Enabling Geospatial Data Access via Education: A MAGIC Approach

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How it all began…

Initial Driving Force

• The University of Connecticut Libraries Map and Geographic Information Center (MAGIC) joined the Undergraduate Education Team within the Libraries during a reorganization in 2008.

• MAGIC needed to transition for expert user focus to meeting the needs of general users and undergraduate students
Reimagining MAGIC

- Reviewed Uconn Academic Plan and Library Strategic Plan
- Looked to peers
- Reviewed Horizon Report from EDUCAUSE to identify trends
Listening to Students

First Phase

• Empowered student employees at MAGIC to develop project ideas
• Encouraged creativity
• Reviewed keyword search data
• Focuses on problem solving
We want to learn more!

Second Phase

• Students expressed interest in internships at MAGIC
• Collaborated with Department of Geography to develop internship program
Internship Program at MAGIC

• Students receive academic credit for internship (no pay)
• Students work with advisor and MAGIC to identify learning goals
• Project outlined is developed based on learning goals
• Final version of project will be publicly accessible with clear attribution to student
Why Students Wanted an Internship Program at MAGIC?

• Classroom experience is task based with achievable outcomes
• Need to increase problem solving ability with GIS
• Desire to work on “Real” projects
• Interest in learning data creation process
Spring 2010

• 2 undergraduate students were first students to enroll in internship experience at MAGIC

• Both students excelled in the program, and enrolled in graduate programs upon completion of internship experience

Projects – Spring 2010

• Historical Railroad Maps
  – Scanning
  – Georeferencing
  – Making publicly available

• GIS Datasets
  – Revised shapefiles
  – Appended join fields for 2010 Census data
  – Developed and updated metadata
Spring 2011

- Two undergraduate student in geography
- Goal was to increase experience with GIS

Project - Spring 2011
- Developed GIS datasets
  - Processed 2010 Census data as it was released
  - Developed maps on 2010 Census data
- Developed climate and precipitation maps
Fall 2011

- 3 undergraduates in geography
- 1 graduate student in geography
- Each project is treated as an individual learning experience

Projects – Fall 2011
- Website development
- Air Navigation Map Index
- 2010 Census GIS Dataset Development
- GIS map development and GIS dataset development
Spring 2012

• 1 graduate student from geography
• Focus was on developing datasets for future projects

Projects – Spring 2012
• Historical aerial photography mosaics
Then something surprising happened....
Students wanted additional experience at MAGIC...
Spring 2012 – Independent Study Projects

• 2 Undergraduates and 1 graduate student in geography
• Projects were developed with an independent study focus
• Treated as researchers with full access to everything in collections

Spring 2012 Projects
• Historical Air Navigation Index Interface Development
• ArcGIS Server Installation and Configuration
• Historical Aerial Photography Mosaicing
Internships have helped MAGIC and the Connecticut State Data Center to Provide More Content, More Resources, and Services
Or to put it another way....

601,220

Total Views of Website content provided by MAGIC and the Connecticut State Data Center between January 1, 2011 to December 31, 2011
Using WordPress for Website Development
ArcGIS Server Test Interface
Air Navigation Maps Index
1923-1935

This index includes air navigation maps developed for the Aeronautics Branch of the Department of Commerce by the Coast and Geodetic Survey, Washington, D.C. from 1923 to 1935. Each air navigation map includes air route information as well as railroads, roads, and canals, providing a unique view of transportation networks within this time period. The interactive index below enables you to select a departure airport and will provide a list of destination airports available based on the departure airport you select. In some cases there may be multiple maps to choose from for your destination airport. Once you have selected an air navigation route, click View Route Map and the interactive map will show the outline for this route and by clicking on the map you will be able to access the map in multiple options, including a full-quality, georeferenced TIF image.
## 2010 Census Data

### 2010 Census Demographic Profile for Connecticut

The latest 2010 Census data can be found using the [American FactFinder](https://factfinder.census.gov) or for advanced users, you can access this data directly via the [US Census FTP server](https://www.census.gov/ftp/). The 2010 Census Demographic Profile data for Connecticut was released on Mar 11, 2011 and includes population, age, sex, race, ethnicity, relationship, household, and housing data. From the links below, users can download the data for Connecticut by multiple geographies from the Spreadsheet link in .csv format. Each of these geographies include multiple attributes and a codebook is provided for each dataset to assist users with using this data.

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<th>Geography</th>
<th>Year</th>
<th>Source</th>
<th>Summary Report</th>
<th>Metadata</th>
<th>Spreadsheet</th>
<th>Shapefile</th>
<th>KML</th>
<th>Preview in Google Maps</th>
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<td>2010</td>
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<td>Coming Soon</td>
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2010 Census Maps
New England Climate Map - 1961-1990

This map includes monthly average temperatures and deviations from the mean temperatures for the 29 northeastern United States weather stations cataloged by the World Meteorological Organization (WMO) for 1961-1990. All values are in degrees Celsius.
Air Photo Mosaics
Next Steps

• Increasing partnerships and collaborative projects
• Expanding internship program to additional departments across campus
• Exploring Independent Study Project Options
A Model For Success

• Strengthening connection to teaching is a win-win
• Provides students with experience working with projects and datasets that benefit the public
• Provides a great way to strengthen skills in GIS while working on projects that benefit the public
Questions?

Want to know more about the internship program? Contact us at:

magic@uconn.edu

Special Thanks to all of the faculty and students that have made the internship program a success!