

CURRICULUM VITAE
BANDANA KAR, Ph.D.

Research Scientist, Critical Infrastructure and Climate; Urban Dynamics Institute
Computational Sciences and Engineering Division, Oak Ridge National Laboratory
karb@ornl.gov | (865) 576-3717 | <https://udi.ornl.gov/content/bandana-kar>

EDUCATION

August 2008	Ph.D. <i>Department of Geography, University of South Carolina, Columbia.</i>
August 2003	Masters in Geography (M. A.) <i>Department of Geography, State University of New York, Albany.</i> Certificate in GIS and Spatial Analysis <i>Department of Geography, State University of New York, Albany.</i>
January 2000	Master of City Planning (M.C.P) <i>Department of Architecture and Regional Planning, Indian Institute of Technology, Kharagpur, West Bengal, India.</i>
December 1997	Bachelor of Architecture (B. Arch) <i>Department of Architecture, College of Engineering and Technology, O.U.A.T, Bhubaneswar, Odisha, India.</i>

PROFESSIONAL EXPERIENCE

August 2014 - Continuing August 2008 – August 2014 August 2007 – May 2008	Associate Professor, Department of Geography and Geology Assistant Professor, Department of Geography and Geology Instructor, Department of Geography, University of South Carolina <ul style="list-style-type: none">• GEOG 345 (Interpretation of Aerial Photographs)
July 2007 – August 2007	Instructor, Department of Geography, University of South Carolina <ul style="list-style-type: none">• GEOG 363 (Introduction to Geographic Information System)

COURSES TAUGHT (USM)

1. Introduction to Geographic Information Systems – Lecture (GHY 217) and Lab (GHY 217L)
2. GIS Based Vector Analysis – Lecture (GHY 417/517) and Lab (GHY 417L/517L)
3. Spatial Analysis and Modeling – Lecture (GHY 418/518) and Lab (GHY 418L/518L)
4. Remote Sensing and Image Interpretation - Lecture (GHY 411/511) and Lab (GHY 411L/511L)
5. Environmental Remote Sensing – Lecture (GHY 412/512) and Lab (GHY 412L/512L)
6. Design and Deployment of Database and Geo-Database - Lecture (GHY 467/567) and Lab (GHY 467L/567L)
7. Internet Mapping – Lecture (GHY 469/569) and Lab (GHY 469L/569L)
8. Environmental Hazards (GHY 455/555)
9. Seminar in Research Techniques and Presentation of Geographic Data (GHY 610/710)
10. Seminar in GIS (GHY 612/712)

PUBLICATIONS (** Indicates Student)

Manuscripts Published

Peer-Reviewed Journal Articles

1. **Liu, X., Kar, B., Zhang, C., and Cochran, D. M., (accepted pending revision). Evaluating Relevance of Twitter Data for Risk Communication, *International Journal of Digital Earth*.
2. **Zale, J. J., Kar, B., Cochran, D. M., (in press). Optimizing Stadium Evacuation by Integrating Geo-computation and Affordance Theory, *Journal of Emergency Management*.
3. Lee, J., Blackmon, B., Cochran, D., Kar, B., and Rehner, T. (2017). Community Resilience, Psychological Resilience, and Depressive Symptoms: An Examination of the Mississippi Gulf Coast Ten Years after Hurricane Katrina and Five Years after the Deepwater Horizon Oil Spill. *Disaster Medicine and Public Health Preparedness*.
4. Kar, B., Sieber, R., Haklay, M., Ghose, R. (2016). Public Participation GIS and Participatory GIS in the Era of GeoWeb. *The Cartographic Journal*, 53(4): 296-299.
<http://dx.doi.org/10.1080/00087041.2016.1256963>.
5. Blackmon, B., Lee, J., Cochran, D., Kar, B., and Rehner, T. (2016). Adapting to Life after Hurricane Katrina and the Deepwater Horizon Oil Spill: An Examination of Psychological Resilience and Depression on the Mississippi Gulf Coast. *Social Work in Public Health*,
<http://dx.doi.org/10.1080/19371918.2016.1188746>
6. Kar, B. (2015). Citizen Science in Risk Communication in the Era of ICT. *Concurrency and Computation: Practice and Experience*, DOI: 10.1002/cpe.3705
7. Cumbie, B. & Kar, B. (2015). The Role of Social Media in U.S. County Governments: The Strategic Value of Operational Aimlessness. *International Journal of Electronic Government Research*, 11(1): 1 – 20.
8. Cumbie, B. & Kar, B. (2014). A Study of Local Government Website Inclusiveness: The Gap Between E-Government Concept and Practice. *Information Technology for Development*, DOI: 10.1080/02681102.2014.906379.
9. Kar, B., **Crowsey, R. C. & **Zale, J. J. (2013). The Myth of Location Privacy in the U.S.: Surveyed Attitude vs. Current Practices. *The Professional Geographer*, 65(1), 47-64.
10. Kar, B. & Hodgson, M. E. (2012). A Process Oriented Areal Interpolation Technique: A Coastal County Example. *Cartography and Geographic Information Science*, 39 (1), 3-16.
11. Kar, B. & Hodgson, M. E. (2012). Relationship between Observational Scale and Modeled Potential Residential Loss from a Storm Surge, *GISRS*, 49(2), 202-227.
12. **Zale, J. J. & Kar, B. (2012). A GIS-based Football Stadium Evacuation model. *Southeastern Geographer*, 52 (1), 70 - 89.
13. Kar, B. & Hodgson, M. E. (2008). A GIS-Based Model to Determine Site Suitability of Emergency Evacuation Shelters. *Transactions in GIS*, 12(2), 227-248.
14. Hodgson, M. E. & Kar, B. (2008). Modeling the Potential Swath Coverage of Nadir and Off-nadir Pointing Remote Sensing Satellite-Sensor Systems. *Cartography and Geographic Information Science*, 35(3), 147-156.

Peer-Reviewed Proceeding Papers

15. Omitaomu, O.A. & Kar, B. (2018). Understanding Infrastructure Dependency During Natural Hazard Events for Actionable Disaster Responses. In *Proceedings of the 2018 IISE Annual Conference*, Orlando, FL.
16. Cumbie, B.A., & Kar, B. (2014). Socially Awkward: Social Media Usage in County-Level Government. In *Proceedings of the 20th Americas Conference of Information Systems*, Savannah, GA.

Peer-Reviewed Book Chapters

17. Omitaomu, O.A., Kar, B., Belles, R. J., Poore, M. P., Mays, G. T., Bhaduri, B. L., Thomas Jr., B., (accepted). Using an Innovative DOE Tool to Evaluate the Suitability of DOD Sites for Small Modular Reactors. *Defense Innovation Handbook*.
18. Kar, B. (2017). Results of an Integrated Approach to Geo-target At-risk Communities and Deploy Effective Crisis Communication Approaches. In *Emergency alert and warning systems: Current knowledge and future research directions*. Washington D.C.: The National Academies Press.
19. Kar, B. & Chow, E. (2016) Fusion of Multi-scaled Spatial and Temporal Data: Techniques and Issues. In Quattrochi, D. A., Wentz, E. A., Lam, N. & Emerson, C. (Eds.) *Integrating scale in remote sensing and GIS*, Boca Raton, FL: Taylor and Francis, pp. 95 - 125.
20. Chow, E. & Kar, B. (2016). Error and Accuracy Assessment for Fused Data: Remote Sensing and GIS. In Quattrochi, D. A., Wentz, E. A., Lam, N. & Emerson, C. (Eds.) *Integrating scale in remote sensing and GIS*, Boca Raton, FL: Taylor and Francis, pp. 95 - 125.
21. Kar, B. (2014). Disaster Risk Reduction: A Comparative Assessment of Policies in US and China". In Awotona, A. (Ed.), *Rebuilding Sustainable Communities after Disasters in China, Japan and Beyond* (131-169). New Castle: Cambridge Scholars Publishing.
22. Kar, B. (2013). Decision Support Tools. In Bradley Penuel, K. B., Statler, M. & Hagen, R. (Eds.), *Encyclopedia of Crisis Management* (255-257). New Castle: Cambridge Scholars Publishing.
23. Kar, B. (2013). Principles of Emergency Management. In Bradley Penuel, K. B., Statler, M. & Hagen, R. (Eds.), *Encyclopedia of Crisis Management* (328-332). New Castle: Cambridge Scholars Publishing.
24. Kar, B. (2013). Public Awareness and Education. In Bradley Penuel, K. B., Statler, M. & Hagen, R. (Eds.), *Encyclopedia of Crisis Management* (765-770). New Castle: Cambridge Scholars Publishing.

Peer-Reviewed Book Reviews

25. Kar, B. (2012). [Review of the book Clifford, N., French, S. & Valentine, G. (Eds.) (2010). *Key Methods in Geography*, CA: SAGE Publications Inc.]. *Southeastern Geographer*, 52(4), 448 – 450.
26. Kar, B. (2012). [Review of the book Kalkhan, M. A. (2011). *Spatial Statistics: Geospatial Information Modeling and Thematic Mapping*, Boca Raton, FL: CRC Press]. *Photogrammetric Engineering and Remote Sensing*, 78(9), 915 - 916.
27. Kar, B. (2004). [Review of the book Pelling, M. (2003). *The Vulnerability of Cities: Natural Disasters and Social Resilience*, London, UK: Earthscan Publications Ltd]. *Natural Hazards Review*, 5(4), 195 – 196.

Non-Peer/Agency Reviewed Technical Reports

28. Kar, B. & Cochran, D. M. (2016). Final Report - An Integrated Approach to Geo-target At-risk Communities and Deploy Effective Crisis Communication Approaches. *Department of Homeland Security - Science and Technology Directorate (DHS - S&T)*, <https://www.dhs.gov/publication/integrated-approach-geo-target-risk-communities-deploy-effective-crisis-communication>.

Manuscripts in Review and Preparation

Peer-Reviewed Journal Articles

29. **Callais, N. E., Kar, B., Cochran, D. M., (in revision). Determining Social Capital of the Homeless Population During Disasters in the Alabama, Mississippi and Louisiana Gulf Coast. *Disasters*.
30. **McBride, S. M., Kuczaj II, S. A., Lyn, H., Moore, F. R., Sacco, D., Kar, B., Taylor, J., (in review). How Can Spatial Bias Affect Habitat use Results of Bottlenose Dolphins *Tursiops truncatus*: A Comparison Between Standardized Photo-identification Surveys and Opportunistic Surveys, *Journal of Aquatic Mammals*.

31. Kar, B., Chow, E., Dede-Bamfo, N., Liu, X., (in preparation). Spatio-temporal Variability of Tweet-Derived Situational Awareness, *International Journal of Digital Earth*.

Book Chapters

32. Kar, B., Cochran, D. M., **Zale, J. J., **Callais, N. E., **Liu, X. (in preparation). Public Expectation of and Responses to WEA Message Content. In Kar, B., and Cochran, D. M. (Eds.), *Understanding the Roles of Risk Communication in Community Resilience Building*. London: Routledge.
33. **Zale, J. J., Kar, B., Cochran, D. M., **Callais, N. E., **Liu, X. (in preparation). Influence of Language Preference on Response to Alert and Warning Messages. In Kar, B., and Cochran, D. M. (Eds.), *Understanding the Roles of Risk Communication in Community Resilience Building*. London: Routledge.

PRESENTATIONS (** Indicates Students)

Papers Presented at Academic and Scientific Conferences

1. Omitaomu, O. A. & Kar, B. (May 2018). Understanding infrastructure dependency during natural hazard events for actionable disaster response. *Institute of Industrial and Systems Engineers (IISE) Annual Conference*. Orlando, FL.
2. Kar, B., Chow, E., & Liu, X. (April 2018). Analyzing tweets to understand spatio-temporal variability of situational awareness information. *Annual Meeting of the Association of American Geographers (AAG)*. New Orleans, LA.
3. Cochran, D., Kar, B., Lee, J., Blackmon, B., Choi, H., & Rehner, T. (April 2018). Community resilience, experience, and perception as factors associated with preparedness among residents in coastal Mississippi. *AAG*. New Orleans, LA.
4. Kar, B. (February 2018). Variability of big data relevance for disaster situational awareness across events. *American Society for Photogrammetry and Remote Sensing (ASPRS)*. Denver, CO.
5. Kotikot, S., Kar, B., & Omitaomu, O. A. (February 2018). VIIRS Day/Night Band (DNB) data for monitoring power recovery: Application and Challenges – Case study of Puerto-Rico following Hurricane Maria. *GeoSymposium at University of Tennessee*. Knoxville, TN.
6. Brandt, A. & Kar, B. (February 2018). Understanding the dynamics of Urban Heat Islands: A look at mobility. *GeoSymposium at University of Tennessee*. Knoxville, TN.
7. Kar, B. (April 2017). Crowdsourcing to citizen science – Assessing big data relevance for situation awareness. *AAG*. Boston, MA.
8. Cochran, D., Kar, B., Lee, J., Blackmon, B., and Rehner, T. (April 2017). Socio-spatial characteristics and experience as factors influencing variations in perceptions of risk and resilience on the Mississippi Gulf Coast. *AAG*. Boston, MA.
9. **Liu, X., and Kar, B. (April 2017). Evaluating the relevance of risk information using spatiotemporal analysis and data mining techniques. *AAG*. Boston, MA.
10. Kar, B. (March 2017). Increasing situational awareness of WEA messages for at-risk communities. *ASPRS*. Baltimore, MD.
11. Kar, B. Cochran, D., **Zale, J., **Liu, X., and **Callais, N. (November 2016). Future of Wireless Emergency Alerts and warnings – A case study of the Mississippi Gulf Coast residents and first responders. *Bays and Bayous Symposiums*. Biloxi, MS.
12. Kar, B. (September 2016). WEA Messages for at-risk communities. *Committee on the Future of Emergency Alert and Warning Systems: Research Directions – National Academy of Sciences*. Washington D.C.
13. Kar, B., Chen, Z. (April 2016). Veracity of structured and unstructured big data – A case study of emergency management. *ASPRS*. Dallas/Ft. Worth, TX.

14. Kar, B., Chen, Z. (March 2016). Big data quality – A comparison of structured and unstructured data During a disaster. AAG. San Francisco, CA.
15. Cochran, D., Kar, B. (2016). Ten years after Katrina, five years after Deepwater Horizon: Risk perception and resilience among residents of the Mississippi Gulf Coast. AAG. San Francisco, CA.
16. **Callais, N. & Kar, B. (March 2016). Invisible people of the invisible coast: The resilience of people experiencing homelessness to disasters on the Alabama, Louisiana, and Mississippi Coasts. AAG. San Francisco, CA.
17. **Liu, X., Kar, B., Cochran, D. (2016). Citizen science and risk communication – An analysis of social media vs. traditional media. AAG. San Francisco, CA.
18. Blackmon, B., Lee, J., Cochran, D., Kar, B., and Rehner, T. (2016). The adaptation and resilience initiative on the MS Gulf Coast: Implications for social work. *Gulf of Mexico – Oil Spill and Ecosystem Science Conference*. Tampa, FL.
19. Cochran, D., Kar, B. (November 2015). Factors influencing public response to emergency alert and warning messages on the Mississippi Gulf Coast. *Southeastern Division of the Association of American Geographers (SEDAAG)*. Pensacola, FL.
20. Kar, B. (October 2015). Citizen science in risk communication in the era of ICT – CIGIR. *10th Gateway Computing Environments Workshop (GCE15)*. Boulder, CO.
21. Kar, B. (April 2015). Spatio-temporal variability of financial loss: A case study of Florida housing market. AAG. Chicago, IL.
22. Cochran, D. M., Kar, B., **Zale, J., **Callais, N., **Liu, X., **Dickens, J., Bass, J. (2015). Household and agency perceptions of emergency warning devices: A comparative study from the Mississippi Gulf Coast. AAG. Chicago, IL.
23. **Zale, J., Kar, B., Cochran, D. M., **Callais, N., **Liu, X., **Dickens, J., Bass, J. (2015). Spatial distribution of trust and use of alert and warning devices: A case study of the Mississippi Gulf Coast. AAG. Chicago, IL.
24. Kar, B., Cochran, D., **Dickens, J. & Bass, J. (November 2014). Exploring public perception of and reaction to emergency alert and warning system dissemination platforms. *SEDAAG*. Athens, GA.
25. Kar, B. (April 2014). Spatial granularity vs property insurance: A case study of Florida housing market. AAG. Tampa, FL.
26. Kar, B. & Harley, G. (March 2014). Suitability of remote sensing data for African dust mapping in the Florida Keys, U.S.A. *ASPRS*. Louisville, KY.
27. **Zale, J., Cochran, D., Kar, B. & **Dickens, J. (March 2014). Spatial distribution of social vulnerability and vulnerable populations in coastal hazard induced at-risk zones. *Mississippi Academy of Sciences (MAS)*. Hattiesburg, MS. (Recipient of Second prize for best presentation).
28. **Zale, J., Bass, J., Kar, B. & **Dickens, J. (July 2013). An integrated approach to geo-target at-risk communities and deploy effective crisis communication approaches. *Natural Hazards Research and Applications Workshop*. Broomfield, CO.
29. **Zale, J., Bass, J., Kar, B. & **Dickens, J. (July 2013). Availability and coverage of warning and alert communication platforms in the Mississippi Coastal Communities. *International Research Committee on Disasters Researchers Meeting*. Broomfield, CO.
30. Kar, B. (April 2013). Landsat vs. night time imagery: Effectiveness of each dataset in risk assessment. AAG. Los Angeles, CA.
31. Kar, B. (March 2013). Exploring spatial relationship between coastal population density and inland distance. *ASPRS*. Baltimore, MD.
32. Kar, B. (February 2012). Decreasing vulnerability of coastal population with increasing inland distance. *MAS*. Hattiesburg, MS.
33. Kar, B. (February 2012). What if tropical storm Irene was hurricane Katrina? AAG. New York City, NY.
34. Kar, B. and Perveen, S. (May 2011). Multi-scale visualization of water stress/scarcity assessment. *ASPRS*. Milwaukee, Wisconsin.

35. Kar, B. and Yousafzai, A. (April 2011). A comparative analysis of risk reduction approaches to the 2010 flooding of South Asia. *AAG*. Seattle, WA.
36. Yousafzai, A. and Kar, B. (February 2011). A comparative analysis of risk reduction approaches to the 2010 flooding of South Asia. *MAS*. Hattiesburg, MS.
37. Kar, B., **Crowsey, R. and **Zale, J. (February 2011). The myth of location privacy in the U.S.: Surveyed attitude vs. current practices. *MAS*. Hattiesburg, MS.
38. Perveen, S. and Kar, B. (April 2010). Geovisualization of water stress/scarcity assessment using different indicators. *AAG*. Washington D.C.
39. Kar, B. (February 2010). Scaling relationship between socio-physical vulnerability and financial loss. *MAS*. Hattiesburg, MS.
40. Kar, B. (November 2009). Why scale matters: A hazard research perspective? *SEDAAG*. Knoxville, TN.
41. Kar, B. and Richard, B. W. (June 2009). Social vulnerability: A determinant of community resilience. *Ghosts of Katrina: Natural Disasters and Community Resilience Sponsored by the Community and Regional Resilience Institute and the Center for Policy and Resilience*. Gulf Port, MS.
42. Kar, B. and Hodgson, M. E. (March 2009). Generalization of coast boundary: Comparison of generalization techniques. *AAG*. Las Vegas, NV.
43. Hodgson, M. E. and Kar, B. (March 2009). Line definition and generalization at the process scale: A hurricane coastline example. *AAG*. Las Vegas, NV.
44. Kar, B. and Hodgson, M. E. (March 2009). What is the modeled potential residential loss from a storm surge? *ASPRS*. Baltimore, MD.
45. Hodgson, M., Davis, B. A., Andris, C. & Kar, B. (May 2008). Adding historical image collections and future plans to the Remote Sensing Hazard Guidance System. *ASPRS*. Portland, OR.
46. Kar, B. and Hodgson, M. E. (April 2008). Housing unit distribution in coastal counties: Comparison of areal interpolation techniques. *AAG*. Boston, MA.
47. Kar, B. and Hodgson, M. E. (February 2008). GIS-based modeling of potential residential loss from a storm surge. *South Carolina GIS Conference*. Greenville, SC.
48. Kar, B. and Hodgson, M. E. (November 2007). Housing unit distribution in coastal counties: Comparison of dis-aggregation techniques. *SEDAAG*. Charleston, SC.
49. Hodgson, M. E. and Kar, B. (November 2007). Mapping the potential swath coverage of a remote sensing satellite-sensor combination. *SEDAAG*. Charleston, SC.
50. Kar, B. (May 2007). Impact of scale of analysis on property loss estimation in Florida: A comparative approach. *ASPRS*. Tampa, FL.
51. Hodgson, M. E., Jensen, J. R., Kar, B., Garcia-Quijano, M. & Lapine, L. (May 2007). Overall and temporal variability in horizontal accuracy of LiDAR data. *ASPRS*. Tampa, FL.
52. Kar, B. (April 2007). Spatial distribution of potential residential loss from a storm surge. *AAG*. San Francisco, CA.
53. Hodgson, M. E., Davis, B. A., Cheng, Y. and Kar, B. (March 2007). A Remote Sensing Hazard Guidance System for analyzing image collection opportunities. *Coastal GeoTools Conference*. Myrtle Beach, SC.
54. Kar, B. (January 2007). A GIS based model to determine site suitability of emergency evacuation shelters. *South Carolina Arc User Network (SCARC)*. Charleston, SC.
55. Kar, B. (May 2006). Interactive web-mapping of SHELDUS. *ASPRS*. Reno, NV.
56. Kar, B. (March 2006). Spatio-temporal distribution of hazard loss in the USA. *AAG*. Chicago, IL.
57. Kar, B. (November 2005). GIS based suitability model to determine evacuation shelters. *SEDAAG*. West Palm Beach, FL.
58. Kar, B. (April 2005). Criteria, weights and geographic scale of analysis used in the disaster mitigation plans. *AAG*. Denver, CO.
59. Kar, B. (April 2002). Pre-disaster planning using remote sensing and GIS for hurricane affected areas. *Workshop on Technologies for Communities*. Rensselaer Polytechnic Institute - Troy, NY.

Posters Presented at Academic and Scientific Conferences

1. Kotikot, S. M., Kar, B., Omitaomu, O. A., White, D. and Davis, C. (March 2018). Understanding relationship between power restoration and social vulnerability using VIIRS Day/Night Band (DNB) data. *Urban Dynamic Institute SAB Poster Session*. Oak Ridge, TN.
2. Brandt, A. and Kar, B. (March 2018). Dynamics of urban heat islands and energy use in Knoxville. *Urban Dynamic Institute SAB Poster Session*. Oak Ridge, TN.
3. Kar, B. and Omitaomu, O. A. (December 2017). Spatio-temporal variability of urban heat island and urban mobility. *American Geophysical Union (AGU)*. New Orleans, LA.
4. Kar, B., Robinson, C., Koch, D., and Omitaomu, O. A. (December 2017). Knowledge to action – Understanding natural hazards induced power outage scenarios for actionable disaster responses. *American Geophysical Union (AGU)*. New Orleans, LA.
5. **Liu, X., Kar, B. and Cochran, D. M. (November 2015). Cyber Infrastructure for Geo-Informatics and Community Resilience (CIGIR), *SEDAAG*. Pensacola, FL. (Best student poster award)
6. Cochran, D. M., Kar, B., **Zale, J., **Callais, N. E., **Liu, X., **Dickens, J. F. and Bass, J. (July 2015). Public perceptions of and responses to emergency alert and warning devices. *Natural Hazards Research and Applications Workshop*. Broomfield, CO.
7. **Wylie, L. and Kar, B. (November 2014). Fire and fuels in the Zuni mountains. *SEDAAG*. Athens, GA.
8. Cumbie, B. and Kar, B. (August 2014). Socially awkward: Social media usage in county-level government. *20th Americas Conference on Information Systems*. Savannah, GA.
9. Kar, B. and **Lanier, R. (November 2013). LandScan vs. night time imagery: Effectiveness of each dataset in risk assessment. *SEDAAG*. Roanoke, VA.
10. **Feather, H. & Kar, B. (November 2013). Site suitability of tornado shelters: A GIS based case study analysis of Mississippi. *SEDAAG*. Roanoke, VA.
11. **McBride, S., Hurley, B., Kar, B., Solangi, M. and Kuczaj, S. (November 2012). Potential habitat utilization and influence of environmental variables on distribution of bottlenose dolphin. *Tursiops Truncatus*, in Mississippi Sound, *USM Research Day*. Hattiesburg, MS.
12. **Zale, J. and Kar, B. (November 2009). A GIS based evacuation model for a football stadium. *SEDAAG*. Knoxville, TN.
13. Kar, B. and Hodgson, M. E. (November 2008). Is DEM a better substitute for floor elevation of residential structures? *SEDAAG*. Greensboro, NC.

Invited Lectures/Presentations

1. Kar, B. (October 2017). Variability of Big Data Relevance for Disaster Situational Awareness Across Events. *School of Geology, Energy and the Environment, Texas Christian University*, Fort Worth, TX
2. Kar, B. (November 2017). The Role of Geospatial Science in Emergency Management and Crisis Informatics. *Department of Geography, University of Tennessee*. Knoxville, TN.
3. Kar, B. (February 2017). Increasing Situational Awareness of WEA Messages for At-risk Communities – A Case Study of 2013 Boulder Flooding. *School of Ocean Science and Technology, USM*. Stennis Space Center, MS.
4. Kar, B. (September 2016). Increasing Situational Awareness of WEA Messages for At-risk Communities. *Urban Dynamics Institute, Oak Ridge National Laboratory*. Oak Ridge, TN.
5. Kar, B. and Cochran, D. M. (February 2015). Geo-targeting At-risk Communities for Effective Crisis Communication - Public Perceptions of and Responses to Emergency Alert and Warning Devices. *Texas A & M - Galveston*.
6. Kar, B. & Cochran, D. M. (November 2014). Geo-targeting At-risk Communities for Effective Crisis Communication. *Department of Homeland Security - S & T Directorate*.

7. Kar, B., Cochran, D. M., Bass, J., **Zale, J. and **Dickens, J. (October 2014). Geo-targeting At-risk Communities for Effective Crisis Communication. *Colloquium - Department of Geography, University of Alabama*. Tuscaloosa, AL.
8. Kar, B. (October 2009). Why Scale Matters: Hazard Research Perspective. *Geoforum - Department of Geography & Geology. USM*. Hattiesburg, MS.

RESEARCH SUPPORT

Completed Research Support

1. National Science Foundation (NSF) – MRI: *Acquisition of a shared high-performance computing cluster (HPC) for research, training and institutional use*, \$684,600, Role: Co-PI (PI: Dr. Gopinath Subramaniam, School of High Performance Materials), Duration: 08/01/2016 - 07/31/2019.
2. National Science Foundation (NSF) - Infrastructure Management and Extreme Events: *Improving economic resilience of the U.S. Gulf Coast communities to coastal hazards*, \$306,793.00, Role: PI, Duration: 1/1/2014 - 5/31/2017 (Grant # CMMI-1335187).
3. NSF – Research Experience for Undergraduates, \$2,500.00 (Grant # CMMI-1335187).
4. Department of Homeland Security (DHS): *An integrated approach to geo-target at-risk communities and deploy effective crisis communication approaches*, \$442,091.00, Role: PI, Duration: 09/24/2012 – 05/31/2016 (Grant # HSHQDC-12-C-00057).
5. Office of Vice-Provost of Research (USM), *Social media: A potential warning/alert platform?* \$2,000.00 (Data Purchase), Role: PI.
6. The University of Southern Mississippi Lucas Endowment Award, *An integrated approach to storm surge risk assessment and mitigation in South Mississippi*, \$3,800.00. Role: PI, Duration: 06/01/2011 – 08/01/2011.
7. SERRI Oak Ridge National Laboratory, *Modeling micro-economic resilience and restoration after a large-scale catastrophe: An analysis of the Gulf Coast after hurricane Katrina*, Role: Mentor to a funded graduate student, Duration: 06/01/2009 – 12/31/2012.
8. SERRI Oak Ridge National Laboratory, *A simulation environment for planning, training, and assessment of emergency response and evacuation capabilities at high consequence sports events*, Role: Mentor to a funded graduate student, Duration: 01/01/2009 – 08/01/2010.

HONORS AND AWARDS

1. 2016: ASPRS Presidential Citation (*ASPRS*)
2. 2013: Scientific Teaching Seminar, and Service Learning Fellowship (*USM*)
3. 2011: Quality Enhancement Plan Seminar, and Lucas Endowment for Faculty Excellence (*USM*)
4. 2010: Summer Institute for Advanced Study of Disaster and Risk (*Beijing Normal University, China*)
5. 2009: Enabling the Next Generation of Hazard Researchers (*National Science Foundation*)
6. 2007: Travel Grant Award (*ASPRS*) and Jeanne X. Kasperson Award (*AAG*)
7. 2004: Certificate of Appreciation - Volunteer GIS Support (*FEMA*)
8. 2002: Initiatives for Woman Award (*IFW: University at Albany, Albany: NY*)

PRESS RELEASES

1. <http://news.usm.edu/article/southern-miss-geography-team-studies-emergency-communications-diverse-mississippi-communitie>
2. <http://www.hattiesburgamerican.com/story/news/education/usm/2016/06/26/study-residents-may-ignore-emergency-alerts/86331562/>
3. http://m.wdam.com/wdam/db_389262/contentdetail.htm?contentguid=w7XbgSdW#.V3_7w53TKbA.facebook
4. <http://www.myfox23.com/#!/Two-Southern-Miss-professors-work-with-Homeland-Security-to-improve-emergency-messaging-alerts/c1xo3/576b0c1f0cf258cfddd81323>

SYNERGISTIC ACTIVITIES

Professional Affiliation

1. American Society for Photogrammetry and Remote Sensing (ASPRS)
2. Association of American Geographers (AAG)
3. American Geophysical Union (AGU);
4. Member – *Bill Anderson Fund (BAF) Feeder Council* and *BAF Student Council Workshop Organizing Committee*;

Manuscript Reviewer

1. Applied Geography
2. Cartography and Geography Information Science
3. Cogent Geoscience
4. Environmental Science and Pollution Research
5. GI Science and Remote Sensing
6. IEEE: Journal of Selected Topics in Earth Observations and Remote Sensing
7. Information Technology for Development
8. International Journal of Geographic Information Science
9. International Journal of Innovative Technology and Creative Engineering
10. Photogrammetric Engineering and Remote Sensing
11. Natural Hazards
12. Natural Hazards Review
13. Southeastern Geographer
14. Urban Planning
15. Chapter reviewer for the Book *Forensic GIS: The Role of Geospatial Technologies for Investigating Crime and Providing Evidence*

Proposal Reviewer

1. *National Science Foundation*: Infrastructure Management and Extreme Events, Geography and Spatial Sciences, Office of International Science and Engineering, Computer and Information Science and Engineering
2. *Department of Homeland Security*: Science and Technology Directorate
3. *Social Sciences and Humanities Research Council of Canada*
4. *AAG Hazard Specialty Group*: Gilbert White Award
5. *Public Entity Risk Institute*: Dissertation Fellowship

Editor

1. Associate Editor, *IEEE - Natural Hazards Review* (2016 – continuing)
2. Guest Associate Editor, *Natural Hazards Review* (2010 – 2016)
3. Co-Editor (Dr. Bandana Kar (ORNL) and Dr. D. M. Cochran (USM)), Invited Book for Routledge – *Understanding the Roles of Risk Communication in Community Resilience Building* (Expected publication date: April 2018).
4. Co- Guest Editor (Dr. Bandana Kar (ORNL), Dr. ZhiQiang Chen (University of Missouri, Kansas City), Dr. Margaret Glasscoe (NASA/JPL), Dr. M. Royder (University of California, Davis)), Special Issue “Geospatial Big Data Sensing, Modeling, and Machine Learning for Seismic Risk Reduction (DRRTG)”, *Journal of Geophysics* (Current)
5. Editorial Board Member, *Southeastern Geographer* (2015 – continuing)
6. Editor, *GIS Section of ASPRS Glossary* (2013 - 2014)
7. Co- Guest Editor (Dr. Bandana Kar (USM), Dr. Muki Haklay (University College, London), Dr. Rina Ghose (University of Wisconsin, Milwaukee), Dr. Renee Sieber (McGill University)), Special Issue “PGIS”, *The Cartographic Journal* (2016)

USM Services

1. Research Award Committee Member - *College of Science and Technology (CoST)* (2016 – 2018)
2. CoST Representative - *Creation of Qualtrics' Management Plan* (2013)
3. Awards Committee Member - *CoST* (2012 – 2015)
4. Revision of the Geographic Information Technology curriculum - *Department of Geography & Geology* (2016)
5. WEAVE Assessment of GIT Certificate Program, *Department of Geography & Geology* (2014 - 2016)
6. Reviewer - *Eagles Scholars Program for Undergraduate Research* (2014 - Continuing)
7. Judge and Reviewer - *Undergraduate Research Symposium* (2012 - 2013)
8. Computer lab maintenance - *Department of Geography & Geology* (2009 - Continuing)
9. Presenter and Discussant - *2nd SMM Gulf Coast Student Chapter Symposium* (2011)
10. Event Supervisor and Judge - *Road Scholar Event of Mississippi Science Olympiad* (2011)
11. Graduate Coordinator - *Geography Program* (2009 - 2011)
12. Department Representative - *Directors of Graduate Studies Committee* (2009 - 2011)
13. Department Representative - *CoST Faculty Council* (2009 – 2010).

Others

1. ***Association of American Geographers (AAG)***
 - a. Co-organizer, *Paper sessions under GIScience and Hazards theme at the 2018 Annual Meeting of the AAG*, New Orleans, LA (<http://annualmeeting.aag.org/hazards>).
 - b. Organizer and Co- Chair (other Co-Chairs: Dr. Hodgson, Dr. Tom Cova (University of Utah)), 2 *Paper sessions on Hazards and GIScience at the 2018 Annual Meeting of the AAG*, New Orleans, LA.
 - c. Organizer and Co-Chair (other Co-Chair: Dr. David M. Cochran), 2 *Paper sessions on Risk Communication and Resilience at the 2018 Annual Meeting of the AAG*, New Orleans, LA.
 - d. Organizer and Co- Chair (other Co-Chairs: Dr. Hodgson, Dr. Tom Cova (University of Utah)), 3 *Paper sessions on Hazards and GIScience at the 2017 Annual Meeting of the AAG*, Boston, MA.
 - e. Organizer and Co-Chair (other Co-Chair: Dr. David M. Cochran), 2 *Paper sessions on Risk Communication and Resilience at the 2017 Annual Meeting of the AAG*, Boston, MA.
 - f. Organizer and Co- Chair (other Co-Chairs: Dr. Hodgson, Dr. Tom Cova (University of Utah), Dr. Rutherford Platt (Gettysburg College)), 3 *Paper sessions on Hazards and GIScience at the 2016 Annual Meeting of the AAG*, San Francisco, CA.
 - g. Organizer and Chair, 1 *Paper session on Geoweb and Citizen Science at the 2016 Annual Meeting of the AAG*, San Francisco, CA.
 - h. Organizer and Co-Chair (other Co-Chair: Dr. David M. Cochran), 2 *Paper sessions on Risk Communication and Resilience at the 2016 Annual Meeting of the AAG*, San Francisco, CA.
 - i. Panelist, *Sexual Harassment in Fieldwork and Laboratory Settings: A Discussion on Existing Policy Frameworks and Developing a Guide to Best Practices for Geography at the 2015 Annual Meeting of the AAG*, Chicago, IL.
 - j. Organizer and Co-Chair (other Co-Chairs: Dr. M. Haklay (University College of London), Dr. Rina Ghose (University of Wisconsin, Milwaukee), Dr. Hilary Geoghagen (University of Reading) and Dr. Renee Sieber (McGill University)), 4 *paper and 1 panel sessions on Looking Backwards and Forwards in Participatory GIS*, 1 *paper session on Citizen Science and Geoweb* and 1 *paper session on GeoPrivacy and Big Data*, 2015 AAG, Chicago, IL.
 - k. Organizer and Co-Chair (other Co-Chair: Dr. David M. Cochran), 2 *Paper sessions on Resilience and Risk Communication at the 2015 Annual Meeting of the AAG*, Chicago, IL.
 - l. Organizer and Co-Chair (other Co-Chair; Dr. Melissa Rura), 2 *paper and 2 panel sessions on Location Based Privacy* and 1 *paper session on Error and Accuracy Assessment and Data Fusion*, 2014 AAG, Tampa, FL.

2. **American Society for Photogrammetry and Remote Sensing (ASPRS)**
 - a. Member, *Technical Program Sub-Committee (TPSC) for 2018 Annual meeting of ASPRS*, February 2018, Denver, CO
 - b. Director, *GIS Division (2017 - 2019)*
 - c. Vice-Chair, *Technical Division Directors Council (TDDC) for 2019 – 2020 Annual Meeting of ASPRS*
 - d. Organizer and Co-Chair, *Frontier Day-STEM Events at 2017 Annual Meeting of the ASPRS*, March 2017, Baltimore, MD.
 - e. Organizer and Co-Chair, *Frontier Day-STEM Events at 2016 Annual Meeting of the ASPRS* (April 2016), Dallas/Ft. Worth, TX.

3. **Bill Anderson Fund (BAF)**
 - a. Co-organizer – *BAF Student Council Workshop* - April 2017, Omaha, NE; July 2017, Broomfield, CO; November 2017, Delaware.
 - b. Speaker, *BAF Student Council Workshop* (July 2016), Broomfield, CO.
 - c. Organizer, *1st Annual BAF Student Council Workshop at the Natural Hazards Research and Application Workshop* (July 2015), Broomfield, CO.

4. **ACM Sigspatial GeoAI Workshop**
 - a. Co-organizer – *2017 GeoAI Workshop*, November 2017, Redondo Beach, CA.

5. **Other**
 - a. Program Committee Member, *Workshop on Using Big Data to Understand Spatial Connectivity at the 2014 IEEE Big Data*,
 - b. Program Committee Member, *Gateways*, October 2017, University of Michigan, Ann Arbor
 - c. Program Committee Member, *Gateways*, September 2018, University of Texas, Austin
 - d. Panelist, *Wireless Emergency Alerts: The Edge of the Wave at the 2014 Annual Natural Hazards Research and Applications Workshop*, Broomfield, CO.
 - e. Reviewer, *ESRI and Digital Globe* (ASPRS 2014)
 - f. Mississippi State Representative, *SEDAAG* (2014 – 2015)
 - g. Member of the Audit Committee – *SEDAAG* (2010 – 2012)
 - h. Reviewer and contributor, *ASPRS Glossary* (2011 – 2013)
 - i. Moderator for the session, *Web/Data Transfer II Session (2006 ASPRS)*
 - j. Discussant for the session, *Urban Application of GIS Session (2005 SEDAAG)*

COLLABORATORS

1. **Collaborators:**
 - a. *University of California, Irvine* – Lisa G. Ludwig, John Rundle
 - b. *University of California, Davis* – Mark Yoder
 - c. *USM: Geography & Geology*: David M. Cochran; *School of Computing*: Andrew Sung, Beddhu Murali, Joe Zhang; *College of Health*: Hwanseok Choi, Michelle Brazail; *School of Public Work*: Joohee Lee, Bret Blackmon, Tim Rehner; *Marine Science*: Jerry Wiggert; *Polymer Science*: Gopinath Subramaniam.
 - d. *University of Maryland – DHS START Center of Excellence*: Brooke Fisher Liu, Michael Egnoto
 - e. *University of Missouri – Kansas City*: ZhiQiang Chen
 - f. *Texas State University*: Edwin Chow
 - g. *NASA JPL*: Dr. Margaret Glasscoe
 - h. *ImageCat Inc.*: Ron Eguchi, Charles Huyck

2. Graduate Advisors:

- a. *University of South Carolina, Columbia* - Michael E. Hodgson, John R. Jensen, Susan L. Cutter, Don Edwards.
- b. *State University of New York at Albany* - Floyd M. Henderson.

3. Graduate Advisor and Committee Chair (University of Southern Mississippi):

a. *Graduated:*

Ph.D. Geography:

- i. Joslyn Zale: Dissertation - *A geo-computational approach to modeling football stadium evacuation* (2017).
- ii. Xiaohui Liu: Dissertation – *Evaluating relevance and reliability of Twitter data for risk information* (2017).

MS Geography:

- iii. Nicole Callais: Thesis – *The invisible people of the invisible coast: The resilience of the homeless residents of the Alabama, Louisiana and Mississippi Gulf Coasts to Disasters* (2016).
- iv. Luke Wylie: Thesis - *Fire and fuels: vegetation change over time in the Zuni Mountains, New Mexico* (2016).
- v. Rebecca Lanier: Thesis - *An integrated drought index incorporating physical and social aspects* (2015).
- vi. William Davis: Research Paper - *Mapping the errors of tornado pathcasts: Distance errors and a potential solution to tornado forecast accuracy* (2014).
- vii. Thomas Wissing: Thesis - *Renewable ocean energy site selection using a GIS - Gulf Coast potential* (2013).
- viii. Brian Moore: Thesis - *The use of remote sensing for mapping possible vectors of West Nile Virus in Mississippi* (2012).
- ix. Joslyn Zale: Thesis - *Modeling football stadium evacuation using a Geographic Information System* (2011).

4. Committee Member:

a. *Graduated:*

Ph.D. Geography:

- i. Rick Crowsey: Dissertation - *Coastal hurricane damage assessment via wavelet transform of remotely sensed imagery* (2012).
- ii. Jennifer Bonin: Dissertation - *Quantifying vulnerability after the storm: Hurricane Katrina case study* (2012).

Ph.D. Science Education:

- iii. Kelly Rouse: Dissertation - *Gamification in science education: The relationship of educational games to motivation and achievement* (2014).

Ph.D. Psychology:

- iv. Shauna McBride: Dissertation - *Habitat utilization by bottlenose dolphins, *Tursiops truncatus*, in Roanoke Sound, North Carolina* (2016).

MS Geography:

- v. Brett Hode: Thesis - *Application of error estimation techniques to OSM data: Exploring the accuracy and quality of Volunteered Geographic Information.*
- vi. Matthew Fahrenbruch: Thesis - *Waves of change: Tourism and vulnerability in San Juan Del Sir, Nicaragua.*
- vii. Kayla Pendergrass: Thesis – *Application of a new tree-ring based drought reconstruction method at multiple forest sites across Indiana, U.S.A.*

- viii. Charles White: Thesis – *Human impacts on fire in De Soto national forest, Mississippi, U.S.A.*
- ix. James Dickens

M.S. Computer Science:

- x. Vignan Bundy: Thesis – *Hadoop big data analytics using Java web application* (2016).

- 5. **Undergraduate Advisor/Mentor (USM):** Denton Bushman, Zachary Cooley, James Dickens, Chandler Farris, Hilton Gillespie, Audrey Graves, James Hadley, Margaret Hall, William Kincaid, Cody Knuth, Lucas Lee, Steven Lowery, Brittany McCalip, Steven Mee, Matt Sumrall.
- 6. **Mentor (ORNL):** Adam Brandt (SULI)