

Debarchana Ghosh

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Education

- 2005 - ... • Ph.D. Candidate, Department of Geography, University of Minnesota
Advisor: Robert B. McMaster and Steven M. Manson
Dissertation: "Predicting and Explaining the West Nile Virus in the Twin Cities Metropolitan Area of Minnesota"
- 2004 – 2005 • Ph.D. Student, Department of Geography, Kansas State University
- 2002 - 2004 • M.Phil (Population Studies) Jawaharlal Nehru University, India.
- 2000 - 2002 • M.A (Geography) Jawaharlal Nehru University, India.
- 1997 - 2000 • B.Sc. (Geography) Presidency College, University of Calcutta, India.

Research Experience

- 2005 - ... • Graduate Research in the field of geospatial technologies, spatial statistics, spatial analysis and modeling, health, and environmental issues. Specific projects include:
 - Clustering and point pattern analysis of West Nile Virus (WNV) infected dead birds, mosquito pools, and human cases
 - Development of novel spatiotemporal approach to delineate WNV transmission cycles as high-risk exposure areas at various scales
 - Understanding human exposure to WNV infected mosquitoes in the urban context through visualization and exploratory data analysis of the potential environmental, built-environment, socioeconomic, and policy factors hypothesized to be associated with the virus transmission.
 - Prediction and explanation of WVN incidences using neural networks
 - Bayesian multivariate spatial models to estimate the WNV infection rate
- 2007 - ... • Examining the effect of sample size on selection of bandwidth by the cross validation method in geographically weighted regression
- Working on a project titled 'Spatial Analysis of Twin Cities Health, Environment, and Law' (SATCHEL) under Prof. Steven M. Manson. This includes:
 - Linking environmental, socioeconomic, demographic, health, built

environment, and urban growth policies data to the georeferenced tax parcels data

- Investigating health issues and hedonic urban land use models using the above mentioned combined data set.
- 2006 - 2007
- Developed a hybrid approach, termed robust principle component geographically weighted regression (RPCGWR), to examine both the location of urban land use and the effect of social and environmental factors affecting land use in the Twin Cities Metropolitan Area of Minnesota.
 - Involved in a research project titled 'Does Sprawl beget Sprawl? Urbanization in Twin Cities Metro Area, 1990-2005' under Prof. Steven Manson.
- 2005 - 2006
- Investigated the quality of knowledge and awareness about HIV/AIDS among Indian women
 - Prediction of vulnerability of married women to domestic violence incidents in India using modern data mining techniques namely, classification trees and random forest model.
- 2003 - 2004
- Masters/M.Phil Dissertation research under Prof. M.D. Vemuri in the field of health geography. The dissertation was titled 'Exposure to Mass Media and its Effect on Mothers Seeking Antenatal Care Services'.

Publications

- **Ghosh, D.**, Steven M. Manson, and Robert B. McMaster. 2008. Delineating West Nile Virus transmission cycles at various scales: The Nearest Neighbor Distance-Time model. *International Journal of Geographic Information Science*. In review after revision.
- S., Heather., **D. Ghosh**, D.V. Riper, and S. M. Manson. 2008. How do you measure distance to open space? Impacts of different types of distance on open space values calculated using a hedonic pricing model. *Environmental and Planning B*. In review after revision.
- Manson, S. M., H.A. Sander, **D. Ghosh**, J. M. Oakes, M. W. Orfield, W. J.Craig, T. F. Luce, E. Myott, S. Sun (2009). Parcel data for research and policy. *Geography Compass*. Accepted in press.
- **Ghosh, D.**, and Steven M. Manson. 2008. Robust Principal Component Analysis and Geographically Weighted Regression: Urbanization in the Twin Cities Metropolitan Area'. *The URISA Journal* 20(1) : 15 - 25
- **Ghosh, D.** (forthcoming). West Nile Virus. *The Encyclopedia of Environment and Society*. Thousand Oakes, CA: SAGE

Debarchana Ghosh, University of Minnesota

- **Ghosh, D.** (forthcoming). Infant Mortality Rate. *The Encyclopedia of Environment and Society*. Thousand Oakes, CA: SAGE
- **Ghosh, D.** (forthcoming). Epidemics. *The Encyclopedia of Environment and Society*. Thousand Oakes, CA: SAGE
- **Ghosh, D.** 2007. Predicting Vulnerability of Indian Women to Domestic Violence Incident. *Research and Practice in Social Sciences* 3(1): 48 - 72
- **Ghosh, D.** 2006. Effect of Exposure to Electronic Mass Media on the Knowledge and Use of Prenatal Care Services: A Comparative Analysis of Indian States. *The Professional Geographer* 58(3): 278 – 293

Awards

- 2008
- Cartography and Geographic Information Society (CaGIS) Best Student Paper Award
 - First place presentation award for the University Consortium for Geographic Information Science (UCGIS) Summer Assembly, 2008
 - Graduate Student Travel Award for UCGIS Summer Assembly, 2008
 - Doctoral Dissertation Fellowship 2008 - 2009. Graduate School. University of Minnesota
 - Doctoral Dissertation research Grant. Graduate School University of Minnesota.
 - 2nd Place Student Paper Award. Graduate Student Affinity Group. Association of American Geographers (AAG)
 - Travel Award. Council of Graduate Studies (COGS). University of Minnesota
 - Travel Award. The Graduate and Professional Student Assembly (GAPSA) University of Minnesota
 - Travel Award. International Geographic Information Fund (IGIF), AAG
 - Graduate Research Award. IGIF, AAG
 - Dissertation Research Grant. AAG
 - Travel Grant. Department of Geography. University of Minnesota
- 2007
- 3rd Place Best Poster Award. 130th Annual Applied Geography Conference, Indianapolis, IN
 - 3rd Place Student Paper Award. Urban And Regional Information Systems Association
 - Ralph H. Brown Prize for Best Graduate Student Publication Award. Department of Geography, University of Minnesota
 - Travel Award. GAPSA

- Travel Award. IGIF, AAG
- 2006
 - Travel Support. Urban Geography Specialty Group, AAG
 - Travel Award. Office for University Women. University of Minnesota
 - Graduate Research Partnership Program. Summer Fellowship, College of Liberal Arts, University of Minnesota
 - Best Student Paper Award. Regional Development and Planning Specialty Group and Asian Geography Specialty Group. AAG
 - Travel Award. GAPSA
- 2005
 - Best Student Paper Award. Asian Geography Specialty Group. Association of American Geographers
- 2004
 - 1st Place Best Poster Award. 127th Annual Applied Geography Conference, St. Louis, MO
- 2003
 - Junior Research Fellowship and eligibility for lectureship under University Grants Commission, India.
- 2000
 - National Scholarship under National Scholarship Scheme, Government of India on the result of B.Sc. Geography (Hons.) Examination.

Invited Presentations

- **Ghosh, D.** February 2009. Graduate School Seminar. University of Minnesota
- **Ghosh, D.** December 2008. Spatiotemporal analysis of West Nile Virus in Twin Cities Metropolitan area of Minnesota. *Minnesota Population Center Seminar Series*. Minneapolis, Minnesota.
- **Ghosh, D.** July 2008. Guest Lecturer in GEOG 1403 Biogeography of the Global Garden. *Department of Geography, University of Minnesota*. Minneapolis, Minnesota

Conference Presentations

- **Ghosh, D.** October 2008. Spatiotemporal approaches to map West Nile Virus high-risk exposure areas at local scales using Geographic Information Science technologies. *American Public Health Association 136th Annual Meeting and Exposition*. San Diego, California
- **Ghosh, D.** June 2008. Spatiotemporal models to delineate West Nile Virus transmission cycles at various scales. *University Consortium for Geographic Information Science Summer Assembly*, Minneapolis, Minnesota.
- **Ghosh, D.**, Steven M. M., and McMaster, R.B. April 2008. Novel approaches to delineate West Nile virus transmission cycles on a micro-scale using Geographic Information Science technologies. *Association of American Geographers Conference*, Boston, Massachusetts.

- **Ghosh, D.**, and Steven M.M. October 2007. Traditional Vs Modern Clustering Techniques: A case study of West Nile Virus Incidence in Minnesota 130th Annual Applied Geography Conference, Indianapolis, Indiana.
- **Ghosh, D.**, and Steven M.M. April 2007. Robust Principal Component Analysis and Geographically Weighted Regression: Urbanization in the Twin Cities Metropolitan Area of Minnesota. Association of American Geographers Conference, San Francisco, California.
- **Ghosh, D.** October 2006. What is the Quality of Knowledge of HIV/AIDS among Indian Women? An Empirical Analysis. 129th Applied Geography Conference, Tampa, Florida.
- **Ghosh, D.** March 2006. Predicting Vulnerability of Indian Women to Domestic Violence Incident. Association of American Geographers Conference, Chicago, Illinois.
- **Ghosh, D.** November 2005. Application of Principal Component Analysis and GIS to delineate health care resource regions of Kansas. 128th Annual Applied Geography Conference, Washington, DC.
- **Ghosh, D.** April 2005. Effect of Exposure to Mass Media on Knowledge and Use of Antenatal Care Services: A Comparative Analysis of Himachal Pradesh, Uttar Pradesh, Andhra Pradesh and Karnataka. Association of American Geographers Conference, Denver, Colorado.
- **Ghosh, D.** March 2005. Analysis of Spatial Inequalities of Health Care Resources in Kansas. 2nd Annual Graduate Student Research Summit, Topeka, Kansas.
- **Ghosh, D.** October 2004. How the Electronic Mass Media Affects Knowledge and Awareness of HIV/AIDS in Indian Women – A Multivariate Logistic Regression Analysis. 127th Annual Applied Geography Conference, St. Louis, Missouri.

Teaching Experience

- 2005
- Teaching Assistant for two laboratory sections for the course titled ‘Biogeography of the Global Garden’. Department of Geography, University of Minnesota
 - Teaching Assistant for ‘World Regional Geography’. Department of Geography, Kansas State University
 - Teaching Assistant for ‘Geography of US’. Department of Geography, Kansas State University
- 2004
- Teaching Assistant for ‘Geography of Tourism’. Department of Geography, Kansas State University
 - Teaching Assistant for ‘World Regional Geography’. Department of Geography, Kansas State University

Service

- Article reviews for *International Journal of Geographic Information Science*
- Graduate Student Board Member (2008 – 2010) for the Medical Geography Specialty Group, Association of American Geographers

Debarchana Ghosh, University of Minnesota

- Graduate student representative for the faculty hire search committee in the department of Geography, University of Minnesota

Professional Membership

- Association of American Geographers
- Specialty Groups: Applied Geography, Asian Geography, Geographic Information Science and System, Medical Geography, Population, and Spatial Analysis and Modeling.
- American Public Health Association

References

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Dr. Steven M. Manson
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Dr. Sudipto Banerjee
Assistant Professor
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