GIS Training-Related Web Sites

NAACCR GIS Committee
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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 (click on a category to jump to that group of web sites):

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. The contact information for the NAACCR GIS Committee can be found at this web site link: https://netforum.avectra.com/eweb/DynamicPage.aspx?Site=NAACCR&Webcode=LeadershipDetail&cmt_key=0a4d2050-c71a-4cb2-b8b6-65b5e3b8a51d

Address Standards

FGDC United States Thoroughfare, Landmark, and Postal Address Data Standard
http://www.fgdc.gov/standards/projects/FGDC-standards-projects/street-address/index_html

US Postal Service ZIP Code lookup
http://zip4.usps.com/zip4/welcome.jsp
or this secure site:
https://tools.usps.com/go/ZipLookupAction!input.action

Cartography

Fantom Planet (A geography blog web site)
Recommended Books: GIS, Cartography, and Geography
A list of books on cartography.
http://fantomplanet.wordpress.com/2008/05/26/recommended-books-gis-cartography-and-geography/

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.colorbrewer2.org

Presentations from the 2001 Cancer Conference:
>   Cartographic Concepts, by Kevin Liske, Electronic Data Systems Corporation
>   Available from the NAACCR GIS Committee's NetLink resources page:
>   http://netlink.naaccr.org/groups2/profile/resources/groupid/2409
>
>   Research in Map Design, by Linda Pickle, National Cancer Institute
>   Available from the NAACCR GIS Committee's NetLink resources page:
>   http://netlink.naaccr.org/groups2/profile/resources/groupid/2409

Related papers by Linda Pickle:

Usability Testing of Map Designs:
Available from the NAACCR GIS Committee's NetLink resources page:
http://netlink.naaccr.org/groups2/profile/resources/groupid/2409

A History and Critique of U.S. Mortality Atlases
Available from the NAACCR GIS Committee's NetLink resources page:
http://netlink.naaccr.org/groups2/profile/resources/groupid/2409

Census-Related

U.S. Census Bureau
American Fact Finder
Interactive access to many of the Census Bureau's data products including results from the
Decennial Surveys and the American Community Survey (has replaced the old decennial long-
form survey). Includes interactive table generation, interactive mapping, and an interface to
download data for GIS use.
http://factfinder2.census.gov/

U.S. Census Bureau
American Community Survey
The American Community Survey is a nationwide survey designed to provide communities with
reliable and timely demographic, social, economic, and housing data every year. It is sent to
approximately 250,000 addresses every month (or 3 million per year) and replaces the "long
form" used in previous decennial censuses. It was fully implemented in 2005 and the first data
sets were published in 2010.
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. There are no plans to add 2010 census data to this application.
http://landview.census.gov/

U.S. Census Bureau
Census Bureau Map Products
Census Bureau maps are organized into reference maps and thematic maps. The reference maps
show the boundaries and names of geographic areas for which the Census Bureau tabulates
statistical data. The thematic maps are data maps of a specific subject or for a specific purpose.
http://www.census.gov/geo/www/maps/CP_MapProducts.htm

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. A link to this report is also on the "Census
Bureau Map Products" web page.
http://www.census.gov/population/www/cen2000/atlas/index.html

U.S. Census Bureau
TIGER Products
Topologically **I**ntegrated **G**eographic **E**ncoding and **R**eferencing system data products. Consists of TIGER/Line shapefile, TIGER/Line files, and KML files (for use with Google Maps and Google Earth), and an online TIGERweb viewer.
http://www.census.gov/geo/www/tiger/index.html

Data Standards

Federal Geographic Data Committee
The Federal Geographic Data Committee (FGDC) is an interagency committee that promotes the coordinated development, use, sharing, and dissemination of geospatial data on a national basis. This nationwide data publishing effort is known as the National Spatial Data Infrastructure (NSDI). The NSDI is a physical, organizational, and virtual network designed to enable the development and sharing of this nation's digital geographic information resources. The goal of NSDI is to reduce duplication of effort among agencies, improve quality and reduce costs related to geographic information, to make geographic data more accessible to the public, to increase the benefits of using available data, and to establish key partnerships with states, counties, cities, tribal nations, academia and the private sector to increase data availability.
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 Block Group 1970/80/90 (Item #368)
> Census Tract Coding System 1970/80/90 (Item # 120)
> Census Tract Certainty 1970/80/90 (Item # 364)
> Census Tract 2000 (Item #130)
> Census Tract Block Group 2000 (Item #362)
> Census Tract Certainty 2000 (Item #365)
> Census Tract 2010 (Item #135)
> Census Tract Block Group 2010 (Item #363)
> Census Tract Certainty 2010 (Item #367)
> Latitude (Item # 2352)
> Longitude (Item #2354)
> GIS Coordinate Quality (Item #366)
> RuralUrban Continuum 1993 (Beale Code) (Item # 3300)
> RuralUrban Continuum 2003 (Beale Code) (Item # 3310).

http://www.naaccr.org/StandardsandRegistryOperations/VolumeII.aspx

Office of Management and Budget, Executive Office of the President,
Coordination of Geographic Information and Related Spatial Data Activities,
OMB Circular 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). The Circular has been revised from the 1990 version to reflect changes in technology, further describe the components of the National Spatial Data Infrastructure (NSDI), and assign agency roles and responsibilities for development of the NSDI.
http://www.whitehouse.gov/omb/circulars_a016_rev

OMB Circular A-16 Supplemental Guidance (November 10, 2010):
http://www.whitehouse.gov/sites/default/files/omb/memoranda/2011/m11-03.pdf

Geocoding

Presentation from the 2001 Cancer Conference:
> Address Coding and Other Georeferencing: A Primer for Effective Geocoding, by
> Frederick Broome, US Census Bureau
> Available from the NAACCR GIS Committee's NetLink resources page:
> http://netlink.naaccr.org/groups2/profile/resources/groupid/2409

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
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. See the full
citation of this document under the "**Journals and Books**" section heading.
http://www.naaccr.org/Portals/0/documents/GIS%20handbook%206-3-03.pdf

North American Association of Central Cancer Registries (NAACCR),
A Geocoding Best Practices Guide
This report is an update and expansion of the earlier NAACCR GIS Basic Practices Handbook
and focuses specifically on geocoding. See the full citation of this document under the
"**Journals and Books**" section heading.
http://www.naaccr.org/LinkClick.aspx?fileticket=ZKekM8k_IQ0%3D&tabid=239&mid=699

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://academics.bhs.org/Research/Health_Geographics_Program/WhatIsGIS.html

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://www.towson.edu/outreach/cgis/

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. NSGIC's Mission is to promote statewide geospatial coordination activities in all states and to be an effective advocate for states in national geospatial policy and initiatives, thereby enabling the National Spatial Data Infrastructure (NSDI).
http://www.nsgic.org

Healthcare – General

GIS at CDC
This CDC web site provides GIS information regarding CDC web applications, a map gallery, training, data sources, newsletters, and listservs.
http://www.cdc.gov/gis/index.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

GIS Lounge, GIS 101
The GIS Lounge web site focuses on GIS, maps, cartography, and other geospatial technologies. The GIS 101 section is a launch page for accessing information about GIS on this site. Find information about what is GIS, the basics of GIS (data, software, etc.), career advice in GIS including where to find a job and GIS internships, plus access to GIS concept pages.
http://gislounge.com/gis-essentials/

GIS.com
This web site provides a brief introduction to GIS, and is hosted by ESRI.
http://www.gis.com/

University of Iowa, Department of Geography
This is web-based instruction on GIS:
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
This paper describes the uses of geographic information systems in the field of public healthcare:
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/files/RushtonVol12No2-3.pdf

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 Resource Governance Council
The Information Resources Governance Council (IRGC) is a Leadership Committee of the CDC's Executive Leadership Board and will continue the principle and practice of providing high-level oversight and guidance for CDC's investments in information and information technology utilizing the following principles and scope:
- Provide effective oversight and guidance for the management and use of information and information technology services and systems at CDC
- Ensure active integration of IR between science, program, and service provision throughout the agency
- Foster ongoing IR innovation to support CDC's mission while protecting CDC's non-public information and other assets
- Create an enterprise IR governance process that is integrated at all levels of the organization
- Promote processes and decision-making bodies that are multi-disciplinary across CDC and include appropriate external partners
- Adhere to Departmental and IR governance best practices, while being responsive to the particular needs of a project
- Promote consistent charters (including scope, mission, functions, and membership) throughout the enterprise governance processes
- Promote the efficient and effective use of secure information resources to enhance CDC's ability to achieve its mission, goals, & objectives
- Support the efficient oversight and governance of information resources spending

http://www2.cdc.gov/cdcup/governance/default.htm

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/phin/tools/NEDSS/index.html

CDC's Office of Surveillance, Epidemiology and Laboratory Science (OSELS), Public Health Surveillance and Informatics Program Office (PHSIPO)
PHSIPO's purpose is to provide and to improve access to and use of public health information. Maintains CDC WONDER software (contact: cwus@cdc.gov).
http://www.cdc.gov/osels

CDC's Office of Surveillance, Epidemiology and Laboratory Science (OSELS), Epidemiology and Analyis Program Office (EAPO)
EAPO supports public health decision making by advancing epidemiologic methods, analytic techniques, library sciences, health equity, information dissemination and systematic literature reviews. Maintains Epi Info software (contact: epiinfo@cdc.gov).
http://www.cdc.gov/osels

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 information to assist all cancer registries in their decisions about GIS tools, practices, and issues. The Handbook is a 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.naaccr.org/Portals/0/documents/GIS%20handbook%206-3-03.pdf

North American Association of Central Cancer Registries (NAACCR),
A Geocoding Best Practices Guide
This report is an update and expansion of the earlier NAACCR GIS Basic Practices Handbook, and focuses specifically on geocoding. The suggested citation follows:
> Goldberg DW: A Geocoding Best Practices Guide. Springfield, IL: North American Association of Central Cancer Registries; 2008, 261 pp.

http://www.naaccr.org/LinkClick.aspx?fileticket=ZKekM8k_IQ0%3D&tabid=239&mid=699

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

Anselin and Associates
Review of Cluster Analysis Software
The NAACCR GIS Committee, working with a consultant, Luc Anselin, PhD of the University of Illinois at Urbana-Champaign, selected four spatial analysis software packages to be reviewed based on the following criteria: 1) they were free and/or open source, 2) they were up-to-date and under active development, 3) they came with a manual and documentation, 4) they were downloadable from the Internet, and 5) they worked within a Microsoft Windows operating system. This report was accepted by the NAACCR Board of Directors on August 18, 2004.
http://www.naaccr.org/LinkClick.aspx?fileticket=pScBROXkeTg%3d&tabid=239&mid=699

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.chd.dphe.state.co.us/cohid/Default.aspx

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://www.doh.state.fl.us/disease_ctrl/epi/cancer/inc_mor/FL_Cancer_Inc_Mort.html

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://oasis.state.ga.us/

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.arf.hrsa.gov/

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://li-gis.cancer.gov/

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://www.mass.gov/dph/masschip

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

National Cancer Intelligence Network (NCIN)
National Health Service (NHS) Cancer Program for England
UK Cancer e-Atlas
The UK cancer e-Atlas provides a way to view cancer incidence, mortality and survival statistics for the UK, the UK constituencies and smaller localities. It provides the public, health care professionals, commissioners and health service managers with basic cancer information for the main types of cancer in males, females and persons.
http://www.ncin.org.uk/cancer_information_tools/eatlas/default.aspx

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), 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

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
A tabular report interface for births, deaths, infant deaths, and abortions.
http://www.ok.gov/health/pub/wrapper/ok2share.html

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://www.portal.state.pa.us/portal/server.pt?open=514&objID=596553&mode=2

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. Contains prostate and colorectal data for 1994-2002.
http://pennstatehershey.org/web/cancer/research/projects/gisatlas
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/datalinks/statedataweb.html
National States Geographic Information Council
http://www.nsgic.org/clearinghouse-nodes

State Web-based Data Query Systems (WDQS)
This web site lists links to various web-based data query systems for multiple states:
National Association for Public Health Statistics and Information Systems (NAPHSIS)
http://www.naphsis.org/index.asp?bid=1271

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

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/support/links.aspx

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.dshs.state.tx.us/chs/gis/Default.shtm

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=chppeopl#chppeopl

Washington State Department of Health,
The Community Health Assessment Tool (CHAT)
The Community Health Assessment Tool (CHAT) provides secure web-based access to a repository containing a variety of healthcare data collections gathered and maintained by the Washington State Department of Health (DOH). These data are standardized and collected into the CHAT data repository which can be queried and the output structured along a very wide set of defined parameters, and subjected to statistical analysis to identify and track meaningful relationships and trends. Periodic data releases and corrections maintain the currency of data and its continuity with prior period information.
http://www.doh.wa.gov/EHSPHL/Epidemiology/NICE/CHAT.htm

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

ESRI version of FGDC Metadata
The objective of this profile is to make metadata more accessible and useful on a daily basis when browsing, searching, and managing data. ArcGIS™ software has the capability to automatically manage and update metadata as the data changes and has made that metadata easily accessible. This profile defines additional elements to support that process and to document characteristics of datasets that are not addressed by the *Content Standard for Digital Geospatial Metadata*.
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://www.gis4biologists.info/metalite.htm

Person & Place Lookup

Reverse Geocode Lookup (Anywho.com)
http://www.anywho.com/

White pages:
http://www.dogpile.com/?qc=wp
http://www.switchboard.com/
http://www.spokeo.com/

Social Security Death Index
http://www.ancestry.com/search/db.aspx?dbid=3693
http://www.familysearch.org/Eng/Search/frameset_search.asp (click on "US Social Security Death Index" on the left of the window)

USGS Geographic Names Database
Database to look up information about geographic locations, including county, latitude and longitude, elevation, and USGS map quad.
http://geonames.usgs.gov/pls/gnispublic

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:

        Business/Economics
        Communication/Art
        English Language Arts
        GIS Software Skills
        Life/Bio Science
        Life/Environ Sciences
        Map & GIS Concepts
        Mathematics
        Multi-disciplinary
        Physical Earth Science
        Social Studies

http://edcommunity.esri.com/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 Open Source platform for publishing spatial data and interactive mapping applications to the web. Originally developed in the mid-1990s at the University of Minnesota, MapServer is released under an MIT-style license, and runs on all major platforms (Windows, Linux, Mac OS X). MapServer is not a full-featured GIS system, nor does it aspire to be.
http://mapserver.org/

OpenGeo
OpenGeo distributes and provides support for the OpenGeo Suite - a series of open source geospatial software services including a geospatial database, a web-based data server and interactive mapping tools. The software itself is free. For a fee, they offer support packages as well as a series of training classes.
http://opengeo.org/

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.refractions.net/

Software – Utilities

DMAP IV
Department of Geography
University of Iowa
DMAP IV (Disease Mapping and Analysis Program, Version 4) is a computer program that enables a user to apply spatial filter methods to any study region. The program was written and is maintained by Qiang Cai, PhD (2007), Department of Geography, the University of Iowa. DMAP IV is a stand-alone program with a GUI interface running on Microsoft Windows operation system (XP, Vista). The software is developed using Microsoft Visual Basic 6.0. The program takes geocoded disease and population data as input and computes disease rate measures at grid points on a predefined spatial grid. More generally, it takes any defined numerator variable and denominator variable for individuals or for small areas and computes the ratio of the two for either circular areas of fixed diameters or spatially adaptive filters.
http://www.uiowa.edu/~gishlth/DMAP4/

GeoDa
GeoDa Center for Geospatial Analysis and Comutation
Arizona State University
GeoDa is the latest incarnation in a long line of software tools developed by Dr. Luc Anselin. It is designed to implement techniques for exploratory spatial data analysis (ESDA) on lattice data (points and polygons). The free program provides a user friendly and graphical interface to methods of descriptive spatial data analysis, such as spatial autocorrelation statistics, as well as basic spatial regression functionality. The latest version contains several new features such as a cartogram, a refined map movie, parallel coordinate plot, 3D visualization, conditional plots (and maps) and spatial regression.
http://geodacenter.asu.edu/software/about
GeoDa tutorials:
http://geodacenter.asu.edu/learning/tutorials

GIS Resources
North American Association of Central Cancer Registries (NAACCR)
This web page provides links to several GIS utilities and reports:
- Address Validation Reference Data
- Cluster Analysis Software Review (this document, under "Books and Journals")
- Geocoding Best Practices Guide (this document, under "Books and Journals")
- Geocoded National Provider Identifier Files
- GIS Handbook (this document, under "Books and Journals")
- SaTScan to Google Earth Python Script
- Shortest Path Finder Tool (this document, under "Software – Utilities")

http://www.naaccr.org/Research/GISResources.aspx

Great Circle Distance Calculator
North American Association of Central Cancer Registries (NAACCR)
This SAS code calculates the great circle distance between the locations of cases at the time of diagnosis and the locations of treatment facilities. Case locations are taken from NAACCR items 2352 (latitude) and 2354 (longitude) in a NAACCR v10 or v11 record layout file. The program can use either source (unconsolidated) or consolidated case records as input. A second input file contains facility IDs, latitude, and longitude.
http://www.naaccr.org/Research/DataAnalysisTools.aspx

GeoLytics
Software products for accessing and mapping census data.
http://www.geolytics.com/index.html

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://surveillance.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

Shortest Path Finder Tool
North American Association of Central Cancer Registries (NAACCR)
The NAACCR Shortest Path Finder Tool is a web-based software application for the processing of research data sets to allow time and distance comparisons of routes utilizing road networks. The tool takes user input (normally in the form of a database or spreadsheet) with start and end coordinates and generates the time and distance to travel from start to finish using the United States or Canadian road network. In this way, it is similar to generating driving directions using Google Maps® or MapQuest®.
http://www.naaccr.org/Research/ShortestPathFinder.aspx

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://regionalanalysislab.org/index.php/Main/STARS

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://li-gis.cancer.gov/researchers/stat_tools.html

USC WebGIS Geocoder
GIS Research Laboratory
University of Southern California
Web-based batch database geocoder developed for NAACCR by Dan Goldberg at the University of Southern California. The user logs into a secure web site and uploads a file of addresses. After the file is processed, the user can download a file with geocodes and data quality codes. The user can also use this service to geocode individual addresses typed into a form.
https://webgis.usc.edu/Services/Geocode/BatchProcess/Default.aspx

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/