



INSIDE ARTHURLAKES LIBRARY

COLORADO SCHOOL OF MINES

Making a Dream Into Reality: An Online GIS-Based Index to Maps of the World

In 2011, a serendipitous conversation between Library staff members Chris Thiry, Map Librarian and Margaret Katz, Preservationist sparked the creation of a search tool dear to researchers and map aficionados around the world. As Chris Thiry states, “In the 20+ years that I have been a Map Librarian, I dreamt of having a single, visual, computerized catalog to the maps in my library; a simple portal to greater access to the collection. Rather than typing proper terms into a library catalog or consulting photo-copied, hand-colored indexes, I dreamt of a system that all one had to do is look at a map, point to the desired area, click the mouse and access that map. This dream has now become a reality.”



Student Assistant Ginevra Moore and Map Librarian Chris Thiry collaborate on index project

Chris observed that online mapping services such as Google Earth or Map Quest are useful for several purposes but for scientific work, researchers often prefer paper topographic maps that show greater details. More importantly, popular websites cannot show people what is available in a library. However, library catalogs have access issues as well. Barring sheet-by-sheet cataloging, library catalogs cannot provide the boundaries of individual map sheets within a set. To address that problem, many library catalogs incorporated non-interactive indexes to collections.

Finding a sheet from a map set has always been a complicated process in libraries. The sheets in the Map Collection are listed

in the catalog but without an index, it is very difficult to identify which sheet belonged to what area. The Map Collection’s indexes were comprised of hand-colored photocopies and located only in the Map Room. Although these indexes were easy to use, they were not very detailed. A user would have to know the precise location of a town to find a sheet. This problem is widespread throughout the map library community. A solution involving interactive indexes had always been a theoretical solution.

Margaret Katz’s chance mention of a grant-funded map indexing project at Yale University reignited Chris’ ambition to create his dream computerized index for the Library’s map collection. Inspired by the work begun at Yale, Chris used ArcGIS, a complex geographic information system to start building the indexes. A GIS integrates hardware, software, and data for capturing, analyzing and displaying all forms of geographically referenced information. ArcGIS, created by ESRI, is the industry standard and is available campus-wide at Mines. It is used by city planners, economists, energy and mining companies, geologists and librarians to view and interpret data in mapping formats that reveal relationships, patterns and trends.

Yale’s project was in its initial phase, small in scope with limited procedure documentation. Chris faced a steep learning curve in all phases of creating the indexes and engineered most of the steps himself. The process included using ArcGIS and

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Making a Dream into Reality

data obtained from a variety of sources, including the maps themselves. Through much trial and error, Chris was able to make indexes to the map sets. The original plan was to merely produce better indexes that were to be printed out for use in the Map Room and loaded as PDF files in the Library's catalog. But technology in the field advanced so exponentially that Chris was able to create interactive, GIS-produced maps to be disseminated on the web from a cloud-based network. Chris compiled the indexes into master websites via ESRI's internet cloud.

The websites make it easier for students, faculty and researchers to find maps in the Arthur Lakes Library Map Collection.



Portal to the Library's GIS-Based Index

Chris created over 75 indexes and aggregated them into 3 different master websites. These are the culmination of almost 2 years of work by Chris and his student assistants. The first 2 sites show what maps, segregated by scale, the Arthur Lakes Library owns. The third site shows the outlines of paper maps that have been scanned by other libraries. While the first 2 are solely dedicated to the Library's collection, the third is universal in scope with no connection to any particular library's collection or catalog.

- Maps at scales 1:50,000 to 1:125,000.
tinyurl.com/k93l6ds
- Maps at scales 1:200,000 to 1:250,000
tinyurl.com/my5wkg4

The websites show the outlines of paper maps the Library owns overlaid on top of a map of the world. The website has a search box so a user can zoom directly to a city, location or geographical features such as mountains or rivers. The sheets owned by the Arthur Lakes Library are highlighted in blue. Clicking on a highlighted quadrangle reveals a pop-up box that contains publication and citation information about the

individual paper maps and a link to the map's record in the Library's catalog. By clicking on an unmarked area of the map, the websites also provide information about sheets not owned by the Library.

The third website is an interactive index to scanned maps of the world at scales 1:50,000 to 1:125,000. It displays similar citation and publication information but contains no link to the Library's map collection. This index is available at tinyurl.com/ksnep8e



BEFORE : Photocopied and hand-colored paper index



AFTER : Detailed graphic image in online index

The Map Collection is one of the jewels of the Arthur Lakes Library. Its 169,000 maps and 6,000 books and atlases cover the world. Users can now access the Map Collection in the way Chris envisioned. Users can click on a map or use the search-box to find the maps they need. No more searching for the exact geographic term or guessing what sheet belongs to what area. Users see immediately where the Library Map Collection has map coverage. The indexes also serve as useful tools in collection development for the Library.

These indexes have been warmly received by the library community. Since the problem of poor indexing is widespread throughout the map library world, Chris has been a pioneer in the creation, coordination, and publicity of a Clearinghouse for GIS-created indexes to paper map sets. In addition, Chris has developed the standards and written documentation on how to create these indexes. Librarians from Yale, University of Wisconsin Milwaukee, University of California Santa Barbara and others have expressed a great interest in adding information to the Clearinghouse. Chris has made presentations about this project to the ESRI Annual Users Conference in San Diego and the Western Association of Map Libraries (WAML) meeting in Yosemite in 2013.

spotlight on staff

Library Experts In Demand

Throughout the years, the Arthur Lakes Librarians are invited to present and share their professional expertise at national and international conferences sponsored by library organizations, engineering and scientific societies and technical firms. Library users also benefit as the librarians bring back current ideas and trends to be implemented in the Library. From the US to the UK, Arthur Lakes Librarians are at the forefront in promotion and improvement of library services to provide the most up-to-date methods for Library users to access information.



Library Experts : Patricia Andersen, Lisa Dunn, Laura Guy

Laura Guy, Systems Librarian, made 3 presentations at 2 Ex Libris Users conferences held in 2013. She combines humor with knowledge as evidenced by her presentation's titles, "Avoiding DATApocalypse!" and "OBDC: How Not to Pull Your Hair Out". Her presentations are well-attended but there are professional and personal benefits for Laura and Library users as well. As Laura states,

"These conferences are a way to learn new techniques and applications which will improve usage of our information platforms such as our discovery tool. I share methods and practices I have learned here at Mines, and acquire and absorb the knowledge and experiences of my colleagues and the vendor. I always come back filled with ideas that are then implemented. My presentations are greatly appreciated by my colleagues, just as I appreciate the time and considerable effort that goes into their papers."

In early 2013, a University of Limerick librarian contacted Patricia Andersen, Public Services Librarian about the Library's LibQual+ user surveys. The Library was one of 10 libraries that significantly improved its scores between 2007 and 2011 campus surveys in providing quiet space for students. As a result, Patricia was invited to attend the "10th Northumbria International Conference on Performance Measurement in Libraries and Information Services" held in York, United Kingdom. At the conference, Patricia met with attendees from all over the world to examine how successfully their assessments of library services were meeting their users' needs. One library focused on 5 problems reported by their student body, took the results to their administration and was awarded 45 million pounds to build a new library.

Lisa Dunn, Head of Reference and Interim Archivist, holds the current Library record for most conferences attended in one year. As a board and committee member in several educational, archival and geological organizations, she attended 6 conferences in 2013 ranging from American Society for Engineering Education (ASEE) conferences in Colorado and Georgia to a GeoScienceWorld Board Meeting held in San Francisco. The benefits of attending and presenting at professional conferences are numerous as Lisa describes,

"We network, learn, and update our knowledge to support our user communities in engineering and the sciences. These interactions keep me current in my field and give me the opportunity to share ideas and problem-solve with some of the most experienced information professionals in STEM education. For example, tracking trends in engineering libraries played a role in our creation of a single service point to better serve our users. When I was invited to speak on geoscience data preservation at a GSA meeting, it was a venue to encourage dialog between data managers and end users. Professional meetings energize me as a professional; I contribute, and always take something away to support our community."

Proceeds from the Library's Annual Book Sale are used for these professional development events and offset conference fees and travel expenses. The Book Sale is a concrete expression of the value in stewardship and preservation of information. Donors and donations are critical to this effort. To make donations to the Book Sale, please visit the Library website at [library.mines.edu/About the Library/Library Booksale](http://library.mines.edu/About%20the%20Library/Library%20Booksale).

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