

## I. EDUCATION

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

## II. PROFESSIONAL POSITIONS

<b>Oct. 2020 - Present</b>	<b>Group Lead (Acting)</b> , Built Environment Characterization Group, ORNL
<b>Oct. 2018 – Sep. 2020</b>	<b>R &amp; D Staff</b> , Remote Sensing Group, ORNL.
<b>June 2017 – Sep. 2018</b>	<b>R &amp; D Staff</b> , GIST Group, Computational Sciences and Engineering Division, ORNL.
<b>Oct. 2020 - Present</b>	<b>Adjunct Associate Professor</b> , Department of Geography, Environment, and Spatial Sciences, Michigan State University, MI
<b>2019 – Present</b>	<b>Adjunct Associate Professor</b> , Department of Geography, University of Tennessee, Knoxville, TN
<b>2014 – 2017</b>	<b>Associate Professor</b> , Department of Geography and Geology, University of Southern Mississippi (USM), Hattiesburg, MS
<b>2008 – 2014</b>	<b>Assistant Professor</b> , Department of Geography and Geology, USM, Hattiesburg, MS
<b>2007 – 2008</b>	<b>Instructor</b> , Department of Geography, University of South Carolina, Columbia

## III. HONORS AND AWARDS

2020	Outstanding Reviewer for 2019 ( <i>ASCE Journals – Natural Hazards Review</i> )
2019	AAG Emerging Scholar Award ( <i>AAG Regional Development and Planning Specialty Group</i> )
2016	ASPRS Presidential Citation ( <i>American Society for Photogrammetry and Remote Sensing</i> )
2013	Scientific Teaching Seminar, and Service Learning Fellowship ( <i>USM</i> )
2011	Quality Enhancement Plan Seminar, and Lucas Endowment for Faculty Excellence ( <i>USM</i> )

- 2010 Summer Institute for Advanced Study of Disaster and Risk (*Beijing Normal University, China*)
- 2009 Fellow - Enabling the Next Generation of Hazard Researchers (*National Science Foundation* - <https://projects.ncsu.edu/project/nextgen/>)
- 2007 Travel Grant Award (*ASPRS*) and Jeanne X. Kasperson Award (*AAG*)
- 2004 Certificate of Appreciation - Volunteer GIS Support (*FEMA*)
- 2002 Initiatives for Woman Award (*IFW: University at Albany, Albany: NY*)

#### IV. PUBLICATIONS

##### A. Peer Reviewed Manuscripts

- 2020 X. Liu, **B. Kar**, F. A. M. Ishino, C. Zhang, F. Williams. "Assessing the Reliability of Relevant Tweets and Validation Using Manual and Automatic Approaches for Flood Risk Communication". *ISPRS International Journal of Geo-Information*, 9(9), 532, <https://doi.org/10.3390/ijgi9090532>.
- 2020 J. A. Tullis and **B. Kar**. "Where is the Provenance? Ethical Replicability and Reproducibility in GIScience and its Critical Applications". *Annals of the American Association of Geographers*. <https://doi.org/10.1080/24694452.2020.1806029>
- 2020 S. Kotikot, **B. Kar**, O. A. Omitaomu. "A Geospatial Framework Using MultiCriteria Decision Analysis for Strategic Placement of Transformers and Generator Reserves in Puerto Rico". *IEEE Transactions on Engineering Management*, 1-11. DOI - 10.1109/TEM.2020.2964606.
- 2019 S. McBride-Kebert, J. S. Taylor, K. A. Wilkinson, H. Lyn, F. R. Moore, D. F. Sacco, **B. Kar**, and S. A. Kuczaj II. "Common Bottlenose Dolphins, *Tursiops truncatus*, Seasonal Habitat Use and Associations with Habitat Characteristics in Roanoke Sound, North Carolina". *International Journal of Comparative Psychology*.
- 2019 S. McBride-Kebert, J. S. Taylor, H. Lyn, F. R. Moore, D. F. Sacco, **B. Kar**, S. A. Kuczaj II. "Controlling for Survey Effort is Worth the Effort: Comparing Bottlenose Dolphins (*Tursiops truncatus*) Habitat Use Between Standardized and Opportunistic Photo-identification Surveys". *Aquatic Mammals* 45, no. 1: 21-29. DOI- 10.1578/AM.45.1.2019.21
- 2019 X. Liu, **B. Kar**, C. Zhang, D. Cochran. "Assessing Relevance of Tweets for Risk Communication". *International Journal of Digital Earth* 12, no. 7: 781-801. <https://doi.org/10.1080/17538947.2018.1480670>.
- 2018 J. J. Zale, **B. Kar**, D. Cochran. "Optimizing Stadium Evacuation by Integrating Geo-computation and Affordance Theory". *Journal of Emergency Management* 16, no. 2: 81-93. [10.5055/jem.2018.0357](https://doi.org/10.5055/jem.2018.0357)
- 2018 J. Lee, B. Blackmon, D. Cochran, **B. Kar**, T. Rehner. "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* 12, no. 2: 241-248.
- 2017 B. Blackmon, J. Lee, D. Cochran, **B. Kar**, T. Rehner. "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* 32, no. 2:65-76.

- 2016 **B. Kar**, R. Sieber, M. Haklay, R. Ghose. “Public Participation GIS and Participatory GIS in the Era of GeoWeb”. *The Cartographic Journal* 53, no. 4: 296-299. <http://dx.doi.org/10.1080/00087041.2016.1256963>.
- 2015 **B. Kar**. “Citizen Science in Risk Communication in the Era of ICT”. *Journal of Concurrency and Computation: Practice and Experience* 28, no. 7: 2005 – 2013.
- 2015 B. Cumbie and **B. Kar**. “The Role of Social Media in U.S. County Governments: The Strategic Value of Operational Aimlessness”. *International Journal of Electronic Government Research* 11, no. 1:1-20.
- 2014 B. Cumbie and **B. Kar**. “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.
- 2013 **B. Kar**, R. C. Crowsey and J. J. Zale. “The Myth of Location Privacy in the U.S.: Surveyed Attitude vs. Current Practices”. *The Professional Geographer*, 65, no. 1: 47-64.
- 2012 **B. Kar** and M. E. Hodgson. “A Process Oriented Areal Interpolation Technique: A Coastal County Example”. *Cartography and Geographic Information Science*, 39, no. 1:3-16.
- 2012 **B. Kar** and M. E. Hodgson. “Observational Scale and Modeled Potential Residential Loss from a Storm Surge”. *GISRS*, 49, 202-227.
- 2012 J. J. Zale and **B. Kar**. “A GIS-based Football Stadium Evacuation Model”. *Southeastern Geographer* 52, no. 1:70 - 89.
- 2008 **B. Kar** and M. E. Hodgson. “A GIS-Based Model to Determine Site Suitability of Emergency Evacuation Shelters”. *Transactions in GIS*, 12, no. 2 (2008):227-248.
- 2008 M. E. Hodgson and **B. Kar**. “Modeling the Potential Swath Coverage of Nadir and Off-nadir Pointing Remote Sensing Satellite-Sensor Systems”. *Cartography and Geographic Information Science*, 35, no. 3:147-156.

## **B. Books and Book Chapters**

- 2019 J. A. Tullis, K. Corcoran, R. Ham, **B. Kar** and M. Williamson. “Multiuser Concepts and Workflow Replicability in sUAS Applications”. In *Best Practices in sUAS Applications in Education, Research, Outreach and Service*, edited by J.B. Sharma, Taylor and Francis. ISBN # 978-0-367-19924-1.
- 2019 **B. Kar** and D. Cochran (Eds.). *Risk Communication and Community Resilience*. Routledge, London, England.
- 2019 **B. Kar**, D. Cochran, J. J. Zale, N. E., Callais, X. Liu. “Public Expectation of and Responses to WEA Message Content”. In **B. Kar** and D. Cochran (Eds.), *Risk Communication in Community Resilience Building*. Routledge, London, England.
- 2018 O. A. Omitaomu, **B. Kar**, R. J. Belles, M. P. Poore, G. T. Mays, B. L. Bhaduri. “Innovative Approaches to Infrastructure Resilience: A Case Study Department of Defense Sites for Small Modular Reactors”. In A. B. Badiru and C. B. Barlow (Eds.), *Defense Innovation Handbook – Guidelines, Strategies, and Techniques*, pp. 281-312. CRC Press.
- 2017 **B. Kar**. “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*, pp. 70-73. The National Academies Press, Washington D.C.

- 2017 **B. Kar** and E. Chow. “Fusion of Multi-scaled Spatial and Temporal Data: Techniques and Issues”. In D. A. Quattrochi, E. A. Wentz, N. Lam and C. Emerson (Eds.), *Integrating Scale in Remote Sensing and GIS*, pp. 95 – 124. Taylor and Francis, Boca Raton, FL.
- 2017 E. Chow and **B. Kar**. “Error and Accuracy Assessment for Fused Data: Remote Sensing and GIS”. In D. A. Quattrochi, E. A. Wentz, N. Lam and C. Emerson (Eds.), *Integrating Scale in Remote Sensing and GIS*, pp. 125-157. Taylor and Francis, Boca Raton, FL.
- 2014 **B. Kar**. “Disaster Risk Reduction: A Comparative Assessment of Policies in US and China”. In A. Awotona (Ed.) *Rebuilding Sustainable Communities after Disasters in China, Japan and Beyond*, pp. 131-169. Cambridge Scholars Publishing, New Castle.
- 2013 **B. Kar**. “Decision Support Tools”. In K. B. Penuel, M. Statler and R. Hagen (Eds.), *Encyclopedia of Crisis Management*, pp. 255-257. Cambridge Scholars Publishing, New Castle.
- 2013 **B. Kar**. “Principles of Emergency Management”. In K. B. Penuel, M. Statler and R. Hagen (Eds.), *Encyclopedia of Crisis Management*, pp. 328-332. Cambridge Scholars Publishing, New Castle.
- 2013 **B. Kar**. “Public Awareness and Education”. In K. B. Penuel, M. Statler and R. Hagen (Eds.), *Encyclopedia of Crisis Management*, pp. 765-770. Cambridge Scholars Publishing, New Castle.

#### C. Agency Reviewed Technical Reports

- 2020 O. A. Omitaomu, R. J. Belles, **B. Kar**, N. Roberts. “Adaptation of OR\_SAGE for NES Analysis”. Department of Energy (DoE).
- 2019 O. A. Omitaomu, R. J. Belles, **B. Kar**. “Advanced Reactor and Fuel Cycle Siting Tools and Considerations”. Department of Energy (DoE).
- 2019 O. A. Omitaomu, S. Kotikot, **B. Kar**. “Identification of Potential Locations for Placement of Strategic Transformers Reserve in Puerto Rico”. Department of Energy (DoE).
- 2016 **B. Kar** and D. Cochran. “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>.

#### D. Peer-Reviewed Proceeding Papers

- 2020 A. Roy and **B. Kar**. “Characterizing the Spread of COVID-19 from Human Mobility Patterns and SocioDemographic Indicators”. In *Proceedings of 3<sup>rd</sup> ACM SIGSPATIAL International Workshop on Advancements in Resilient and Intelligent Cities*.
- 2020 P. Sharma, M. Zhang, J. Wang, **B. Kar**, D. Bausch, Z. Chen, K. Tiampo, M. Glasscoe, G. Schumann, M. Pierce, R. Eguchi. “DisasterAWARE-A Global Alerting Platform for Flood Events”. *Climate Change and Disaster Management – Technology and Resilience in a Troubled World - Geographic Information for Disaster Management (GI4DM)*.

- 2020 T. Moss and **B. Kar**. “Socio-Economic Vulnerability to Urban Heat in Dallas, TX During the 2020 Covid-19 Pandemic”. *Climate Change and Disaster Management – Technology and Resilience in a Troubled World - Geographic Information for Disaster Management (GI4DM)*.
- 2020 **B. Kar**, D. Bausch, J. Wang, P. Sharma, Z. Chen, G. Schumann, M. Pierce, K. Tiampo, R. Eguchi and M. Glasscoe. “An Integrated Model of Models for Global Flood Alerting”. *7<sup>th</sup> International Conference on Flood and Urban Water Management (FRIAR 2020 - <https://www.wessex.ac.uk/conferences/2020/friar-2020>)*, September 2020.
- 2019 **B. Kar**, E. Chow, N. Dede-Namfo, X. Liu. “Using Social Media to Geo-target Emergency Management Efforts”. In *Proceedings of the 5<sup>th</sup> ACM SIGSPATIAL International Workshop on the use of GIS in Emergency Management (EM-GIS 2019)*. Chicago, IL. DOI: 10.1145/3356998.3365769.
- 2019 **B. Kar** and J. Ethridge. “Mobility Pattern Analysis for Recovery and Restoration Activities Using Geo-Tagged Tweets”. In *Proceedings of 2<sup>nd</sup> ACM SIGSPATIAL International Workshop on Advancements in Resilient and Intelligent Cities*. Chicago, IL. DOI: 10.1145/3356395.3365547.
- 2018 O. A. Omitaomu and **B. Kar**. “Understanding Infrastructure Dependency During Natural Hazard Events for Actionable Disaster Responses”. In *Proceedings of the 2018 IISE Annual Conference*. Orlando, FL. ISBN: 978-1-5108-6935-6.
- 2014 **B. Kar** and R. Ghosh. “Is My Information Private? Geo-privacy in the World of Social Media”. In *GIO @ GIScience*, pp. 28-31.
- 2014 B. Cumbie and **B. Kar**. “Socially Awkward: Social Media Usage in County-Level Government”. In *Proceedings of the 20th Americas Conference of Information Systems*. Savannah, GA.

#### E. Peer-Reviewed Workshop Paper

- 2019 **B. Kar**. “Multi-user and Collaborative Framework for Reproducibility and Replicability”. In *2019 Replicability and Reproducibility in Geospatial Research: A SPARC Workshop, 2019, Tempe, AZ. [https://sgsup.asu.edu/sites/default/files/replicability\\_and\\_reproducibility\\_in\\_geospatial\\_research\\_final.pdf](https://sgsup.asu.edu/sites/default/files/replicability_and_reproducibility_in_geospatial_research_final.pdf)*

#### F. Peer-Reviewed Book Reviews

- 2012 **B. Kar**. Review of *Key Methods in Geography*, edited by N. Clifford, S. French, and G. Valentine, 2010, *Southeastern Geographer* 52, no. 4 (2012):448 – 450.
- 2012 **B. Kar**. Review of *Spatial Statistics: Geospatial Information Modeling and Thematic Mapping*, by M. A. Kalkhan, Boca Raton, FL: CRC Press, 2011, *Photogrammetric Engineering and Remote Sensing* 78, no. 9 (2012): 915 - 916.
- 2004 **B. Kar**. Review of *The Vulnerability of Cities: Natural Disasters and Social Resilience*, by M. Pelling, London, UK: Earthscan Publications Ltd, 2003, *Natural Hazards Review* 5, no. 4(2004): 195-196.

#### G. Published Reports

- 2019 **B. Kar**, O. A. Omitaomu, X. Ye, S. Mohebbi and G. Fu. *ARIC 2019 Workshop Report. <https://dl.acm.org/doi/10.1145/3383653.3383660>*.

- 2012 Solis, P., et al. “Trustworthy GeoAI for Resilience: A Multi-sector Conceptual Framework and Research Agenda [White Paper]”. *Arizona State University Knowledge Exchange for Resilience*. Available from: [bit.ly/trustworthygeoai](https://bit.ly/trustworthygeoai)

## H. In Review and In Preparation

1. ZhiQiang Chen, M. Glasscoe, R. Eguchi, C. Huyck and **B. Kar** (in review). “Roles of Remote Sensing Technologies for Disaster Resilience”. In *Objective Resilience Manual of Practice (OR-MOP)*, edited by M. Ettouney.
2. A. Roy and **B. Kar** (in review). “A Multicriteria Decision Analysis Framework to Measure Accessibility to Healthcare Facilities in the Wake of CoVID-19”. *2021 Transportation Research Board Annual Meeting*.
3. Sean G. Young, J. Datta, **B. Kar**, X. Huang, M. D. Williamson, J. A. Tullis and J. Cothren (in preparation). “Challenges and limitations of geospatial data in the context of COVID-19”. In S. Shaw and D. Sui (Eds.) *Human Dynamics in Smart Cities*, Springer.
4. W. Straka, **B. Kar**, et al. (in review). “Examining the Economic and Environmental Impacts of COVID-19 Using Earth Observation Data”. *IJGI*.
5. D. M. Cochran, J. Zale, **B. Kar** (in preparation). “Response of Spanish Population to Risk Communication: A Case Study of Mississippi Gulf Coast”. *Professional Geographer*.

## V. GRANTS

### A. Current Research Project

- |             |   |
|-------------|---|
| 2020 – 2021 | <b>PI.</b> “Forecasting and Mapping Power Restoration Time following Extreme Events”, <i>DoE</i> , \$1,000,000.   |
| 2020 – 2021 | <b>Co-PI.</b> “Energy Infrastructure Damage Identification and Assessment Utilizing Imagery from Earth Observation Satellites and Airborne Systems”, <i>DoE</i> , \$950,000. (PI: Dr. David Hughes, ORNL).  |
| 2020 – 2021 | <b>Co-PI.</b> “Situational-Temporal Awareness for Integrated Oil and Natural Gas Systems (STATIONS)”, <i>DoE</i> , \$900,000. (PI: John Brewer, National Energy Technology Laboratory).   |
| 2019 – 2023 | <b>Co-PI.</b> “Advancing Access to Global Flood Modeling and Alerting Using the PDC DisasterAWARE Platform and Remote Sensing Technologies”, <i>NASA-ROSES</i> ( <a href="https://appliedsciences.nasa.gov/what-we-do/projects/advancing-access-global-flood-modeling-and-alerting-using-pdc-disasteraware">https://appliedsciences.nasa.gov/what-we-do/projects/advancing-access-global-flood-modeling-and-alerting-using-pdc-disasteraware</a> ), \$1.4 million. (PI: Dr. Margaret Glasscoe, NASA/JPL) (Grant: IAT #80HQTR19T0105). |

### B. Completed Research Support

- |             |  |
|-------------|--|
| 2019        | <b>Task Lead</b> (CyberGIS Deployment). “Oak Ridge Advanced Fuel Cycle Logistics Environment”, <i>DoE</i> , \$500,000. (PI: Olufemi A. Omitaomu – ORNL).                       |
| 2017 – 2019 | <b>Task Lead</b> (Building Outline Regularization). “USA Structure Detection Project”, <i>Department of Homeland Security (DHS)</i> , \$4 million. (PI: Budhu Bhaduri – ORNL). |
| 2018 – 2019 | <b>Task Lead</b> (Imagery Analytics Architecture Development). “GMS Data Analytics”, <i>DoE</i> , \$250,000. (PI: Craig Moss – ORNL).  |

- 2018 **Task Lead** (Spatial Optimization of Power Infrastructure Deployment). “Identification of Potential Locations for Placement of Strategic Transformers Reserve in Puerto Rico”, *DoE*, \$350,000. (PI: Olufemi A. Omitaomu - ORNL).
- 2016 – 2019 **Co-PI**. “Acquisition of a Shared High-Performance Computing Cluster (HPC) for Research, Training and Institutional Use”, *National Science Foundation (NSF) – MRI*, \$684,600. (PI: Gopinath Subramaniam, USM).
- 2014 – 2017 **PI**. “Improving Economic Resilience of the U.S. Gulf Coast Communities to Coastal Hazards”, *NSF – IMEE*, \$306,793 (Grant # CMMI-1335187).
- 2017 **PI**. “Improving Economic Resilience of the U.S. Gulf Coast Communities to Coastal Hazards”, *NSF - Research Experience for Undergraduates*, \$2,500. (Grant # CMMI-1335187).
- 2012 – 2016 **PI**. “An Integrated Approach to Geo-Target At-Risk Communities and Deploy Effective Crisis Communication Approaches”, *DHS*, \$442,091 (Contract # HSHQDC-12-C-00057).
- 2012 **PI**. “Social Media: A Potential Warning/Alert Platform?”, *USM*, \$2,000.
- 2011 **PI**. “An Integrated Approach to Storm Surge Risk Assessment and Mitigation in South Mississippi”, *USM Lucas Endowment Award*, \$3,800.

## VI. PRESENTATIONS

### A. Papers Presented in Academic Conferences

- 2020 **B. Kar**, W. Straka, C. Elvidge, S. Kondragunta Z. Wei S. D. Miller, A. Watts. “Examining the Economic and Environmental Impacts of COVID-19 Using Earth Observation Data.” *American Geophysical Union*.
- 2020 A. Roy and **B. Kar**. "Assessing the Impact of Hurricane Sandy on Mobility Patterns in New York City across Scales". *American Geophysical Union*.
- 2020 M. Glasscoe, **B. Kar**, D. Bausch, G. Hempe, C. Chiesa, K. Tiampo, Z. Chen, G. Schumann, R. Eguchi, C. Huyck, M. Pierce, J. Wang. “Rapid Flood Severity Classification and Alerting for the Spring 2020 Africa Floods: A Case Study.” *American Geophysical Union*.
- 2020 D. Wanyama, **B. Kar**, N. Moore. “Quantitative Multi-Factor Characterization of Ecological Vulnerability in the Mount Elgon Ecosystem". *American Geophysical Union*.
- 2020 C. Woods, K. Tiampo, M. Glasscoe, M. Pierce, **B. Kar**, D. Bausch, G. Schumann. “An Automated Approach to Flood Detection Through a Threshold Based Method and Machine Learning using Sentinel-1A/B SAR Data.” *American Geophysical Union*.
- 2020 S. Ghosh, C. Huyck, R. Eguchi, M. Glasscoe, B. Kar, K. Tiampo, Z. Chen, D. Bausch. “Earth Observation (EO) Based Critical Infrastructure Exposure Models and Flood Forecasting Techniques for Risk Monitoring and Management for the City of Vadodara, India.” *American Geophysical Union*.

- 2020 **B. Kar**, D. Bausch, J. Wang, P. Sharma, Z. Chen, G. Schumann, M. Pierce, K. Tempo, R. Eguchi, M. Glasscoe. “An Integrated Model of Models for Global Flood Alerting”. *7<sup>th</sup> International Conference on Flood and Urban Water Management (FRIAR 2020)*.
- 2020 Guy J.-P. Schumann, Margaret Glasscoe, Douglas Bausch, Marlon Pierce, Jun Wang, ZhiQiang Chen, Ronald Eguchi, Charles Huyck, Kristy Tiampo, and **B. Kar**. “Using a Model-of-Models Approach and Remote Sensing Technologies to Improve Flood Disaster Alerting”. *EGU General Assembly 2020, Online May4th – 8th<sup>th</sup>*. <https://doi.org/10.5194/egusphere-egu2020-13113>.
- 2019 **B. Kar**. “Understanding Human-Environment Interaction Through the Lens of Resilience Framework and Smart Initiatives”. *Gulf of Mexico Research Initiative (GoMRI) Workshop: Living on the Edge: Enhancing the Sustainability of Coupled Human-Environment Systems in the Gulf of Mexico Region*. Mobile, AL.
- 2019 **B. Kar**, D. M. Cochran, J. Zale, X. Liu and N. Callais. “Understanding the Socio-Spatial Variation of Perception of Resilience Among the Mississippi Gulf Coast Communities”. *CNERP - 6<sup>th</sup> National Forum on Socioeconomic Research in Coastal Systems*, May 2019. New Orleans, LA.
- 2019 H. Roberts, **B. Kar**, E. Petrun Sayers. “The Role of Citizen Science in Hurricane Risk Communication Efforts”. *International Crisis and Risk Communication Conference*. Orlando, FL.
- 2019 **B. Kar**, O. A. Omitaomu, S. Kotikot. “Evaluating the Effectiveness of VIIRS Day-Night Band Data for Power Outage Impact Assessment”. *AAG*. Washington D.C.
- 2019 D. M. Cochran and **B. Kar**. “What is the Best Emergency Warning Device? Perceptions of Households and Emergency Management Agencies on the Mississippi Gulf Coast”. *AAG*. Washington D.C.
- 2019 **B. Kar**, S. Kotikot, and O. A. Omitaomu. “Using VIIRS Day/Night Band (DNB) for Estimating Population Density Distribution”. *American Society for Photogrammetry and Remote Sensing (ASPRS)*. Denver, CO.
- 2018 O. A. Omitaomu and **B. Kar**. “Understanding Infrastructure Dependency During Natural Hazard Events for Actionable Disaster Response”. *Institute of Industrial and Systems Engineers (IISE) Annual Conference*. Orlando, FL.
- 2018 **B. Kar**, E. Chow, X. Liu. “Analyzing Tweets to Understand Spatio-temporal Variability of Situational Awareness Information”. *AAG*. New Orleans, LA.
- 2018 D. Cochran, **B. Kar**, J. Lee, B. Blackmon, H. Choi, T. Rehner. “Community Resilience, Experience, and Perception as Factors Associated with Preparedness Among Residents in Coastal Mississippi”. *AAG*. New Orleans, LA.
- 2018 **B. Kar**. “Variability of Big Data Relevance for Disaster Situational Awareness Across Events”. *ASPRS*. Denver, CO.
- 2018 S. Kotikot, **B. Kar**, O. A. Omitaomu. “VIIRS Day/Night Band (DNB) Data for Monitoring Power Recovery: Application and Challenges – Case study of Puerto-Rico following Hurricane Maria”. *GeoSymposium*. Knoxville, TN.
- 2018 A. Brandt and **B. Kar**. “Understanding the Dynamics of Urban Heat Islands: A look at Mobility”. *GeoSymposium*. Knoxville, TN.
- 2017 **B. Kar**. “Crowdsourcing to Citizen Science – Assessing Big Data Relevance for Situation Awareness”. *AAG*. Boston, MA.

- 2017 D. Cochran, **B. Kar**, J. Lee, B. Blackmon, T. Rehner. “Socio-Spatial Characteristics and Experience as Factors Influencing Variations in Perceptions of Risk and Resilience on the Mississippi Gulf Coast”. *AAG*. Boston, MA.
- 2017 X. Liu and **B. Kar**. “Evaluating the Relevance of Risk Information Using Spatiotemporal Analysis and Data Mining Techniques”. *AAG*. Boston, MA.
- 2017 **B. Kar**. “Increasing Situational Awareness of WEA Messages for At-Risk Communities”. *ASPRS*. Baltimore, MD.
- 2016 **B. Kar**, D. Cochran, J. Zale, X. Liu and N. Callais. “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.
- 2016 **B. Kar**. “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.
- 2016 **B. Kar** and Z. Chen. “Veracity of Structured and Unstructured Big Data – A Case Study of Emergency Management”. *ASPRS*. Dallas/Ft. Worth, TX.
- 2016 **B. Kar** and Z. Chen. “Big Data Quality – A Comparison of Structured and Unstructured Data During a Disaster. *AAG*. San Francisco, CA.
- 2016 D. Cochran and **B. Kar**. “Ten Years After Katrina, Five Years After Deepwater Horizon: Risk Perception and Resilience Among Residents of the Mississippi Gulf Coast”. *AAG*. San Francisco, CA.
- 2016 N. Callais and **B. Kar**. “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.
- 2016 X. Liu, **B. Kar**, D. Cochran. “Citizen Science and Risk Communication – An Analysis of Social Media vs. Traditional Media”. *AAG*. San Francisco, CA.
- 2016 B. Blackmon, J. Lee, D. Cochran, **B. Kar**, T. Rehner. “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.
- 2015 D. Cochran and **B. Kar**. “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.
- 2015 **B. Kar**. “Citizen Science in Risk Communication in the Era of ICT – CIGIR”. *10<sup>th</sup> Gateway Computing Environments Workshop (GCE15)*. Boulder, CO.
- 2015 **B. Kar**. “Spatio-Temporal Variability of financial Loss: A Case Study of Florida Housing Market”. *AAG*. Chicago, IL.
- 2015 D. Cochran, **B. Kar**, J. Zale, N. Callais, X. Liu, J. Dickens, J. Bass. “Household and Agency Perceptions of Emergency Warning Devices: A Comparative Study from the Mississippi Gulf Coast”. *AAG*. Chicago, IL.
- 2015 J. Zale, **B. Kar**, D. Cochran, N. Callais, X. Liu, J. Dickens, J. Bass. “Spatial Distribution of Trust and Use of Alert and Warning Devices: A Case Study of the Mississippi Gulf Coast”. *AAG*. Chicago, IL.
- 2014 **B. Kar**, D. Cochran, J. Dickens, J. Bass. “Exploring Public Perception of and Reaction to Emergency Alert and Warning System Dissemination Platforms”. *SEDAAG*. Athens, GA.
- 2014 **B. Kar**. “Spatial Granularity vs Property Insurance: A Case Study of Florida Housing Market”. *AAG*. Tampa, FL.

- 2014 **B. Kar** and G. Harley. "Suitability of Remote Sensing Data for African Dust Mapping in the Florida Keys, U.S.A.". *ASPRS*. Louisville, KY.
- 2014 J. Zale, D. Cochran, **B. Kar**, J. Dickens. "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).
- 2013 J. Zale, J. Bass, **B. Kar**, J. Dickens. "An Integrated Approach to Geo-Target At-Risk Communities and Deploy Effective Crisis Communication Approaches. *Natural Hazards Research and Applications Workshop*. Broomfield, CO.
- 2013 J. Zale, J. Bass, **B. Kar**, J. Dickens. "Availability and Coverage of Warning and Alert Communication Platforms in the Mississippi Coastal Communities". *International Research Committee on Disasters Researchers*. Broomfield, CO.
- 2013 **B. Kar**. "LandScan vs. Night Time Imagery: Effectiveness of Each Dataset in Risk Assessment". *AAG*. Los Angeles, CA.
- 2013 **B. Kar**. "Exploring Spatial Relationship Between Coastal Population Density and Inland Distance". *ASPRS*. Baltimore, MD.
- 2012 **B. Kar**. "Decreasing Vulnerability of Coastal Population with Increasing Inland Distance". *MAS*. Hattiesburg, MS.
- 2012 **B. Kar**. "What if Tropical Storm Irene was Hurricane Katrina?" *AAG*. New York City, NY.
- 2011 **B. Kar** and S. Perveen. "Multi-Scale Visualization of Water Stress/Scarcity Assessment". *ASPRS*. Milwaukee, Wisconsin.
- 2011 **B. Kar** and A. Yousafzai. "A Comparative Analysis of Risk Reduction Approaches to the 2010 Flooding of South Asia". *AAG*. Seattle, WA.
- 2011 A. Yousafzai and **B. Kar**. "A Comparative Analysis of Risk Reduction Approaches to the 2010 Flooding of South Asia". *MAS*. Hattiesburg, MS.
- 2011 **B. Kar**, R. Crowsey, J. Zale. "The Myth of Location Privacy in the U.S.: Surveyed Attitude vs. Current Practices". *MAS*. Hattiesburg, MS.
- 2010 S. Perveen and **B. Kar**. "Geo-visualization of Water Stress/Scarcity Assessment Using Different Indicators". *AAG*. Washington D.C
- 2010 **B. Kar**. "Scaling Relationship Between Socio-Physical Vulnerability and Financial Loss. *MAS*. Hattiesburg, MS.
- 2009 **B. Kar**. 2009. "Why Scale Matters: A Hazard Research Perspective?" *SEDAAG*. Knoxville, TN.
- 2009 **B. Kar** and B. W. Richard. "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.
- 2009 **B. Kar** and M. E. Hodgson. "Generalization of Coast Boundary: Comparison of Generalization Techniques". *AAG*. Las Vegas, NV.
- 2009 M. E. Hodgson and **B. Kar**. "Line Definition and Generalization at the Process Scale: A Hurricane Coastline Example". *AAG*. Las Vegas, NV.
- 2009 **B. Kar** and M. E. Hodgson. "What is the Modeled Potential Residential Loss from a Storm Surge?" *ASPRS*. Baltimore, MD.

- 2008 M. Hodgson, B. A. Davis, C. Andris, **B. Kar**. “Adding Historical Image Collections and Future Plans to the Remote Sensing Hazard Guidance System”. *ASPRS*. Portland, OR.
- 2008 **B. Kar** and M. E. Hodgson. “Housing Unit Distribution in Coastal Counties: Comparison of Areal Interpolation Techniques”. *AAG*. Boston, MA.
- 2008 **B. Kar** and M. E. Hodgson. “GIS-Based Modeling of Potential Residential Loss from a Storm Surge”. *South Carolina GIS Conference*. Greenville, SC.
- 2007 **B. Kar** and M. E. Hodgson. “Housing Unit Distribution in Coastal Counties: Comparison of dis-aggregation techniques. *SEDAAG*. Charleston, SC.
- 2007 **B. Kar** and M. E. Hodgson. “Mapping the Potential Swath Coverage of a Remote Sensing Satellite-Sensor Combination”. *SEDAAG*. Charleston, SC.
- 2007 **B. Kar**. “Impact of Scale of Analysis on Property Loss Estimation in Florida: A Comparative Approach”. *ASPRS*. Tampa, FL.
- 2007 M. E. Hodgson, J. R. Jensen, **B. Kar**, M. Garcia-Quijano, L. Lapine. “Overall and Temporal Variability in Horizontal Accuracy of LiDAR Data”. *ASPRS*. Tampa, FL.
- 2007 **B. Kar**. “Spatial Distribution of Potential Residential Loss from a Storm Surge”. *AAG*. San Francisco, CA.
- 2007 M. E. Hodgson, B. A. Davis, Y. Cheng, **B. Kar**. “A Remote Sensing Hazard Guidance System for Analyzing Image Collection Opportunities”. *Coastal GeoTools Conference*. Myrtle Beach, SC.
- 2007 **B. Kar**. “A GIS Based Model to Determine Site Suitability of Emergency Evacuation Shelters”. *South Carolina Arc User Network (SCARC)*. Charleston, SC.
- 2006 **B. Kar**. “Interactive Web-Mapping of SHELDUS”. *ASPRS*. Reno, NV.
- 2006 **B. Kar**. “Spatio-Temporal Distribution of Hazard Loss in the USA”. *AAG*. Chicago, IL.
- 2005 **B. Kar**. “GIS Based Suitability Model to Determine Evacuation Shelters”. *SEDAAG*. West Palm Beach, FL.
- 2005 **B. Kar**. “Criteria, Weights and Geographic Scale of Analysis Used in the Disaster Mitigation Plans”. *AAG*. Denver, CO.
- 2002 **B. Kar**. “Pre-disaster Planning Using Remote Sensing and GIS for Hurricane Affected Areas”. *Workshop on Technologies for Communities*. Rensselaer Polytechnic Institute - Troy, NY.

### Invited Talks

- 2020 **B. Kar**. “Geospatial Science and Big Data for Urban Resilience”. *Department of Geosciences, University of Arkansas*. Fayetteville, AR.
- 2019 **B. Kar**. “Geospatial Science and Big Data for Urban Resilience”. *College of Social Sciences, Michigan State University*. East Lansing, MI.
- 2019 **B. Kar**. “Geospatial Science and Big Data for Urban Resilience”. *College of Arts and Sciences, University of Nebraska*. Lincoln, NE.
- 2019 **B. Kar**. “Exploring the Use of Geospatial Big Data for National Security”. *Oak Ridge Institute for Science and Education (ORISE)*. Oak Ridge, TN.
- 2017 **B. Kar**. “Variability of Big Data Relevance for Disaster Situational Awareness Across Events”. *School of Geology, Energy and the Environment- Texas Christian University*. Fort Worth, TX.

- 2017 **B. Kar.** “The Role of Geospatial Science in Emergency Management and Crisis Informatics”. *Department of Geography - University of Tennessee*. Knoxville, TN.
- 2017 **B. Kar.** “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.
- 2016 **B. Kar.** “Increasing Situational Awareness of WEA Messages for At-Risk Communities”. *Oak Ridge National Laboratory*. Oak Ridge, TN.
- 2015 **B. Kar.** “Geo-targeting At-risk Communities for Effective Crisis Communication - Public Perceptions of and Responses to Emergency Alert and Warning Devices”. *Department of Marine Science - Texas A & M*. Galveston, TX.
- 2014 **B. Kar** and D. Cochran. “Geo-targeting At-risk Communities for Effective Crisis Communication”. *Department of Homeland Security - S & T Directorate*.
- 2014 **B. Kar**, D. Cochran. J. Bass, J. Zale, J. Dickens. “Geo-targeting At-risk Communities for Effective Crisis Communication”. *Department of Geography - University of Alabama*. Tuscaloosa, AL.
- 2009 **B. Kar.** “Why Scale Matters: Hazard Research Perspective”. *Department of Geography & Geology – USM*. Hattiesburg, MS.

#### **B. Panels and Workshops**

- 2020 J. Loerzel, J. Barnes, S. Cauffman, **B. Kar**, K. Marsh. “Hope for Stronger Communities: A Role for Resilience Indicators”. [NHR 2020](#) (Virtual).
- 2020 P. Kedron, **B. Kar**, J. Holler. “Convergence, Reproducibility, and Replicability in GIScience: The Road Ahead and Road Behind”. [UCGIS](#) (Virtual).
- 2020 P. Kedron, **B. Kar**, M. Goodchild, J. Holler, E. Shook. “Reproducibility and Replicability Issues in Geography and Spatial Science”. *AAG Annual Meeting* (Virtual).
- 2019 **B. Kar.** “What is Convergent GIScience?”. *University of Arkansas - Convergent GIScience Priorities Workshop*. Fayetteville, AR.
- 2019 **B. Kar.** “Flood Risk Communications: What Information Do Users Need?”. *Earth from Space Research Institute Symposium - Making Communities More Resilient to Extreme Flooding*. Columbia, MD.
- 2019 **B. Kar.** “Social Sensing and Big Data Computing for Disaster Management”. *AAG Annual Meeting*. Washington D.C.
- 2015 **B. Kar.** “Sexual Harassment in Fieldwork and Laboratory Settings: A Discussion on Existing Policy Frameworks and Developing a Guide to Best Practices for Geography”. *AAG Annual Meeting*. Chicago, IL.
- 2014 **B. Kar.** “Wireless Emergency Alerts: The Edge of the Wave”. *Annual Natural Hazards Research and Applications Workshop*. Broomfield, CO.

#### **C. Posters Presented in Academic and Scientific Conferences**

- 2019 M. Glasscoe, D. Bausch, K. Tiampo, R. Eguchi, M. Pierce, Z. Chen, **B. Kar** and G. Schumann. “Advancing Access to Global Flood Modeling and Alerting Using the PDC DisasterAWARE Platform and Remote Sensing Technologies”. *American Geophysical Union (AGU)*. San Francisco, CA.

- 2019 **B. Kar** and T. Moss. “Integrating Earth Observation Data with Socio-Economic Data to Understand the Relationship Between Urban Heat Islands and Social Vulnerability”. *AGU*. San Francisco, CA. Featured in Landsat Science: <https://landsat.gsfc.nasa.gov/how-urban-heat-affects-the-socially-vulnerable-in-sun-belt-cities/>.
- 2018 **B. Kar**, S. Kotikot, D. Wanyama and O. A. Omitaomu. “Monitoring Power Restoration Using Satellite Imagery and Social Vulnerability”. *AGU*. Washington D.C.
- 2018 S. Kotikot, **B. Kar**, O. A. Omitaomu, D. White, C. Davis. “Understanding Relationship Between Power Restoration and Social Vulnerability Using VIIRS Day/Night Band (DNB) Data”. *Urban Dynamic Institute SAB Poster Session*. Oak Ridge, TN.
- 2018 A. Brandt and **B. Kar**. “Dynamics of Urban Heat Islands and Energy Use in Knoxville”. *Urban Dynamic Institute SAB Poster Session*. Oak Ridge, TN.
- 2017 **B. Kar** and O. A. Omitaomu. “Spatio-Temporal Variability of Urban Heat Island and Urban Mobility”. *AGU*. New Orleans, LA.
- 2017 **B. Kar**, C. Robinson, D. Koch, and O. A. Omitaomu. 2017. “Knowledge to Action – Understanding Natural Hazards Induced Power Outage Scenarios for Actionable Disaster Responses. *AGU*. New Orleans, LA.
- 2015 X. Liu, **B. Kar**, D. Cochran. 2015. “Cyber Infrastructure for Geo-Informatics and Community Resilience (CIGIR)”. *SEDAAG*. Pensacola, FL. (Best student poster award).
- 2015 D. Cochran, **B. Kar**, J. Zale, N. Callais, X. Liu, J. Dickens, J. Bass. “Public Perceptions of and Responses to Emergency Alert and Warning Devices”. *Natural Hazards Research and Applications Workshop*. Broomfield, CO.
- 2014 L. Wylie and **B. Kar**. “Fire and Fuels in the Zuni Mountains”. *SEDAAG*. Athens, GA.
- 2014 B. Cumbie and **B. Kar**. “Socially Awkward: Social Media Usage in County-Level Government”. *20th Americas Conference on Information Systems*. Savannah, GA.
- 2013 **B. Kar** and R. Lanier. “LandScan vs. Night Time Imagery: Effectiveness of Each Dataset in Risk Assessment”. *SEDAAG*. Roanoke, VA.
- 2013 H. Feather and **B. Kar**. “Site Suitability of Tornado Shelters: A GIS Based Case Study Analysis of Mississippi”. *SEDAAG*. Roanoke, VA.
- 2012 S. McBride, B. Hurley, **B. Kar**, M. Solangi, S. Kuczaj. “Potential Habitat Utilization and Influence of Environmental Variables on Distribution of Bottlenose Dolphin *Tursiops Truncatus* in Mississippi Sound”. *USM Research Day*. Hattiesburg, MS.
- 2009 J. Zale and **B. Kar**. “A GIS Based Evacuation Model for a Football Stadium”. *SEDAAG*. Knoxville, TN.
- 2008 **B. Kar** and M. E. Hodgson. “Is DEM a Better Substitute for Floor Elevation of Residential Structures?” *SEDAAG*. Greensboro, NC.

## VII. TEACHING

### A. Courses Taught at USM (2008 – 2017)

- GHY 217/217L: Introduction to Geographic Information Systems  
 GHY 417/417L: GIS Based Vector Analysis

GHY 517/517L:	GIS Based Vector Analysis
GHY 418/418L:	Spatial Analysis and Modeling
GHY 518/518L:	Spatial Analysis and Modeling
GHY 411/411L:	Remote Sensing and Image Interpretation
GHY 511/511L:	Remote Sensing and Image Interpretation
GHY 412/412L:	Environmental Remote Sensing
GHY 512/512L:	Environmental Remote Sensing
GHY 467/467L:	Design and Deployment of Database and Geo-Database
GHY 567/567L:	Design and Deployment of Database and Geo-Database
GHY 469/469L:	Internet Mapping
GHY 569/569L:	Internet Mapping
GHY 455/555:	Environmental Hazards
GHY 610/710:	Seminar in Research Techniques and Presentation of Geographic Data
GHY 612/712:	Seminar in GIS

### **B. Courses Taught at University of South Carolina (2007 - 2008)**

GEOG 345:	Interpretation of Aerial Photographs
GEOG 363:	Introduction to Geographic Information System

### **C. Graduate Student Advisor at USM**

Joslyn Zale (PhD, 2013 - 2017)
Xiaohui Liu (PhD, 2014 - 2017)
Nicole Callais (MS, 2014 - 2016)
Luke Wylie (MS, 2014 - 2016)
Rebecca Lanier (MS, 2013 - 2015)
William Davis (MS, 2012 - 2014)
Thomas Wissing (MS, 2011 - 2013)
Brian Moore (MS, 2010 - 2012)
Joslyn Zale (MS, 2009 - 2011)

### **D. Service on Graduate Student Committee**

Prativa Sharma (PhD, Dept. of Civil Engineering, University of Missouri, 2017 - present)
Nicole Callais (PhD, Department of Geography, UT Knoxville, 2018 - present)
Dan Wanyama (PhD, Department of Geography, Environment, and Spatial Science, Michigan State University, 2019 - present)
Rick Crowsey (PhD in Geography, USM, 2008 - 2012)
Jennifer Bonin (PhD in Geography, USM, 2008 - 2012)
Kelly Rouse (PhD in Science Education, USM, 2010 - 2014)
Shauna McBride (PhD in Psychology, USM, 2012 - 2016)
Elida Rocha (MS in Geography, USM, 2016 - 2018)
James Dickens (MS in Geography, USM, 2014 - 2016)
Kayla Pendergrass (MS in Geography, USM, 2013 - 2015)
Charles White (MS in Geography, USM, 2013 - 2015)
Brett Hode (MS in Geography, USM, 2012 - 2014)
Matthew Fahrenbruch (MS in Geography, USM, 2010 - 2012)
Vignan Bundy (MS in Computer Science, USM, 2014 - 2016)

#### **D. Undergraduate Student Advisor at 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.

#### **E. Mentoring at ORNL**

##### Postdoc Mentoring Program

Marie Romedenne (Physical Sciences Directorate, 2019 – present)

Yiyu Wang (Physical Sciences Directorate, 2019 – present)

Pezhi Mai (Physical Sciences Directorate, 2019 – present)

Matthew Sandlin (Energy and Environmental Sciences Directorate, 2019 – present)

##### DoE – Science Undergraduate Laboratory Internship (SULI)

Anthony James Hatch (Civil Engineering, Covenant College, GA, 2020)

Tamar Moss (Environmental Science, Brandeis University, 2019); Recipient of the Best Abstract Award and [Ignite Talk Award](#) from SULI-ORISE; Profiled on [SULI-ORISE](#).

Jacob Ethridge (Sophomore in Civil Engineering, UT Chattanooga, 2019)

Adam Brandt (BS in Geology, Utah State University, 01/2018 – 07/2018)

Fernando Runte (BS in Computer Science, Sam Houston University, 2018)

##### DoE – Advanced Short Term Research Opportunity (ASTRO)

Dan Wanyama (Ph.D. Candidate in Geography, Michigan State University, 2018)

##### NSF – Mathematical Sciences Graduate Internship (MSGI)

Avipsa Roy (Ph.D. Candidate in Geographical Sciences, ASU, 2020)

Tamera Riggs (Ph.D. Candidate in Mathematics, UT Knoxville, 2019)

#### **F. Other Mentoring Activities**

Anoor Academy, Knoxville, 2019 *Future City Competition: Powering Our Future* (3<sup>rd</sup> Prize in Region)

Anoor Academy, Knoxville, 2020 *Future City Competition – Clean Water: Tap Into Tomorrow* (1<sup>st</sup> Prize in Region).

### **VIII. SERVICES**

#### **A. ORNL**

Panelist, *ORPA Panel on Academic Career* (2020)

Presenter – Professional Organization Showcase, *ORPA Postdoc Appreciation Week* (2020)

Judge, *ORPA Research Symposium* (2018 and 2019)

#### **B. University of Southern Mississippi**

##### Department

Geographic Information Technology (GIT) Degree and Certificate Curriculum (2016)

WEAVE Assessment of GIT Certificate Program (2014 - 2016)

Computer Lab Maintenance (2009 – 2016)

Graduate Coordinator for Geography Program (2009 - 2011)

Representative to the Directors of Graduate Studies Committee (2009 - 2011)

Representative to the College Faculty Council (2009 – 2010)

College

Research Award Committee Member (2012 – 2017)

Creation of Qualtrics' Management Plan (2013)

University

Reviewer for Eagles Scholars Program for Undergraduate Research (2014 - 2016)

Judge and Reviewer for Undergraduate Research Symposium (2012 - 2013)

Presenter and Discussant for 2nd SMM Gulf Coast Student Chapter Symposium (2011)

Event Supervisor and Judge for Road Scholar Event of Mississippi Science Olympiad (2011)

**C. Professional Memberships and Activities**

Professional Affiliation

ASPRS - American Society for Photogrammetry and Remote Sensing

AAG - Association of American Geographers

AGU - American Geophysical Union

ACM – Association for Computing Machinery SIGSPATIAL

AAAS - American Association for the Advancement of Sciences

ASCE – American Society of Civil Engineers

URISA – Urban and Regional Information System Association

- |                   |   |
|-------------------|---|
| 2016 – continuing | Associate Editor and Social and Behavioral Science Editor, <i>IEEE - Natural Hazards Review</i>   |
| 2019 – Continuing | Associate Editor, <i>Springer – Computational Urban Science</i>   |
| 2020 – Continuing | Chair, <i>AAG Specialty Group - Geographic Information Science and Systems</i>  |
| 2020 – Continuing | Mentor, AAG   |
| 2020 – Continuing | Chair, <i>ASPRS - Technical Division Directors Council (TDDC)</i>   |
| 2019 – Continuing | Member and Lead of Best Practices Committee, <i>URISA Community Resilience Taskforce</i> ( <a href="https://www.urisa.org/communityresilience">https://www.urisa.org/communityresilience</a> )  |
| 2018 – Continuing | Working Group Member, <i>American Nuclear Society - ANS-2.35 - Guidelines for Estimating Present &amp; Projecting Future Socioeconomic Impacts from the Construction, Operations, and Decommissioning of Nuclear Sites.</i>                                     |
| 2020 – Continuing | Advisory Panel Member, <i>Initiative for Coastal Adaptation and Resilience (iCAR), University of Southern Florida</i> ( <a href="https://www.stpetersburg.usf.edu/resources/icar/contact-us/">https://www.stpetersburg.usf.edu/resources/icar/contact-us/</a> ) |
| 2018 – 2020       | Vice Chair, <i>AAG Specialty Group - Geographic Information Science and Systems</i>   |
| 2018 – 2020       | Vice-Chair, <i>ASPRS - Technical Division Directors Council (TDDC)</i>  |
| 2017 – 2019       | Director, <i>ASPRS - GIS Division</i>   |
| 2014 – 2015       | Mississippi State Representative, <i>Southeastern Division of AAG</i>   |
| 2010 – 2012       | Member of the Audit Committee, <i>Southeastern Division of AAG</i>  |

Journal Editorial Board

2019 - present GIScience and Remote Sensing (GISRS)  
2015 - 2019 Southeastern Geographer

Guest Editor

2020 **B. Kar**, Xinyue Ye, Z. Li, Q. Huang (Eds.), Special Issue on Scaling and Spatio-Temporal Modeling for Crisis Informatics, *ISPRS International Journal of Geo-Information*.

2019 **B. Kar** and D. M. Cochran (Eds.), *Understanding the Roles of Risk Communication in Community Resilience Building*, Invited Book for Routledge (Natural Hazard Center New Reads - <https://hazards.colorado.edu/library/new-reads>).

2019 Xinyue Ye, C. Wu, G. Cervone, **B. Kar** (Eds.), Special Issue on Integrating Remote Sensing and Social Sensing, *Remote Sensing*.

2010 - 2016 Guest Associate Editor, *Natural Hazards Review*

2016 **B. Kar**, M. Haklay, R. Ghose, R. Sieber (Eds.), Special Issue on *Past, Present and Future of Participatory GIS and Public Participation GIS*, The Cartographic Journal.

Conference Organizer, Program Committee Member, Chair

2020 *ASPRS Virtual Conference*  
Program Committee Member

*AGU Annual Meeting*

- a. Schmidt, **B. Kar**, B. Chen (Conveners and Chairs), Poster, Paper and E-lightning sessions on *Integrating Remote Sensing Data and Geospatial Analytics for Assessment of Hazards, Risk and Resilience of Communities and Infrastructures, and Risk Communication*.
- b. J. N. Burns and **B. Kar** (Conveners and Chairs), Paper and Poster sessions on *Scale Issues in Natural Hazard Risk Assessment, Communication, and Reduction*.

*ACM SIGSPATIAL*

**B. Kar**, X. Ye, S. Mohebbi, G. Fu (Co-organizers and Co-Chairs), *3<sup>rd</sup> International Workshop on Advances in Resilient and Intelligent Cities (ARIC 2020)*

*UCGIS - Global GIScience Education – Conversations about Resiliency in GIScience* (<https://www.globalgisceeducation.org/>)  
Regional Coordinator for North America

*Science Gateways*

Program Committee Member

2019

*AAG Annual Meeting*

- a. **Kar**, M. E. Hodgson, T. Cova (Co-Organizers and Co-Chairs), Paper sessions on *Hazards and GIScience*.
- b. **B. Kar**, D. M. Cochran, X. Liu (Co-Organizers and Co-Chairs), Paper sessions on *Risk Communication and Resilience*.
- c. **B. Kar**, E. Chow, Z. Chen (Co-Organizers and Co-Chairs), Paper sessions on *Social Media and Big Data for Disasters*.
- d. X. Ye, **B. Kar**, S. Wang (Co-Organizers and Co-Chairs), Paper sessions in *Symposium on Human Dynamics Research in the Age of Smart/Intelligent Systems: Smart Cities and Urban Computing*.

*ASPRS Annual Meeting*

Program Committee Member

*AGU Annual Meeting*

**Kar**, Z. Chen and M. Glasscoe (Conveners), Paper and Poster sessions on *Using Earth Observations and Imagery Analysis For Risk and Resilience Assessment, Risk Communication and Monitor Response and Recovery Efforts*.

*ACM SIGSPATIAL*

**B. Kar**, O. A. Omitaomu, X. Ye, S. Mohebbi, G. Fu (Co-organizers and Co-Chairs), *2<sup>nd</sup> International Workshop on Advances in Resilient and Intelligent Cities (ARIC) Science Gateways*

Program Committee Member

*Goinformatics in Sustainable Ecosystem and Society (GSES) and Geospatial Artificial Intelligence for Urban Computing (GeoAI-UC)*

Program Committee Member

2018

*AAG Annual Meeting*

- a. Co-Organizer, *GIScience and Hazards theme* (<http://annualmeeting.aag.org/hazards>)
- b. **B. Kar**, M. E. Hodgson, T. Cova (Co-Organizers and Co-Chairs), Paper sessions on *Hazards and GIScience*.
- c. **B. Kar** and D. M. Cochran (Co-Organizers and Co-Chairs), Paper sessions on *Risk Communication and Resilience*.

*ASPRS Annual Meeting*

Program Committee Member

*AGU Annual Meeting*

**B. Kar**, John J Murray, Andrew Molthan, Jordan R Bell (Conveners and Chairs), Paper and Poster sessions on *Using Earth Observations and Imagery Analysis For Risk and Resilience Assessment, Risk Communication and Monitor Response and Recovery Efforts*

*ACM SIGSPATIAL*

**B. Kar**, O. A. Omitaomu, S. Mohebbi, G. Fu (Co-organizers and Co-Chairs), *1<sup>st</sup> International Workshop on Advances in Resilient and Intelligent Cities (ARIC)*  
Program Committee Member: *2<sup>nd</sup> International GeoAI Workshop*.

*Science Gateways*

Program Committee Member

2017

*AAG Annual Meeting*

- a. **Kar**, M. E. Hodgson, T. Cova (Co-Organizers and Co-Chairs), Paper sessions on *Hazards and GIScience*.
- b. **B. Kar** and D. M. Cochran (Co-Organizers and Co-Chairs), Paper sessions on *Risk Communication and Resilience*.

*ASPRS Annual Meeting*

Organizer and Chair, *Frontier Day-STEM Events*.

*ACM SIGSPATIAL*

H. Mao, Y. Hu, **B. Kar**, S. Gao and G. McKenzie (Co-organizers and Co-Chairs),  
*1<sup>st</sup> International GeoAI Workshop*.

*Science Gateways*

Program Committee Member

*William A. Anderson Fund (BAF)*

Co-organizer, *BAF Student Council Workshops*

2016

*AAG Annual Meeting*

- a. **Kar**, M. E. Hodgson, T. Cova, R. Platt (Co-Organizers and Co-Chairs), Paper sessions on *Hazards and GIScience*.
- b. **B. Kar** and D. M. Cochran (Co-Organizers and Co-Chairs), Paper sessions on *Risk Communication and Resilience*.
- c. **B. Kar** (Organizer and Chair), Paper session on *Geoweb and Citizen Science*.

*ASPRS Annual Meeting*

Co-Organizer and Co-Chair, *Frontier Day-STEM Events*.

*Science Gateways*

Program Committee Member

*William A. Anderson Fund (BAF)*

Co-organizer and Speaker, *BAF Student Council Workshops*

- 2015 *AAG Annual Meeting*
- a. **Kar**, M. Haklay, R. Ghose, H. Geoghagen and R. Sieber (Co-Organizers and Co-Chairs), Paper and panel sessions on *Looking Backwards and Forwards in Participatory GIS, paper session on Citizen Science and Geoweb and on GeoPrivacy and Big Data*.
  - b. **B. Kar** and D. M. Cochran (Co-Organizers and Co-Chairs), Paper sessions on *Risk Communication and Resilience*.

*William A. Anderson Fund (BAF)*  
Co-organizer, *BAF Student Council Workshops*

- 2014 *AAG Annual Meeting*  
**B. Kar** and M. Rura (Co-Organizer), Paper and panel sessions on *Location Based Privacy and on Error and Accuracy Assessment and Data Fusion*.

*ASPRS Annual Meeting*  
Reviewer, *ESRI and Digital Globe Awards*

*IEEE Conference on Big Data*  
PC Member, *Workshop on Using Big Data to Understand Spatial Connectivity*

Other

- 2020 *AAAS – 2021 Annual Meeting*  
Session Reviewer

- 2020 *NASA-CoVID-19 Challenge*  
Subject Matter Expert and Judge

- 2019 *Hopper Down Under*  
Reviewer

- 2017 – present *ORNL*  
Women in Computing Group Member

- 2011 - 2013 *ASPRS Annual Meeting*  
Reviewer and contributor, *ASPRS Glossary*

- 2006 *ASPRS Annual Meeting*  
Moderator, *Web/Data Transfer II Session*

- 2005 *Southeastern Division of AAG Annual Meeting*  
Discussant, *Urban Application of GIS Session*

Journal Manuscript and Book Chapter Reviewer

1. Annals of the American Association of Geographers
2. Applied Geography
3. Applied Science
4. Cartography and Geography Information Science
5. Cogent Geoscience
6. Environmental Science and Pollution Research
7. GI Science and Remote Sensing
8. IEEE: Journal of Selected Topics in Earth Observations and Remote Sensing; IEEE: Geoscience and Remote Sensing Letters; IEEE – Transactions on Engineering Management
9. Information Technology for Development
10. International Journal of Geographic Information Science
11. International Journal of Innovative Technology and Creative Engineering
12. ISPRS International Journal of Geo-Information
13. Journal of Emergency Management
14. Journal of Humanitarian Action
15. Mathematics
16. Natural Hazards
17. Natural Hazards Review
18. Photogrammetric Engineering and Remote Sensing
19. Southeastern Geographer
20. Symmetry
21. Urban Planning

Proposal Review

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; Humans, Disasters and the Built Environment; Established Program to Stimulate Competitive Research (EPSCoR), Civic Innovation Challenge (CIVIC)*
2. Department of Homeland Security: *Science and Technology Directorate; Terrorism Prevention and Counterterrorism Research (TPCR) Center of Excellence*
3. Department of Energy: *National Nuclear Security Administration Minority Serving Institution Partnership Program (NNSA MSIPP).*
4. Social Sciences and Humanities Research Council of Canada
5. AAG Hazard Specialty Group: *Gilbert White Award*
6. Public Entity Risk Institute: *Dissertation Fellowship*

**IX. COLLABORATORS**

1. Cooperative Institution for Meteorological Satellite Studies: *William C. Straka III, Steve Miller*
2. Colorado School of Mines: *Chris Elvidge*
3. Dartmouth Flood Observatory: *Guy Schumann*
4. George Mason University: *Shima Mohebbi*
5. ImageCAT Inc.: *Ronald Eguchi, Subhraroop Ghosh, Charles Huyack*
6. NASA JPL: *Margaret Glasscoe*

7. National Energy Technology Laboratory: *John Brewer, Justin Adder, Arun Iyengar*
8. NIYAMIT Inc.: *Doug Bausch, Jordan Nicole Burns*
9. NIH: *Xiaohui Liu*
10. NOAA: *Shobha Kondragunta, Zigang Wei*
11. ORNL: *O. A. Omitaomu, David Hughes, Lexie Yang*
12. Pacific Disaster Center: *Chris Chiesa, Greg Hempe*
13. Pacific Northwest National Laboratory: *Dave Anderson*
14. RAND Corporation: *Elizabeth Petrun Sayers*
15. Arizona State University: *Peter Kedron, Patricia Solis*
16. Indiana University: *Marlon Pierce, Kevin Mickey*
17. Michigan State University: *Nathan Moore*
18. National Alliance for Public Safety GIS Foundation (NAPSG): *Tari Martin*
19. Texas A & M University: *Xinyue Ye*
20. Texas State University: *T. Edwin Chow*
21. University of Arkansas: *Jason A. Tullis, Sean Young, Malcolm Williamson*
22. University of Colorado: *Kristy Tempo*
23. University of Exeter: *Guangtao Fu*
24. University of George: *Matthew Bilskie*
25. University of Missouri – Kansas City: *ZhiQiang Chen*
26. University of South Carolina: *Zhenlong Li*
27. USM: *David M. Cochran, Greg Carter, Joslyn Zale.*
28. Univ. of Wisconsin: *Qunying Huang*

## **X. PRESS RELEASE**

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](http://m.wdam.com/wdam/db_389262/contentdetail.htm?contentguid=w7XbgSdW#.V3_7w53TKbA.facebook)