Reigniting Bibliographic Research with GIS and Visualization

RBMS at ALA

Sunday, June 30, 1:00-2:30

McCormick Place Convention Center room S404bc

**[Opening ALA branded slide]** When I was asked to present here today I knew I wanted to talk about a jewel of the UIC rare books collection, the Lawrence J. Gutter Collection of Chicagoana. The Gutter collection fits the title of today’s session – History on Fire! How Libraries Mitigate Loss of the Cultural Record Due to Disaster or Destruction—in two ways. First, the Gutter collection of Chicagoana mitigates the loss of the cultural record by preserving key materials about the history of Chicago, a city important in the history of the United States. Second, the Gutter collection relates to disastrous fires by containing books and other printed materials created in Chicago that survived the devastation of Great Fire of October 1871.

**[Slide of bookplate & book covers]** So, what is the Gutter collection? Let me start with the collector. Lawrence J. Gutter was a graduate of the University of Illinois at Navy Pier, who began collecting books in 1948. By the mid-1960s he became especially interested in collecting materials pertaining to the history of Chicago, from the period of the incorporation of the city in 1837 to around 1930, referred to as the "Age of Chicago."

The University Library purchased the Gutter Collection in 1982 with private gift funds and through the University of Illinois Foundation. The collection, containing ca. 6,500 titles, presents high and low culture, from thrilling novels of life on the frontier **[zoom to covers],** to municipal governance, to sensationalist exposes of crime and corruption**,** not to mention fine first editions of literary classics such as Dreiser’s Sister Carrie and Algren’s Chicago: City on the Make along with maps, prints, and manuscripts. The Gutter Pre-fire Imprints, those books published in Chicago before the great fire, numbers 500, and was the largest collection in private hands at the time of the UIC acquisition.

Private collectors like Larry Gutter play a tremendously important role in recognizing or creating patterns and connections and building comprehensive bodies of work with a connoisseur’s eye. But collectors do not live forever, in contrast to institutions, especially universities and their libraries. Universities, as has often been remarked, are as a group the most enduring institutions in western culture.

Repositories not only preserve books, documents, and other cultural artifacts but preserve them with altruistic purpose. Libraries and cultural heritage sites enable the public to marvel at objects from the past, to use artifacts and texts to reconstruct stories of people and places, and to help us make the right decisions in governance and citizenship. In fact, I propose that new and emerging technologies add another dimension to our ability to reconstruct the past and I will demonstrate some uses of readily available tools that render textual information and dispersed bibliographic data immediately understandable and relatable. I have used the set of 500 Gutter Pre-fire Imprints as my data source to examine the impact of the Great Fire on the printing and publishing industry in Chicago.

By taking geographic information available in special collections materials, we can recreate virtually the spatial relationships that existed before their destruction. While this recreation cannot bring back the original places in space, it can give us a deeper understanding of the relationships these places had with one another.

Here’s a clear view of the path that the fire took through the city boundaries, essentially obliterating the oldest parts of the central district, all the way to the southern part of what was then the township of Lakeview. **[slide of** **interactive map?** [**http://www.encyclopedia.chicagohistory.org/pages/3710.html**](http://www.encyclopedia.chicagohistory.org/pages/3710.html) **and historical burned district map**]

The University of Illinois at Chicago is situated in the historically rich Near West Side, a neighborhood that was actually spared from the Great Fire because of a strong south-westerly wind **[point out the area on the interactive burn map]**. Our students make up one of the most culturally and ethnically diverse student bodies in the United States. **[campus photo with students] [campus photos]** The campus is just blocks **[google map with line from east campus to DeKoven]** from where the Great Chicago Fire is believed to have started **[picture of Mrs. O’Leary’s cow],** and where, fittingly, the Chicago Fire Academy was later built to train firefighters. UIC, by the way, also has the dubious distinction of razing the majority of the buildings that comprised Jane Addams’ Hull-House Settlement **[photos of HH complex before and during demo],** meaning that sometimes universities mitigate disasters and sometimes cause **them [photo of HHM with SCE in background].**

But cities aren’t frozen in time. On the contrary, vital cities are continually being renewed, sometimes controversially at the hands of developers, sometimes aspirationally as we see with projects like Chicago’s Millenium Park, and sometimes out of necessity, such as rebuilding after disasters. Such disasters are the inspiration for today’s panel, and my colleagues demonstrate how libraries become the preserves of the cultural record, maintaining that link between the past and present.

**[Slide with images of Special Collections]** However, those of us who safeguard artifacts of the past can’t really have any idea of how they’ll eventually be used, and quickly evolving and obsoleting technologies can be overwhelming. While many of the tasks we undertake like cataloging, archival processing, and reference remain consistent, technology has profoundly changed how we accomplish these tasks, and offers opportunities to make our collections discoverable and usable in ways I couldn’t have imagined even 20 years ago, at the advent of the Internet Age.

**[slide of Chicago Before the Fire]** Chicago in the 19th century was a thriving boom-town, and by the late 19th century, the Chicago publishing industry was second only to New York City’s. The 500 Gutter Pre-fires are distinguished by well over 100 discreet imprints. Still, before I began my research I didn’t know if these printers and publishers were directly impacted by the Great Fire. A crucial first step was to document where they were located, and then compare their locations with the areas of Chicago destroyed by the great fire. As for presentation, I had the idea that mapping would be the best way to represent this spatial information, which led to the creation of these slides. **[show geolocated historical maps showing locations of the printers and publishers and discuss]** Note how closely clustered in the 1 square mile around the Court House they are, and how exciting it must have been to be so near to the center of commerce and entertainment in such a rapidly evolving city. Furthermore, once I had the establishing geographical information, I was able to conduct research to find the visual resources such as prints and photos that would give a more 3-dimensional understanding of the look and feel of the pre-fire district than just those points on a map.  **[show historical photos and prints that show the city before the fire].**

Now’s a good time to talk about how my colleague, Becky Lowery, and I went about constructing the geolocated maps. **[slide of process montage]** Initial steps to simply gather the necessary data included running a report against the library catalog database for the records for the Gutter pre-fire imprints, and from there I further cleaned the data utilizing excel spreadsheets. **[zoom to MARC record]** I isolated the MARC field 260 publication information, and then, to document the addresses I searched old city directories and the crucial bibliographies of early Illinois and Chicago imprints produced by the WPA and by Cecil Byrd. Several tasks had to be performed in order to then place the publishers on the map. **[zoom to spreadsheet]** First, the addresses of the publishers needed to have the corrected street numbers and in some cases street names determined. Second the map itself had to be overlaid on the Google Earth image of Chicago in such a way that there was geographic correspondence between the two, **[zoom to G-Earth view]** and then, the actual plotting of places could take place.

Due to the expansion of the city limits in the 1880s and 1890s Chicago went through a two-phase street renumbering project in 1909 and 1911. That meant that those pre-1871 addresses had to be converted to the post 1911 numbering and naming system still in use today. The Chicago History Museum provides copies of both of these renumbering and the street renaming schemes among its many helpful online resources. Also several address were given by a building name such as Reynolds Block or Tribune Building which required researching the address in sources such as the Encyclopedia of Chicago, or by inspecting the books themselves to look for clues.

Much to my chagrin and naiveté, I discovered GIS isn’t as simple as dropping pins on a map, it actually requires using computer language to plot coordinates. So, after addresses were converted to the current numbering system, they were converted to longitude and latitude using the Batch Conversions of Address to Latitude/Longitude application written by Stephen P. Morse. (<http://stevemorse.org/jcal/latlonbatch.html?direction=forward>) . Then the Excel spreadsheet containing all of the cleaned and normalized data was used to create the bulk of the KML file to place the points on Google Earth. **[zoom to KML tags] Keyhole Markup Language** (**KML**) is an [XML](http://en.wikipedia.org/wiki/XML) notation for expressing geographic annotation and visualization within [Internet](http://en.wikipedia.org/wiki/Internet)-based, two-dimensional maps and three-dimensional [Earth](http://en.wikipedia.org/wiki/Earth) browsers.

Since I wanted to give a sense of the historical locations of these printers, I chose to place the map points on old maps from the period being studied, instead of just placing them in a familiar GoogleMap. Google Earth provides an overlay tool as part of the Google Earth program. With this tool you may overlay the image, in this case JPEG scans of Chicago maps published in 1871 and 1873, and then stretch, move, and rotate the image until it fits the correct parts of the satellite view; this is called rubber sheet referencing. Several things may affect this such as different projections between the two images or errors, especially on older maps. In addition there are changes in the actual geography that may be natural such as changes in the course of rivers, or man-made. For instance, a great deal of land on the lakefront east of Michigan Avenue and the railroad tracks --(think of all that beautiful parkland east of the Art Institute)—is largely landfill comprised of fire debris such as the rubble you see here **[slide of Post-fire Devastation]**. So exact fits are the exception rather than the rule. Given the fact that the street grid remained essentially unchanged, we have been able to make a good fit here.

What can visualizations tell us that would be different than reading a biography of Chicago printing history? The most compelling reason for data visualization is that it facilitates rapid acquisition of information. For example, just by looking at the map with the locations of the printers we can imagine the opportunity amongst these printers for competition, or for community. It shows that many probably shared resources, and indeed**, [go to map with a blown out dots],** this blown out view of a number of printers that shared the same address reveals their social network. **, [explain that what they’re seeing is an expanded view of a single dot that represents 11 printers**]. I also couldn’t look at the maps showing the movement of the fire through the city, and look at the location of the printers, and then at the photos of the ruins and not immediately understand that the industry was devastated. There would have been no way to evacuate the heavy equipment, and I picture the rolls of paper and stacks of pages igniting in a flash. These suppositions are confirmed by the many eye-witness accounts of the city in flames and in such books as “The Story of Chicago in connection with the printing business,” published in 1912. In a similar vein, just by using a simple publisher name word cloud **[word cloud slide]** generated with the freely available Wordle tool, we can quickly see the publishers with the highest representation in the Gutter Pre-fire Imprints and can guess that these books must have had the widest circulation outside of Chicago since they survived. This simple information could open up new areas of research about distribution patterns of Chicago imprints.

Of course, the Great Conflagration didn’t mean the end to the book trade in Chicago, and indeed, the city quickly rebuilt itself bigger and better than ever. **[slide of rebuilt city in 1875]** This map shows us that by 1873, the printing and publishing industry was up and running, and while the distribution of the offices is slightly wider, dispersing to the west and south, than in the pre-fire years, the industry rebuilt largely in the same Loop central commercial district. **[give data and show map of their locations by 1873].** This was one of the biggest surprises of my research, as I thought perhaps the industry was immediately rebuilt in the area we now think of as Printers’ Row. **[slide of Google map showing location of Printers’ Row].** After the realization that wasn’t the case, I did a very little digging and *The Encyclopedia of Chicago* told me that the printing industry didn’t move into this area until around 1885, after the completion of the Dearborn Street train Station.**[zoom to photo and point out train depot]** This area would have attracted printers as a new and convenient transportation hub with architecture built to maximize the usefulness of high capacity jobbing presses. Some 80 years later the old printing houses were converted to residential condominiums, restaurants and shops, with only vestiges of names and terra cotta decorations on buildings and an annual literary festival belying the history of the neighborhood. The earlier printers’ row in Chicago’s Loop, however, is harder to discern, its history mostly relegated to books.

[Conclusion] Again, I’d like to thank Alice Schreyer and the RBMS programmers for this opportunity to explore and expand my understanding of GIS, visualization and other emerging technologies. The digital humanities offer great opportunities for new kinds of learning and collaboration, and I certainly greatly benefitted from the wisdom and contributions of my colleagues Becky Lowery, GIS whiz, and Isabel Gonzalez-Smith who helped me with the nifty but tricky Prezi presentation tool **[Thank you slide]**. I have to say, though, that what I found really pleasurable about this small research project I presented today was the good, old-fashioned diving into the books themselves and what I learned along the way. **[click back to overview slide]** I discovered a wealth of historical information in the city directories, which were rife with statistics and narratives about the growth of the city, its people, and industries. I think most in the audience here would agree that technology is great, but the really good part of our jobs is working with the old stuff.

Averting the disaster of cultural and historical amnesia is at the very heart of what librarians, archivists and curators do each and every day. Just as maps orient us to our surroundings, old books, manuscripts, archives, and images bridge our present reality with our history. New kinds of collection use, technology, and imagination will surely reveal aspects of these stories in surprising ways over time.