Geospatial Discovery and Collaboration: Vanderbilt's GIS Lab

By Alyssa Sklar and Stacy Curry-Johnson

Introduction

In October 2023, the Vanderbilt University Libraries embarked on an exciting new initiative: creating a dedicated GIS Lab, designed to provide comprehensive GIS resources that foster exploration, enhance geospatial data literacy, and encourage collaboration. Prior to the creation of the GIS Lab, GIS services at Vanderbilt were managed by a single Geospatial Librarian through the Digital Lab at the Library. However, the growing demand for GIS resources—particularly in an environment lacking a dedicated GIS or Geography program—necessitated the expansion of our GIS team. This article explores the evolution of the GIS Lab, the challenges we've encountered, and the collaborative projects that have shaped our work.

About

The GIS Lab at- Vanderbilt University Libraries is a resource hub for geospatial discovery and collaboration, serving students, faculty, staff, and the broader community. Our team includes Dr. Stacy Curry-Johnson, the Director of the GIS Lab, the Director of Research Strategy for the Library, and a Research Assistant Professor in Anthropology, who has laid the groundwork for the lab over the past 8 years. Joining the team in June 2024, Alyssa Sklar, the Librarian for Geospatial Systems and Data, has added her expertise to further strengthen our GIS services. Together, we offer hands-on GIS workshops, one-on-one consultations, and tailored instruction to help faculty, students, and staff incorporate geospatial analysis into their research and coursework. The GIS lab is a stand-alone department within the Vanderbilt Library organizational structure. It was previously under the Digital Lab, but due to the unique nature of project engagement, instruction, and curriculum development, the administration deemed the lab suited for its own department.

One unique aspect of our work is providing GIS support in a context where there is no dedicated GIS or Geography program. This situation requires the GIS Lab to serve as a cross-disciplinary resource, offering support to fields such as anthropology, history, health sciences, and the social sciences. In this environment, the GIS Lab is a connecting piece to bridge the gap between departments and disciplines that typically do not have GIS as a core focus.

The GIS Lab's facilities have expanded to accommodate growing demand, with a dedicated room equipped with 13 computers running multiple types of GIS software. This new space has allowed us to offer a more robust range of services, from introductory GIS workshops to advanced data analysis and visualization sessions.

Vanderbilt Library GIS Lab

Projects & Library Collaborations

Our GIS Lab has had the opportunity to work on a range of projects, collaborating with both academic and community partners. Prior to the lab creation, the university did not have a dedicated computer lab that served GIS software and programming. Students and faculty found it difficult to work and teach without PCs

available. One of the future goals of the lab is to expand to add more computers for credit-based course instruction. Also, high computing machines for advanced processing should be added. Below are some of our most recent initiatives.

- GIS Day 2024 | The Art of Cartography: Historical Maps for Modern Inquiry

In partnership with Vanderbilt's Special Collections and University Archives, and supported by The Curb Center for Art, Enterprise & Public Policy, we facilitated a multi-faceted event titled *The Art of Cartography: Historical Maps for Modern Inquiry*. This event explored the historical significance of maps and their relevance to understanding cultural heritage. We offered hands-on workshops for georeferencing and digitizing maps, a roaming map exhibit,a reception showcasing maps depicting native lands in Tennessee, maps of Havana and Paris, as well as some Blaeu maps, and [created a StoryMap](.).

GIS Day 2024

- The Geophysical Investigation and Geospatial Storytelling of the William Edmondson Homesite

This project brought together the Friends of William Edmondson Homesite Park and Gardens, Vanderbilt's Institute for Spatial Research (VISR), and other campus units

to conduct a geophysical survey of the William Edmondson homesite using ground-penetrating radar. We then created a [StoryMap](#) of William Edmondson's life and his contributions to the Edgehill community. The project engaged the community through outreach days, where oral histories of the area were collected and incorporated into the digital story.

The William Edmondson project also sparked a collaboration with Vanderbilt's Buchanan Library Fellows program, where three undergraduate students, mentored by the GIS Lab, mapped all the planted trees on the homesite and developed an [interactive tree map](#) using ArcGIS Online. This initiative has provided students with experience in spatial data collection, map design, and community engagement through GIS.

Challenges

One of the core challenges we've faced in establishing the GIS Lab has been raising awareness of its services across a diverse campus community. Despite our efforts to communicate through various channels —including a new website, updated LibGuides, a monthly mailing list, and event listings on various platforms—we have found that students and faculty often remain unaware of the full range of GIS tools and services available to them. Students often express surprise with comments like, "I didn't know this existed," which underscores the difficulty in reaching a broad audience especially when we do not liaise with a Geography or GIS department.

Another challenge we've encountered is balancing workshop attendance between in-person and virtual formats. While Zoom workshops have allowed us to reach a wider audience, hands-on tutorials can be difficult for participants to follow when they only have one screen to use. In contrast, in-person workshops provide a more interactive environment. Still, attendance tends to fluctuate, and it can be a challenge to engage students who might be unaware of our in-person offerings. This can be due to several external factors such as intensive student schedules and workload. Finding the right balance for both in-person and virtual learning is part of our current effort.

Looking Ahead

As our GIS Lab grows, managing this expansion amidst limited resources remains a key challenge. One potential solution we're exploring is expanding GIS training beyond the lab itself, creating a GIS literacy program for library staff across various departments. This would allow us to leverage the skills and expertise of librarians across the institution, ensuring that GIS support is available throughout the campus and not confined to a single lab space. Additionally, we aim to create a digital badging system for GIS through the Library to incentivize learning and provide transferable skills to students. As previously stated, we also plan to add more computers and high computing systems into the lab. Part of the lab development will include the addition of touchscreen monitors for viewing and interacting with digital maps.   Lastly, we aim to expand our collaborative efforts beyond Vanderbilt and the Nashville community, seeking opportunities to contribute to regional and national initiatives that leverage the power of geospatial tools and GIS literacy.

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