

E-scholarship Linked Index to NCGIA GIScience Education Resources

Download this index to directly link to K-12 and undergraduate education resources. These include exercises, lab materials, and reports and position papers from education-focused workshops and conferences that were hosted and sponsored by NCGIA and partner institutions.

The NCGIA GIS and GIScience core curricula and the core curriculum for technical colleges are available as separate series at http://escholarship.org/uc/spatial_ucsb_ncgia

University-Level Materials

[90-4: NCGIA/U.S. Census Multiple Representations Data Set Project Technical Report on Pilot Project: Lee County, Florida](#), by Joseph S. DeLotto and Barbara P. Battenfield, SUNY-Buffalo and Frederick Broome, U.S. Census Bureau, documents a joint effort to produce a multi-scale, multi-agency database for teaching and research.

[91-21: GIS Teaching Facilities: Six Case Studies on the Acquisition and Management of Laboratories](#), edited by Stephen D. Palladino and Karen K. Kemp, UCSB, includes six case studies reviewing the acquisition and management of computer labs established primarily for teaching GIS.

[91-27: VT/GIS: The von Thünen GIS Package](#), by Rustin F. Dodson, UCSB, provides an interactive tutorial and exercises with which students can explore a spatially-relaxed von Thünen model.

[92-9: GIS Videos: An Annotated Bibliography](#), by Amy Ruggles, UCSB, describes over 120 educational videos on GIS and related subjects, from government agencies, software and hardware vendors, and independent video companies. Prepared in cooperation with ASPRS.

[92-13: A Glossary of GIS Terminology](#), compiled by Dr. G. Padmanabhan and Jeawan Yoon, North Dakota State University, and Mark Leipnik, UCSB, gives a comprehensive alphabetical listing of technical terms and their common meanings, also an alphabetical list of acronyms related to GIS.

[93-5: Teaching Introductory Geographical Data Analysis with GIS: A Laboratory Guide for an Integrated Spacestat/Idrisi Environment](#), edited by Rusty Dodson, Preface by Luc Anselin, UCSB, contains student laboratory exercises for an introductory course in spatial analysis, based on an integrated computing environment using the SpaceStat and Idrisi software packages. Topics include exploratory data analysis, spatial weight matrices, spatial autocorrelation, point pattern analysis, bivariate regression, spatial ANOVA, and trend surface regression. Includes a DOS diskette with datasets and linkage software. REQUIRED SOFTWARE: SpaceStat version 1.0 or higher, and Idrisi version 4.0 or higher.

[93-10: The NCGIA Guide to Laboratory Materials—1993](#), edited by Rustin F. Dodson, UCSB, a compendium of information pertaining to GIS laboratory education.

96-12: GIS Laboratory Exercises: Introduction to GIS, 2nd edition, by Jeremy Taylor, Jane Fletcher, and Karen Kemp, UCSB, Data and exercises for introductory GIS courses, written for use with *Idrisi for Windows* and *ArcView 2*.

K-12 Level Materials

Palladino, Steve: [A Role for Geographic Information Systems in the Secondary Schools: An Assessment of the Current Status and Future Possibilities](#), 1994

93-2: NCGIA Secondary Education Project "GIS in the Schools" Workshop Resource Packet, by Stephen D. Palladino, UCSB, materials for GIS outreach to secondary schools, includes: prototype workshop review, GIS short course notes, resource list, and GIS glossary; also helpful to teachers wanting simple resources for GIS teaching.

93-11: African Data Viewer—compiled by Stephen D. Palladino, UCSB, (with disk), includes thirty IDRISI based data sets of climatic factors, population density, elevation, and soil degradation. This product of the NCGIA Secondary Education Project is self-contained, requiring no additional software to view the data. Designed to introduce K-12 teachers and students to digital GIS data; includes DOS disk with data, program and installation instructions.

95-5: Color Your World, An Exploration with ArcView 2.0, compiled by Paul Sutton, Paul Van Zuyle, and Steve Palladino, UCSB, an interactive GIS based computer game designed for secondary school students to expose them to fundamental and essential geographic information necessary for understanding not only geography but politics, economics, demography, and other disciplines. The game produces thematic maps which show patterns and distributions of important phenomena. REQUIRED SOFTWARE: ArcView 2.0.

96-6: Critical Issues in GIS-Based Educational Module Development: NCGIA's ArcView-based Color Your World Module, by Steve Palladino and Paul Van Zuyle, UCSB, provides a framework for the development of GIS based education modules for K-12 schools, discusses critical design and process issues.

Education Resources from NCGIA Workshops and Conferences

National Center for Geographic Information and Analysis; California Geographic Information Association: [California GIS Educators' Symposium: Participants, Summary Discussion and Agenda](#), 1996

National Center for Geographic Information and Analysis; National Council for Geographic Education (NCGE); Technical Education Research Centers (TERC): [GIS in the K-12 Classroom: Research Agenda from EDGIS '96](#), 1996

World Computer Graphics Foundation; Towson State University; National Center for Geographic Information and Analysis: [Second International Symposium on GIS in Higher Education](#), 1996

Towson State University; National Center for Geographic Information and Analysis (UCSB): [Third International Symposium on GIS and Higher Education](#), 1997

Towson State University; National Center for Geographic Information and Analysis (UCSB): [Third International Symposium on GIS in Higher Education, Program flier](#), 1997

Kemp, Karen K.; Reeve, Derek E.; Heywood, D. Ian: [Report of the International Workshop on Interoperability for GIScience Education](#), 1998

Bibliographies

Onsrud, Harlan J.; Frank, Steven: [NCGIA Annual GIS Bibliography for 1991](#)

Frank, Steven; Onsrud, Harlan J.: [NCGIA Annual GIS Bibliography for 1992](#)

Frank, Steven; Lopez, Xavier; Johnson, Jeff; Onsrud, Harlan J.: [NCGIA Annual GIS Bibliography for 1993](#)

[Teaching and Learning Resources at CSISS and spatial@ucsb](#)

The Center for Spatially Integrated Science and the **Center for Spatial Studies** at UCSB offer additional teaching and learning resources through e-scholarship. See the following:

[CSISS Education and Learning Resources](#)

[CSISS Classics](#), essays on spatial thinking and innovations in the social sciences

[Spatial Perspectives on Analysis for Curriculum Enhancement](#)

Spatial Curriculum and Research, University of Redlands; Center for Spatial Studies, UCSB: [Symposium on a Curriculum for Spatial Thinking: Executive Summary](#), 2009

Janelle, Donald G.; Grossner, Karl: [TeachSpatial: A Portal to Instructional Resources on Spatial Concepts for STEM Education, Proposal](#), 2010

Center for Spatial Studies, UCSB: [The UCSB Minor in Spatial Studies](#), 2011

Janelle, Donald G.; Grossner, Karl; Lenaburg, Lubella: [TeachSpatial: A Portal to Instructional Resources on Spatial Concepts for STEM Education, Final Report](#), 2012

Matthews, Stephen A.; Janelle, Donald G.; Goodchild, Michael F.: [Future Directions in Spatial Demography, Final Report](#), 2012

Hegarty, Mary; Newcombe, Nora S.; Goodchild, Michael F.; Janelle, Donald G.; Shipley, Thomas F.; Sinton, Diana: [Spatial Thinking across the College Curriculum, Final Report](#), 2013

Janelle, Donald G.; Kuhn, Werner; Gould, Michael; Lovegreen, Maureen: [Advancing the Spatially Enabled Smart Campus, Final Report](#), 2014