Social Science In Place
GIS, Spatial Concepts and Applied Social Science Seminar
Fall 2006 Schedule

Date & Time	Venue	Presenter(s)	Title
September 28 (Thursday) **Noon**	SRC Conference Room	Henry Brady & Iris Hui Department of Political Science	Is It Worth Going an Extra Mile to Improve Causal Inference? Using GIS to Understand Voting in Los Angeles County. [Abstract] [Flyer]
October 2 (Monday) 4:00 pm	SRC Conference Room	Edmund Seto School of Public Health	Why Ask "Where" in Infectious Disease Epidemiology? An Application of GIS in Public Health. [Abstract] [Flyer]
October 17 (Tuesday) **Noon**	SRC Conference Room	Bernt Wahl Center for Entrepreneurship & Technology. College of Engineering	Who Is In Your Neighborhood? Defining Neighborhood Boundaries & Identifying Localized Context. [Abstract] [Flyer]
October 31 (Tuesday) **Noon**	SRC Conference Room	Howard Foster Head GIS Projects. UC Berkeley GIS Center.	GIS for Today and Tomorrow. [Abstract] [Flyer]
November 6 (Monday) 4:00 pm	SRC Conference Room	Jon Stiles UCDATA, Survey Research Center	Block by Block: Census Geographies from Small to Large in the 20th and 21st Centuries. [Abstract]
November 13 (Monday) ** 3:00 pm**	50 Birge Hall (Direction)	Michael Goodchild & Donald Janelle Department of Geography, UC-Santa Barbara	CSISS And The Case For Space In The Social Sciences. [Abstract]
November 16 (Thursday) 4:00 pm	SRC Conference Room	James Gimpel Department of Political Science, University of Maryland	GIS Applications for Political Science Research. [Abstract]
TBA	SRC Conference Room	Greg Biging Department of Environment Science & Policy Management. College of Natural Resources	Spatial Statistics

SRC: Survey Research Center first floor conference room. 2538 Channing Way. (Corner of Channing Way and Bowditch) Tel: 642-6578. Contact: Iris Hui (iris_hui@berkeley.edu) for questions or more information.

Last Updated: October 26, 2006.

Details

Date, Time & Venue

September 28, 2006 (Thursday), Noon. Survey Research Center Conference Room. [Direction.]

Title:

Is It Worth Going an Extra Mile to Improve Causal Inference? Using GIS to Understand Voting in Los Angeles County.

Presenters

Prof. Henry Brady. Class of 1941 Monroe Deutsch Professor of Political Science and Public Policy. Director, Survey Research Center.

Iris Hui. Doctoral candidate, Political Science Department.

Topics covered

GIS applications in election, voting behavior, Exploratory Spatial Data Analysis (ESDA).

Abstract

Two seemingly unrelated approaches to quantitative analysis have recently become more popular in social science applications. The first approach is the explicit consideration of counterfactuals in causal inference and the development of various matching techniques to choose control cases comparable to treated cases in terms of some predefined characteristics. To be useful, these methods require the identification of important characteristics that are likely to ensure that a statistical condition called "conditional independence" is met. The second trend is the increased attention given to geography and the use of spatial statistics. Although these two approaches have found their ways into the social science research separately, we think that they can be fruitfully combined. Geography and Geographic Information Systems (GIS) can improve matching and causal inference. Geography can be conceptualized in terms of "distance" and "place" which can provide guidance about potentially important characteristics that can be used to improve matching. After developing a conceptual framework that shows how this can be done, we present two empirical examples which combine counterfactual thinking with geographical ideas. The first example looks at the cost of voting and demonstrates the utility of matching using zip codes and distance to polling place. The second example looks at the performance of the InkaVote voting system in Los Angeles by matching precincts in LA with geographically adjacent precincts in surrounding counties. This example demonstrates the strengths and weaknesses of geographic proximity as a matching variable. In pursuing these examples, we also show how recent progress in GIS techniques provides tools that can deepen researchers' understanding of their idea.

Date, Time & Venue

October 2, 2006 (Monday), 4:00 pm. Survey Research Center Conference Room. [Direction.]

Title:

Why Ask "Where" in Infectious Disease Epidemiology? An Application of GIS in Public Health.

Presenter

Dr. Edmund Seto. Lecturer. School of Public Health.

Topics covered

GIS applications in public health.

Abstract

Dr. Seto will present his latest research on estimating villagers' exposures to Schistosoma japonicum, a waterborne infectious parasite found in China. Previous studies have estimated the risk of infection by this parasite by quantifying water contact activity. Most of these studies do not ask where water contact occurs. In contrast, Dr. Seto's study is based on a spatially-explicit water contact questionnaire that allowed him to map the locations of water contact activities. In Dr. Seto's study, water contact alone was not found to be associated with infection. Only after adjusting for the location of water contact and accounting for the parasite concentrations at those locations did he find an association.

Dr. Seto specializes in the use of GIS for public health applications at the School of Public Health at UC Berkeley.

Date, Time & Venue

October 17, 2006 (Tuesday), Noon. Survey Research Center Conference Room. [Direction.]

Title:

Who Is In Your Neighborhood? Defining Neighborhood Boundaries & Identifying Localized Context.

Presenter

Bernt Wahl. UC Berkeley Industry Fellow. Center for Entrepreneurship & Technology. College of Engineering.

Topics covered

Neighborhood boundaries definition. Potential applications in business, political campaigning, public health, urban planning & social science.

Abstract

Cities are generally broken down into sub-regions for data analysis based on zip code rather than neighborhood characteristics. Many data users might want to target neighborhoods based on socioeconomic classes. As Internet search and mobile mapping become more granular, location based services can now tailor to communities' needs and demographics more effectively. The ability to precisely delineate neighborhood boundary brings substantial commercial benefits. However, neighborhood boundary data for cities are not commercially available. Using multiple criteria, we developed a new dataset which identifies neighborhood boundary for 11,000 neighborhoods for the

150 largest cities in the U.S. By producing high-quality dataset based on well-established GIS principles, this new standard could be adopted by major companies and institutions, including search engine companies (Google, Yahoo, and Microsoft), real estate firms, governmental agencies, as well as social science researchers.

This project was the recipient of the 2006 MapWorld Meridian Award.

Date, Time & Venue

October 31, 2006 (Tuesday), Noon. Survey Research Center Conference Room. [Direction.]

Title:

GIS for Today and Tomorrow.

Presenter

Howard Foster. PhD. Head GIS Projects. UC Berkeley Geographic Information Science Center.

Topics covered

GIS. Latest developments. Web mapping.

Abstract

GISs have evolved from early manual cartographic systems (yes, GIS did exist before computers) to today's online, real-time, virtually-real environmental simulation systems. This lecture is about the evolution of GIS technology, where it's been and maybe where it's going. We look at how some of these technologies work and what's under the hood in geospatial services, ArcIMS, Google Earth, Mapserver, PostGIS, and how some of these technologies can be combined. We also look at the work of the Open Geospatial Consortium and its effort to keep today's technologies from becoming dead-ends that limit the development of tomorrow's GISs

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Date, Time & Venue

November 6, 2006 (Monday), 4:00 pm. Survey Research Center Conference Room. [Direction.]

Title:

Block by Block: Census Geographies from Small to Large in the 20th and 21st Centuries.

Presenter

Dr. Jon Stiles. Director of Archive Services. UCDATA . Survey Research Center.

Topics covered

Census geographies and data.

Abstract

The geographies of the decennial census are of great importance for researchers. Whether in designing sampling frames, linking contextual measures to geographically sited analysis units, or using geographies as the object of research, the geographic levels and boundaries associated with the Census comprise a rich resource and standard. What are the geographic levels available? How do they change? For what periods do they exist? What kinds of data items can be linked with different geographies, and where can those data be found? This talk will provide both an overview and some specifics about these questions for potentials users of geographically sited data.

Date, Time & Venue

November 13, 2006 (Monday), 3:00pm. 50 Birge Hall. (Next to LeConte, Across from Campanile.) [Direction]

Title:

CSISS (Center for Spatially Integrated Social Science) and The Case For Space In The Social Sciences.

Presenter

Prof. Michael Goodchild. Department of Geography, UC Santa Barbara. Principal Investigator, Center for Spatially Integrated Social Science. (See Bios)

Prof. Donald Janelle. Department of Geography, UC Santa Barbara. Program Director, Center for Spatially Integrated Social Science. (See Bios)

Topics covered

GIS applications in social science. Recent developments in GIS.

Abstract

Several recent commentators have drawn attention to what might be termed a "spatial turn" in the social sciences, driven in part by the insights that can be gained by looking at society from a spatial perspective, and in part by advances in the technologies of spatial data acquisition and analysis. Examples are shown of studies in which a spatial perspective led to novel insights, and in which the nature of spatial data required an approach that was distinctly different from statistical tradition. Six arguments for a spatial approach to social science are presented. The Center for Spatially Integrated Social Science was established in 1999 with funding from NSF, and focuses on facilitating access to spatial perspectives, data, and analytic techniques.

Bios

Michael F. Goodchild is Professor of Geography at the University of California, Santa Barbara; Chair of the Executive Committee, National Center for Geographic Information and Analysis (NCGIA); Associate Director of the Alexandria Digital Library Project; and Director of NCGIA's Center for Spatially Integrated Social Science. He received his BA degree from Cambridge University in Physics in 1965 and his PhD in Geography from McMaster University in 1969. After 19 years at the University of Western Ontario, he moved to Santa Barbara in 1988. He was Director

of NCGIA from 1991 to 1997. He was elected member of the National Academy of Sciences and Foreign Fellow of the Royal Society of Canada in 2002, and member of the American Academy of Arts and Sciences in 2006. He has received honorary doctorates from Laval University (1999), Keele University (2001), McMaster University (2004), and Ryerson University (2004). In 1990 he was given the Canadian Association of Geographers Award for Scholarly Distinction, in 1996 the Association of American Geographers award for Outstanding Scholarship, in 1999 the Canadian Cartographic Association's Award of Distinction for Exceptional Contributions to Cartography, and in 2002 the Educator of the Year Award from the University Consortium for Geographic Information Science. In 2001 he received a Lifetime Achievement Award from Environmental Systems Research Institute, Inc. He was Editor of *Geographical Analysis* between 1987 and 1990 and Editor of the Methods, Models, and Geographic Information Sciences section of the *Annals of the Association of Americal Geographers* from 2000 to 2006. He serves on the editorial boards of ten other journals and book series. His major publications include *Accuracy of Spatial Databases* (1989); *Geographical Information Systems: Principles and Applications* (1991); *Environmental Modeling with GIS* (1993); *GIS and Environmental Modeling: Progress and Research Issues* (1996); *Scale in Remote Sensing and GIS* (1997); *Interoperating Geographic Information Systems* (1999); *Geographical Information Systems: Principles, Techniques, Management and Applications* (1999); *Geographic Information Systems and Science* (2001 and 2005); *Spatial Uncertainty in Ecology* (2001); *Spatial Data Quality* (2002); *Uncertainty in Geographical Information* (2002); *Foundations of Geographic Information Science* (2003); *Spatially Integrated Social Science* (2004); and *GIS, Spatial Analysis, and Modeling* (2005); in addition he is author of some 350 scientific papers. He was Chair of the National Research Council's Mapping Science Committee from 1997 to 1999; has been a member of NRC's Commission on Physical Sciences, Mathematics, and Applications; and is currently a member of NRC's Geographic Science Committee. His current research interests center on geographic information science, spatial analysis, and uncertainty in geographic data.

Donald G. Janelle is Research Professor and Program Director of the Center for Spatially Integrated Social Science (www.csiss.org) at the University of California Santa Barbara. Through its programs, CSISS seeks to assist the dissemination of spatial thinking and spatial technologies across the social sciences, and currently sponsors the NSF-funded Spatial Perspectives on Analysis for Curriculum Enhancement (SPACE) program to encourage implementation of spatial thinking and analysis in undergraduate teaching in the social sciences.

Don served previously as Chair of the Geography Department and as Assistant Vice Provost at the University of Western Ontario in London, Canada, where he was on the faculty for thirty years. He has held visiting appointments in Geography at St. Mary's University (Halifax) and at the Federal University of Bahia (Brazil), in Economics at the Free University of Amsterdam, and in Anthropology in affiliation with the Canadian-American Center at the University of Maine.

Don has served as Editor of *The Canadian Geographer* (the official journal of the Canadian Association of Geographers), as editorial board member for leading geography journals, and as chair of the Publications Committee of the Association of American Geographers (AAG). He was recently the North American co-leader for a research Focus Group on Information and Communications Technology, Innovation, and the Transport System in a program supported jointly by the European Commission, Transport Canada, and the National Science Foundation, and has participated as one of two North American representatives on the Scientific Advisory Board of the International Non-governmental Permanent Observatory on Sustainable Mobility in Urban Areas – a project to advise

European policy makers on ways to improve human mobility and the quality of urban life in Europe. He is a recipient of the Edward L. Ullman Award for Career Contributions to Transportation Geography from the AAG.

Don's research focuses on the interrelated dynamics of human settlement systems with the human behavioral changes that take place in liaison with evolving technologies in transportation and communication. Most of his publications build on the theme of human response to space-adjusting technologies: space-time analyses of individual behavior, the time-geography of cities, the temporal-spatial ordering of social systems, locational conflict analysis, and the role of space-adjusting technologies in structuring new patterns of social and economic organization. He is best known for developing the concepts of "time-space convergence" and human "space-time extensibility". Time-space convergence advances the notion that, if distance is measured relative to the effort required in overcoming it (e.g., travel time/cost), then places (e.g., cities) are in continual competitive struggles to gain access advantages over other places and to minimize their distances to the rest of the urban system. In contrast, space-time extensibility focuses on the need to measure the extent to which people, firms, and other institutions can and do extend their reach beyond their points of physical presence, a theme that has captured increased recognition with the advance of globalization.

Recent books include:

- DG Janelle and D Hodge, editors. **Information, Place, and Cyberspace. Issues in Accessibility** (Springer-Verlag, 2000).
- MF Goodchild and DG Janelle, editors, **Spatially Integrated Social Science** (Oxford University Press, 2004).
- DG Janelle, B Warf, and K Hansen, editors. **WorldMinds: Geographical Perspectives on 100 Problems** (Kluwer Academic Publishers, 2004).

Date, Time & Venue
November 16, 2006 (Thursday), 4:00 pm. Survey Research Center Conference Room. [Direction.]

Title:
GIS Applications for Political Science Research

Presenter
Prof. James Gimpel. Department of Political Science. University of Maryland, College Park.

Topics covered
GIS applications in political science.

Abstract
Fifty years ago, an earlier generation of political scientists recognized the utility of a geographic approach to the empirical study of American politics. But with the advent of the survey research revolution across the social sciences, many political scientists concluded that the study of political geography was an imperfect substitute for having good individual level data. Now this viewpoint is being challenged by researchers who are using Geographic Information Systems to identify and

measure concepts that are important to a wide range of political phenomena, even those observable at the individual level. GIS can compliment and extend the insight to be gained from conventional political science tools and methods. This presentation will discuss the relevance of location and distance concepts, flows, and related spatial phenomena to the study of American politics. Applications will be introduced that address the geography of campaign finance and fundraising, candidate familiarity and name recognition, news media consumption and political communications, and voting and vote method. There will be time for discussion of ideas and applications after the presentation.