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](http://www.nsf.gov) under its program of support for infrastructure in the social and behavioral sciences.

### CCSISS News

* [**CSISS News**](http://www.csiss.org)

<table>
<thead>
<tr>
<th>Core Programs</th>
<th>Learning Resources</th>
<th>Spatial Resources</th>
<th>Spatial Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005 Workshop Programs: <strong>SPACE</strong></td>
<td>These introductory materials include <a href="http://www.csiss.org">CSISS Classics</a> and select video clips from the CSISS summer workshops.</td>
<td>CSISS has compiled e-journals, bibliographies, and other spatial resources for the social sciences.</td>
<td>Here's where you'll find information about software for the exploration and analysis of spatial data.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Search Engines</th>
<th>CSISS Events</th>
<th>Community Center</th>
<th>About CSISS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Try out one of our custom search engines to find spatial analysis resources on the Internet.</td>
<td>Here's where you'll find information and registration for workshops, conferences and specialist meetings.</td>
<td>Join the forums, or if your organization relates to our mission and goals, register as a CSISS affiliate.</td>
<td>CSISS presentations, news, personnel, and sitemap. Our Strategic Plan and Annual Reports are also found here.</td>
</tr>
</tbody>
</table>

Copyright © 2001-2005 by Regents of University of California, Santa Barbara
Webmaster: [Gamael Zavala](mailto:webmaster@csiss.org)
Modeling a Center for Spatially Integrated Social Science

Critical Themes in Social Science

+ 

Tools and Concepts for Spatial Thinking

+ 

Infrastructure

= 

Advances in Spatial Social Science
Some Critical Themes in the Social Sciences:

- Space-time accessibility
- Equity
- Externality effects
- Risk assessment
- Small-area analysis
- Sense of place
- Cultural analysis
- Demographic processes
- Health and disease
- Crime mapping and law enforcement
- Community organization
- Governance
- Electoral processes
- Globalization
- International conflict
- Coupling human and environmental systems
- etc
Tools and Concepts for Spatial Thinking:

• Agent-based modeling
• Point-pattern analysis
• Exploratory spatial data analysis
• Bayesian analysis
• Spatial interaction modeling
• Dynamic visualization
• Flow-data analysis
• Analytical cartography
• Spatial econometrics
• Location-allocation modeling
• GIS
• Remote sensing
• etc.
Building National Infrastructure

Programs:
• Learning resources
• Workshop training
• Best practice publications
• Research specialist meetings
• Software development
• Web search engine development
• Place-based search tools
• Conference presentations
• Interdisciplinary orientation

Tactics:
• Inform (I)
• Involve (I²)
• Illustrate (I³)
• Innovate (I⁴)
• Infiltrate (I⁵)
• Integrate (I⁶)
Spatial Analysis

Outcomes

Advances in Theory
New NSF Programs
New Journals

Interdisciplinary Collaboration
International Conference(s)

New Applications
New Social Science Resources

Specialist Meetings
Tools Development
Place-Based Search
Workshops

Spatial Econometrics
Agent-Based Modeling
Flow Data Analysis
GIS
Analytical Cartography
Dynamic Visualization
Bayesian Analysis
Spatial Interaction Modeling

Location-Allocation Modeling
ESDA

Diffusion of Spatial Analysis

New Journals
International Conference(s)
Center for Spatially Integrated Social Science

1999

Spatial Perspectives on Analysis for Curriculum Enhancement

2004 – 2006

Population Research Institute

2005 – 2006
GIS and Population Science

About the Program

The Mission

This GIS Population Science program has a primary mission to significantly promote the mastery and use of spatial methods in population research by the current cohort of young population scientists. In support of this mission, the Population Research Institute (The Pennsylvania State University) and the Center for Spatially Integrated Social Science (University of California, Santa Barbara) have combined their expertise to offer national workshops for Ph.D. students, postdocs, and young faculty in demography and in related fields with research interest in population science. In addition, the program is developing web-based infrastructure for access to learning and research resources by workshop participants and by the broader international community of population scientists.

The Target Audience

Two-week-long GIS Population Science workshops will be offered in 2005 and 2006 to provide standardized, intensive training for young researchers in geographic information science specifically tailored toward population science. The primary audience for these workshops are interdisciplinary pre-doctoral students of demography at NICHD-supported population training centers in the United States, institutional members of the wider Association of Population Centers (APC), graduate students in demography-related disciplines from both APC and non-APC institutions (including agricultural economics, anthropology, economics, geography, public health, rural sociology, sociology), as well as young faculty and researchers employed in population agencies.

Host Organizations and Program Funding

The Penn State and UCSB partnership builds on shared expertise in GIS instruction, spatial statistics, and cartographic visualization; shared experience in workshop and conference management; and complementary expertise in demographic science, distance learning, and digital libraries. See About for more information.

The GIS Population Science program is funded by the National Institute of Child Health and Human Development (NICHD) as an R25 award titled "GIS Training Program for Population Scientists" (R25 HD047744-01). The support of NICHD is gratefully acknowledged.
Crime Based Analysis and Classification of 729 American Cities (1976)

Authors  Harries, K. D.

Source  Social Indicators Research v2: 467-487.

Category  Spatial Econometrics

Disciplines  Geography; Sociology; Statistics & Operations Research

Database  National Criminal Justice Reference Service Abstracts

Keywords  spatial correlation; spatial cluster

SPACE
Spatial Perspectives on Analysis for Curriculum Enhancement

• NSF CCLI-National Dissemination Program
  October 2003 – September 2006
• Consortium: UCSB, Ohio State University, UCGIS
• PI: D Janelle / Co-PIs: M Goodchild and R Appelbaum
• Partner PIs: M-P Kwan (OSU) / A Getis (UCGIS)
Why SPACE?

• Spatial thinking should be one of the foundations for general undergraduate education (for informed citizenship and for general information analysis and assessment)

• Spatial perspectives provide a means of integrating theory within and across disciplines, and for matching it with evidence

• Spatial analysis can serve as a foundation for interdisciplinary cooperation (e.g., the coupling of environmental and social processes)
SPACE Goals

• Facilitate undergraduate faculty development in spatial social science
• Expand curricula resources in spatial social science
• Provide follow-through professional development
• Achieve diversity in access to educational opportunities
• Establish and encourage support networks
• Foster technology integration
• Promote discipline integration
• National dissemination
SPACE Workshop Content Themes

• Geographic Information Systems
• Spatial Pattern Analysis
• Spatial Econometrics
• Map Making and Cartographic Visualization
• Spatial Interaction
• Agent-Based Modeling
• Place-Based Search
• Remote Sensing
• Applications
CSISS Best Practice Publications

M.F. Goodchild and D.G. Janelle, eds.

Spatially Integrated Social Science

Oxford University Press, 2004

See preview http://www.csiss.org/best-practices/siss/ for objectives, chapter abstracts, & related resources
Florence Kelley: Slums of the Great Cities Survey Maps, 1893
By Nina Brown

Background

Kelley, Florence (1859-1932)

Florence Kelley, the daughter of Congressman William D. Kelley, was one of the most dedicated social activists of the Progressive Era. A graduate of Cornell University and Northwestern University Law School, Florence Kelley was drawn into social activism after studying for a short period at the University of Zurich. In Europe she read the work of Karl Marx (1818-1881) and Friedrich Engels (1820-1895) and became an ardent socialist. She later translated into English Engels' *The Condition of the Working Class in London* (1887) and corresponded with Engels for the remainder of his life. When Kelley returned to the United States she married a socialist labor leader, but the marriage was short lived. In 1891 Kelley divorced and moved to Chicago, where she became a resident of Hull House, the

http://www.csiss.org/SPACE/resources/classics/
Henry Mayhew: London Labour and the London Poor, 1861
By Nina Brown

Background
Henry Mayhew (1812-1887)

The Intensity of Criminality
Map showing the number of criminal offenders to every 10,000 of population in each county of England and Wales.
CSISS Classics - Spatial Thinking in Sociology

- Charles Booth, Mapping London’s Poverty, 1885-1903
- Patrick Doreian on Linear Models with Spatially Distributed Data
- Florence Kelly, Slums of the Great Cities Survey Maps, 1893
- Colin Loftin and Sally K Ward, Application of Spatial Autocorrelation in Sociology
- Henry Mayhew, London Labour and the London Poor, 1861
- Robert Park and Ernest Burgess, Urban Ecology Studies, 1925
- Clifford R Shaw and Henry D McKay, Social Disorganization Theory
- Georg Simmel, The Sociology of Space
- Alma and Karl Taeuber, Residential Segregation in US Cities
- Alfred Weber, Theory of the Location of Industries, 1909
- William G Skinner, Marketing and Social Structure in Rural China
Problems Associated with Spatial Pattern Analysis

Art Getis

Introduction to Spatial Pattern Analysis in a GIS Environment

Time: 9:58
Quality: **High** - 31MB

Time: 9:43
Quality: **High** - 31MB

Time: 7:29
Quality: **Audio Only** **High** - 2MB

Time: 3:53
Quality: **Audio Only** **High** - 2MB

http://www.csiss.org/streaming_video/2002/
<table>
<thead>
<tr>
<th>Video Title</th>
<th>Time:</th>
<th>Quality:</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Nature of Spatial Pattern Analysis</td>
<td>9:58</td>
<td><strong>High</strong> - 31MB</td>
</tr>
<tr>
<td>Problems Associated with Spatial Pattern Analysis</td>
<td>9:43</td>
<td><strong>High</strong> - 31MB</td>
</tr>
<tr>
<td>An Introduction to GIS</td>
<td>7:29</td>
<td><strong>Audio Only</strong> - 2MB</td>
</tr>
<tr>
<td>GIS Functionality</td>
<td>9:58</td>
<td><strong>High</strong> - 33MB</td>
</tr>
<tr>
<td>Current Technologies in GIS</td>
<td>14:54</td>
<td><strong>High</strong> - 48MB</td>
</tr>
<tr>
<td>Spatial Patterns of Birth Data</td>
<td>15:42</td>
<td><strong>Audio Only</strong> - 5MB</td>
</tr>
<tr>
<td>Spatial Patterns of Fertility in Egypt</td>
<td>10:18</td>
<td><strong>High</strong> - 32MB</td>
</tr>
</tbody>
</table>
CSISS Tools Clearinghouse

The **CSISS Tools Clearinghouse** is intended to grow into a robust collection of spatial analysis software, software links, and links to information about tools for spatial analysis. The development of these tools is a lively research area and the goal of this clearinghouse is to provide up-to-date information on available tools. The clearinghouse is comprised of:

- **Search Engine**
  Search a continuously updated, comprehensive index of the CSISS Select Tools and Links to Portals.

- **Select Tools**
  Browse through tools particularly suited to the analysis of spatial phenomena.

- **Portal Links**
  A listing of useful collections of software tools for anyone interested in Spatial Analysis, or those looking for specific tools.

- **CSISS Tools (offsite)**
  The home of the software tools development efforts under CSISS, carried out in the Spatial Analysis Laboratory of the Department of Agricultural and Consumer Economics at the University of Illinois, Urbana-Champaign.

*New* - GeoDa 0.9, beta release software for ESDA with dynamically linked windows.
*New* - R-Geo, a developing effort to promote spatial data analysis software in the R language.
Download GeoDa 0.9.5-i
• Tutorials
• Sample Data
• Workbook
• Openspace Mailing List

www.geoda.uiuc.edu

Luc Anselin
Tobler's FlowMapper

http://www.csiss.org/clearinghouse/FlowMapper
The GIS Cookbook is a collection of simple descriptions and illustrations of GIS methods written with minimal GIS jargon. Recipes cover two GIS software platforms, ArcView 3.x and ArcGIS 8/9.x. The target users are social scientists with an interest in introducing spatial thinking into their current research and also having some experience with computers but little to no exposure to GIS. The GIS Cookbook is in its beginning stages and will be expanded to better serve the needs of social scientists. It will be supplemented with recipes for ArcGIS 9.x prior to the start of the 2005 GIS Population Science Workshops.

GIS Cookbook Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>ArcView 3.x</th>
<th>ArcGIS 8.x</th>
<th>ArcGIS 9.x</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Getting Started</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>◦ How to Open a Map Document, then Add Data</td>
<td>3.x</td>
<td>8.x</td>
<td>9.x</td>
</tr>
<tr>
<td>◦ How to add data after opening a new view</td>
<td>3.x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>◦ Performing an Attribute Query</td>
<td></td>
<td>8.x</td>
<td>9.x</td>
</tr>
<tr>
<td>◦ Performing a Spatial Query</td>
<td></td>
<td>8.x</td>
<td>9.x</td>
</tr>
<tr>
<td>2. Dealing with Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>◦ Importing an Excel table to your GIS project</td>
<td>3.x</td>
<td>8.x</td>
<td>9.x</td>
</tr>
<tr>
<td>◦ Joining a table to an existing table</td>
<td>3.x</td>
<td>8.x</td>
<td>9.x</td>
</tr>
</tbody>
</table>
Syllabi: http://www.csiss.org/learning_resources/content/syllabi/

Course Syllabi From Leading Researchers in Spatial Social Science

Anthropology • Archaeology • Criminology • Demography • Economics
Environment & Resources • Geographical Information Science
Human Geography • History • Political Science • Public Health • Sociology
Spatially Integrated Social Science • Urban Studies & Urban Planning

This page provides links to reading lists of courses taught by leading researchers in spatial social science, organized by discipline. The links are provided with the permission of the researchers themselves. In most cases these researchers are not directly affiliated with CSISS; in all cases the researchers are considered by CSISS to be leaders in the analysis of space within their discipline.

Know of a course in the social sciences related to the analysis of space? Let us know.
SPACE Discipline Resources

Categories

- Also see: GIS Syllabi

Links

- Asian Spatial Information and Analysis (ACASIA) - a research institution specializing GIS databases for Asia and the former Soviet Union.
- Baltic Sea GIS, Maps and Statistical Database - and other information for the Baltic Sea drainage basin.
- Colorado Office of Emergency Management: Carroll - local government oriented GIS data.
- Digital Chart of the World - Download the borderlines of different countries, in Arc/INFO export format.
- Freedata.ca - Dedicated to the issue of public access to government geospatial data across Canada. It is a place to discuss, issues, educate, coordinate and encourage change.
- GIS Data Depot - Provides free GIS data downloads and creates custom spatial data CD-ROMs.
- Hawaii Statewide GIS Program - Free downloadable GIS spatial data, metadata, and maps.
- Infoshare: Community Data on New York City - Profile and compare neighborhoods, and produce original tables.
- Louisiana Statewide GIS - Contains GIS and mapping data on the state of Louisiana.
SPACE Teaching Materials

Teaching Materials >> Student Learning Assessment >> College and University

Links

» **Field-tested Learning Assessment Guide (FLAG)** - Offers broadly applicable, self-contained modular classroom assessment techniques (CATs) and discipline-specific tools for STEM instructors interested in new approaches to evaluating student learning, attitudes and performance.

» **Learning Through Technology** - Features information on using technology in the classroom, case studies, assessment tools, glossary, and links. Provided by the National Center for Science Education.

» **Online Evaluation Resource Library** - This library was developed for professionals seeking to design, conduct, document, or review project evaluations. OERL's resources include instruments, plans, and reports from evaluations that have proven to be sound and representative of current evaluation practices.

» **Teaching Goals Inventory Online** - A self-assessment of instructional goals. Its purpose is threefold: (1) to help college teachers become more aware of what they want to accomplish in individual courses; (2) to help faculty locate Classroom Assessment Techniques they can adapt and use to assess how well they are achieving their teaching and learning goals; and (3) to provide a starting point for discussion of teaching and learning goals among colleagues.
Challenges for SPACE Workshop Participants I

**SPACE** Incentive Awards

- Up to $1500 expense awards to participate in spatial-oriented conference / to present a paper about teaching spatial thinking at the undergraduate level
- Eligibility: **SPACE** workshop participants
- Based on implementation of course exercises and syllabi, development of educational development resources, or superb example of a student course project
Challenges for SPACE Workshop Participants II

• Academic Conference Courses to Enhance Spatial Science (ACCESS)
  – Half-day and full-day workshops at academic discipline conferences
    • exposure and profile for spatial analysis in undergraduate teaching
    • Follow-up support for prior workshop participants
    • Involve spatial researchers from different disciplines
  – Proposals encouraged for organizing and instructing—SPACE provides financial assistance – see http://www.csiss.org/SPACE/workshops/access.php
Academic Conference Courses to Enhance Spatial Science (ACCESS) funding from SPACE

• Symposium: Integrating Geospatial Perspectives and Education in Archaeology, Society for American Archaeology
  San Juan, Puerto Rico, April 2006. Veronica Arias, Heather Richards, and Judith van der Elst

• Workshop: Integrating GIS and Spatial Analysis into the Undergraduate Planning Curriculum, Association of Collegiate Schools of Planning
  Charleston, South Carolina, October 2005. Richard LeGates

• Demonstration Workshop: GIS, GPS, and Spatial Analysis Tools in Support of Service Learning, National Technology and Social Science Conference
  Las Vegas, NV, April 2005. David Padgett

• Panel Session: GIS and Spatial Analysis Tools to Enhance Social Science Course Content and Research, Association of Social and Behavioral Scientist
Challenges for SPACE Workshop Participants III

• Documenting Results of SPACE Workshops:
  – Entry and Exit Surveys (expectations and evaluations)
  – Follow-up Survey (evidence of implementation and long-term influence)

• Recommending Web Links to resources for spatial social science undergraduate education:
  – Course syllabi
  – Data and course exercises
  – Resources for curriculum, course, and project development, and evaluation
  – Instruments and resources for learning assessment
  – Examples of teaching and student accomplishments
Self-report Averages
Oklahoma Workshop Participants 2006

1 = No familiarity
2 = Familiarity
3 = Experience with applications
4 = Good knowledge
5 = Expert knowledge

1 6 4 2 0
0 4 6 2 1
0 3 5 4 1
1 2 5 2 3
0 1 0 1 1
3 2 4 2 2
1 2 4 3 3
3 4 1 3 2
0 2 4 5 2
0 1 2 7 3
0 3 2 6 2
1 1 4 7 0
2 1 1 8 1
Bonding in SPACE
Challenges for SPACE Workshop Participants IV

Enjoy the Workshop and the OU Experience