Plenary

“Generating Urban Landscapes at the Fine Scale: Cells, Agents, Form, and Development.” Michael Batty (Centre for Advanced Spatial Analysis, University College London, 1-19 Torrington Place, Gower Street, London, WC1E 6BT, UK. Email: m.batty@ucl.ac.uk)

Abstract: Ways of modelling urban systems are undergoing a sea change: from aggregative to disaggregate approaches in which space and time and the sectors of interest are being represented and simulated at ever finer scales. This is due to many factors, as much to new data sets at fine spatial and temporal scales becoming available, as it is to the seemingly rapid changes currently dominating urban society and the need to address the need to take account of time and dynamics in as much detail as space within our theoretical conceptions of city systems. This paper will illustrate a number of approaches to developing good models of urban change at the fine scale in which local actions generate global morphologies, and in which individual actors are represented as purposive agents acting individually and collectively in generating locational decisions. The models will draw on ideas in cellular automata and agent-based theory but will engage patterns which are consistent with spatial and temporal geometries of a fractal kind. One of the innovative features of this kind of modelling is its ability to generate patterns which are the result of processes operating over many time intervals involving many agents, thus generating morphologies that are characteristic both spatial and temporally of the way landscapes are formed and the way they change.

Discussant: Catherine Dibble (Department of Geography, 2181 LeFrak Hall, University of Maryland, College Park, MD 20742. Email: cdibble@geog.umd.edu)

Population Modeling and Analysis I (Co-sponsored by Population specialty group)

1. “Comparing Traditional and Spatial Segregation Measures: A Scale-Effect Perspective.” David W. Wong (Geography & Earth Science, George Mason University, Fairfax, VA 22030. E-mail: dwong2@gmu.edu)
2. “Age Articulation of U.S. Inter-metropolitan Migration Flows.” David A. Plane (Department of Geography & Regional Development, University of Arizona, Tucson, AZ 85721 E-mail: plane@u.arizona.edu) and Frank Heins (Istituto di Ricerche Sulla Popolazione, Rome, Italy)
3. “Patterns and Processes of Neighborhood Change Within Cities of the Southwest.” Jani Little and James O. Huff (Department of Geography and Institute of Behavioral Science, University of Colorado, Boulder, CO 80309)
4. “Changes in the geographic organization of physician services, 1990-1997.” John Odland and Mark Reisinger (Department of Geography, Indiana University, Bloomington IN 47405. E-mail: odland@indiana.edu)
5. “Towards micro-scale modeling of gentrification in relational spaces.” David O’Sullivan (Department of Geography, The Pennsylvania State University, 317 Walker Building, University Park, PA 16802. E-mail: osullivan@geog.psu.edu)

**Modeling in Urban and Regional Planning** (co-sponsored by Regional Development and Planning specialty group)

1. “A hybrid geocomputation model for operational land-use and transport simulation.” Paul Torrens (Centre for Advanced Spatial Analysis, University College, London)
2. “Calibration of the SLEUTH urban growth model for two metropolitan areas of Portugal.” Elisabete Alves da Silva (Department of Landscape Architecture and Regional Planning, University of Massachusetts – Amherst) and Keith Clarke (Department of Geography, University of California at Santa Barbara)
4. “Urban Access as an Urban Quality Indicator.” Emily Talen (Department of Urban and Regional Planning, University of Illinois at Urbana-Champaign)
5. “Modeling for lakeshore accessibility.” Dave Lemberg (Department of Geography, Western Michigan University)

**Spatial Analysis and Modeling I**

1. “A Spatial Filtering Specification for the Auto-Poisson Model.” Claire Saint-Rossy and Daniel A. Griffith (Department of Geography, Syracuse University, Syracuse, NY 13244-1020 E-mail: griffith@maxwell.syr.edu)
2. “Adding spatial detail to Public Use Microdata – a synthetic approach.” Paul Williamson and Zengyi Huang (Department of Geography, University of Liverpool, Liverpool, UK L69 3BX. Email: william@liv.ac.uk)
3. “Calculating Conditional Locational Interdependence with Raster GIS.” M. John Hodgson (Department of Earth and Atmospheric Sciences, The University of Alberta, Edmonton, Alberta Canada, T6G 2E3. Email: mjho@ualberta.ca)
4. “Can the Self-organizing Criticality (SOC) Construct help resolve Modifiable Areal Unit Problems (MAUP) related to urban activities: A preliminary exploration.” Kingsley E. Haynes, Rajendra G. Kulkarni and Roger R. Stough (The School of Public Policy, George Mason University, Fairfax, VA 22030. Email: khaynes@gmu.edu)
5. “The Open SpaceStat Project.” Luc Anselin (Regional Economics Applications Laboratory, University of Illinois Urbana-Champaign, Urbana, IL 61801, E-mail: anselin@uiuc.edu) and Sergio J. Rey (Department of Geography, San Diego State University, San Diego, CA 92182, E-mail: rey@typhoon.sdsu.edu)

**Spatial Analysis and Modeling II**
Measures of Agreement Between Maps

1. “Statistical methods to validate land-use simulations,” R Gil Pontius Jr (Graduate School of Geography, Clark University, 950 Main Street, Worcester MA 01610-1477. Email: rpontius@clarku.edu)
2. “An Interactive Method for Joining Spatial Data Units.” Takashi Sato, Yukio Sadahiro and Atsuyuki Okabe (Department of Urban Engineering, University of Tokyo, Tokyo, 1138656. E-mail: satotaka@ua.t.u-tokyo.ac.jp)
3. “Comparing massive tessellations: a linear systems approximation.” John R Miron (Department of Geography, University of Toronto, Toronto, ON M1C 1A4. E-mail: miron@chass.utoronto.ca)

Spatial Analysis and Modeling Student Paper Competition

1. “Developing a Bivariate Spatial Association Measure: An Extension of Moran’s I.”  Sang-Il Lee (Department of Geography, The Ohio State University, Columbus, OH 43210. Email: slee@geography.ohio-state.edu.)
2. “GeoGraph Simulations of Globalization Processes.” Catherine Dibble (Department of Geography, 2181 LeFrak Hall, University of Maryland, College Park, MD 20742. Email: cdibble@geog.umd.edu)
3. “Excess Commuting: Analysis and Extensions.” Mark W. Horner (Department of Geography, The Ohio State University, Columbus, OH, 43210. E-mail: horner.38@osu.edu)
4. “Geospatial Analysis of Raster Images Using an ArcView Extension.” Christopher P. Caird (Western Michigan University, Kalamazoo, MI, 49008. Email: x99caird@wmich.edu)
5. “Evaluating the Effects of Local Contexts on Individual Accessibility: a Multilevel Approach.” Joe Weber (Department of Geography, Ohio State University, Columbus, OH 43210. E-mail: jweber@geography.ohio-state.edu)
Population-Environment and Spatial Analysis/Econometrics (co-sponsored by Human Dimensions of Global Change specialty group)

1. Colin Polsky (Penn State): A Spatial Analysis of Agricultural Land-Use
2. Dawn Parker (Indiana University): Location and Production Patterns of Certified Organic Farmers: Individual Incentives and Spatial Clustering
3. Darla Munroe (Indiana University): Patterns of Small-Scale Farming Land Use in Poland: A Multi-scale Spatial Econometric Analysis
4. Morgan Grove (USFS): Synthesis of social and ecological approaches for the spatial analyses of human ecosystems, with examples from Phoenix, Arizona and Baltimore, Maryland
5. Cynthia Rosenzweig (Columbia University): forthcoming

GIS for Environmental Modeling (co-sponsored by GIS specialty group)

- Bian, Ling; Feng, Chen-Chieh; and Sorokine, Alexendre. “A Component-Based Simulation of Individual and Group Interactions in the Context of Environmental Epidemiology”
- Brunskill, Jeffer, C. “Subject Perception of Meteorological Map Representations: Presence of a North-South Temperature Gradient”
- Bunch, Martin, J. “A GIS-Based Decision Support System for Environmental Management: Linking Conceptual and Simulation Models of the Cooum River”
- Couclelis, Helen and Liu, Xiaohang. “Dynamics and Uncertainty in Integrated Urban-Environmental Model”
- Crosier, Scott and Goodchild, Michael, F. “Developing an Infrastructure for Sharing Environmental Models”
- Crow, Susan, R. “Spatial Modeling Environments: Integration of GIS and Conceptual Modeling Frameworks”
- Deadman, Peter and Lim, Kevin. “An Agent-Based, Spatially Referenced Simulation of Land Use Change in the Amazon Rainforest”
- Emerson, Charles, W. “Fractal Simulation of Volatile Organic Compound Emissions from Landfills”
- Feng, Chen-Chieh. “Designing a Specification for Semantic Interoperability between GIS and Hydrologic Model”
- Manson, Steve. Use of Genetic Programming to Model Land-Manager Decision-making for Environmental Modeling”
- Mennis, Jeremy. “Prototype Implementation of a Semantic GIS Database Model”
- Ouyang, Ming; Revesz, Peter; and Chen, Rui. “Modeling GIS Time Series Data with Piecewise Linear Function”
• Sorokine, Alexandre. “Spatial Data Representations in Environmental Models in The Context of GIS Interoperability”
• Tenenbaum, David. “ArcTrCS - ArcView Transect Characterization System”
• Wu, Lin. “Bridging Theories and Technology: Lessons Learned in Teaching Environmental Modeling with GIS”