

SOME GIS and Spatial Analysis Tutorials

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This is a *partial* listing of on-line GIS and Spatial Analysis tutorials compiled Fall 2008. There listing here is not an endorsement as we have not had a chance to critically evaluate them; and some are software version specific and thus may be dated. We offer this list as possible starting points for those interested in learning more about GIS and their application in spatially informed science.

There are many more **software specific tutorials** available for packages like

GeoDa (GeoDa Center) at <http://geodacenter.asu.edu>
<http://www.pop.psu.edu/gia-core/pdfs/R25-software-document-GeoDa.pdf>

R (The Comprehensive R Archive Network) at <http://cran.r-project.org/>
<http://www.pop.psu.edu/gia-core/pdfs/R25-software-document-R.pdf>

ESRI Training and Education (ArcGIS)
<http://training.esri.com/gateway/index.cfm>

GRASS Tutorials (Mirror site)
<http://grass.itc.it/gdp/tutorials.php>

Please consult <http://www.pop.psu.edu/gia-core/software2.htm>

Other useful listing of tutorials can be found at

Huxley: College of the Environment, Spatial Analysis Lab
<http://www.acadweb.wvu.edu/gis/links/gis.htm>

University of Oregon Libraries – GIS Tutorials
http://libweb.uoregon.edu/map/map_section/listserves_tutorials/map_Tutorials.html

The GIS Lounge Listing of Tutorials in GIS
<http://gislounge.com/tutorials-in-gis/>

GIS/Mapping Tutorials & Guides

Introduction to Geographic Information Systems (GIS) Tutorial – Harvard University

<http://hcl.harvard.edu/libraries/maps/gis/tutorials.html>

Pennsylvania Spatial Data Access (PASDA) Tutorials

<http://www.pasda.psu.edu/tutorials/default.asp>

USGS Getting Started with GIS

<http://webgis.wr.usgs.gov/globalgis/tutorials/index.html>

USGS – Investigating World Demography Using GIS

<http://education.usgs.gov/common/lessons/worlddemographylesson.pdf>

NOAA – GIS Tutorial

<http://www.csc.noaa.gov/products/sccoasts/html/gistut.htm>

FEMA – on-line GIS Tutorials

http://www.fema.gov/plan/prevent/fhm/ot_main.shtm#4

ATSDR - GIS in Public Health

<http://www.atsdr.cdc.gov/gis/conference98/gisindex.html>

AHRQ - Using Geographic Methods to Understand Health Issues

<http://www.ahrq.gov/research/geomap/geomap1.htm>

Sandia National Laboratories – GIS Tutorials (dated)

<http://www.sandia.gov/GIS/tech.html>

University of Iowa – Dept of Geography's Improving Public Health Through Geographical Information Systems An Instructional Guide to Major Concepts and Their Implementation

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

GIS Lab/Techniques Options

<http://www.uiowa.edu/~geog/health/index2.html>

University of Arkansas Libraries Maps and GIS tutorials

<http://libinfo.uark.edu/GIS/tutorial.asp>

UC San Diego Libraries – GIS How Tos

<http://ucsd.libguides.com/gis>

Uni of Michigan – SAND Tutorial: Reprojecting Data with ArcGIS

http://www.lib.umich.edu/nsds/spatial_tutorials/proj/arcgisproj.html

Uni of Michigan – SAND Numeric & Spatial Data Services – How to Georeference an Image Using ArcGIS

http://www.lib.umich.edu/nsds/spatial_tutorials/georectify.pdf

Uni of Michigan – SAND – Quick Guide to Obtaining Census Data in a GIS-friendly Format from Geolytics Census CDs

http://www.lib.umich.edu/nsds/spatial_tutorials/geolyticsav.html

Uni of Michigan – SAND - Mapping Street Addresses using ESRI's StreetMap Extension

http://www.lib.umich.edu/nsds/spatial_tutorials/streetmap.html

University of Oregon Libraries – GIS Tutorials

http://libweb.uoregon.edu/map/map_section/listserves_tutorials/map_Tutorials.html

Utah State University, Department of Geography – GIS Exercises

<http://www.nr.usu.edu/Geography-Department/rsgis/GIS/exer/gisexer.html>

University of Waterloo University Maps Library

<http://www.lib.uwaterloo.ca/locations/umd/digital/tutorials.html>

ESRI's GIS for Health and Human Services

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

The Geospatial Resource Portal

Overview of GIS <http://www.gisdevelopment.net/tutorials/tuman006.htm>

Fundamentals of GIS <http://www.gisdevelopment.net/tutorials/tuman002.htm>

Geographical Data Sets <http://www.gisdevelopment.net/tutorials/tuman003.htm>

Learn2Map Free GIS Tutorial

http://www.mapcruzin.com/learn_to_map/

Introduction to GIS (by Kardi Teknomo)

<http://people.revoledu.com/kardi/tutorial/GIS/index.html>

The Essential Guide to GIS (by Ed Parsons)

<http://easyweb.easynet.co.uk/~edp/esguide/start.html>

Spatial Analysis

General Tutorials

Again, there are many advanced spatial analysis tutorials available on-line – see page one for selected software specific starting points.

University of Washington – Urban Ecology Spatial Analysis Workshop (2004)

http://www.urbanecology.washington.edu/GIS_Tutorial/index.htm

GeoVISTA Center, Penn State – ESTAT Tutorials

<http://www.geovista.psu.edu/grants/nci-esda/tutorials.html>

A Tutorial on Spatial Data Analysis (by Gilberto Câmara et al) National Institute for Space Research, Brazil.

http://www.dpi.inpe.br/gilberto/spatial_analysis.html

GIS Development - The Geospatial Resource Portal – Analysis of Geographic Data

<http://www.gisdevelopment.net/tutorials/tuman001.htm>

Online Lectures or Handouts

There are many **academic papers, lectures and PowerPoint presentations** on-line. This is a very limited listing. For some useful starting points please consult the GISPopSci and Advanced Spatial Analysis webpages hosted by CSISS (<http://www.csiss.org>). For example, a sample presentation on spatial demography by John Weeks of San Diego State University is available at http://www.csiss.org/events/workshops/2004/SPA2004/resources/spa_weeks_demography.pdf

Please consult the *International Journal of Health Geographics* website at <http://www.ij-healthgeographics.com/> for many excellent articles on GIS and spatial analysis in health

research. For example, “The crossroads of GIS and health information: a workshop on developing a research agenda to improve cancer control” available at

<http://www.ij-healthgeographics.com/content/pdf/1476-072X-5-51.pdf>

Similarly, if you are interested in academic publications on GIS and spatial analysis applications to health and demographic research please see the literature search resources that are available at:

<http://www.pop.psu.edu/gia-core/litsearches.htm>

Many **lecture courses** are now available on line. These include:

University of Iowa, Department of Geography: GIS & Public Health lecture Series

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

Spatial Epidemiology Course (by Uriel Kitron and Marilyn Ruiz of UIUC)

<http://maximus.cvm.uiuc.edu/vp560/>

Other links

Long Island Breast Cancer Studies (NCI) <http://li-gis.cancer.gov/>

CDC: Building a Geographic Information Systems (GIS) Public Health Infrastructure for Research and Control of Tropical Diseases

<http://www.cdc.gov/ncidod/eid/vol1no4/hightow.htm>

Place, Space, and Health: GIS and Epidemiology by Nancy Krieger (Epidemiology, 2003)

http://minority-health.pitt.edu/archive/00000417/01/Place,_Space,_and_Health-_GIS_and_Epidemiology.pdf

North Carolina State Center for Health Statistics - Mapping Mortality and Morbidity Rates (by James L. Wilson and Paul A. Buescher) <http://www.schs.state.nc.us/SCHS/pdf/SP15.pdf>

Harvard School of Public Health – Geographic Information Systems (GIS) in Public Health Research http://biosun1.harvard.edu/research/divisions/env_stat/GISinLMA/

PRI GIA Core Resource Document on GIS and Public Health

http://www.pop.psu.edu/gia-core/pdfs/gis_rd_02-43.pdf

GIS Applications for Demographic Estimation and Projection (by Jack Baker et al U. of New Mexico)

<http://www.unm.edu/~bber/presentations/GISApplicationDemoEst.pdf>

Application of Remote Sensing and GIS in Demographic and Socio-Economic Analysis of Dehradun City http://www.incaindia.org/technicalpapers/46_MUIP06.pdf

GIS in Health Research – in Australia (PowerPoint by Jessica Scott)

www.walis.wa.gov.au/forum/past_forum/2005/assets/2005/J%20Scott%20-%20Health.ppt

CDC offprint of Keith Clarke et al's article on "Epidemiology and Geographic Information Systems: A Review and Discussion of Future Directions."

<http://www.cdc.gov/ncidod/EID/vol2no2/clarke.htm>

NASA - Landscape Epidemiology and RS/GIS

<http://geo.arc.nasa.gov/sge/health/landepi.html>

Epidemiological Bulletin (March 1996) Use of GIS in Epidemiology (Epi-GIS)
http://www.paho.org/English/SHA/epibul_95-98/be961gis.htm#use

ESRI: Epidemiology and GIS
http://www.esri.com/mapmuseum/mapbook_gallery/volume16/health4.html

ESRI: Developing a Collaborative GIS Project in Social Services
<http://www.esri.com/library/reprints/pdfs/devlpsocialsvs.pdf>

ESRI Newsletter: Building a Community Health Surveillance System
<http://www.esri.com/news/arcuser/0102/comhealth1of2.html>

ESRI Newsletter: Health Geography
<http://www.esri.com/news/arcuser/0702/overview.html>

ESRI Newsletter: GIS for Healthcare Today and Tomorrow
<http://www.esri.com/news/arcuser/0499/umbrella.html>

ESRI Newsletter: Spatially Enabling Vital Health Data
<http://www.esri.com/news/arcuser/0499/vital.html>

ESRI Newsletter: Tracking Trends in Health Care with GIS
<http://www.esri.com/news/arcuser/0702/healthtrends1of2.html>

ESRI Newsletter: Mapping Healthcare Networks
<http://www.esri.com/news/arcuser/0499/access.html>

ESRI Brochure: GIS Solutions for Health Sciences and the Business of Health Care
<http://www.esri.com/library/brochures/pdfs/heathbro.pdf>

The application of space/time analysis tools of GIS in spatial epidemiology: a case study of Hepatitis B in China using GIS <http://ieeexplore.ieee.org/iel5/10226/32597/01526305.pdf>

GIS Development: GIS in health
<http://www.gisdevelopment.net/application/health/overview/healtho0003pf.htm>