with GIS or other geographic data visualization techniques. The goal of the training was to provide basic GIS knowledge and hands-on GIS experience, exposing C&A staff to information that would help them to better understand the data needs of researchers and enable some to continue their study of GIS to better support students and become partners with faculty in data-based research and instruction.

The GIS instruction was provided on two days (July 28, 2015 and July 30, 2015) and included the following topics.

- GIS Introduction
- GIS Unique Capabilities
- GIS Data – Vector Maps
- GIS Data – Raster Images
- GIS Data Sources
- Scale of GIS Data
- Databases and Datasets
- Visualizing Data
- GIS Layers
- Maps and Data
- Maps and Databases
- GIS Applications and Examples

- ESRI
- GIS Software Overview
- ArcGIS Software
- ArcMap/ArcView Desktop GIS
- Map Documents
- Map Layers
- ArcCatalog
- ArcToolbox
- Using GIS for Spatial Analysis and Mapping
- Data Classification of Choroplethic Maps
- Choroplethic Maps
- Methods for Creating Data Classes
- Beginning/Intermediate Hands-on GIS exercises

E. Outcomes

The outcomes of the Amigos-funded grant included the introduction of C&A librarians, archivists and staff to geographic information systems; the initiation of one librarian's development of expertise in the identification of datasets and the application of GIS technology; the creation of a student GIS workspace; and the impetus of collaboration of C&A librarians and archivists with university faculty and staff on GIS-related projects.

1. Staff Development

Twenty librarians, archivists and library staff members participated in a two day GIS workshop. Participants gained a basic understanding of geographic information systems and hands-on experience using ArcGIS. One librarian participated in additional web-based training to develop GIS proficiency to support assistance to student researchers.

2. Technology and Service Enhancement

Ottenheimer Library purchased additional hardware and created a research consultation room featuring one GIS workstation. The workstation was made available for use by librarians assisting students with research and students independently applying GIS in their research. A research consultation service was publicized on campus as well as in the community (Putting 2016). After the GIS training and the creation of the GIS workspace, librarians determined that the complexity of GIS and the limited number of students capable of effectively using GIS warranted investigating additional options. This prompted the library to subscribe to Social Explorer in 2017 as an additional means of data visualization in student research.

3. Collaboration and Exploration

Expected outcomes of the grant-funded project were the training of librarians and archivists in the exploration and application of data visualization and geographic technology, as well as the establishment of a new research support service. Additional outcomes have been C&A collaboration with university faculty in grant-funded research projects, and support for the identification of additional map digitization and metadata projects.

One GIS grant application/collaboration occurred in 2017 when the C&A Ottenheimer Library received a \$13,000 grant from the National Endowment for the Arts to sponsor an NEA Big Read community event (Ottenheimer 2017). Participants read *Into the Beautiful North* and engaged in book discussions and presentations exploring immigration in the United States. For the initiative, a librarian applied census data in the visualization of evolving immigration patterns.

In 2018, archivists at the C&A Center for Arkansas History and Culture received a \$6,000 grant from the Arkansas Humanities Council to assess, digitalize, and catalog early railway line and city maps created in the early 1900's (Center 2018). The archivists also received a \$50,000 Humanities Collections and Reference Resources grant from the National Endowment for the Humanities (NEH) to bring together scholars and technical specialists to digitize and describe archival maps, documents, architectural drawings, and photographs related to Little Rock urban renewal. The mapping renewal project included adding geospatial data to the digital files so that GIS can be used for analysis. (UA 2018).

These three recent grant initiatives were independent of the Amigos grant; however, the Amigos grant expanded geographic knowledge and renewed interest among the C&A staff not only in data visualization but also the university's geographic collections. This prompted librarians and archivists to explore new research possibilities and investigate hidden university research collections. Consequently, the 2015 Amigos Fellowship and Opportunity grant has continued to provide benefit to UA Little Rock beyond its initial impact.

F. Cited References

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