

Appendix B: CSISS Materials (including off-print of Goodchild et al. 2000)

Appendix

The CSISS Program

Extracts from the CSISS Strategic Plan and the 2003 Annual Report to NSF

CSISS, the Center for Spatially Integrated Social Science, is funded by the National Science Foundation under its program of support for infrastructure in the social and behavioural sciences. Its programs focus on the methods, tools, techniques, software, data access, and other services needed to promote and facilitate a novel and integrating approach to the social sciences.

CSISS MISSION

CSISS is founded on the principle that analyzing social phenomena in space and time enhances our understanding of social processes. Hence, CSISS cultivates an integrated approach to social science research that recognizes the importance of location, space, spatiality, and place.

The **GOAL** of CSISS is to integrate spatial concepts into the theories and practices of the social sciences by providing infrastructure to facilitate: (1) the integration of existing spatial knowledge, making it more explicit, and (2) the generation of new spatial knowledge and understanding.

OBJECTIVES

1. To encourage and expand applications of new geographic information technologies and newly available geographically referenced data in social science.
2. To introduce the next generation of scholars to this integrated approach to social science research.
3. To foster collaborative interdisciplinary networks that address core issues in the social sciences using this approach.
4. To develop a successful clearinghouse for the tools, case studies, educational opportunities, and other resources needed by this approach.

CSISS PROGRAMS

To fulfill its objectives, CSISS administers seven interrelated programs:

Specialist Meetings

CSISS organizes meetings on core issues in the social sciences that cut across traditional disciplinary boundaries to focus on gaps in knowledge that can be addressed through a spatial perspective. Typically, these meetings address traditional domains of social science inquiry (e.g., equity, cultural analysis, externalities, and globalization), as well as new areas of investigation where spatial perspectives and technologies might add value (e.g., location-based services that exploit GPS and wireless technologies). These meetings identify scientific agendas and workshop needs for young scholars, propose learning resources essential to the diffusion of tools and concepts, suggest the creation of

new spatial research tools, explore dissemination practices to reach potential users of spatial perspectives, foster collaborative networks among meeting participants, and develop best-practice publications of exemplary social science applications.

National Workshops

CSISS sponsors intensive weeklong workshops and provides participant scholarships to introduce the latest and most authoritative approaches to the methods and tools of spatially integrated social science. The primary client group for workshops include PhD candidates, postdoctoral students, and untenured Assistant Professors. However, some senior scholars are included to provide a bridging across academic generations. Consistent with CSISS objectives, workshop invitees are selected from a broad mix of social science disciplines. Effort is made during the workshops to build collaborative networks among participants by stressing the commonality of the spatial perspective to problem identification and research approach.

Spatial Analytic Tools

CSISS researchers at the University of Illinois at Urbana-Champaign seek to develop and disseminate a powerful and easy-to-use suite of software for spatial data analysis, to advance methods of statistical analysis to account for spatial effects, and to integrate these developments with GIS capabilities. Dissemination of these tools is promoted on the CSISS website (www.CSISS.org), through Specialist Meetings, Workshops, Best Practice publications, and Learning Resources.

Learning Resources

CSISS aims to develop learning resources covering core spatial concepts and exemplary research approaches. These include lecture outlines, exercises, interactive learning modules, and demonstrations, and are made available through the website www.CSISS.org. CSISS Learning Resources emphasize problems and approaches that will be of value to a wide range of social sciences. Workshop and Specialist Meeting participants are encouraged to recommend Learning Resources for development and are solicited for contributions. In addition, CSISS works to develop collaboration with other institutions engaged in the production and dissemination of learning resources on spatial approaches to the social sciences.

Best Examples

CSISS seeks to identify outstanding uses of spatial analytic approaches that advance theoretical understanding and empirical testing in social science. Specialist Meetings are charged with recommending specific researchers whose publications qualify as best practices. Such exemplary research is featured in CSISS publications and workshops, and is targeted for the development and solicitation of learning resources.

Place-Based Search

In collaboration with UCSB's Alexandria Digital Library and its ADEPT initiative (Alexandria Digital Earth Prototype), CSISS is developing services to enable search and delivery of geographically referenced information on the World Wide Web and in digital

libraries. A gazetteer interface with the CSISS Internet search engine will permit refined searches for spatial analytic applications by place and region.

Virtual Community

CSISS is developing an open, virtual community to share spatial analytic software, foster discussion about spatial approaches in the social sciences, provide learning resources, and highlight information on workshops, conferences, and the latest innovations and applications of spatial analysis. The vehicle for these community-building and outreach efforts is <http://www.CSISS.org>. CSISS aims to position this website as the primary port-of-call for researchers and students of spatial analysis in the social sciences. To this end, it has developed a specialized Internet search engine to identify relevant resources on the World Wide Web and provides consolidated bibliographical resources derived from a broad range of on-line sources.

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CSISS Specialist Meetings (2000-2004):

- Spatial Equity and Social Inequality, Santa Barbara, November 2000
- Spatial Externalities, Santa Barbara, January 2001
- Location-Based Services, Santa Barbara, December 2001
- Spatial Analytic Tools Software Development, Santa Barbara, May 2002
- Spatial and Social Interactions in Economics, Santa Barbara, 4-5 April 2003
- Health Risk Perception and Spatial Analysis, Santa Barbara 10-11 October 2003
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Consistent with CSISS objectives, workshop invitees are selected from a broad mix of social science disciplines. Effort is made during the workshops to build collaborative networks among participants by stressing the commonality of the spatial perspective to problem identification and research approach.

The following workshops were presented in Summer 2003:

Population Science and GIS

19–23 May 2003, University Park, State College PA

Topics covered: An overview on the uses of geospatial information technologies within the population sciences; applications to problems of urban poverty, neighborhood research, racial/ethnic diversity, maternal/child health, epidemiology, and population-environment; spatial analytical methods for demographic inquiry, issues in geospatial data handling, and using spatial analysis tools within GIS (ArcGIS 8.2, ArcView 3.3) for data visualization and modeling. No experience in spatial analysis required.

Instructors: Stephen Matthews (coordinator), Mark Gahegan, and David O’Sullivan (all of The Pennsylvania State University), Livia Montana (Macro International), Trudy Suchan (U.S. Census Bureau), David Wong (George Mason University), Frank Tanser (Medical Research Council, Durban, South Africa), and Paul Voss (University of Wisconsin, Madison).

Co-sponsors with CSISS and Host institution: The Pennsylvania State University (Population Research Institute, Social Science Research Institute, Department of Geography, and the GIS Council).

Accessibility in Space and Time: A GIS Approach

7–11 July 2003, Columbus OH

Topics covered: Measuring and analyzing accessibility in physical and social space, and in cyberspace; network approaches to connectivity and accessibility; graphical visualization and computational approaches to the analysis of individual space-time behavior; statistical modeling of spatial interaction patterns; and spatial optimization techniques. Applications and exercises will feature a range of social science issues. No experience in GIS required.

Instructors: Mei-Po Kwan (coordinator), Alan Murray, Morton O’Kelly, Michael Tiefelsdorf (all of The Ohio State University).

Co-sponsor with CSISS and Host institution: Department of Geography, The Ohio State University (www.geography.ohio-state.edu).

Introduction to Spatial Pattern Analysis in a GIS Environment

28 July–1 August 2003, Santa Barbara CA

Topics covered: Introduction to concepts in GIS, spatial pattern analysis (exploratory and confirmatory), autocorrelation statistics, and geostatistics (including variogram analysis and kriging). Lectures cover research methods in spatial pattern analysis in the social sciences. Exercises include an introduction to ArcInfo 8.0 and data exploration of social, behavioral and economic phenomena. No experience in spatial analysis required.

Instructors: Arthur Getis (coordinator), John R. Weeks, and Jared Aldstadt (all of San Diego State University) and Michael Goodchild (CSISS, University of California, Santa Barbara).

Host institution: CSISS, University of California, Santa Barbara (CSISS.org/events/workshops/).

Geographically Weighted Regression and Associated Statistics

4–8 August 2003, Santa Barbara CA

Topics covered: Local statistics and local models, the basics of GWR with examples, statistical inference and GWR, GWR and spatial autocorrelation, extensions to the basic GWR framework and concept, applications of specialized GWR software (provided), and visualizing the output in ArcView 3.3.

Instructors: A. Stewart Fotheringham (coordinator), Chris Brunsdon, and Martin Charlton (all of The University of Newcastle).

Host institution: CSISS, University of California, Santa Barbara (CSISS.org/events/workshops/).

ICPSR 2003 Summer Workshops

CSISS encourages participation in the workshops taught by Luc Anselin (University of Illinois, Urbana-Champaign) for the Interuniversity Consortium on Political and Social Research. See www.icpsr.umich.edu/TRAINING/summer.html for details on time, place, and registration.

Introduction to Spatial Data Analysis

Spatial data visualization and exploration, analysis of clusters and point patterns, global and local indicators of spatial autocorrelation, variogram analysis, and introduction to spatial regression analysis and related software. Familiarity with multivariate statistics and basic concepts of probability theory expected, and some knowledge of desktop GIS software required. See <http://sal.agecon.uiuc.edu/courses/index.html#intro> for details.

Spatial Regression Analysis

Spatial econometric analysis, incorporating spatial effects, maximum likelihood and other estimation procedures, specification searches, and implementation in standard software packages. Participant background in intermediate regression analysis or intermediate econometrics, and familiarity with introductory spatial data analysis, expected. See <http://sal.agecon.uiuc.edu/courses/index.html#reg> for details.

Workshop Application and Participation Patterns

The number applicants for the 2003 CSISS summer workshop was 328, a 46 percent increase over the previous year. The trend in numbers (excluding the ICPSR workshop participants) follows: 136 (152 with ICPSR workshops) in 2000, 235 (262 with ICPSR workshops) in 2001, 224 in 2002, and 328 in 3003. In 2000 and 2001, CSISS offered scholarship support for participants in ICPSR workshops, a practice discontinued in 2002 because of increasing pressure on funds. In all years, interest in spatial analysis workshops among social scientists exceeded capacity by a significant margin. CSISS was able to serve 49 percent of applicants in 2000, 43 percent in 2001, 31 percent in 2002, and 28 percent in 3003.

Table 1 reveals a broad disciplinary representation. While geography is the most strongly represented, this representation has declined as a proportion of all participants. The increase in population and demography in 2003 reflects the specialized workshop in this area at Pennsylvania State University.

Table 1. Numbers of Applicants and Attendees in CSISS Summer Workshops

Discipline	ATTENDEES					APPLICANTS					Ratio Accepted
	2000	2001	2002	2003	Totals	2000	2001	2002	2003	Totals	
Economics	9	12	7	7	35	10	45	21	25	113	0.31
Political Science	14	5	4	9	32	26	12	7	13	63	0.51
Sociology	11	13	9	11	44	14	31	22	18	98	0.45
Anthropology	5	12	10	6	33	10	32	25	15	94	0.35
Geography	17	20	22	20	79	46	61	73	110	310	0.25
Public Policy	2	8	4	1	15	9	23	25	21	86	0.17
Urban Studies/Plan	3	6	3	8	20	6	11	10	48	81	0.25
Statistics	3	2	0	2	7	4	4	0	5	15	0.47
Criminology	3	6	3	1	13	4	10	7	6	33	0.39
Population/Health	1	12	6	24	43	2	18	22	61	115	0.37
Other, social science	1	5	3	4	13	4	8	7	5	29	0.45
Other, not social science	3	2	1	0	6	17	7	5	1	32	0.19
	72	103	72	93	340	152	262	224	328	966	0.35

Table 2 CSISS Workshop Applicants, Summer 2003					
Participant & Applicant Status	Pop Science	Accessibility	Pattern Analysis	GWR	Total Applications
PhD Candidate	18	10	22	22	72
Other Graduate Student	22	22	36	35	115
Post Doc	6	3	5	6	20
Untenured Faculty	8	9	8	14	39
Tenured Faculty	7	8	11	9	35
Other/Unspecified	21	14	7	5	47
No. of Women	42/82	28/66	42/89	36/91	148/328

Tables 2 and 3 for the **2003 workshop season** represent the data on applicants in the same format as in previous annual reports. Women represent 45 percent of the applicant pool for 2003, down from a previous high of 48 percent in 2001. The large number of universities with applicants reflects a strong general awareness of CSISS programs. Younger scholars (PhD candidates, other graduate students, post doctorate scholars, and untenured faculty) are the primary client group, accounting for 75 percent of applicants.

Survey of Participants in CSISS Programs

In March 2003, the UCSB Social Science Survey Research Center administered a web-based survey of all applicants/participants for CSISS programs. Responses on a few questions are especially useful in evaluating the success of the workshop and specialist meeting programs. The survey targeted 518 participants and 223 non-participant applicants to CSISS programs since January 2000. Excluding email bounces of approximately 20%, the response rate was 55 percent – this included 232 participants and 92 non-participants. Some responses follow:

- 87% of participants **“strongly agree” or “agree”** that **“My CSISS experience has had positive impacts on my research”**
- 57% of participants **“strongly agree” or “agree”** that **“CSISS experience has had positive impacts on my teaching”**

Full details on the survey will provide cross-tabulations by discipline, status of participant (e.g. graduate student / tenured professor), and level of expertise in spatial analysis. **A full report on this survey will be available at www.csiss.org/survey in early October 3003.**

Table 3

Distribution of CSISS Workshop Participants & Applications by Discipline & for Number of Universities, Summer 2003

Discipline/Area	Participants Accepted in Workshops				Total Acceptances & Applications
	Pop Science	Accessibility	Pattern Analysis	GWR	
Anthropology/ Archaeology	4		2		6/15
Communications			1		1/1
Criminology				1	1/6
Demography/ Population Studies	4	2		3	9/34
Economics	2	2	2	1	7/25
Environmental Studies/Planning			1		1/21
Epidemiology/ Health Studies	5	5	1	4	15/27
Geography		4	2	1	7/32
GIS/Remote Sensing	2	6		2	10/67
Information Science					0/1
Political Science		2	4	3	9/13
Psychology			3		3/4
Regional Science		1	1	1	3/11
Sociology	3	5	2	1	11/18
Statistics		1		1	2/5
Urban Studies/ Planning	1	2	2	3	8/48
Totals:	21	30	21	21	93/328
No. Universities & Other Institutions	19/57	25/48	17/66	19/63	68/159

Discipline / Area labels are based on the self-identification of applicants.

These totals are based on participants and applicants for all workshops, excluding duplicates of universities represented across workshops.

Social Science Conference Workshops and Sessions Sponsored and Co-sponsored by CSISS (2000-2003)

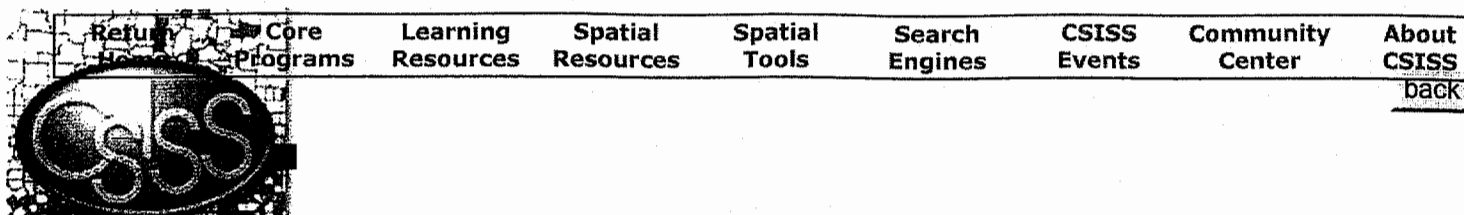
- Political Processes and Spatial Methodologies Workshop, Boulder 10-12 March 2000
- American Society of Criminology, lunch session, San Francisco 16 November 2000
- Association of American Geographers, CSISS Program, New York 28 February 2001
- Workshop on Political Processes and Spatial Analysis, Miami 5-6 March 2001
- Canadian Association of Geographers, Infrastructure for Spatial Social Science Montreal 9 June 2001
- American Sociological Association Didactic Workshop on Spatial Social Science, Anaheim, 8 August 2001
- Wharton School CSISS Summer Workshop 'Introduction to Spatial Data Analysis in the Social Sciences', Philadelphia, 29-31 August 2001
- Association of Pacific Coast Geographers, Santa Barbara 12 September 2001
- Digital Communities Conference on Cities and the Information Society, Chicago 7 November 2001
- Social Science History Association, Spatial Social Science, Chicago 15 November 2001
- Association of American Geographers, Panel on CSISS, Los Angeles 22 March 2002
- GIS Research UK, Sheffield, 4 April 2002
- American Anthropological Association Workshop on Spatial Analysis in Anthropology, New Orleans 22 November 2002
- American Agricultural Economics Association and the Rural Sociological Society, Montreal 27 July 2003
- American Sociological Association, Methodological Workshop on Spatial Analysis in Sociology, Atlanta 18 August 2003

CSISS Specialist Meetings (2000-2004):

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- Health Risk Perception and Spatial Analysis, Santa Barbara 10-11 October 2003
- Time-mapping Globalization in the World-System, Riverside 6-7 February 2004

Co-sponsored with Interuniversity Consortium on Political and Social Research:

- Advanced Workshop on Spatial Analysis in Social Research, Ann Arbor 17-20 May 2001
- Introduction to Spatial Data Analysis (week-long workshops) Urbana-Champaign in summer 2000; Santa Barbara in summer 2001 and 2002; Ann Arbor in summer 2003
- Spatial Regression (week-long workshops) Ann Arbor in summer 2000, 2001, and 2002; Urbana-Champaign in summer 2003



CSISS Conference Participation and Sponsorship

2003

American Sociological Association (ASA) Annual Meeting Atlanta, GA August, 17 2003

Site Search

ASA Annual Meeting Workshop: Does Space Matter? Analyzing and Visualizing Spatial Effects in Sociology Sunday, August 17, 2003, 8:30 - 11:00 a.m.

This workshop addresses 1) the theoretical rationale for including spatial perspectives in sociological research, 2) the availability spatial data and spatial analytic tools for studying social patterns and processes, and 3) the integration of spatial statistics with methods of spatial visualization. [Download the Agenda](#)


- o **Luc Anselin**, University of Illinois, Urbana-Champaign
Exploratory Spatial Data Analysis and GeoDa 1.9MB
- o **Rob Baller**, University of Iowa - *Applying a Spatial Perspective to the Study of Violence: Lessons Learned* 2.6MB
- o **Don Janelle**, University of California, Santa Barbara
Resources for Spatial Social Science 1.3MB
- o **John R. Logan and Deirdre Oakley**, Lewis Mumford Center
Spatial Mapping for Sociologists: Some Great Maps and How to Use Them 2.9MB

American Agricultural Economics Association (AAEA) Annual Meeting Montreal, Quebec July 26, 2003

AAEA / The Rural Sociological Society Annual Meeting Workshop: Spatial Analysis for Rural Sociology and Agricultural Economics Saturday, July 26, 2003, 8:00 a.m. - 12:00 p.m.

This workshop's aim was to facilitate a more explicit recognition of spatial effects in the analysis of geo-referenced data within the research domains of rural sociology and agricultural economics.
[Download the Agenda](#)

- o **Michael F. Goodchild**, University of California, Santa Barbara
Spatial Tools for Econometric and Exploratory Analysis 1.4MB
- o **Donald G. Janelle**, University of California, Santa Barbara
CSISS Resources for Research and Teaching 1.6MB
- o **Gerald C. Nelson**, University of Illinois, Urbana-Champaign
Exploiting Space in Agricultural Economics Models 1.8MB

- o **Paul R. Voss**, University of Wisconsin-Madison
Spatial Analysis in Rural Sociology  600kb






2002

AAA 101st Annual Meeting and Workshop

New Orleans, LA

November 20-24, 2002

**American Anthropological Association
Workshop on Spatial Analysis in Anthropology**
Thursday, November 21, 2002, 4:00 - 5:45 p.m.

- o **Emilio Moran**, Indiana University - *Introduction*  3.9MB
- o **Eduardo Brondizio**, Indiana University - *Enhancing Ethnographic Research through Spatial and Temporal Analysis*  2.1MB
- o **Luc Anselin**, University of Illinois, Urbana-Champaign - *Mapping and Analysis for Spatial Social Science*  2.4MB
- o **Donald Janelle**, UC Santa Barbara - *Resources for Spatial Thinking and Analysis*  3.4MB
- o **Susan Stonich**, UC Santa Barbara - *The Future of Spatial Approaches in Anthropology*  2.1MB

AAA Session: Powerful GIS Tools to Advance Spatial and Temporal Analysis in Anthropological Research
Thursday, November 21, 2002, 4:00 - 5:45 p.m.

- o *Session and Paper Abstracts*  29kb

Organized by Barbara Herr-Harthorn, UC Santa Barbara

Annual Meeting of the Association of American Geographers

Los Angeles, CA

March 22, 2002

Panel Session: Center for Spatially Integrated Social Science
Chair: Helen Couclelis - Introduction

- o **Michael Goodchild** - Why Space? What is Spatially Integrated Social Science? [\[PDF\]](#)
- o **Luc Anselin** - New tools for Spatial Analysis in the Social Sciences [\[PDF\]](#)
- o **Donald Janelle** - Web-based Infrastructure for Spatially Integrated Social Science [\[PDF\]](#)
- o **Stuart Sweeney** - Discipline Relationships and Market Penetration of CSISS Workshops [\[PDF\]](#)
- o **Helen Couclelis** - CSISS Specialist Meetings and the Diffusion of Spatial Thinking in the Social Sciences [\[PDF\]](#)

For additional information, please visit the AAG web site,
<http://www.aag.org/>.

2001

Annual Meeting of the Social Science History Association
Chicago, IL
November 15-18, 2001

Michael Goodchild and Donald Janelle, both of the CSISS Executive Committee, presented papers at the Annual Meeting of the Social Science History Association:

- o What is Spatially Integrated Social Science? What might it contribute to Social Science History?
- o Building National Infrastructure for Enhancing Spatial Analysis in the Social Sciences

For additional information, please visit the conference web site,
<http://www.ssha.org/ssha2001/cfp.html>.

Digital Communities: Cities in the Information Society
Chicago, Illinois
November 4-7, 2001

This conference provided a forum to explore and discuss the challenges created by the intersection of information technology and urban life. The four main conference themes were Physical Environment, Urban Institutions, Social Relationships, and Economy and Urban Development.

The Digital Communities conference received funds from the **Center for Spatially Integrated Social Science (CSISS)** for 5-7 graduate students to attend and to present their research.

For additional information, please visit the conference web site,
<http://www.digitalcommunities2001.org>.

American Sociological Association Annual Meeting
Anaheim, CA
August 20, 2001

In a four-hour seminar at the ASA Annual Meeting, *Cities of the Future*, CSISS leaders presented spatial analysis, and ways in which CSISS can be of use in research with a spatial component. Presenters included Dr. Michael F. Goodchild and Dr. Richard P. Appelbaum, both of UCSB, and Dr. John R. Logan of University of Albany.

For additional information, please visit the conference web site,
<https://www.e-noah.com/ASA/ASA01AM/...>

2000

American Society of Criminology Conference
San Francisco, CA
November 14-18, 2000

Thanks to the efforts of Nancy LaVigne, CSISS Advisory Board member, CSISS programs were presented at the ASC meetings in San Francisco on November 16th. Mike Goodchild opened the lunchtime session, which attracted about 80 participants, by outlining the principles on which CSISS is founded. Don Janelle followed by

describing CSISS programs, and ways in which criminologists could become engaged in CSISS activities.

For additional information, please visit the conference web site,
<http://www.asc41.com/www/2000/cmsindx.htm>.

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Other Related Events

2003

Conference on Spatial Information Theory - COSIT

The aim of COSIT is to bring together researchers from different disciplines for an intensive scientific exchange. This aim is facilitated by the presentation and discussion of a restricted number of papers and posters – the most innovative and significant recent contributions – rather than papers covering all advances in the field. The conference is designed as a single track meeting to ensure that all conference participants can get involved in the discussions of the selected papers.

*Ittingen, Switzerland
September 24th-28th, 2003*

The Vespucci Initiative Summer School on GIS

Celebrating the fifth centenary of Vespucci's discoveries, the Vespucci Initiative recaptures his spirit of multi-disciplinary intellectual enquiry to explore new frontiers of knowledge. To that end it organizes and conducts a range of research and teaching activities, bringing together senior scientists and promising young researchers from around the world.

The 2003 Summer School will focus on Location Based Services and Spatial Data Infrastructures and e-Government. It builds on the successes of the Summer Institutes organized by the European Science Foundation's GISDATA programme and the National Science Foundation's NCGIA in 1995-97. The School is open to post-graduate researchers in the academic, public, and private sectors selected on a competitive basis through an open call for expression of interest.

*Villa Demidoff, Pratolino (Florence), Italy
July 28th - August 8th, 2003*

2002

Short Course on The Economics of Urban Sprawl and Land Use Change

The purpose of this one-day intensive course is to expose graduate students, environmental and urban economists, geographers, urban planners and policymakers to the recent developments in the literature on the Economics of Urban Sprawl and Land Use Change Modeling.

*Donald Bren School of Environmental Sciences and Management, UCSB
June 22, 2002, 8:00 am – 6:30 pm*

2001

Special Workshop on Agent-Based Models of Land Use / Land Cover Change

Sponsored by The Land Use and Land Cover Change (LUCC) Project, Center for the Study of Institutions, Population, and Environmental Change, and Center for Spatially Integrated Social Science

*Irvine, CA
October 4th-7th, 2001*

Site Search

**Sackler Colloquium on
Adaptive Agents, Intelligence and Emergent Human Organization:
Capturing Complexity Through Agent-Based Modeling**

*Irvine, CA
October 5th-6th, 2001*

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