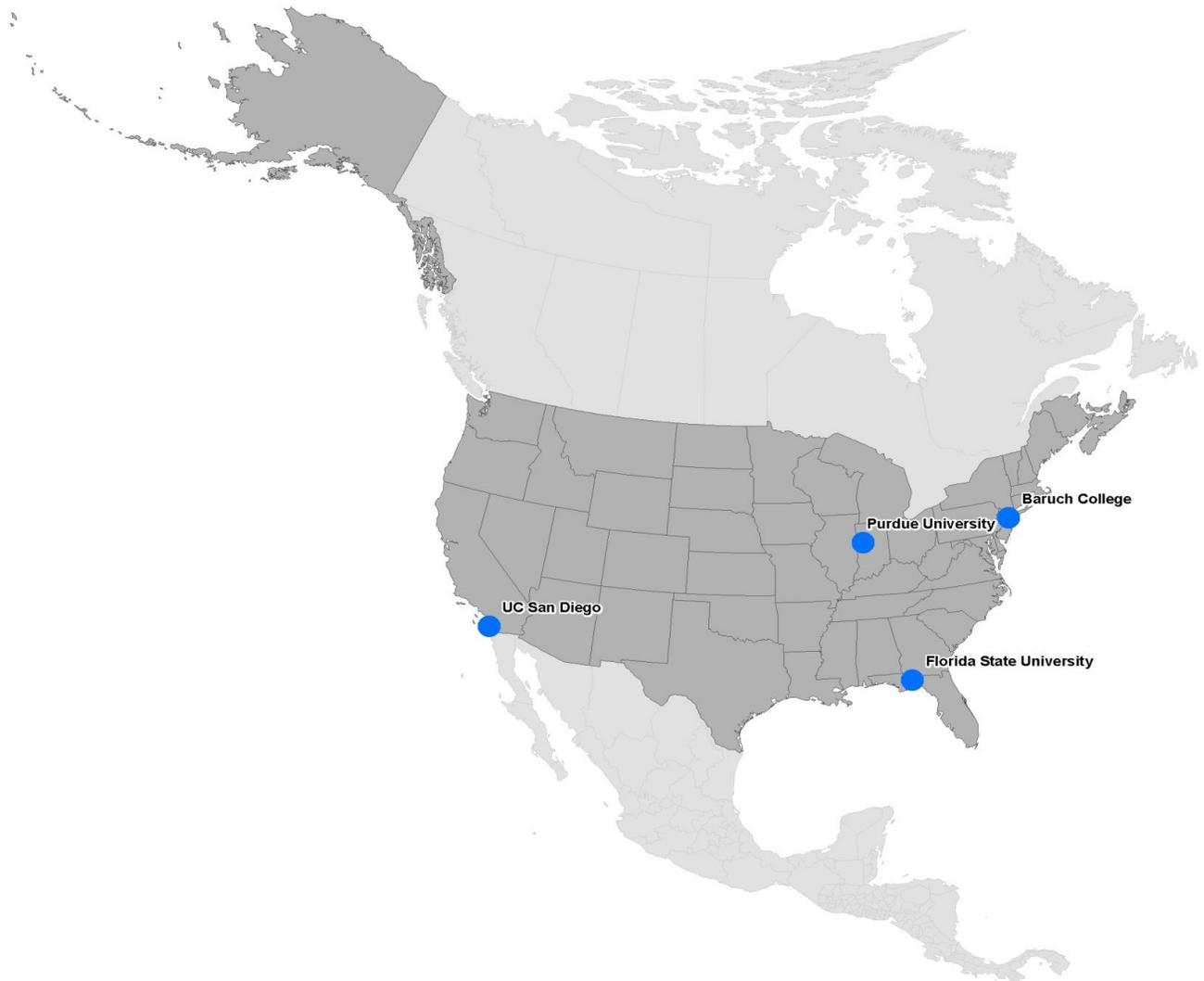


GIS in *EVERY* Library: Making It Happen

The Top 5 GIS Resources from our panelists and
ALA Map and Geography Round Table (MAGERT) Board Members
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Chris Miller, Purdue University, Indiana

- PostGIS - <http://postgis.refractory.net/> PostGIS is a very powerful open source geodatabase built onto PostgreSQL. Born in 2001, PostGIS is now anchoring tons of geospatial projects, providing not only a vector and tabular data store, but a customizable, programmable suite of spatial operations and functions. PostGIS runs on Linux, Windows, and OS X and is usable by nearly everything worth its weight in the GIS world (even ArcSDE can be run with PostGIS on the back end). What's that? You don't like to write SQL with fancy spatial functions and operations? It's okay -- it ships with some helper utilities, for one thing, but QGIS, GeoServer, and gdal/ogr (among many others) are all able to connect to, display and manipulate data in PostGIS.
- OpenLayers - <http://openlayers.org/> Take Google Maps, open source it and add a lot more input/overlay formats and protocols, and you have OpenLayers. It's a JavaScript web mapping framework that doesn't make you sign anything or accept advertisements and it can be used virtually anywhere one needs to render interactive map data. In some ways, the only limit on what OpenLayers can do is your own ability to code web application functionality. It drops nicely into modern web technologies, so almost anything that can be done with spatial data rendering online and web development can be done on top of OpenLayers.
- GDAL/OGR - <http://gdal.org/> GDAL and OGR are complementary raster and vector (respectively) manipulation libraries. They are open source and are ultimately made to be included in spatial manipulation software and scripts, but the more visible use scenarios involve running the utility programs that come with the code. `gdal_warp`, `gdalinfo`, `gdal_translate`, `ogrinfo`, and `ogr2ogr` are all very small, but very powerful programs that perform all of your typical operations on spatial data, including format translations, projections, clipping and subsetting, basic interrogation, and coordinate reference system assigning. Almost certainly you've used `gdal` and/or `ogr` at some point and you may not have realized it (it powers a lot of applications in the open geo world and is even written into certain parts of ArcGIS).
- GeoNetwork - <http://geonetwork-opensource.org/> Love, love, love working with metadata? Who doesn't!? GeoNetwork is an open source metadata management platform and server in wide use around the world. It manages and edits metadata in several popular schema (FGDC's CSDGM, ISO 19115/119/139, Dublin Core), harvests (and is harvestable by) other catalogs and stores via OAI-PMH, CSW, WebDAV, and natively, and indexes content for search using Apache's Lucene. If your web design and usability standards are low it can be used as a portal-in-a-box, but better still it's not too difficult to use it as a silent back end/administrative tool and build (or integrate) your own points of access. At Purdue, we're developing our own front end/client applications by pointing Apache's Solr (an important piece of the popular VUFind product) at GeoNetwork's Lucene index, which allows us to do lots of nifty tricks with search and opens up a future where we do even more interesting things with faceted results; dynamic, semantic query interpretation; and catalog-linking. GeoNetwork might look a little old-school at first, but there are lots of things that can be done to it and with it, and it's open source to boot.
- GeoServer + GeoWebcache - <http://geoserver.org/display/GEOS/Welcome> & <http://geowebcache.org/trac> GeoServer serves geodata. It sits in front of many, many formats and serves them out in a number of ways, including your typically important WMS, WCS, and WFS. Recent iterations feature a much improved admin interface, and when you put GeoWebcache in front of it, you're suddenly able to send your geodata out to the world in exactly the way the world wants it -- in fast, tiled streams into Google Earth/Maps, OpenLayers, and countless other modern clients.
- Firebug - <http://getfirebug.com/> - Okay, there's nothing explicitly spatial or GISy about Firebug, an add-on to Mozilla's Firefox browser. But if you've done any work with geodata on the web (and yes that includes testing WMS servers), you'll appreciate that firebug lets you see everything that comprises what shows up in the browser window. Every graphic element, every request to every server (including individual tiles in OpenLayers or GMaps, and then every element of the constructed page. Find out what you did wrong in one tenth the time it takes to think it through!

Frank Donnelly, Baruch College CUNY, New York

- **DIVA GIS data** -<http://www.diva-gis.org/gData> – Country level vector and raster data for every single country in the world – download individual files or geodatabases. Initially assembled for the BioGeomancer Project at UC Berkeley and part of the DIVA GIS project, most files come from public domain sources. For just global administrative boundaries you could also visit the GADM (<http://www.gadm.org/>) database page. *Also recommended by the MAGERT board!*
- **TIGER Line Shapefiles** – <http://www.census.gov/geo/www/tiger/> – extracts of the US Census Bureau’s TIGER Line files for all legal, administrative, and statistical areas in the US, updated annually.
- **Cartographic Boundary Files** – <http://www.census.gov/geo/www/cob/> - generalized extracts of the US Census Bureau’s TIGER Line files for several administrative areas (i.e. states, counties, zip codes) and census areas (i.e. tracts, block groups, metros) in the US from 1990 and 2000. *Also recommended by the MAGERT board!*
- **National Historical Geographic Information System** - <http://www.nhgis.org/> – the NHGIS is a project at the University of Minnesota that compiles and provides historical census boundaries and data for the United States from 1790 to the present. New users must register, but there is no cost and downloads are free. *Also recommended by the MAGERT board!*
- **QGIS** - <http://qgis.org/> – a free, open source, user friendly, cross-platform GIS. Windows users can download QGIS, the advanced GRASS GIS, and the GDAL / OGR utilities in one package. *Also recommended by Chris Miller of Purdue and the MAGERT board!*

Christie Koontz, Florida State University

- Public libraries and GIS: This was my inspiration for much of my work. Savas, E.S. 1978. “On equity in providing public services.” *Management Science* 24, 800-808.
- Discussion of OVERLAP BETWEEN GIS & IS: Greg Downey. 2007. “Human geography and information studies,” in B. Cronon, ed., *Annual Review of Information Science and Technology* 41, Medford, NJ: Information Today, Inc.
- HOW TO: Fred L. Miller. 2007. *GIS Tutorial for Marketing*. NY: ESRI Press.
- An APPLICATION: Christie Koontz, Dean K. Jue & Keith Curry Lance. 2005. “Neighborhood-based in-library use performance measures for public libraries: A nationwide study of majority–minority and majority white/low income markets using personal digital data collectors,” *Library and Information Science Research* 27, 28-50.

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- BatchGeo.com - <http://www.batchgeo.com/> - a useful web tool where both GIS novices and experienced geospatial professionals can easily geocode locations. From a simple spreadsheet listing the locations of people, places, or things - Batchgeo can produce either a private or publicly available Google Map that displays individual placemarkers at the locations listed in the spreadsheet. When clicking on the placemaker in these maps, information about that location is shown from the spreadsheet. Batchgeo geocodes street addresses, provides an accuracy rating, and allows placemarkers to be manually relocated before the map is published. For more experienced GIS users, Batchgeo can export a new spreadsheet listing longitude and latitude, which can be used in a GIS program to generate shapefiles.
- geodata.gov - <http://gos2.geodata.gov/wps/portal/gos> - One-stop for federal, state and local geographic data.
- Google Earth Library - <http://www.gelib.com/> - a repository with free KML applications ranging from aeronautical charts to current events that can be viewed in Google Earth. Popular downloads include the ability to view topographic maps draped three-dimensionally unto the "surface" of Google Earth. The library also provides links to blogs and KML creation tools.
- National Map Seamless Server - <http://seamless.usgs.gov/> - Offers free downloads of national base layers as well as other geospatial data layers from USGS.
- Online GIS Resources – http://delicious.com/gis_resources - a collection of online resources for GIS data, software and GIS-related things. You can use tags to find GIS resource by place, subject or type. Created by GIS librarians for you!
- USDA Geospatial Data Gateway - <http://datagateway.nrcs.usda.gov/> - Provides One Stop Shopping for natural resources or environmental data at anytime, from anywhere, to anyone. The Gateway allows users to choose their area of interest, browse and select data from the catalog, customize the format, and have it downloaded or shipped on CD or DVD.



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