

Diansheng Guo

Associate Professor

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EDUCATION

2003 Ph.D., Department of Geography, Pennsylvania State University, USA
1999 M.S., Institute of Geographical Sciences, Chinese Academy of Sciences, China
1996 B.S., Department of Urban and Environmental Sciences, Peking University, China

EMPLOYMENT POSITIONS

2009 - present Associate Professor, Department of Geography, University of South Carolina
2004 - 2009 Assistant Professor, Department of Geography, University of South Carolina
2003 - 2004 Postdoc, GeoVISTA Center, Dept. of Geography, Pennsylvania State University
1999 - 2003 Research Assistant, Department of Geography, Pennsylvania State University

COURSES TAUGHT

GEOG 141: The Earth From Above (now GEOG 105: The Digital Earth)
GEOG 363: Introduction to Geographic Information Systems (GIS)
GEOG 554: Spatial Programming
GEOG 563: Advanced Geographic Information Systems (GIS)
GEOG 731: Seminar—Quantitative Analysis in Geography
GEOG 763: Seminar—Spatiotemporal Data Mining and Visualization
GEOG 863: Advanced Seminar—Frontiers in GIScience

AWARDS AND HONORS

2013 Breakthrough Rising Star Award, Office of Research, University of South Carolina
2009 Service Award, International Association of Chinese Professionals in Geographic Information Sciences (CPGIS)
2008 National Science Foundation (NSF) CAREER Award
2007 Semifinalist, NSF Science & Engineering Visualization Challenge (Top 10 entries in the Information Graphics category)
2005 First Prize, IEEE Information Visualization Contest

- 2004 Intergraph-UCGIS Young Scholar Award
2003 Paper Award, UCGIS Summer Assembly
2002 First Place, Poster Competition, UCGIS Summer Assembly
2002 E. W. Miller Award, Department of Geography, Pennsylvania State University
1999 Presidential Award, Excellent Master Thesis, Chinese Academy of Sciences

JOURNAL PUBLICATIONS (* denotes advisee)

- 2013 Koylu C.*, **D. Guo** and A. Kasakoff. "Mapping Social Relationships across Space and Time", Cartography and Geographic Information Science (Accepted)
2013 Koylu, C.* and **D. Guo**. "Smoothing Locational Measures in Spatial Networks", Computers, Environment and Urban Systems (Accepted)
2012 Gao P.*, **D. Guo**, K. Liao, J. J. Webb, and S. L. Cutter. "Early Detection of Terrorism Outbreaks Using Prospective Space-Time Scan Statistics", The Professional Geographer. doi:10.1080/00330124.2012.724348.
2012 **Guo, D.**, X. Zhu, H. Jin, P. Gao and C. Andris (2012). "Discovering Spatial Patterns in Origin-Destination Mobility Data", Transactions in GIS, 16(3), 411-429.
2012 Wang, F., **D. Guo** and S. McLaffert. "Constructing Geographic Areas for Cancer Data Analysis: A Case Study on Late-stage Breast Cancer Risk in Illinois", Applied Geography, 35(1), 1-11.
2012 Kupfer J. A., P. Gao and **D. Guo**. "Regionalization of forest pattern metrics for the continental United States using contiguity constrained clustering and partitioning", Ecological Informatics. Vol. 9, 11-18.
2011 **Guo, D.** and H. Wang*. "Automatic Region Building for Spatial Analysis", Transactions in GIS, 15(s1), 29 - 45.
2011 **Guo, D.** and H. Jin*. "iRedistrict: Geovisual Analytics for Redistricting Optimization", Journal of Visual Languages and Computing, 22(4), 279-289.
2010 **Guo, D.**, S. Liu*, and H. Jin*. "A Graph-based Approach to Vehicle Trajectory Analysis", Journal of Location Based Service, 4(3), pages 183-199.
2010 **Guo, D.** "Local Entropy Map: A Non-Parametric Approach to Discover Spatially Varying Bivariate Relationships". International Journal of Geographical Information Science, 24(9), pages 1367-1389.
2009 **Guo, D.** "Flow Mapping and Multivariate Visualization of Large Spatial Interaction Data", IEEE Transactions on Visualization and Computer Graphics, 15(6), pp. 1041-1048.
2009 **Guo, D.** and J. Mennis. "Spatial data mining and geographic knowledge discovery-An introduction". Computers, Environment and Urban Systems, 33(6), pp. 403-408.

- 2008 Liao, K.* and **D. Guo**. "A Clustering-Based Approach to a Capacitated Facility Location Problem". Transactions in GIS. 12(3), pp. 323–339.
- 2008 **Guo, D.** "Regionalization with Dynamically Constrained Agglomerative Clustering and Partitioning (REDCAP)". International Journal of Geographical Information Science. 22(7), pp. 801-823.
- 2008 Chen, J., A.M. MacEachren, and **D. Guo**. "Supporting the Process of Exploring and Interpreting Space-Time, Multivariate Patterns: The Visual Inquiry Toolkit ". Cartography and Geographic Information Science, 35(1), pp. 33-50.
- 2007 **Guo, D.** "Visual Analytics of Spatial Interaction Patterns for Pandemic Decision Support". International Journal of Geographical Information Science, 21(8), pp. 859-877.
- 2007 **Guo, D.**, K. Liao*, M. Morgan*. "Visualizing Patterns in a Global Terrorism Incident Database", Environment and Planning B: Planning and Design. 34, pp. 767-784.
- 2006 **Guo, D.** and M. Gahegan. "Spatial Ordering and Encoding for Geographic Data Mining and Visualization", Journal of Intelligent Information Systems, 27(3), pp. 243-266
- 2006 **Guo, D.**, J. Chen, A. M. MacEachren, and K. Liao. "A Visualization System for Spatio-Temporal and Multivariate Patterns (VIS-STAMP)", IEEE Transactions on Visualization and Computer Graphics, 12(6), pp. 1461-1474. (Featured on the cover)
- 2005 **Guo, D.**, M. Gahegan, A.M. MacEachren, and B. Zhou. "Multivariate Analysis and Geovisualization with an Integrated Geographic Knowledge Discovery Approach". Cartography and Geographic Information Science, 32(2), pp. 113-132. (Featured on the cover)
- 2003 **Guo, D.** "Coordinating Computational and Visualization Approaches for Interactive Feature Selection and Multivariate Clustering". Information Visualization, 2(4): 232-246.
- 2003 **Guo, D.**, D. Peuquet and M. Gahegan. "ICEAGE: Interactive Clustering and Exploration of Large and High-dimensional Geodata". GeoInformatica, 7(3): pp. 229-253.

BOOK CHAPTERS OR EDITED BOOK (* denotes advisee)

- 2012 **Guo D.** and J. Wu*. "Understanding Spatiotemporal Patterns of Multiple Crime Types with a Geovisual Analytics Approach", in *Crime Modeling and Mapping Using Geospatial Technologies*, edited by M. Leitner. Springer.
- 2012 Y. Leung, C. Zhou, B. Lees, **D. Guo** and C. Chen (eds.) Proceedings of the First IEEE International Conference on Spatial Data Mining and Geographical Knowledge Services (ICSDM 2011), IEEE Press.

- 2010 A. Croitoru, **D. Guo**, F. Wang, D. Wong, Agouris, P., and A. Stefanidis. "Geospatial Data Analysis and Information Extraction", In *Advanced GeoInformation Science*, edited by C. Yang, D. W. Wong, Q. Miao & R. Yang. CRC Press, pages 145 - 205.
- 2010 **Guo D.** "Spatial Data Mining", In *Encyclopedia of Geography*, edited by Barney Warf, SAGE Publications.
- 2010 **Guo D.** "Geocoding", In *Encyclopedia of Geography*, edited by Barney Warf, SAGE Publications.
- 2009 **Guo D.** "Multivariate Spatial Clustering and Geovisualization", In *Geographic Data Mining and Knowledge Discovery (second edition)*, edited by H.J. Miller and J. Han, Taylor & Francis, pp. 325-345.

PEER-REVIEWED CONFERENCE PUBLICATIONS (* denotes advisee)

- 2013 Bras, H., A. Kasakoff, **D. Guo** and C. Koylu. "Visualizing historical kinship networks using data from marriage registers: The Netherlands, 1830-1950", The XXXIII Sunbelt Social Networks Conference, International Network for Social Network Analysis (INSNA). Hamburg, Germany. May 21-26. (Accepted)
- 2013 Leitner M. and **D. Guo**. "The Impact of Hurricanes on Crime Using a Data Mining and Visual Analytics Approach", The 26th International Cartographic Conference, Dresden Germany. August 25 – 30, 2013 (Under Review)
- 2012 **Guo, D.**, K. Liao* and H. Jin*. "Partitioning Geographically Embedded Complex Networks", International Conference on Geographic Information Science (GIScience 2012), Columbus, Ohio. September 18-20. (Extended Abstract)
- 2009 **Guo, D.** (2009) "Greedy Optimization for Contiguity Constrained Hierarchical Clustering". In *Proceedings - IEEE International Conference on Data Mining Workshops*, pp. 591-596, IEEE Press.
- 2009 Jin, H.* and **D. Guo** (2009). "Understanding Climate Change Patterns with Multivariate Geovisualization". In *Proceedings - IEEE International Conference on Data Mining Workshops*, pp. 217-222, IEEE Press.
- 2008 **Guo, D.** (2008) "Multi-scale Flow Mapping of Large Spatial Interaction Data", International Conference on Geographic Information Science (GIScience 2008), Park City, Utah. September 23-26.
- 2006 **Guo, D.** (2006) "Spatio-Temporal Visual Analytics for Pandemic Response and Decision Support", Workshop on Visual Analytics & Spatial Decision Support, Münster, Germany. September 20.
- 2006 **Guo, D.** (2006) "Local Entropy Map: A Nonparametric Approach to Measure Spatially Varying Bivariate Relationships", The Fourth International Conference on Geographic Information Science (GIScience 2006), Münster, Germany. September 20-23.

- 2006 **Guo, D.** (2006) "Mining and Visualizing Spatial Interaction Patterns for Pandemic Response", Workshop on Spatial Data Mining, SIAM Conference on Data Mining, Bethesda, MD, USA. April 22.
- 2005 Chen, J., **Guo, D.**, and A. MacEachren (2005) "Space-Time-Attribute Analysis and Visualization of U.S. Company Data". IEEE Symposium on Information Visualization (InfoVis 2005), Compendium Volume, Minneapolis, MN, Oct. 23-25. (2pp. on CD)
- 2004 **Guo, D.**, M. Gahegan, and A. MacEachren. (2004) "An Integrated Environment for High-Dimensional Geographic Data Mining", The Third International Conference on Geographic Information Science, Adelphi, MD, USA, pp. 107-110.
- 2004 Ola, A., **D. Guo**, and J. Macgill. (2004) "Exploration of Semantic Uncertainty in Parameterized Land Use/Land Cover Classifications", The Third International Conference on Geographic Information Science, Adelphi, MD, USA, pp. 5-8.
- 2003 **Guo, D.**, M. Gahegan, D. Peuquet and A. MacEachren. (2003) "Breaking Down Dimensionality: An Effective Feature Selection Method for High-dimensional Clustering". The Third SIAM (Society for Industrial and Applied Mathematics) International Conference on Data Mining, Workshop on Clustering High Dimensional Data and its Applications, San Francisco, CA, pp. 29-42.
- 2003 MacEachren, A.M., X. Dai, F. Hardisty, **D. Guo** and G. Lengerich. (2003) "Exploring High-D Spaces with Multiform Matrices and Small Multiples". IEEE Symposium on Information Visualization, Seattle, WA, pp. 31-38.
- 2003 **Guo, D.** (2003) "A Geographic Visual Query Composer (GVQC) for Accessing Federal Databases". Proceeding, dg.o.2003, National Conference for Digital Government Research, Boston, MA, pp. 397-400.
- 2002 **Guo, D.**, D. Peuquet and M. Gahegan. (2002) "Opening the Black Box: Interactive Hierarchical Clustering for Multivariate Spatial Patterns". The 10th ACM International Symposium on Advances in Geographic Information Systems, McLean, VA, pp. 131-136.
- 2002 Steiner, E., A. MacEachren and **D. Guo**. (2002) "Developing and Assessing Light-weight Data-driven Exploratory Geovisualization Tools for the Web". Advances in Spatial Data Handling, Proceedings of the 10th International Symposium on Spatial Data Handling, ed. D. E. Richardson and P. v. Oosterom, Springer: pp. 487-500.
- 2002 **Guo, D.**, D. Peuquet, M. Gahegan and A. MacEachren. (2002) "Interactive Subspace Clustering for Mining High-Dimensional Spatial Patterns". The Second International Conference on Geographic Information Science, Boulder, CO, pp. 60-63.
- 2001 MacEachren, A., F. Hardisty, M. Gahegan, M. Wheeler, X. Dai, **D. Guo** and M. Takatsuka. (2001) "Supporting Visual Integration and Analysis of Geospatially-

- referenced Statistics Through Web-deployable, Cross-platform Tools”.
Proceeding, dg.o.2001, National Conference for Digital Government Research,
Los Angeles, CA, pp.17-24.
- 2000 Peuquet, D. and **D. Guo**. (2000) “Mining Spatial Data Using An Interactive Rule-based Approach”. The First International Conference on Geographic Information Science, Savannah, GA , pp. 152-153.
- 2000 Mennis, J., D. Peuquet and **D. Guo**. (2000) “A Semantic GIS Database Model for the Exploration Of Spatio-Temporal Environmental Data”. The 4th International Conference on Integrating GIS and Environmental Modeling (GIS/EM4): Problems, Prospects, and Research Needs, Banff, Alberta, Canada. Paper available at <http://www.colorado.edu/research/cires/banff/pubpapers/197>
- 1999 Zhang, J., **D. Guo** and Q. Wan. (1999) “Geospatial Data Mining and Knowledge Discovery using Decision Tree Algorithm-A Case Study of Soil Data Set of Yellow River Delta (YRD)”. Geoinformatics'99, Ann Arbor, MI.
- 1999 Wan, Q., C. Zhou and **D. Guo**. (1999) “Web-Based Distributed Collaborative Spatial Decision-Making System”. Towards Digital Earth—Proceedings of the International Symposium on Digital Earth. Beijing, Science Press.
- 1998 Zhang, J. and **D. Guo**. (1999) “A Preliminary Study on Geographical Data Sharing by WebGIS”. Geoinformatics'98, Beijing.

BOOK REVIEW

- 2005 **Guo D.** “GIS: A Computing Perspective” (Second Edition) by Michael F. Worboys and Matt Duckham”, Transactions in GIS, 9 (4): 632-634, 2005.

PRESENTATIONS (* denotes advisee)

- 2012 “Computational Analysis and Visualization of Large Spatial Interaction Data”, Colloquium Talk, Department of Geography and Earth Sciences, University of North Carolina at Charlotte (UNCC). November 30, 2012.
- 2012 “Spatial Aggregation in Health Data Analysis: Challenges and Opportunities”, Colloquium Talk, Department of Epidemiology, School of Public Health, University of South Carolina. October 17, 2012
- 2012 “Mapping social relationships across space and time”, AutoCarto International Research Symposium, September 17, 2012 Columbus, Ohio (Co-authored with and Presented by C. Koylu*)
- 2012 “A visual analytics approach to animating dynamic spatial networks”, GIScience Workshop: GeoVisual Analytics, Time to Focus on Time. September 18, 2012 Columbus, Ohio (Co-authored with and Presented by C. Koylu*)
- 2012 “Neighborhood Effects on Health: Measurement and Analysis Challenges”, Society for Prevention Research (SPR) 20th Annual Conference, May 1,

- Washington DC. (Co-authors: D. Guo and J. Mennis)
- 2012 “Identifying Functionally-Connected Habitat Compartments with a Novel Regionalization Technique”, 27th Annual Symposium of the U.S. Regional Association of the International Association for Landscape Ecology, Newport, Rhode Island. April 8 – 12, 2012. (Co-authors: P. Gao, J. Kupfer and D. Guo)
- 2012 “Discovering Spatial Structures in Massive Trajectory Data”, 108th AAG Annual Meeting, New York, NY, February 24-28, 2012.
- 2012 “Smoothing Locational Measures in Spatial Interaction Networks”, 108th AAG Annual Meeting, New York, NY, February 24-28, 2012. (Presented by C. Koylu*, **Second-Place Winner of the GIS Specialty Group Honors Student Paper Competition**)
- 2012 “Spatial scan statistics with hierarchical regionalization”, 108th AAG Annual Meeting, New York, NY, February 24-28, 2012. (Co-authors: H. Wang* and D. Guo)
- 2012 “Investigate Spatio-Temporal and Multivariate Patterns of Crime in Philadelphia, PA”. 108th AAG Annual Meeting, New York, NY, February 24-28, 2012. (Co-authors: J. Wu* and D. Guo)
- 2011 “Geographical Visualization of Migration with Genealogical Data”, Workshop on the Intermediate Data Structure (IDS) for Historical Longitudinal Databases, in conjunction with The 36th Annual Meeting of the Social Science History Association, Boston, MA, November 2011. (Co-authors: D. Guo, A. B. Kasakoff, C. Koylu*, H. Jin*, M. J. DuBois and S. Feetham)
- 2011 “Automatic Region Building for Spatial Analysis”, ESRI International User Conference, San Diego, CA, July 11-15, 2011.
- 2011 “Spatio-Temporal Analysis and Visualization of Movements and Trajectories”, Plenary Talk, The 19th International Conference on Geoinformatics, Shanghai, China, June 24-26, 2011.
- 2011 “Generating Synthetic Benchmark Data for Evaluating Disease Mapping Approaches”, The 19th International Conference on Geoinformatics, Shanghai, China, June 24-26, 2011.
- 2011 “A New Method to Spatial Scan Statistics with Space Partitioning”, UCGIS Summer Assembly, Boulder, Colorado, June 22 – 23, 2011. (Co-authors: H. Wang* and D. Guo. H. Wang won the **Transactions in GIS Best Paper Award** at the UCGIS summer assembly. He was also given a *Travel Award* by UCGIS to present the paper at the assembly.)
- 2011 “Early Detection of Terrorism Clusters Using Space-Time Scan Statistics”, 107th AAG Annual Meeting, Seattle, WA, April 12-16, 2011. (Co-authors: P Gao*, D. Guo and K. Liao*)
- 2011 “A Fine Tuning Procedure for Multi-resolution Image Segmentation”, 107th AAG Annual Meeting, Seattle, WA, April 12-16, 2011. (Co-authors: H. Jin* and

D. Guo)

- 2011 “iRedistrict: An Efficient and Effective System for Redistricting Optimization”, The 107th AAG Annual Meeting, Seattle, WA, April 12–16, 2011.
- 2010 “Computational and Visual Analysis of Spatial Interactions”, Colloquium Talk, Department of Geography, University of Georgia, Athens, GA, April 2, 2010.
- 2010 “A Non-Parametric Approach to Detecting Local Multivariate Relationship”, 106th AAG Annual Meeting, Washington, DC, April 14-18, 2010.
- 2010 “Using Centrality Measures to Discover Structural Characteristics of Migration Data”, 106th AAG Annual Meeting, Washington, DC, April 14-18, 2010. (Co-authored with and Presented by C. Koylu*)
- 2009 “Greedy Optimization for Contiguity Constrained Hierarchical Clustering”. IEEE International Conference on Data Mining, Miami, FL, USA. December 6-9.
- 2009 “Visual Analytics for Exploring Large Spatial Interaction Networks”, The 105th Annual Meeting, Association of American Geographers, Las Vegas, NV, March 22-27.
- 2008 “Multi-scale Flow Mapping of Large Spatial Interaction Data”, International Conference on Geographic Information Science (GIScience 2008), Park City, Utah. September 23-26.
- 2008 “REDCAP—A Toolkit for Multivariate Visualization and Regionalization”, The 104th Annual Meeting, Association of American Geographers, Boston, BA, April 15-19.
- 2008 “Visualizing Complex Spatial Interactions and Networks”, DoD/DHS Workshop on Social Science Modeling and Information Visualization, Arlington, VA, January 23-25.
- 2007 “Regionalization with Spatially Constrained Multivariate Clustering: Methodologies and Applications”, The 103rd Annual Meeting, Association of American Geographers, San Francisco, CA, April 17-21.
- 2006 “Spatio-Temporal Visual Analytics for Pandemic Response and Decision Support”, Workshop on Visual Analytics & Spatial Decision Support, Münster, Germany. September 20.
- 2006 “Local Entropy Map: A Nonparametric Approach to Measure Spatially Varying Bivariate Relationships”, The Fourth International Conference on Geographic Information Science (GIScience 2006), Münster, Germany. September 20-23.
- 2006 “Visual Analytics for Space-Time and Multivariate Patterns: Methodologies and Applications”, State Key Lab of Resources and Environmental Information System (LREIS), Chinese Academy of Sciences, June 2, Beijing, China.
- 2006 “Spatial Ordering for Geographic Data Mining and Visualization”, National Cancer Institute (NCI), U.S. National Institutes of Health (NIH), April 19, Rockville, MD.

- 2006 “Mining and Visualizing Spatial Interaction Patterns for Pandemic Response”, Workshop on Spatial Data Mining, SIAM Conference on Data Mining, April 22, Bethesda, MD, USA.
- 2006 “On the Ordering Problem in Spatial Data Mining and Geovisualization: Methods and Applications”, The 102nd Annual Meeting, Association of American Geographers, March 7-11, 2006, Chicago, IL.
- 2005 “Measuring Geographically Varying Bivariate Patterns”. Presented the Annual Meeting, Association of American Geographers, April 5-9, 2005, Denver, CO.
- 2005 “Unsupervised Feature Selection for Geovisualization and Spatial Data Mining”. Presented at the Auto Carto 2005, Las Vegas, NV, USA, March 21-23, 2005.
- 2004 “An Integrated Environment for High-Dimensional Geographic Data Mining”. Presented at the *Third International Conference on Geographic Information Science*, October 19-23, Adelphi, MD.
- 2004 “An Integrated Approach to Geographic Knowledge Discovery – Exploring Multivariate Spatial Patterns”. Presented the *100th Annual Meeting, Association of American Geographers*, March, Philadelphia, PA.
- 2003 “Choosing Attributes for Analysis: Effective and Efficient Feature Selection for Exploring High-Dimensional Data”. Presented at the Summer Assembly, University Consortium for Geographic Information Science, June 16-20, Pacific Grove, CA.
- 2003 “A Geographic Visual Query Composer (GVQC) for Accessing Federal Databases”. Presented at the *NSF's National Conference on Digital Government Research*, May 18-21, Boston, MA.
- 2003 “Breaking Down Dimensionality: An Effective Feature Selection Method for High-dimensional Clustering” (first author with M. Gahegan, D. Peuquet and A. MacEachren). Presented at the *Third SIAM International Conference on Data Mining*, May 1-3, San Francisco, CA.
- 2002 “Opening the Black Box: Interactive Hierarchical Clustering for Multivariate Spatial Patterns” (first author with D. Peuquet and M. Gahegan). Presented at the *10th ACM International Symposium on Advances in Geographic Information Systems*, Nov. 8-9, McLean, VA.
- 2003 “Interactive Subspace Clustering for Mining High-Dimensional Spatial Patterns” (first author with D. Peuquet, M. Gahegan and A. MacEachren). Presented at the *Second International Conference on Geographic Information Science*, Sept. 25-28, Boulder, CO.
- 2003 “Developing and Assessing Light-weight Data-driven Exploratory Geovisualization Tools for the Web” (third author with E. Steiner and A. MacEachren). Presented at the *10th International Symposium on Spatial Data Handling*, July 8-12, Ottawa, Canada.
- 2003 “Spatial Cluster Ordering for High-Dimensional Geographic Knowledge

- Discovery”. Presented at the Summer Assembly, University Consortium for Geographic Information Science (UCGIS), June 27-29, Athens, GA.
- 2003 “Towards A True Human-Machine Collaboration For Spatial Multivariate Clustering”. Presented at the *98th Annual Meeting, Association of American Geographers*, March 19-23, Los Angeles, CA.
- 2001 “Implementation and Comparison of Two Data Models for Managing Climatologic Data with Object-oriented Databases” (first author with D. Peuquet and J. Mennis). Presented at the *97th Annual Meeting, Association of American Geographers*, Feb. 27 – March 3, New York, NY .
- 2000 “Mining Spatial Data Using An Interactive Rule-based Approach” (coauthor with D. Peuquet and J. Mennis). Presented at the *First International Conference on Geographic Information Science*, Oct. 28-31, Savannah, GA.

WORKSHOP PARTICIPANTION

- 2012 The Urban Code: Big Urban Data. Senseable City Lab, MIT, Cambridge, MA. November 15-16, 2012
- 2011 The Future of Scientific Knowledge Discovery in Open Networked Environments: A National Symposium and Workshop. March 10-11, 2011 (Washington, DC).
- 2010 GeoVA(t) - Geospatial Visual Analytics: Focus on Time, Workshop held in conjunction with AGILE, May 10-11 2010 (Guimarães, Portugal).
- 2010 National Science Foundation TeraGrid Workshop on Cyber-GIS, February 2-3, 2010 (Washington, DC).
- 2009 Capturing Context: A Conference on Bridging Spatial & Network Analyses, June 12-13th, 2009 (Columbia University, New York, NY)
- 2008 DoD/DHS Workshop on Social Science Modeling and Information Visualization, Sponsored by Department of Defense and Department of Homeland Security, January 23-25, 2008 (Arlington, VA).
- 2005 NISS/SAMSI Workshop on Collaborations in the Mathematical Geosciences, Sponsored by NSF, October 6-7, 2005 (Research Triangle Park, NC).
- 2003 UCGIS Workshop on Geospatial Visualization and Knowledge Discovery, sponsored by the Advanced Research and Development Activity (ARDA) and the United States Geological Survey (USGS)., November 18 – 20, 2003 (Landsdowne, VA).

RESEARCH GRANTS

- 2013 Project Consultant, “SBIR Phase I: Computing-Assisted Zoning Optimization and Service”, National Science Foundation (NSF) SBIR Award, \$150,000
- 2008 - 2013 PI, “Extracting and Understanding Complex Patterns in Spatial Interactions—A

- Computational-Visual Framework”, National Science Foundation (NSF) CAREER Award, \$406,350
- 2009 - 2010 Project Consultant, in collaboration with Rudy Rull (Northern California Cancer Center), Vivien Chen (Louisiana Tumor Registry), and Fahui Wang (Louisiana State University), “Constructing Geographic Areas in GIS for Cancer Data Analysis,” SEER-RRSS program, National Cancer Institute (NCI), National Institutes of Health (NIH), \$3,500.
- 2005 - 2008 Co-PI, Center of Excellence for the Study of Terrorism and Responses to Terrorism (START), Department of Homeland Security. USC Research Team: S. Cutter (PI), W. Piegorsch, J. Rose, A. Bowman, M. Tompkins, D. Cowen, M. Hodgson, M. deCastro, D. Guo, and F. Hardisty, \$1,000,000.
- 2005 - 2006 PI, “Geo-Visual and Analytical Analysis of Cancer Data”, a subcontract from Pennsylvania State University to the University of South Carolina, funded by the National Cancer Institute (NCI), National Institute of Health (NIH), \$10,000
- 2005 - 2006 PI, “Discovering Patterns of Terrorism Incidents Across Time, Geography, and Multivariate Space”, funded by the Walker Institute of International and Area Studies, in conjunction with the Office of the Vice President for Research, University of South Carolina, \$4,000

PATENT:

Patent pending, “Optimization and Visual Controls for Regionalization and Redistricting”, Application number: 12/961,080, Publication number: US 2011/0137903 A1, Filing date: Dec 6, 2010.

PROFESSIONAL SERVICE

Editorial Board

The Professional Geographer (2011 – 2014)
Transactions in GIS (2012 – 2015)

Guest Editor

Computers, Environment and Urban Systems, 33(6), 2009
A special issue on “Spatial Data Mining: Methods and Applications”

Reviewer/Panelist for Agencies (year [times])

National Science Foundation (NSF) (2012[3], 2011[2], 2010 [1], 2009 [2], 2008 [1])
NSF Geography and Spatial Science (GSS) Program
NSF Information Integration and Informatics (III) Program

National Institute of Health (NIH), National Cancer Institute (NCI) (2007 [1])
Research Council for Natural Sciences and Engineering, Academy of Finland (2007 [1])

Reviewer for Journals (year [times])

International J. of Geographical Information Science (IJGIS)	2012[3], 2011[2], 2010[4], 2009[1], 2008[3], 2007[1], 2006[4], 2005[1]
Cartography and Geographic Information Science (CaGIS)	2010[2], 2009[1]
GeoInformatica	2012 [2], 2010[1], 2009[1], 2007[1]
Transactions in GIS	2012[3], 2011[2]
Geographical Analysis	2011[1], 2010[1]
Annals of GIS	2010[1]
Cartographica	2011[1]
Cartographic Journal	2008[2]
Annals of the Association of American Geographers	2009[1]
The Professional Geographer	2011[1], 2007[1]
Environment and Planning B	2010[1], 2007[1]
Computers, Environment and Urban Systems	2012[2], 2009[3], 2006[2]
Urban Studies	2006[1]
Urban Geography	2010[1]
Remote Sensing of Environment	2010[1]
Journal of Photogrammetry and Remote Sensing	2005[1], 2004[1]
GIScience and Remote Sensing	2006[1]
IEEE Transactions on Knowledge and Data Engineering	2010[1], 2009[1], 2006[1]
IEEE Transactions on Pattern Analysis and Machine Intelligence	2008[1], 2007[1], 2006[1]
IEEE Transactions on Visualization and Computer Graphics	2012[2], 2006[2], 2005[1]
IEEE Computer Graphics and Applications	2005[1]
Journal of Visual Languages and Computing	2010[1]
Information Visualization	2008[2], 2007[1], 2005[1]

Reviewer for Books

Monograph, *Data Representations, Transformations, and Statistics for Visual Reasoning*, by Ross Maciejewski, Purdue University. Synthesis Lectures on Sample Series, Morgan & Claypool Publishers.

Edited Book, *Crime Modeling and Mapping Using Geospatial Technologies*, edited by Michael

Leitner, Springer.

Program Committee Member

- 2013 The 21th International Conference on GeoInformatics, Kaifeng, Henan, China. (June 15-17, 2013)
- 2013 The 12nd International Conference of GeoComputation (GeoComputation'2013) Wuhan, China (May 23 – 25, 2013)
- 2012 IEEE International Conference on Data Mining (ICDM'12), Brussels, Belgium (December 10 - 13, 2012)
- 2012 IEEE Conference on Visual Analytics Science and Technology (InfoVis 2012), Seattle, WA, USA. (October 23-28, 2011)
- 2012 The Seventh International Conference on Geographic Information Science (GIScience), Columbus, Ohio, USA. (Sept. 18 – 21, 2012)
- 2012 The 16th International Conference on Information Visualization (IV12), Montpellier, France. (July 10-13, 2012)
- 2012 The 20th International Conference on GeoInformatics, Hong Kong, China. (June 15-17, 2012) (Program Committee Co-Chair)
- 2012 The 16th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD), Kuala Lumpur, Malaysia. (May 29 - June 1, 2012)
- 2011 IEEE International Conference on Data Mining (ICDM'11), Vancouver, Canada. (December 11-14, 2011)
- 2011 IEEE Conference on Visual Analytics Science and Technology (VAST 2011), Providence, RI, USA. (October 23-28, 2011)
- 2011 International Symposium on Spatial-Temporal Analysis and Data Mining, UCL, London, UK (July 18-20, 2011).
- 2011 Program Committee Chair, IEEE International Conference on Spatial Data Mining and Geographical Knowledge Services (ICS DM), Fuzhou, China. (June 29–July 1, 2011)
- 2011 The 19th International Conference on GeoInformatics, Shanghai, China. (June 24-26, 2011)
- 2011 The 5th International Association for China Planning (IACP) Annual Conference, Beijing, China. (June 17-19, 2011)
- 2011 EuroVA 2011: The Second International Workshop on Visual Analytics, Bergen, Norway. (May 31, 2011)
- 2011 GeoViz Hamburg 2011: Linking Geovisualization with Spatial Analysis and Modeling, Hamburg, Germany. (March 10-11, 2011)
- 2010 IEEE Conference on Visual Analytics Science and Technology (VAST 2010), Salt Lake City, Utah, USA. (October 24-29, 2010)
- 2010 The 14th International Conference on Information Visualization (IV10), London, UK.

- (July 26-29, 2010)
- 2009 International Workshop on Spatial and Spatio-temporal Data Mining (In conjunction with IEEE ICDM), Miami, FL, USA. (December 5, 2009)
- 2009 Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD-09), Bangkok, Thailand. (April 27-30, 2009)
- 2008 IEEE International Conference on Data Mining (ICDM), Pisa, Italy. (December 15-19, 2008)
- 2007 International Workshop on Spatial and Spatio-temporal Data Mining (In conjunction with IEEE ICDM), Omaha, NE, USA. (October 28, 2007)
- 2007 The 5th International Conference on Coordinated & Multiple Views in Exploratory Visualization (CMV07), Zurich, Switzerland. (July, 2007)
- 2006 The 4th International Conference on Coordinated & Multiple Views in Exploratory Visualization (CMV06), London, UK. (July, 2006)
- 2005 The 9th International Conference on Information Visualization (IV05), London, UK. (July, 2005)
- 2004 The 8th International Conference on Information Visualization (IV04), London, UK (July, 2004)

Conference Special Session Organizer

- 2013 Spatio-Temporal Data Mining and Visual Analytics, 108th AAG Annual Meeting, Los Angeles, April 9-13, 2013.
- 2012 Spatio-Temporal Data Mining and Visual Analytics, 108th AAG Annual Meeting, New York, NY, February 24-28, 2012.
- 2010 Spatial Data Mining and Exploratory Data Analysis, 106th AAG Annual Meeting, April 14-18, 2010, Washington, DC.
- 2009 Spatial Data Mining and Exploratory Data Analysis, 105th AAG Annual Meeting, March 22-27, 2009, Las Vegas, NV.
- 2008 Spatial Data Mining and Exploratory Data Analysis, 104th AAG Annual Meeting, April 15-19, 2008, Boston, MA.
- 2007 Spatial Data Mining and Exploratory Data Analysis, 103th AAG Annual Meeting, April 17-21, 2007, San Francisco, CA.
- 2006 Spatial Data Mining and Exploratory Data Analysis, 102th AAG Annual Meeting, March 7-11, 2006, Chicago, IL.

SOCIETY MEMBERSHIP AND SERVICE

- 2009 – present University Consortium of Geographical Information Science (UCGIS)
- Communications Chair (2009 – present)
 - USC delegate (2009 – present)

2000 – present	Member, Association of American Geographers (AAG)
2005 – present	Member, South East Division of AAG (SEDAAG) <ul style="list-style-type: none"> ▪ South Carolina State Representative (2007-2008)
2004 – present	Member, IEEE Computer Society
2000 – present	Member, International Association of Chinese Professionals in Geographic Information Sciences (CPGIS) <ul style="list-style-type: none"> ▪ Chair of Board of Directors (2012 – 2013) ▪ President (2011 – 2012) ▪ President-Elect (2010 – 2011) ▪ Vice President, Treasurer (2010 – 2011) ▪ Vice President (2008-2009) ▪ Membership committee (2007-2008)

GRADUATE STUDENT ADVISING

Chaired Dissertation/Thesis Committees

2012 – present	Chao Chen (Ph.D., continuing)
2010 – present	Hu Wang (Ph.D., continuing)
2008 – present	Hai Jin (Ph.D., to complete in 2013)
2008 – present	Caglar Koylu (Ph.D., to complete in 2013)
2006 – 2011	Ke Liao (Ph.D., completed)

Membership on Dissertation Committees

2012 – present	Kyle Buck (Ph.D., continuing)
2011 – present	Leanne Sulewski (Ph.D., to complete in 2013)
2010 – present	Shufan Liu (Ph.D., to complete in 2013)
2009 – present	Peng Gao (Ph.D., to complete in 2013)
2008 – 2012	Chris Burton (Ph.D., completed)
2010 – 2012	Chang Yi (Ph.D., completed)
2006 – 2008	Kevin Borden (Ph.D., completed)
2005 – 2008	Mathew Schmittlein (Ph.D., completed)
2004 – 2008	Zhongwu Wang (Ph.D., completed)

Membership on Thesis Committees

2012 – present	Michael DuBois (M.S., continuing)
2009 – 2011	Stephen Feetham (M.S., completed)
2008 – 2010	Jiang Wu (M.S., Completed)

2008 – 2010	Jiayu Wang (M.S., completed)
2006 – 2009	Michael Morgan (M.S., completed)
2006 – 2008	Clio Andris (M.S., completed)
2006 – 2008	Shoumik Rahman (M.S., Department of Health Sciences, completed)
2005 – 2006	Linna Li (M.S., completed)
2004 – 2005	Chris Saylor (M.S., completed)

DEPARTMENTAL/ UNIVERSITY SERVICE

2009 – present	Admission Committee, Department of Geography, USC
2009 – present	USC Delegate to the UCGIS
2008 – present	Chair, Computer Policy Committee, Department of Geography, USC
2005 – 2010	Undergraduate Advisor, Department of Geography, USC
2004 – 2010	Awards and Scholarships Committee, Department of Geography, USC
2005 – 2007	United Way Ambassador, Department of Geography, USC
2005 – 2007	Graduate Day Judge, University of South Carolina