

# GIS Training-Related Web Sites

NAACCR GIS Committee

<http://www.naaccr.org/GIS>

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The NAACCR GIS Committee has compiled a list of geographic information systems-related web sites that can be used for educational purposes. Web sites in this list are grouped by subject category. The categories are as follows:

- Address Standards
- Cartography
- Census-Related
- Data Standards
- Geocoding
- GIS-Related Organizations
- Healthcare – General
- Healthcare – Government
- Journals & Books
- Maps & Data
- Metadata
- Person & Place Lookup
- Software – ESRI
- Software – Open Source
- Software – Utilities
- Spatial Analysis

No explicit criteria were used for selecting these sites. This list should not be regarded as comprehensive or definitive. Note that web site addresses frequently change – please bring such changes to the attention to the NAACCR GIS Committee Chair so this document can be updated. This list does not constitute an endorsement of any organization, product, or program.

## Address Standards

**FGDC Address Data Content Standard**

[http://www.fgdc.gov/standards/status/sub2\\_4.html](http://www.fgdc.gov/standards/status/sub2_4.html)

**US Postal Service ZIP Code lookup**

<http://zip4.usps.com/zip4/welcome.jsp>

# Cartography

**Department of Geography,  
California State University at Northridge,  
The Virtual Geography Department Project,  
Cartography Book List**

A list of books on cartography with an emphasis on textbooks by Eugene Turner, California State University. Missing some of the newer texts (the list does not appear to have been updated since 1999) but still has many excellent references.

<http://www.csun.edu/~hfgeg005/cwg/carttext/carttext.html>

**Department of Geography and Earth Sciences,  
University of North Carolina at Charlotte,  
The Virtual Geography Department Project,  
Color Theory**

An online tutorial and exercise on the nature and use of color by Laurie Garo, University of North Carolina. Students are asked to identify and create basic colors, demonstrate understanding of perceptual aspects of color, create a variety of flat and process colors to specification within several color systems, and apply color to map symbol design.

<http://personal.uncc.edu/lagaro/cwg/color/index.html>

**Department of Geography and Earth Sciences,  
University of North Carolina at Charlotte,  
The Virtual Geography Department Project,  
Map Projections**

An online tutorial and exercise on map projections by Laurie Garo, University of North Carolina. Students are asked to identify and describe map projection properties, to compare distortions between various map projections, and to select their own projections for specific land areas and map types.

<http://personal.uncc.edu/lagaro/cwg/mapproj/index.html>

**Pennsylvania State University, ColorBrewer**

ColorBrewer is a free online tool designed to help people select good color schemes for maps and other graphics.

<http://www.colorbrewer.org>

**Presentations from the 2001 Cancer Conference:**

Cartographic Concepts, by Kevin Liske, Electronic Data Systems Corporation

[http://www.naaccr.org/index.asp?Col\\_SectionKey=9&Col\\_ContentID=333](http://www.naaccr.org/index.asp?Col_SectionKey=9&Col_ContentID=333)

Research in Map Design, by Linda Pickle, National Cancer Institute

[http://www.naaccr.org/index.asp?Col\\_SectionKey=9&Col\\_ContentID=332](http://www.naaccr.org/index.asp?Col_SectionKey=9&Col_ContentID=332)

# Census-Related

## **U.S. Census Bureau**

### **American Community Survey**

The American Community Survey is a new nationwide survey designed to provide communities a fresh look at how they are changing. It will replace the long form in future censuses and is a critical element in the Census Bureau's reengineered 2010 census plan

<http://www.census.gov/acs/www/>

## **U.S. Census Bureau**

### **LandView 6**

This is a Windows-based geographic information and data viewer. It contains both database management software and mapping software. It allows you to create simple thematic maps of Census 2000 data.

<http://landview.census.gov/>

## **U.S. Census Bureau**

### **Mapping Census 2000: The Geography of U.S. Diversity**

This report presents a synthesis of the basic patterns and changes in U.S. population distribution in the last decade. Each page features county-level detail for the 50 states, the District of Columbia, and Puerto Rico. Each page also includes a small state-level map for a simplified view of the population theme. The Census 2000 data in this report are based on the U.S. Census Bureau Redistricting (PL 94-171) Summary File.

<http://www.census.gov/population/www/cen2000/atlas.html>

## **U.S. Census Bureau**

### **TIGER, TIGER/Line, and TIGER-Related Products**

Topologically Integrated Geographic Encoding and Referencing system data products.

<http://www.census.gov/geo/www/tiger/index.html>

# Data Standards

## **Federal Geographic Data Committee**

The Federal Geographic Data Committee is a 19 member interagency committee composed of representatives from the Executive Office of the President, Cabinet-level and independent agencies. The FGDC is developing the National Spatial Data Infrastructure (NSDI) in cooperation with organizations from State, local and tribal governments, the academic community, and the private sector. The NSDI encompasses policies, standards, and procedures for organizations to cooperatively produce and share geographic data.

<http://www.fgdc.gov/>

## **North American Association of Central Cancer Registries (NAACCR)**

### **NAACCR Data Standards for Cancer Registries**

#### **Vol 2: Data Standards and Data Dictionary**

The following cancer data items pertain to GIS:

- Patient Address at Diagnosis – No & Street (Item # 2330)
- Patient Address at Diagnosis – Supplemental (Item #2335)
- Patient Address at Diagnosis – City (Item #70)
- Patient Address at Diagnosis – State (Item #80)
- Patient Address at Diagnosis – Postal Code (Item #100)
- County at Diagnosis (Item #90)
- Census Tract 1970/80/90 (Item #110)
- Census Tract Coding System 1970/80/90 (Item # 120)
- Census Tract Certainty 1970/80/90 (Item # 364)
- Census Tract 2000 (Item #130)
- Census Tract Certainty 2000
- Census Tract Block Group
- Latitude (Item # 2352)
- Longitude (Item #2354)
- GIS Coordinate Quality (Item #366)
- RuralUrban Continuum Code 1993 (Beale Code)(Item # 3300)
- RuralUrban Continuum Code 2000 (Beale Code)(Item # 3310).

[http://www.naacr.org/index.asp?Col\\_SectionKey=7&Col\\_ContentID=122](http://www.naacr.org/index.asp?Col_SectionKey=7&Col_ContentID=122)

## **Office of Management and Budget, The Executive Office of the President, Coordination of Geographic Information and Related Spatial Data Activities, Circular No.A-16, revised (August 19, 2002)**

This Circular provides direction for federal agencies that produce, maintain or use spatial data either directly or indirectly in the fulfillment of their mission. This Circular establishes a coordinated approach to electronically develop the National Spatial Data Infrastructure and establishes the Federal Geographic Data Committee (FGDC).

[http://www.whitehouse.gov/omb/circulars/a016/a016\\_rev.html](http://www.whitehouse.gov/omb/circulars/a016/a016_rev.html)

# Geocoding

## **Presentation from the 2001 Cancer Conference:**

Address Coding and Other Georeferencing: A Primer for Effective Geocoding, by Frederick Broome, US Census Bureau

[http://www.naaccr.org/index.asp?Col\\_SectionKey=9&Col\\_ContentID=334](http://www.naaccr.org/index.asp?Col_SectionKey=9&Col_ContentID=334)

## **Presentation from the 2003 Cancer Conference**

Geocoding Cancer Data, by Gerard Rushton, University of Iowa

<http://www.uiowa.edu/~gishlth/giswkshp/>

## **Presentation from the 2004 ESRI Health GIS Conference**

Procedures for Geomasking to Protect Patient Confidentiality, by Dave Stinchcomb, National Cancer Institute. Slides with notes. Geomasking is the method of slightly moving a location of a person's residence as plotted on a map to protect patient confidentiality while at the same time 1) preserving spatial relationships so that analyses are not impacted and 2) maintaining visual patterns on resulting maps.

<http://gis.esri.com/library/userconf/health04/papers/pap3012.pdf>

## **Harvard School of Public Health**

### **Public Health Disparities Geocoding Project Monograph**

This web site presents an introduction to geocoding and using area-based socioeconomic measures with public health surveillance data. The suggested citation follows:

Krieger N, Waterman PD, Chen JT, Rehkopf DH, Subramanian SV. Geocoding and monitoring US socioeconomic inequalities in health: an introduction to using area-based socioeconomic measures -- The Public Health Disparities Geocoding Project Monograph. Boston, MA: Harvard School of Public Health.

<http://www.hsph.harvard.edu/thegeocodingproject/>

## **North American Association of Central Cancer Registries (NAACCR), GIS Basic Practices Handbook**

### **Section II: Patient Address Data**

See the full citation of this document under the “**Journals and Books**” section heading. This section of the NAACCR GIS Basic Practices Handbook gives an in-depth description of geocoding patient addresses. It is 15 pages in length and includes tables and figures.

<http://www.naaccr.org/filesystem/pdf/GIS%20handbook%206-3-03.pdf>

# GIS-Related Organizations

## **Baystate Health System, Health Geographics Program**

Baystate Medical Center has been using GIS since 1998 and is internationally recognized for its pioneering work in “pushing the GIS envelope” in health care applications. It is one of the only hospitals in the U.S. with an established GIS program.

<http://www.baystatehealth.com/gis>

## **Center for Geographic Information Sciences**

CGIS is a self-support organization within the Division of Economic and Community Outreach at Towson University, Maryland. It is staffed with mostly contract employees and is awarded contracts for work with government agencies and businesses. It operates as a GIS business within the University environment.

<http://cgis.towson.edu>

## **Center for Spatially Integrated Social Sciences**

The CSISS mission recognizes the growing significance of space, spatiality, location, and place in social science research. It seeks to develop unrestricted access to tools and perspectives that will advance the spatial analytic capabilities of researchers throughout the social sciences. CSISS is funded by the National Science Foundation under its program of support for infrastructure in the social and behavioral sciences. Includes information on CSISS core research programs, learning resource, spatial resources, spatial tools, search engines, and CSISS events.

<http://www.csiss.org/>

## **National Center for Geographic Information and Analysis**

The National Center for Geographic Information and Analysis is an independent research consortium dedicated to basic research and education in geographic information science and its related technologies, including geographic information systems (GIS). The three member institutions are the University of California, Santa Barbara; the University at Buffalo; and the University of Maine.

<http://www.ncgia.ucsb.edu/>

## **Pennsylvania State University**

### **Geographic Visualization Science, Technology, and Applications Center (GeoVISTA)**

GeoVISTA's specific mission is to coordinate integrated and innovative research in Geographic Information Science (GIScience), with an emphasis on geovisualization. The focus is on developing powerful human-centered methods and technologies that make it possible for scientists and decision makers to solve scientific, social, and environmental problems through computer-supported, visually-enabled analysis of the growing wealth of geospatial data.

<http://www.geovista.psu.edu/>

### **The National States Geographic Information Council**

The National States Geographic Information Council (NSGIC) is an organization of States committed to efficient and effective government through the prudent adoption of geographic information technology (GIT). Members of NSGIC include delegations of state GIS coordinators and senior state GIS managers from across the United States. Other members include representatives from Federal agencies, local government, the private sector, academia and other professional organizations. A rich and diverse group, the NSGIC membership includes nationally and internationally recognized experts in GIS, geospatial data production and management, and information technology policy.

<http://www.nsgic.org>

# Healthcare – General

## **CDC-NHIS: Public Health GIS News and Information**

This is a bimonthly, electronic report dedicated to scientific excellence and advancement in disease control and prevention through the use of Geographic Information Systems (GIS) technology. As well as being available on-line, it is also available via listserv.

[http://www.cdc.gov/nchs/about/otheract/gis/gis\\_publichealthinfo.htm](http://www.cdc.gov/nchs/about/otheract/gis/gis_publichealthinfo.htm)

## **GIS for Health and Human Services**

Provides potential GIS solutions for health-related issues through the use of ESRI software. Although this is more of a marketing web site, it does give some good examples and provides links to newsletters and articles that describe GIS health projects.

<http://www.esri.com/industries/health/index.html>

## **University of Iowa, Department of Geography**

Improving Public Health Through Geographical Information Systems An Instructional Guide to Major Concepts and Their Implementation

<http://www.uiowa.edu/~geog/health/>

## **University of Iowa, Department of Geography**

Rushton G, Elmes G, McMaster R. Considerations for improving geographic information system research in public health. URISA Journal 2000; 12(2): 31-49.

<http://www.urisa.org/Journal/protect/Vol12No2/rushton/abstract.htm>

# Healthcare – Government

## **CDC/ATSDR Policy on Releasing and Sharing Data**

The purpose of CDC's data release/sharing policy is to ensure that (1) CDC routinely provides data to its partners for appropriate public health purposes and (2) all data are released and/or shared as soon as feasible without compromising privacy concerns, federal and state confidentiality concerns, proprietary interests, national security interests, or law enforcement activities.

<http://www.cdc.gov/od/foia/policies/sharing.htm>

## **CDC Information Council**

The Council's general charter is to:

- Generate new cross-cutting information and IT proposals
- Oversee the development of the agency's enterprise architecture (EA)
- Recommend agency-wide requirements, policies, & investments
- Develop agency-wide standards, guidance, and procedures
- Evaluate, monitor or oversee initiatives, programs, or projects
- Serve as the primary forum to coordinate review and engagement on agency information and IT issues such as HHS Data Council, HIPAA, OMB data and information policies, and Standards Development Organization actions, e.g. HL 7.

<http://www.cdc.gov/cic/>

## **National Electronic Disease Surveillance System (NEDSS)**

The National Electronic Disease Surveillance System (NEDSS) is an initiative that promotes the use of data and information system standards to advance the development of efficient, integrated, and interoperable surveillance systems at federal, state and local levels. It is a major component of the Public Health Information Network. The vision of NEDSS is to have integrated surveillance systems that can transfer appropriate public health, laboratory, and clinical data efficiently and securely over the Internet.

<http://www.cdc.gov/nedss/>

## **Division of Public Health Surveillance and Informatics**

The Division of Public Health Surveillance and Informatics purpose is to provide and to improve access to and use of public health information. Maintains Epi Info and WONDER software.

<http://www.cdc.gov/epo/dphsi/index.htm>

# Journals & Books

## **International Journal of Health Geographics**

This journal receives papers on the application of geographic information systems and science in public health, healthcare, health services, and health resources.

<http://www.ij-healthgeographics.com/home/>

## **North American Association of Central Cancer Registries (NAACCR), GIS Basic Practices Handbook**

NAACCR GIS Task Force members compiled state-of-the-art information to assist all cancer registries in their decisions about GIS tools, practices, and current issues. The Handbook is a current reflection of how GIS can be applied to cancer registry operations, practices, and research using cancer registry data. For all cancer registries that are considering a GIS initiative for their programs, this Handbook will be an invaluable resource. The suggested citation follows:

Wiggins L (Ed). Using Geographic Information Systems Technology in the Collection, Analysis, and Presentation of Cancer Registry Data: A Handbook of Basic Practices. Springfield (IL): North American Association of Central Cancer Registries, October 2002, 68 pp.

<http://www.naacr.org/filesystem/pdf/GIS%20handbook%206-3-03.pdf>

## **National Library of Medicine, PubMed**

PubMed, a service of the National Library of Medicine, includes over 15 million citations for biomedical articles back to the 1950s. These citations are from MEDLINE and additional life science journals. PubMed includes links to many sites providing full text articles and other related resources.

<http://www.ncbi.nlm.nih.gov/entrez/query.fcgi>

# Maps & Data

## **Colorado Health Information Data Set**

The Colorado Health Information Dataset (CoHID) allows access to local-level health data compiled by the Colorado Department of Public Health and Environment to help users determine the health status of a neighborhood, community, county, or region in Colorado.

<http://www.cdphe.state.co.us/cohid/>

## **Dartmouth Atlas of Health Care**

The Dartmouth Atlas project is a funded research effort of the faculty of the Center for the Evaluative Clinical Sciences at Dartmouth Medical School. The Atlas project brings together researchers in diverse disciplines - including epidemiology, economics, and statistics - and focuses on the accurate description of how medical resources are distributed and used in the United States.

<http://www.dartmouthatlas.org>

## **Florida Cancer Data System**

Interactive map of state cancer data.

[http://fcds.med.miami.edu/oscripts/pub\\_mapincidence.asp](http://fcds.med.miami.edu/oscripts/pub_mapincidence.asp)

## **Georgia Division of Public Health, Online Analytical Statistical Information System (OASIS), GIS Mapping Tool**

With this tool you can map Georgia birth and death vital statistics, and Georgia Cancer Registry statistics by county for the years specified. Users can choose from a set of measures such as number and percent of births that are low birth weight, infant mortality rates, or number and rate of heart disease mortality. Data can be selected by race.

<http://ecom.itos.uga.edu/dphgis/>

## **Health Resources and Services Administration (HRSA), Area Resource File**

The Area Resource File (ARF) is a database containing over 6,000 variables for each county in the US. ARF is used for health service research, health policy analysis, and other geographically based activities.

<http://www.arfsys.com>

## **Health Resources and Services Administration (HRSA), Geospatial Data Warehouse**

This geospatial data warehouse and its associated applications provide HRSA with access to a broad range of information about HRSA programs, related health resources, and demographic data useful for planning and policy purposes. The HRSA Geospatial Data Warehouse captures grants, scholarship and loan programs, designation of underserved areas, and service demonstration programs and integrates these with data acquired from external sources.

<http://datawarehouse.hrsa.gov/>

### **Kansas Information for Communities**

Interactive map of state cancer data.

<http://kic.kdhe.state.ks.us/kic/cancer.html>

### **Kentucky Cancer Registry**

Interactive map of state cancer data.

<http://www.kcr.uky.edu/>

### **Long Island Geographical Information System (LI GIS)**

The Geographic Information System for Breast Cancer Studies on Long Island (LI GIS) is an enterprise geographic information system combining data, ESRI ArcGIS, and statistical and spatial software and extensions. The LI GIS is designed to study the potential relationships between environmental exposures and breast cancer on Long Island. It also is available to researchers for studying other diseases.

<http://www.healthgis-li.com/>

### **Massachusetts Community Health Information Profile (MassCHIP)**

Downloadable utility that provides a variety of healthcare data, including cancer, by geographic area. Some of this data is also available interactively through the web site under “Instant Topics”.

<http://masschip.state.ma.us/>

### **Modern Language Association Language Map**

The MLA Language Map displays the locations and numbers of speakers of the thirty languages most commonly spoken in the United States.

<http://www.mla.org>

### **Multi-Agency Internet Geographic Information Service (MAIGIS), West Midlands Cancer Intelligence Unit, The University of Birmingham**

The Multi-Agency Internet Geographic Information Service (MAIGIS) is a three-year pilot project to establish an interactive map-based web service providing health and health-related data at the regional level for the area of northern England.

<http://maigis.wmpho.org.uk/>

### **National Cancer Institute (NCI), Cancer Mortality Maps and Graphs**

This web site provides interactive maps, graphs (which are accessible to the blind and visually-impaired), text, tables and figures showing geographic patterns and time trends of cancer death rates for the time period 1950-1994 for more than 40 cancers.

<http://www3.cancer.gov/atlasplus/>

### **National Cancer Institute (NCI), Consumer Health Profiles**

A Unique System To Identify, Describe, and Reach Your Target Audience. The following materials are available to order:

- **Cluster Maps** - Maps that show where target clusters most in need of cancer education and outreach programs are located in a particular area
- **Cluster Profiles** - Narrative descriptions of the health behaviors, media habits, and lifestyle characteristics of clusters most in need of cancer education and outreach programs.
- **Demographic Maps** - Maps that show where people or households with a particular demographic characteristic are located (e.g., women 65+)
- **Demographic Reports** - Tables of data indicating how many people or households with a demographic characteristic live in a defined region.

<http://dcccps.nci.nih.gov/ACSRB/consumer.html>

### **National Cancer Institute (NCI), GIS Special Interest Group**

The goal of this site is to serve as a central source of information about GIS and related resources. It consists primarily of links to other relevant sites. This site is designed for use by the general public, cancer researchers, and members of the GIS Special Interest Group at NCI.

<http://gis.cancer.gov/>

### **National Cancer Institute (NCI), State Cancer Profiles**

Dynamic views of state cancer statistics for prioritizing cancer control efforts in the nation, states, and counties.

<http://statecancerprofiles.cancer.gov>

### **National Cancer Institute (NCI), US Predicted Cancer Incidence, 1999: Complete Maps by County and State from Spatial Projection Models**

The results presented in this report are computed by a spatial projection model that predicts the number of cases in each county based on the sociodemographic and lifestyle profile for that county. The purpose is to present, for the first time, complete county and state maps and tables of rates and case counts for 1999 estimated by these new statistical models. From a national perspective, the maps included in the report allow examination of the geographic distribution of cancer incidence across the country and of the magnitude of differences among states.

<http://srab.cancer.gov/incidence/monograph.html>

### **National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP), Division of Adult and Community Health, Behavioral Risk Factor Surveillance System (BRFSS) Maps**

BRFSS Maps is an interactive mapping application that graphically displays the prevalence of behavioral risk factors at the state and MMSA level. Using GIS mapping technology and BRFSS data, it allows users to visually compare prevalence data for states, territories, and local areas. Features include multiple data classification methods, map panning and zooming, related prevalence tables, downloadable map images, and the capability to download the BRFSS data in a GIS shapefile data format for more detailed analysis.

<http://apps.nccd.cdc.gov/gisbrfss/>

**New York State Department of Health,  
New York State Cancer Surveillance Improvement Initiative**

The Cancer Surveillance Improvement Initiative (CSII) began in 1998. It is designed to answer questions of many New Yorkers about the cancer incidence in their communities. It provides maps of cancer incidence; maps of risk factors, including environmental information, also will be produced. CSII also provides information on cancer, its possible causes and how to interpret maps and graphs.

<http://www.health.state.ny.us/nysdoh/cancer/csii/nyscsii.htm>

**New Jersey Geographic Information Network**

The New Jersey Geographic Information Network - NJGIN - is your new and improved gateway to geospatial information in New Jersey.

[https://njgin.state.nj.us/NJ\\_NJGINExplorer/index.jsp](https://njgin.state.nj.us/NJ_NJGINExplorer/index.jsp)

**North Carolina State Center for Health Statistics,  
North Carolina Health Atlas**

The North Carolina Health Atlas contains maps of North Carolina that depict county level health and health-related information. The primary purpose of the Atlas is to provide a way to interpret visually a broad range of data and information about the health of North Carolinians.

<http://www.schs.state.nc.us/SCHS/gis/atlas/index.html>

**Oklahoma State Department of Health, Web-based Vital Statistics**

Includes a map-based tabular report interface.

<http://www.health.state.ok.us/stats/vs/index.htm>

**Pennsylvania Department of Health, Epidemiologic Query and Mapping System (EpiQMS)**

EpiQMS is an interactive health statistics web site that can produce numbers, rates, graphs, charts, maps, and county profiles using various demographic variables (age, sex, race, etc.) from birth, death, cancer, and population datasets for the state and counties or regions.

<http://app2.health.state.pa.us/epiqms/Asp/ChooseDataset.asp>

**Pennsylvania State University,**

**MM-0718: A model GIS/atlas for state comprehensive cancer control**

The goal of the model GIS/Atlas is to develop, test and disseminate methods and products that provide an accurate, timely, and innovative display and analysis of state-based, geo-referenced cancer data. This research is a logical step in our long-range goal to effectively utilize geo-referenced data to reduce cancer burden. Primary users of this research will be state and national health agencies as they plan, implement and evaluate initiatives to reduce cancer morbidity and mortality. Epidemiologists and other health researchers will also benefit from this research and product development and dissemination.

<http://www.hmc.psu.edu/gisatlas/index.htm>

<http://www.geovista.psu.edu/grants/CDC/>

### **State GIS Clearinghouse Data Sites**

These web pages list links to GIS data clearinghouses in all 50 states.

Geographic Information System Laboratory at MIT

<http://libraries.mit.edu/gis/data/statecenter.html>

National States Geographic Information Council

[http://www.nsgic.org/related\\_sites/index.cfm](http://www.nsgic.org/related_sites/index.cfm)

Ron's GIS Stuff Site

[http://www.dragonbbs.com/members/db7641/sta\\_link.html](http://www.dragonbbs.com/members/db7641/sta_link.html)

### **South Carolina State Budget & Control Board, Health & Demographic Section, Office of Research and Statistics**

The Health and Demographics Section of the Office of Research and Statistics receives, processes, distributes, and interprets health, demographic, and census data in South Carolina.

[http://www.ors.state.sc.us/digital/health\\_demo.asp](http://www.ors.state.sc.us/digital/health_demo.asp)

### **South Carolina Department of Health and Environmental Control, South Carolina Community Assessment Network (SCAN)**

This site allows generation of user-specified tables and interactive maps of public health data.

<http://scangis.dhec.sc.gov/scan/>

Similar Interactive Sites for Other States

<http://scangis.dhec.sc.gov/scan/links/links.htm>

### **Tennessee Department of Health, Health Information Tennessee (HIT)**

Health Information Tennessee (HIT) is a public health informatics project to disseminate health information interactively to assist in the identification and assessment of health needs of Tennessee residents.

<http://hit.state.tn.us/>

### **Texas Department of State Health Services, Center for Health Statistics**

GIS support of for Texas state health programs.

<http://www.tdh.state.tx.us/gis/default.htm>

### **USGS National Atlas**

A good Federal source for national maps and geographic information. Data are grouped into the following categories: agriculture, biology, boundaries, climate, environment, geology, history, map references, people (including health), transportation, and water.

<http://www.nationalatlas.gov>

### **USGS National Atlas, National Center for Health Statistics Atlas of United States Mortality by Linda Pickle.**

Go to NationalAtlas.gov

Click on MapLayers

Click on People

Scroll down to "Mortality, Cancer, 1970-1994", or to "Mortality, Various Causes, 1988-1992"

Click on View Map Layer Description to view information and download data

The link below brings you directly to the People list:

<http://www.nationalatlas.gov/maplayers.html?openChapters=chppeople#chppeople>

**Washington State Department of Health,  
Epidemiologic Query and Mapping System (EpiQMS)**  
Interactive health statistics web site for the state of Washington.  
<https://fortress.wa.gov/doh/epiqms/>

**West Virginia Health Status Atlas**

These maps provide an overview of the health status of West Virginians. They are in GIF format for general viewing from the WEB, and PDF format for more detailed viewing and printing.  
<http://www.wvdhhr.org/bph/oehp/atlas/default.htm>

# Metadata

## **FGDC Metadata**

Metadata or "data about data" describe the content, quality, condition, and other characteristics of data. The Federal Geographic Data Committee approved the Content Standard for Digital Geospatial Metadata (FGDC-STD-001-1998) in June 1998.

<http://www.fgdc.gov/metadata/metadata.html>

## **ESRI version of FGDC Metadata**

Metadata or "data about data" describe the content, quality, condition, and other characteristics of data. The Federal Geographic Data Committee approved the Content Standard for Digital Geospatial Metadata (FGDC-STD-001-1998) in June 1998.

<http://www.esri.com/metadata/esriprof80.html>

## **New Jersey Department of Environmental Protection, Bureau of Geographic Information Systems, Metadata Standard**

This web site contains presentations, help, examples, and frequently asked questions about metadata.

<http://www.state.nj.us/dep/gis/metastan.htm>

## **USGS MetaLite**

MetaLite is a simple tool for collecting and validating Federal Geographic Data Committee (FGDC) compliant metadata. It allows a user to quickly document geospatial data while still adhering to FGDC Metadata Content Standards.

<http://gisdata.usgs.net/metalite/>

# Person & Place Lookup

## **Reverse Geocode Lookup (Anywho.com)**

<http://www.anywho.com/>

## **Social Security Death Index**

<http://www.ancestry.com/search/db.aspx?dbid=3693>

## **USGS Geographic Names Database**

[http://geonames.usgs.gov/pls/gnis/web\\_query.gnis\\_web\\_query\\_form](http://geonames.usgs.gov/pls/gnis/web_query.gnis_web_query_form)

## Software – ESRI

### ArcLessons

This ESRI site has “how-to” tutorials posted by all types of teachers about all kinds of aspects of GIS. These range literally from the Kindergarten level to advanced GIS topics. Available lesson categories:

- Map & GIS Concepts.
- GIS Software Skills
- Physical Earth Science
- Social Studies
- Other

<http://gis.esri.com/industries/education/arclessons/arclessons.cfm>

## Software – Open Source

### Geocoding code

Code by Dan Egnor that won the 2002 Google Programming Contest, including a TIGER/Line based geocoder that turns street addresses into latitude/longitude coordinates, a simple indexer that looks for addresses and key words in documents, and a query engine to search for documents matching certain key words that also contain addresses within a certain distance from a target location. This code is available to the public under the terms of the GNU General Public License.

<http://dan.egnor.name/google.html>

### MapServer

MapServer is an OpenSource development environment for constructing spatially enabled Internet-web applications. The software builds upon other popular OpenSource or freeware systems including Shapelib, FreeType, Proj.4, GDAL/OGR. MapServer will run where most commercial systems won't or can't, on Linux/Apache platforms. MapServer supports several Open Geospatial Consortium web specifications: WMS (client/server), non-transactional WFS (client/server), WCS (server only), WMC, SLD, GML and Filter Encoding.

<http://mapserver.gis.umn.edu/>

### PostGIS

PostGIS adds support for geographic objects to the PostgreSQL object-relational database. In effect, PostGIS “spatially enables” the PostgreSQL server, allowing it to be used as a backend spatial database for geographic information systems (GIS), much like ESRI's SDE or Oracle's Spatial extension. PostGIS follows the OpenGIS “Simple Features Specification for SQL” and will be submitted for conformance testing at version 1.0. PostGIS is released under the GNU General Public License.

<http://postgis.refrains.net/>

# Software – Utilities

## **GeoDa**

**Spatial Analysis Laboratory, Department of Agricultural and Consumer Economics,  
University of Illinois at Urbana-Champaign**

GeoDa is the latest incarnation in a long line of software tools developed by Luc Anselin and co-workers designed to implement techniques for exploratory spatial data analysis (ESDA) on lattice data (points and polygons). It is intended to provide a user friendly and graphical interface to methods of descriptive spatial data analysis, such as spatial autocorrelation statistics and indicators of spatial outliers.

[http://sal.agecon.uiuc.edu/geoda\\_main.php](http://sal.agecon.uiuc.edu/geoda_main.php)

GeoDa tutorials:

[http://sal.agecon.uiuc.edu/stuff\\_main.php#tutorials](http://sal.agecon.uiuc.edu/stuff_main.php#tutorials)

Prostate Cancer ESDA and Spatial Statistics project using GeoDa:

[http://sal.agecon.uiuc.edu/projects\\_main.php#open](http://sal.agecon.uiuc.edu/projects_main.php#open)

## **GeoLytics**

Software products for accessing and mapping census data.

<http://www.geolytics.com/index.html>

## **GIS Tools**

Software products for accessing and mapping census data.

<http://www.gistools.com/>

## **Head-Bang PC Software**

**National Cancer Institute (NCI)**

“Head-banging” is a weighted two-dimensional median-based smoothing algorithm, developed to reveal underlying geographic patterns in data where the values to be smoothed do not have equal variances.

<http://srab.cancer.gov/headbang/>

## **SaTScan**

Free software for analyzing spatial, temporal and space-time count data using the spatial, temporal, or space-time scan statistics.

<http://www.satscan.org>

Presentation on this software: 2003 Cancer Conference Course on “Spatial Statistics for Cancer Surveillance” by Martin Kulldorff

<http://www.satscan.org/presentation>

## **Space Time Analysis of Regional Systems (STARS)**

Space-Time Analysis of Regional Systems (STARS) is an open source package designed for the analysis of areal data measured over time. STARS brings together a number of recently developed methods of space-time analysis into a user-friendly graphical environment offering an array of dynamically linked graphical views.

<http://stars-py.sf.net>

## **Statistical Extensions to ArcView**

### **Long Island GIS & National Cancer Institute (NCI)**

Four extensions to ArcView GIS: a disease rate calculator, an areal interpolator, an empirical Bayes smoothing tool, and a cluster analysis tool using SaTScan. Available for ArcView versions 3, 8, and 9.

[http://www.healthgis-li.com/researchers/stat\\_tools.jsp](http://www.healthgis-li.com/researchers/stat_tools.jsp)

## **USC WebGIS Portal**

### **University of Southern California, GIS Research Laboratory**

The USC WebGIS Portal consists of a series of freely available web-based tools useful for creating and manipulating geographic data for use in all types of spatial research. Current tools include batch postal address geocoding and manual geocode correction, postal address parsing, normalization and validation, and tools for postal address and geographic data capture. The full source code can be made available upon request.

<https://webgis.usc.edu>

## **ZP4**

### **Semaphore Corporation**

ZP4 is software combined with official U.S. Postal Service data files on a single DVD-ROM that together provide a powerful tool for automatically determining the correct mailing address, ZIP+4 code, and mail carrier route number for any location in the United States.

<http://www.semaphorecorp.com/cgi/zp4.html>

# **Spatial Analysis**

## **Iowa Cancer Registry**

Rushton G. SEER Special Project #08. Development of high-resolution population distribution data to enhance cancer prevention and control research. RFP No. NCI-PC-25014-20. 2004.

<http://www.uiowa.edu/~gishlth/UIORNL>

## **Presentations from the 2003 Cancer Conference**

Exploratory Spatial Data Analysis (ESDA) Smoothed Maps, by Gerard Rushton, University of Iowa

Spatially Adaptive Filters, by Chetan Tiwari, University of Iowa

Exploratory Spatial Data Analysis (ESDA): Reliability of Cancer Maps, by Gerard Rushton, University of Iowa

<http://www.uiowa.edu/~gishlth/giswkshp/>