

## I. Research Interests and Expertise

- Risk and Resilience Modeling of Energy Infrastructure and Cities, Resilience Informatics, Loss Estimation, Social Vulnerability Assessment, Accessibility Modeling, and Risk Communication.
- Geospatial Data Science, Multi-scale modeling, Data Fusion, Remote Sensing Applications, Spatial Decision Support Systems, Spatial Analytics and Modeling.

## II. EDUCATION

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

## III. PROFESSIONAL POSITIONS

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|--------------------------------|--|
| <b>Oct. 2021 - Present</b>     | <b>Senior Scientist and Group Lead</b> , Built Environment Characterization Group, National Security Sciences Directorate (NSSD), ORNL, Oak Ridge, TN. |
| <b>Oct. 2020 – Sep. 2021</b>   | <b>R &amp; D Staff and Acting Group Lead</b> , Built Environment Characterization Group, NSSD, ORNL, Oak Ridge, TN.                                    |
| <b>Oct. 2018 – Sep. 2020</b>   | <b>R &amp; D Staff</b> , Remote Sensing Group, NSSD, ORNL, Oak Ridge, TN.  |
| <b>June 2017 – Sep. 2018</b>   | <b>R &amp; D Staff</b> , GIST Group, Computational Sciences and Engineering Division, ORNL, Oak Ridge, TN.   |
| <b>April 2022 – Present</b>    | <b>Joint Faculty</b> , Dept. of Geography, University of Tennessee, Knoxville, TN.   |
| <b>Oct. 2020 – April 2022</b>  | <b>Adjunct Associate Professor</b> , Dept. of Geography, University of Tennessee, Knoxville, TN.   |
| <b>Oct. 2019 – Present</b>     | <b>Adjunct Associate Professor</b> , Dept. of Geography, Environment, and Spatial Sciences, Michigan State University, East Lansing, MI.               |
| <b>August 2014 – May 2017</b>  | <b>Associate Professor</b> , Dept. of Geography and Geology, University of Southern Mississippi (USM), Hattiesburg, MS.                                |
| <b>August 2008 – July 2014</b> | <b>Assistant Professor</b> , Dept. of Geography and Geology, USM, Hattiesburg, MS.   |
| <b>August 2007 – July 2008</b> | <b>Instructor</b> , Dept. of Geography, University of South Carolina, Columbia, SC.  |

#### IV. HONORS AND AWARDS

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| 2022 | Outstanding Service Award for Establishing DEI Committee, <i>American Society for Photogrammetry and Remote Sensing (ASPRS)</i>   |
| 2021 | Panel Fellow ( <i>NSF CMMI's Game Change Academies for Advancing Research Innovation (CGCA)</i> )   |
| 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 | Presidential Citation, <i>ASPRS</i>   |
| 2013 | Service-Learning Fellowship, <i>USM</i>   |
| 2011 | Lucas Endowment for Faculty Excellence, <i>USM</i>  |
| 2010 | Participant in the Summer Institute for Advanced Study of Disaster and Risk, <i>Beijing Normal University, China</i>  |
| 2009 | Enabling the Next Generation of Hazard Researchers Fellow, <i>National Science Foundation</i> - <a href="https://projects.ncsu.edu/project/nextgen/">https://projects.ncsu.edu/project/nextgen/</a> |
| 2007 | Travel Grant Award, <i>ASPRS</i>  |
| 2007 | Jeanne X. Kasperson Award, <i>AAG</i>   |
| 2004 | Certificate of Appreciation - Volunteer GIS Support, <i>Federal Emergency Management Agency (FEMA)</i>  |
| 2002 | Initiatives for Woman Award, <i>IFW: University at Albany, Albany, NY</i>   |

#### V. GRANTS AND FUNDING

##### A. Current Research Projects

|             |  |
|-------------|--|
| 2021 - 2023 | <b>Co-I.</b> “PR 100: Puerto Rico Grid Resilience and Transmission to 100% Renewable Energy”, <i>Department of Energy (DOE)</i> , \$12million. ( <b>PI:</b> Baggu Murali, National Energy Renewable Laboratory).   |
| 2021 - 2023 | <b>Co-I (ORNL PI) and Project Manager.</b> “Global Initiative for Flood Forecasting and Alerting (GIFFT)”, <i>NASA – Disasters Program</i> , \$750,000 ( <b>PI:</b> Dr. Margaret Glasscoe, Univ. of Alabama, Huntsville).  |
| 2020 – 2023 | <b>PI.</b> “Forecasting and Mapping Power Restoration Time following Extreme Events”, <i>DOE</i> , \$2,365,000 ( <b>Co-I:</b> O. A. Omitaomu (ORNL), J. Brewer, A. Iyengar and M. Prica (National Energy Technology Laboratory))   |
| 2020 – 2023 | <b>Co-I (ORNL PI).</b> “Situational-Temporal Awareness for Integrated Oil and Natural Gas Systems (STATIONS)”, <i>DoE</i> , \$2,240,000. ( <b>PI:</b> John Brewer, National Energy Technology Laboratory).   |
| 2019 – 2023 | <b>Co-I (ORNL 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. ( <b>PI:</b> Dr. Margaret Glasscoe, NASA) (Grant: IAT #80HQTR19T0105). |

##### B. Pending Research Projects

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| 1. | <b>PI.</b> “Time Varying Distribution System Vulnerability Assessment Model”, <i>Department of Energy (DOE)</i> , \$2million. |
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##### C. Completed Research Projects

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| 2020 – 2022 | <b>Co-I.</b> “Energy Infrastructure Damage Identification and Assessment Utilizing Imagery from Earth Observation Satellites and Airborne Systems”, <i>DOE</i> , \$950,000. ( <b>PI:</b> Dr. David Hughes, ORNL). |
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| 2021        | <b>PI.</b> “Infrastructure Resilience and National Security: A Workshop and Research Agenda”, <i>ORNL</i> , \$25,000 ( <b>Co-I:</b> Rebecca Efroymson (Environmental Science Division (ESD)); Guodong Liu (Electrification and Energy Infrastructure Division); Juan Restrepo (Computer Science and Mathematics Division), Christa Brelsford and Carter Christopher (GSHSD); Melissa Allen-Dumas (Computational Sciences and Engineering Division)). |
| 2021        | <b>Co-I.</b> “Climate and Energy Equity in the South: A Workshop and Research Agenda”, <i>ORNL</i> , \$25,000 ( <b>PI:</b> Rebecca Efroymson (ESD)).   |
| 2019        | <b>Task Lead</b> (CyberGIS Deployment). “Oak Ridge Advanced Fuel Cycle Logistics Environment”, <i>DoE</i> , \$500,000. ( <b>PI:</b> O. A. Omitaomu, ORNL).   |
| 2017 – 2019 | <b>Task Lead</b> (Building Outline Regularization). “USA Structure Detection Project”, <i>Dept of Homeland Security (DHS)</i> , \$4 million. ( <b>PI:</b> M. Tuttle, ORNL).  |
| 2018 – 2019 | <b>Task Lead</b> (Imagery Analytics Architecture Development). “GMS Data Analytics”, <i>DoE</i> , \$250,000. ( <b>PI:</b> Craig Moss, ORNL).   |
| 2018        | <b>Task Lead</b> (Spatial Optimization of Power Infrastructure Deployment). “Identification of Potential Locations for Placement of Strategic Transformers Reserve in Puerto Rico”, <i>DoE</i> , \$350,000. ( <b>PI:</b> O. A. Omitaomu, ORNL).  |
| 2016 – 2019 | <b>Co-PI.</b> “Acquisition of a Shared High-Performance Computing Cluster (HPC) for Research, Training, and Institutional Use”, <i>National Science Foundation (NSF) – MRI</i> , \$684,600. ( <b>PI:</b> Gopinath Subramaniam, USM).   |
| 2014 – 2017 | <b>PI.</b> “Improving Economic Resilience of the U.S. Gulf Coast Communities to Coastal Hazards”, <i>NSF IMEE</i> , \$306,793 (Grant # CMMI-1335187).  |
| 2017        | <b>PI.</b> “Improving Economic Resilience of the U.S. Gulf Coast Communities to Coastal Hazards”, <i>NSF - Research Experience for Undergraduates</i> , \$2,500. (Grant # CMMI-1335187).   |
| 2012 – 2016 | <b>PI.</b> “An Integrated Approach to Geo-Target At-Risk Communities and Deploy Effective Crisis Communication Approaches”, <i>DHS</i> , \$442,091 (Contract # HSHQDC-12-C-00057).   |
| 2012        | <b>PI.</b> “Social Media: A Potential Warning/Alert Platform?”, <i>USM</i> , \$2,000.  |
| 2011        | <b>PI.</b> “An Integrated Approach to Storm Surge Risk Assessment and Mitigation in South Mississippi”, <i>USM Lucas Endowment Award</i> , \$3,800.  |

## VI. PUBLICATIONS

### a. Peer Reviewed Manuscripts

|      |  |
|------|--|
| 2022 | <b>B. Kar</b> and G. Schumann (invited commentary paper - in press). “Reproducibility and Replicability of Flood Models – A Discussion”, <i>Hydrological Processes Today</i> .   |
| 2022 | X. Liu, <b>B. Kar</b> , F. A. M. Ishino, T. Onega and F. Williams (in press). “Racially/Ethnically Stratified COVID-19 Tweets Associated with COVID-19 Cases and Deaths”, <i>JMIR Publications – Advancing Digital Health Research</i> .   |
| 2022 | A. Roy and <b>B. Kar</b> (2022). “A Multicriteria Decision Analysis Framework to Measure Accessibility to Healthcare Facilities in the Wake of CoVID-19”, <i>Journal of Transport and Health</i> , 24, <a href="https://doi.org/10.1016/j.jth.2022.101331">https://doi.org/10.1016/j.jth.2022.101331</a>   |
| 2021 | D. Wanyama, <b>B. Kar</b> and N. Moore (2021). “Quantitative Multi-Factor Characterization of Eco-Environmental Vulnerability in the Mount Elgon Ecosystem”, <i>GIScience and Remote Sensing</i> . <a href="https://doi.org/10.1080/15481603.2021.2000351">https://doi.org/10.1080/15481603.2021.2000351</a>   |
| 2021 | J. I. Blanford, F. Bowlick, A. Gidudu, M. Gould, A. L. Griffin, <b>B. Kar</b> , K. Kemp, M. de Roistem S. deSabbata, D. Sinton, J. Strobl, N. Tate, F. Toppen and D. Unwin. 2021. “Lockdown Lessons: An International Conversation on Resilient GIScience Teaching”. <i>Journal of Geography in Higher Education</i> . <a href="https://doi.org/10.1080/03098265.2021.1986687">https://doi.org/10.1080/03098265.2021.1986687</a> |

- 2021 S. Ghosh, M. Glasscoe, **B. Kar**, K. Tiampo, D. Green, M. Mendoza and C. Hyuck. 2021. "Detection and Alert for the City of Vadodara: A Space-based Flood Approach for Mitigating Impacts on Critical Infrastructures and Reducing Economic Losses", *Know Disasters*, July-August 2021.
- 2020 T. Moss and **B. Kar**. 2020. "Socio-Economic Vulnerability to Urban Heat in Phoenix, Arizona and Dallas, Texas during June 2020", *ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, VI-3/W1-2020, 59–66. <https://doi.org/10.5194/isprs-annals-VI-3-W1-2020-59-2020>.
- 2020 P. Sharma, J. Wang, M. Zhang, C. Woods, **B. Kar**, D. Bausch, Z. Chen, K. Tiampo, M. Glasscoe, G. Schumann, M. Pierce, and R. Eguchi. 2020. "DisasterAWARE-A Global Alerting Platform for Flood Events", *ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, VI-3/W1-2020, 107-113. <https://doi.org/10.5194/isprs-annals-VI-3-W1-2020-107-2020> (Recipient of GI4DM Best Paper Award).
- 2020 X. Liu, **B. Kar**, F. A. M. Ishino, C. Zhang, F. Williams. 2020. "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**. 2020. "Where is the Provenance? Ethical Replicability and Reproducibility in GIScience and its Critical Applications", *Annals of the American Association of Geographers*, 111(5): 1218–1328. <https://doi.org/10.1080/24694452.2020.1806029>.
- 2020 S. Kotikot, **B. Kar**, O. A. Omitaomu. 2020. "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-Keibert, J. S. Taylor, K. A. Wilkinson, H. Lyn, F. R. Moore, D. F. Sacco, **B. Kar**, and S. A. Kuczaj II. 2020. "Common Bottlenose Dolphins, *Tursiops truncatus*, Seasonal Habitat Use and Associations with Habitat Characteristics in Roanoke Sound, North Carolina", *International Journal of Comparative Psychology*, 32.
- 2019 S. McBride-Keibert, J. S. Taylor, H. Lyn, F. R. Moore, D. F. Sacco, **B. Kar**, S. A. Kuczaj II. 2019. "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(1): 21-29. DOI- 10.1578/AM.45.1.2019.21.
- 2019 X. Liu, **B. Kar**, C. Zhang, D. Cochran. 2019. "Assessing Relevance of Tweets for Risk Communication", *International Journal of Digital Earth*, 12(7): 781-801. <https://doi.org/10.1080/17538947.2018.1480670>.
- 2018 J. J. Zale, **B. Kar**, D. Cochran. 2018. "Optimizing Stadium Evacuation by Integrating Geo-computation and Affordance Theory", *Journal of Emergency Management*, 16(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. 2018. "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(2): 241-248.
- 2017 B. Blackmon, J. Lee, D. Cochran, **B. Kar**, T. Rehner. 2017. "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(2): 65-76.
- 2016 **B. Kar**, R. Sieber, M. Haklay, R. Ghose. 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>.

- 2015 **B. Kar**. 2015. "Citizen Science in Risk Communication in the Era of ICT", *Journal of Concurrency and Computation: Practice and Experience*, 28(7): 2005 – 2013.
- 2015 B. Cumbie and **B. Kar**. 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.
- 2014 B. Cumbie and **B. Kar**. 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.
- 2013 **B. Kar**, R. C. Crowsey and J. J. Zale. 2013. "The Myth of Location Privacy in the U.S.: Surveyed Attitude vs. Current Practices", *The Professional Geographer*, 65(1): 47-64.
- 2012 **B. Kar** and M. E. Hodgson. 2012. "A Process Oriented Areal Interpolation Technique: A Coastal County Example", *Cartography and Geographic Information Science*, 39(1): 3-16.
- 2012 **B. Kar** and M. E. Hodgson. 2012. "Observational Scale and Modeled Potential Residential Loss from a Storm Surge", *GISRS*, 49: 202-227.
- 2012 J. J. Zale and **B. Kar**. 2012. "A GIS-based Football Stadium Evacuation Model", *Southeastern Geographer*, 52(1):70 - 89.
- 2008 **B. Kar** and M. E. Hodgson. 2008. "A GIS-Based Model to Determine Site Suitability of Emergency Evacuation Shelters", *Transactions in GIS*, 12(2): 227-248.
- 2008 M. E. Hodgson and **B. Kar**. 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.

#### **b. Peer-Reviewed Proceeding Papers**

- 2021 P. Sharma, **B. Kar**, J. Wang and D. Bausch. 2021. "A Machine Learning Approach to Flood Severity Classification and Alerting" In *Proceedings of 4<sup>th</sup> ACM SIGSPATIAL International Workshop on Advancements in Resilient and Intelligent Cities*. <https://doi.org/10.1145/3486626.3493432>
- 2021 **B. Kar**, J. Bobeck, T. Moss, D. Hughes. 2021. "Spatiotemporal Tracking of Wide Area Power Outage from Night-Time Light Imagery", In *Proceedings of the 2021 IGARSS*. DOI: 10.1109/IGARSS47720.2021.9554293.
- 2021 K. Tiampo, C. Woods, L. Huang, P. Sharma, Z. Chen, **B. Kar**, D. Bausch, C. Simmons, R. Estrada, M. Willis, M. Glasscoe. 2021. "A Machine Learning Approach to Flood Depth and Extent Detection Using Sentinel 1A/B Synthetic Aperture Radar", In *Proceedings of the 2021 IGARSS*.
- 2021 **B. Kar**, J. Brewer, O. A. Omitaomu, A. Iyengar, N. Roberts, and R. Hoesly. 2021. "Accessibility and Availability of Gas Stations for Liquid Fuel Supply During Severe Weather Events", In *Proceedings of the 2021 IISE Annual Conference*.
- 2020 A. Roy and **B. Kar**. 2020. "Characterizing the Spread of COVID-19 from Human Mobility Patterns and Socio Demographic Indicators", In *Proceedings of 3<sup>rd</sup> ACM SIGSPATIAL International Workshop on Advancements in Resilient and Intelligent Cities*. DOI: 10.1145/3423455.3430303.
- 2019 **B. Kar**, E. Chow, N. Dede-Namfo, X. Liu. 2019. "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. 2019. "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**. 2018. “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. 2014. “Is My Information Private? Geo-privacy in the World of Social Media”, In *GIO @ GIScience*, 28-31.
- 2014 B. Cumbie and **B. Kar**. 2014. “Socially Awkward: Social Media Usage in County-Level Government”, In *Proceedings of the 20th Americas Conference of Information Systems*. Savannah, GA.

#### c. Peer-Reviewed Workshop Paper

- 2019 **B. Kar**. 2019. “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).

#### d. Books

- 2019 **B. Kar** and D. Cochran (Eds.). *Risk Communication and Community Resilience*. Routledge, London, England, (Natural Hazard Center New Reads - <https://hazards.colorado.edu/library/new-reads>).

#### e. Book Chapters

- 2022 Z. Chen, M. Glasscoe, R. Eguchi, C. Huyck and **B. Kar**. “Roles of Remote Sensing Technologies for Disaster Resilience”. In *Objective Resilience Manual of Practice (ORMOP)*, edited by M. Ettouney, American Society of Civil Engineers (ASCE).
- 2021 S. G. Young, J. Datta, **B. Kar**, X. Huang, M. D. Williamson, J. A. Tullis and J. Cothren, 2021. “Challenges and Limitations of Geospatial Data in the Context of COVID-19”, In *Human Dynamics in Smart Cities*, edited by S. Shaw and D. Sui, Springer.
- 2020 **B. Kar**, D. Bausch, J. Wang, P. Sharma, Z. Chen, G. Schumann, M. Pierce, K. Tiampo, R. Eguchi and M. Glasscoe. 2020. “An Integrated Model of Models for Global Flood Alerting”, *WIT Transactions on the Built Environment*, 194: 73-86. ISSN# 1743-3509, WIT Press.
- 2019 J. A. Tullis, K. Corcoran, R. Ham, **B. Kar**, and M. Williamson. 2019. “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**, D. Cochran, J. J. Zale, N. E., Callais, X. Liu. 2019. “Public Expectation of and Responses to WEA Message Content”. In *Risk Communication in Community Resilience Building*, edited by B. Kar and D. Cochran. Routledge, London, England.
- 2018 O. A. Omitaomu, **B. Kar**, R. J. Belles, M. P. Poore, G. T. Mays, B. L. Bhaduri. 2018. “Innovative Approaches to Infrastructure Resilience: A Case Study Department of Defense Sites for Small Modular Reactors”, In *Defense Innovation Handbook – Guidelines, Strategies, and Techniques*, edited by A. B. Badiru and C. B. Barlow, 281-312, CRC Press.
- 2017 **B. Kar**. 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*, 70-73, The National Academies Press, Washington D.C.
- 2017 **B. Kar** and E. Chow. 2017. “Fusion of Multi-scaled Spatial and Temporal Data: Techniques and Issues”, In *Integrating Scale in Remote Sensing and GIS*, edited by D. A. Quattrochi, E. A. Wentz, N. Lam and C. Emerson, 95 – 124, Taylor and Francis, Boca Raton, FL.

- 2017 E. Chow and **B. Kar**. 2017. "Error and Accuracy Assessment for Fused Data: Remote Sensing and GIS". In *Integrating Scale in Remote Sensing and GIS*, edited by D. A. Quattrochi, E. A. Wentz, N. Lam and C. Emerson, 125-157, Taylor and Francis, Boca Raton, FL.
- 2014 **B. Kar**. 2014. "Disaster Risk Reduction: A Comparative Assessment of Policies in US and China", In *Rebuilding Sustainable Communities after Disasters in China, Japan and Beyond*, edited by A. Awotona, 131-169, Cambridge Scholars Publishing, New Castle.
- 2013 **B. Kar**. 2013. "Decision Support Tools", In *Encyclopedia of Crisis Management*, edited by K. B. Penuel, M. Statler and R. Hagen, 255-257, Sage Publications Inc., California.
- 2013 **B. Kar**. 2013. "Principles of Emergency Management", In *Encyclopedia of Crisis Management*, edited by K. B. Penuel, M. Statler and R. Hagen, 328-332, Sage Publications Inc., California.
- 2013 **B. Kar**. 2013. "Public Awareness and Education", In *Encyclopedia of Crisis Management*, edited by K. B. Penuel, M. Statler and R. Hagen, 765-770, Sage Publications Inc., California.

#### f. Peer-Reviewed Book Reviews

- 2012 **B. Kar**. 2012. Review of *Key Methods in Geography*, edited by N. Clifford, S. French, and G. Valentine, 2010, *Southeastern Geographer*, 52(4): 448 – 450.
- 2012 **B. Kar**. 2012. 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 (9): 915 - 916.
- 2004 **B. Kar**. 2004. Review of *The Vulnerability of Cities: Natural Disasters and Social Resilience*, by M. Pelling, London, UK: Earthscan Publications Ltd, 2003, *Natural Hazards Review*, 5 (4): 195-196.

#### g. Agency Reviewed Technical Reports

- 2022 **B. Kar**, J. Brewer, O. A. Omitaomu, B. Turner, Y. Chen, N. Roberts, S. Levinson, M. Prica, and A. Iyengar. 2022. "Restoration of Power Outage from Wide-area Severe Weather Disruptions (RePOWERD)", *Department of Energy (DoE)*.
- 2022 J. Brewer, **B. Kar**, O. A. Omitaomu, N. Roberts, R. Hoesly, N. Diab, L. Clahane, K. Jani, and A. Iyengar. 2022. "Situational Temporal Awareness Tool for Integrated Oil and Natural Gas Systems (STATIONS)", *Department of Energy (DoE)*.
- 2020 O. A. Omitaomu, R. J. Belles, **B. Kar**, N. Roberts. 2020. "Adaptation of OR\_SAGE for NES Analysis", *Department of Energy (DoE)*.
- 2019 O. A. Omitaomu, R. J. Belles, **B. Kar**. 2019. "Advanced Reactor and Fuel Cycle Siting Tools and Considerations", *DoE*.
- 2019 O. A. Omitaomu, S. Kotikot, **B. Kar**. 2019. "Identification of Potential Locations for Placement of Strategic Transformers Reserve in Puerto Rico", *DoE*.
- 2016 **B. Kar** and D. Cochran. 2016. "An Integrated Approach to Geo-target At-risk Communities and Deploy Effective Crisis Communication Approaches", *Department of Homeland Security - Science and Technology Directorate*. <https://www.dhs.gov/publication/integrated-approach-geo-target-risk-communities-deploy-effective-crisis-communication>.

#### h. Published Reports

- 2021 Solís, P., et al. 2020. "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).
- 2020 **B. Kar**, X. Ye, S. Mohebbi, G. Fu. 2020. *ARIC 2020 Workshop Report*. <https://doi.org/10.1145/3447994.3448004>.

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

**i. Manuscripts in Review and in preparation**

1. Y. Chen, **B. Kar**, O. Omitaomu, B. Turner, N. Roberts, J. Brewer and M. Prica (in preparation). “A Systematic Review of Power Outage Response and Restoration Approaches at Distribution Level.
2. Carvalhaes, **B. Kar**, G. Thakur and C. Christopher (in preparation). “Exploring Drivers of Global Climate Migration: From Statistical Analysis to Simulation of Complex Systems”.
3. **B. Kar** and T. Carvalhaes (in preparation). “Urban Heat Island – A Review and Research Agenda to address Energy Justice and Heat Equity”.

## VII. PRESENTATIONS

### A. Invited Talks

- 2021 **B. Kar**. “DisasterAWARE – A Global Flood Alerting Platform”, *ISPRS Technical Commission IV – Working Group 6 Webinar Series – Smart, Sustainable and Resilient Cities*, Dec. 2<sup>nd</sup>, 2021 (Virtual).
- 2021 **B. Kar**. “Enhancing Energy Resilience to Changing Climate and Extreme Weather Events”, *University of Colorado, Boulder – Joint Earth Seminar Series*, Nov. 17<sup>th</sup>, 2021 (Virtual).
- 2021 **B. Kar**. “Geospatial Science and Energy Resilience”, *University of Kansas – GIS Day*, Nov. 17<sup>th</sup>, 2021 (Virtual).
- 2021 **B. Kar**, M. Allen-Dumas, E Parish and C. Brelsford. “Applying Tools to Address Risk, Resilience and Environmental Justice”, *DOE’s Building Technologies Office June Webinar Series* (Virtual).
- 2020 **B. Kar**. “Keynote Address: Big Data for Urban Resilience”, *The Eighth International Conference on Big Data Analytics (BDA 2020)*. <http://bda2020.org/> (Virtual).
- 2020 **B. Kar**. “Keynote Address: Review of Smart Technologies and Geospatially Integrated Technologies to Assist Communities Plan, Prepare and Adapt and be Resilient”, *iCAR (Initiative on Coastal Adaptation and Resilience) 2020 Workshop*. <https://www.stpetersburg.usf.edu/resources/icar/events/index.aspx> (Virtual).
- 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

- 2022 P. Edgar, B. Ferguson-Barrineau, **B. Kar**, L. Eaves, J. Urban-Karr, and G. Chen. “Women in Geography: Thriving and Advancing in a Male Dominated Field”, [AAG Webinar 2022](#) (Virtual).
- 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*.
- 2019 **B. Kar**. “Social Sensing and Big Data Computing for Disaster Management”, *AAG*. 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*. Chicago, IL.

## C. Workshops

- 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.
- 2014 **B. Kar**. “Wireless Emergency Alerts: The Edge of the Wave”, *Annual Natural Hazards Research and Applications Workshop*. Broomfield, CO.

## D. Presentations in Academic Conferences

- 2022 **B. Kar** and S. Meade. 2022. “Urban Heat Island Impact on Energy Burden Among Socially Vulnerable Groups,” *International Geoscience and Remote Sensing Symposium (IGARSS)*.
- 2022 G. Schumann, M. Glasscoe, **B. Kar**. 2022. “Global Satellite-based Flood Monitoring Post-MODIS”, *LANCE* *UWG* (<https://wiki.earthdata.nasa.gov/display/LANCE/LANCE+UWG%3A+3-4+May+2022>).
- 2022 S. Ghosh, M. Glasscoe, **B. Kar**, K. Tiampo, C. Huyck, P. Amyx and G. Hempe, 2022. “Stakeholder Engagement to Disseminate Flood Severity, inundation, and Critical Infrastructure Exposure Information for Mitigation”, *ASPRS*.
- 2022 D. Cochran, **B. Kar**, J. Zale. 2022. “Modeling Social Vulnerability on the Mississippi Gulf Coast and Beyond,” *American Association of Geographers (AAG)*.
- 2022 **B. Kar**, B. Turner, S. Levinson, O. Omitaomu, J. Brewer, Y. Chen, N. Roberts, M. Prica, A. Iyengar. 2022. “Modeling Power Outage Restoration Following Extreme Events,” *AAG*.
- 2021 S. Ghosh, M. Glasscoe, **B. Kar**, K. Tiampo, C. Huyck, G. Hempe and P. Amyx. 2021. “A Framework for Flood Detection and Alerting for Vadodara to Mitigate Impacts on Critical Infrastructure and Reduce Economic Losses,” *American Geophysical Union (AGU)*.
- 2021 J. Bobeck, **B. Kar**, T. Moss and D. Hughes. 2021. “Monitoring Wide Area Power Outages During Winter Storm Uri Using Night-time Light Imagery”, *AGU*.

- 2021 P. Sharma, **B. Kar**, J. Wang and D. Bausch. 2021. "A Machine Learning Approach to Flood Severity Classification and Alerting", *4<sup>th</sup> ACM SIGSPATIAL International Workshop on Advancements in Resilient and Intelligent Cities*.
- 2021 **B. Kar**, J. Bobeck, T. Moss, D. Hughes. 2021. "Spatiotemporal Tracking of Wide Area Power Outage from Night-Time Light Imagery", *IGARSS*.
- 2021 **B. Kar**, J. Bobeck, T. Moss, D. Hughes. 2021. "Spatiotemporal Tracking of Wide Area Power Outage from Night-Time Light Imagery", *IGARSS*.
- 2021 K. Tiampo, C. Woods, L. Huang, P. Sharma, Z. Chen, **B. Kar**, D. Bausch, C. Simmons, R. Estrada, M. Willis, M. Glasscoe. 2021. "A Machine Learning Approach to Flood Depth and Extent Detection Using Sentinel 1A/B Synthetic Aperture Radar", *IGARSS*.
- 2021 **B. Kar**, J. Brewer, O. Omitaomu, R. Hoesly, N. Roberts, A. Iyengar. 2021. "Accessibility and Availability of Gas Stations for Liquid Fuel During Extreme Events", *IISE Annual Virtual Conference and Expo*.
- 2021 **B. Kar**, J. Brewer, O. Omitaomu, A. Iyengar, N. Roberts, R. Hoesly, N. Diab. 2021. "Situational-Temporal Awareness Tool for Integrated oil and Natural Gas Systems (STATIONS)", *Association of American Geographers (AAG)*.
- 2021 J. Zale and **B. Kar**. 2021. "Optimizing Stadium Evacuation by Integrating Geo-Computation and Affordance Theory", *AAG*.
- 2021 M. Glasscoe, K. Tiampo, C. Woods, **B. Kar**, D. Bausch, P. Sharma, M. Zhang, Z. Chen, J. Wang, M. Pierce, G. Schumann and R. Eguchi. 2021. "Integrating Hydrologic Models and Earth Observation Data for Global Flood Forecasting and Alerting", *American Society of Photogrammetry and Remote Sensing Annual Conference (ASPRS)*.
- 2021 W. Straka, **B. Kar**, S. Kondragunta, S. Miller, C. Elvidge, H. Zhang and Z. Wei. 2021. "Examining the Economic and Environmental Impacts of COVID-19 Using Earth Observation Data", *American Meteorological Society Annual Meeting*.
- 2020 T. Moss and **B. Kar**. "Socio-Economic Vulnerability to Urban Heat in Phoenix, Arizona and Dallas, TX During June 2020", *Climate Change and Disaster Management – Technology and Resilience in a Troubled World - Geographic Information for Disaster Management (GI4DM)*.
- 2020 P. Sharma, M. Zhang, J. Wang, C. Woods, **B. Kar**, D. Bausch, Z. Chen, K. Tiampo, M. Glasscoe, G. Schumann, M. Pierce, R. Eguchi. 2020. "DisasterAWARE-A Global Alerting Platform for Flood Events", *GI4DM*.
- 2020 **B. Kar**, W. Straka, C. Elvidge, S. Kondragunta Z. Wei S. D. Miller, A. Watts. 2020. "Examining the Economic and Environmental Impacts of COVID-19 Using Earth Observation Data", *AGU*.
- 2020 A. Roy and **B. Kar**. 2020. "Assessing the Impact of Hurricane Sandy on Mobility Patterns in New York City across Scales", *AGU*.
- 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. 2020. "Rapid Flood Severity Classification and Alerting for the Spring 2020 Africa Floods: A Case Study", *AGU*.
- 2020 **B. Kar**, D. Bausch, J. Wang, P. Sharma, Z. Chen, G. Schumann, M. Pierce, K. Tempo, R. Eguchi, M. Glasscoe. 2020. "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**. 2020. "Using a Model-of-Models Approach and Remote Sensing Technologies to Improve Flood Disaster Alerting", *EGU General Assembly 2020, Virtual*, <https://doi.org/10.5194/egusphere-egu2020-13113>.

- 2019 **B. Kar.** 2019. “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. 2019. “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*. New Orleans, LA.
- 2019 H. Roberts, **B. Kar**, E. Petrun Sayers. 2019. “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. 2019. “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**. 2019. “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. 2019. “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**. 2018. “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. 2018. “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. 2018. “Community Resilience, Experience, and Perception as Factors Associated with Preparedness Among Residents in Coastal Mississippi”, *AAG*. New Orleans, LA.
- 2018 **B. Kar**. 2018. “Variability of Big Data Relevance for Disaster Situational Awareness Across Events”, *ASPRS*. Denver, CO.
- 2018 S. Kotikot, **B. Kar**, O. A. Omitaomu. 2018. “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**. 2018. “Understanding the Dynamics of Urban Heat Islands: A look at Mobility”, *GeoSymposium*. Knoxville, TN.
- 2017 **B. Kar**. 2017. “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. 2017. “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**. 2017. “Evaluating the Relevance of Risk Information Using Spatiotemporal Analysis and Data Mining Techniques”, *AAG*. Boston, MA.
- 2017 **B. Kar**. 2017. “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. 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.
- 2016 **B. Kar**. 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.
- 2016 **B. Kar** and Z. Chen. 2016. “Veracity of Structured and Unstructured Big Data – A Case Study of Emergency Management”, *ASPRS*. Dallas/Ft. Worth, TX.

- 2016 **B. Kar** and Z. Chen. 2016. "Big Data Quality – A Comparison of Structured and Unstructured Data During a Disaster", AAG. San Francisco, CA.
- 2016 D. Cochran and **B. Kar**. 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.
- 2016 N. Callais and **B. Kar**. 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.
- 2016 X. Liu, **B. Kar**, D. Cochran. 2016. "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. 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.
- 2015 D. Cochran and **B. Kar**. 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.
- 2015 **B. Kar**. 2015. "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**. 2015. "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. 2015. "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. 2015. "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. 2014. "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. 2014. "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. 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 2<sup>nd</sup> prize for best presentation).
- 2013 J. Zale, J. Bass, **B. Kar**, J. Dickens. 2013. "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. 2013. "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**. 2013. "LandScan vs. Nighttime Imagery: Effectiveness of Each Dataset in Risk Assessment", AAG. Los Angeles, CA.
- 2013 **B. Kar**. 2013. "Exploring Spatial Relationship Between Coastal Population Density and Inland Distance", *ASPRS*. Baltimore, MD.
- 2012 **B. Kar**. 2012. "Decreasing Vulnerability of Coastal Population with Increasing Inland Distance", *MAS*. Hattiesburg, MS.
- 2012 **B. Kar**. 2012. "What if Tropical Storm Irene was Hurricane Katrina?" AAG. New York City, NY.

- 2011 **B. Kar** and S. Parveen. 2011. "Multi-Scale Visualization of Water Stress/Scarcity Assessment", *ASPRS*. Milwaukee, Wisconsin.
- 2011 **B. Kar** and A. Yousafzai. 2011. "A Comparative Analysis of Risk Reduction Approaches to the 2010 Flooding of South Asia", *AAG*. Seattle, WA.
- 2011 A. Yousafzai and **B. Kar**. 2011. "A Comparative Analysis of Risk Reduction Approaches to the 2010 Flooding of South Asia", *MAS*. Hattiesburg, MS.
- 2011 **B. Kar**, R. Crowsey, J. Zale. 2011. "The Myth of Location Privacy in the U.S.: Surveyed Attitude vs. Current Practices", *MAS*. Hattiesburg, MS.
- 2010 S. Parveen and **B. Kar**. 2010. "Geo-visualization of Water Stress/Scarcity Assessment Using Different Indicators", *AAG*. Washington D.C
- 2010 **B. Kar**. 2010. "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. 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.
- 2009 **B. Kar** and M. E. Hodgson. 2009. "Generalization of Coast Boundary: Comparison of Generalization Techniques", *AAG*. Las Vegas, NV.
- 2009 M. E. Hodgson and **B. Kar**. 2009. "Line Definition and Generalization at the Process Scale: A Hurricane Coastline Example", *AAG*. Las Vegas, NV.
- 2009 **B. Kar** and M. E. Hodgson. 2009. "What is the Modeled Potential Residential Loss from a Storm Surge?", *ASPRS*. Baltimore, MD.
- 2008 M. Hodgson, B. A. Davis, C. Andris, **B. Kar**. 2008. "Adding Historical Image Collections and Future Plans to the Remote Sensing Hazard Guidance System", *ASPRS*. Portland, OR.
- 2008 **B. Kar** and M. E. Hodgson. 2008. "Housing Unit Distribution in Coastal Counties: Comparison of Areal Interpolation Techniques", *AAG*. Boston, MA.
- 2008 **B. Kar** and M. E. Hodgson. 2008. "GIS-Based Modeling of Potential Residential Loss from a Storm Surge", *South Carolina GIS Conference*. Greenville, SC.
- 2007 **B. Kar** and M. E. Hodgson. 2007. "Housing Unit Distribution in Coastal Counties: Comparison of Dis-aggregation Techniques", *SEDAAG*. Charleston, SC.
- 2007 **B. Kar** and M. E. Hodgson. 2007. "Mapping the Potential Swath Coverage of a Remote Sensing Satellite-Sensor Combination", *SEDAAG*. Charleston, SC.
- 2007 **B. Kar**. 2007. "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. 2007. "Overall and Temporal Variability in Horizontal Accuracy of LiDAR Data", *ASPRS*. Tampa, FL.
- 2007 **B. Kar**. 2007. "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**. 2007. "A Remote Sensing Hazard Guidance System for Analyzing Image Collection Opportunities", *Coastal GeoTools Conference*. Myrtle Beach, SC.
- 2007 **B. Kar**. 2007. "A GIS Based Model to Determine Site Suitability of Emergency Evacuation Shelters", *South Carolina Arc User Network (SCARC)*. Charleston, SC.
- 2006 **B. Kar**. 2006. "Interactive Web-Mapping of SHEL DUS", *ASPRS*. Reno, NV.
- 2006 **B. Kar**. 2006. "Spatio-Temporal Distribution of Hazard Loss in the USA", *AAG*. Chicago, IL.
- 2005 **B. Kar**. 2005. "GIS Based Suitability Model to Determine Evacuation Shelters", *SEDAAG*.
- 2005 **B. Kar**. 2005. "Criteria, Weights and Geographic Scale of Analysis Used in the Disaster Mitigation Plans", *AAG*. Denver, CO.



- 2002 **B. Kar**. 2002. “Pre-disaster Planning Using Remote Sensing and GIS for Hurricane Affected Areas”, *Workshop on Technologies for Communities*. Rensselaer Polytechnic Institute - Troy, NY.

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

- 2022 **B. Kar**, M. Glasscoe, D. Bausch, P. Sharma, J. Wang, G. Schumann, K. Tiampo, Z. Chen, M. Pierce, R. Eguchi. 2022. “An Ensemble Approach to Global Flood Severity Forecasting and Alerting in Near Real-time”, *ISPRS*.
- 2021 M. Glasscoe, **B. Kar**, F. Meyer, K. Tiampo, C. Huyck, C. Chiesa, G. Hempe, B. Osmanoglu and L. Schultz. 2021. “Dissemination of Global Surface Water Mapping from SAR and Optical Data to Global Stakeholders”, *AGU*.
- 2020 D. Wanyama, **B. Kar**, N. Moore. 2020. “Quantitative Multi-Factor Characterization of Ecological Vulnerability in the Mount Elgon Ecosystem”, *AGU*.
- 2020 S. Ghosh, C. Huyck, R. Eguchi, M. Glasscoe, B. Kar, K. Tiampo, Z. Chen, D. Bausch. 2020. “Earth Observation (EO) Based Critical Infrastructure Exposure Models and Flood Forecasting Techniques for Risk Monitoring and Management for the City of Vadodara, India”, *AGU*.
- 2019 M. Glasscoe, D. Bausch, K. Tiampo, R. Eguchi, M. Pierce, Z. Chen, **B. Kar** and G. Schumann. 2019. “Advancing Access to Global Flood Modeling and Alerting Using the PDC DisasterAWARE Platform and Remote Sensing Technologies”, *AGU*. San Francisco, CA.
- 2019 **B. Kar** and T. Moss. 2019. “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/article/how-urban-heat-affects-socially-vulnerable-sun-belt-cities>.
- 2018 **B. Kar**, S. Kotikot, D. Wanyama and O. A. Omitaomu. 2018. “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. 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.
- 2018 A. Brandt and **B. Kar**. 2018. “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. 2017. “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. 2015. “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**. 2014. “Fire and Fuels in the Zuni Mountains”, *SEDAAG*. Athens, GA.
- 2014 B. Cumbie and **B. Kar**. 2014. “Socially Awkward: Social Media Usage in County-Level Government”, *20th Americas Conference on Information Systems*. Savannah, GA.
- 2013 **B. Kar** and R. Lanier. 2013. “LandScan vs. Nighttime Imagery: Effectiveness of Each Dataset in Risk Assessment”, *SEDAAG*. Roanoke, VA.
- 2013 H. Feather and **B. Kar**. 2013. “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. 2012. "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**. 2009. "A GIS Based Evacuation Model for a Football Stadium", *SEDAAG*.
- 2008 **B. Kar** and M. E. Hodgson. 2008. "Is DEM a Better Substitute for Floor Elevation of Residential Structures?", *SEDAAG*. Greensboro, NC.

## VIII. 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. Thesis and Dissertation Committee Member

Prativa Sharma (PhD, Dept. of Civil Engineering; University of Missouri, 2017 - 2021)  
 Dan Wanyama (PhD, Dept. of Geography, Environment, and Spatial Science; Michigan State University, 2017 - 2021)  
 Tamar Moss (BA – Honors Thesis; Brandeis University, 2017 – 2021)  
 Nicole Callais (PhD, Dept. of Geography; UT Knoxville, 2018 - Present)  
 Rick Crowsey (PhD, Dept. of Geography and Geology; USM, 2008 - 2012)  
 Jennifer Bonin (PhD Dept. of Geography and Geology; USM, 2008 - 2012)

Kelly Rouse (PhD, Science Education; USM, 2010 - 2014)  
Shauna McBride (PhD, Dept. of Psychology; USM, 2012 - 2016)  
Elida Rocha (MS, Dept. of Geography and Geology; USM, 2016 - 2018)  
James Dickens (MS, Dept. of Geography and Geology; USM, 2014 - 2016)  
Kayla Pendergrass (MS, Dept. of Geography and Geology; USM, 2013 - 2015)  
Charles White (MS, Dept. of Geography and Geology; USM, 2013 - 2015)  
Brett Hode (MS, Dept. of Geography and Geology; USM, 2012 - 2014)  
Matthew Fahrenbruch (MS, Dept. of Geography and Geology; USM, 2010 - 2012)  
Vignan Bundy (MS, School of Computing; USM, 2014 - 2016)

#### **E. Thesis and Dissertation Committee Examiner**

Md Ashraful Islam (PhD, School of Science; Univ. of New South Wales, Australia; 2022)  
Litan Kumar Mohanty (PhD, Dept. of Geology and Geophysics; Indian Institute of Technology – Kharagpur, India; 2022)

#### **F. 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.

#### **G. Mentoring at ORNL**

##### Staff Mentoring

Nasir Ahmad (National Security Sciences Directorate, 2022 - Present)  
Thomaz Carvalhaes (National Security Sciences Directorate, 2021 - Present)  
Olivera Kotevska (Computational Science and Math Division, 2021 - Present)

##### Postdoc Mentoring Program

Marie Romedenne (Physical Sciences Directorate, 2019 – 2020)  
Yiyu Wang (Physical Sciences Directorate, 2019 – 2020)  
Pezhi Mai (Physical Sciences Directorate, 2019 – 2020)  
Matthew Sandlin (Energy and Environmental Sciences Directorate, 2019 – 2020)

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

Landen Treadway (Computer Science and Information Technology, Tennessee Technological University, TN, 2022)  
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](#) (SULI-ORISE); Profiled on [SULI-ORISE](#) and [WDTS](#).  
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 (Michigan State University, 2018)

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

Avipsa Roy (Arizona State University, 2020)  
Tamera Riggs (UT Knoxville, 2019)

ORNL – Virtual Graduate Student Research Internship  
Prativa Sharma (University of Missouri-Kansas City, 2021)

GEM Fellowship Program  
Paula Perez (University of Colorado - Boulder, 2022)

#### **H. 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).

### **IX. SERVICES AND OUTREACH ACTIVITIES**

#### **A. ORNL**

2022 Chair of Planning Committee, *Women's Leadership Workshop*  
2021 Organizing Committee Member and Content Manager, *Women's Leadership Workshop*  
2020 Panelist, *ORPA Panel on Academic Career*  
2020 Presenter and Professional Organization Showcase, *ORPA Postdoc Appreciation Week*  
2019 Judge, *ORPA Research Symposium*  
2018 Judge, *ORPA Research Symposium*

#### **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, *Eagles Scholars Program for Undergraduate Research* (2014 - 2016)  
Judge and Reviewer, *Undergraduate Research Symposium* (2012 - 2013)  
Presenter and Discussant, *2nd SMM Gulf Coast Student Chapter Symposium* (2011)  
Event Supervisor and Judge, *Road Scholar Event of Mississippi Science Olympiad* (2011)

#### **C. Professional Memberships and Services**

##### Professional Society Affiliation

AAAS - American Association for the Advancement of Sciences  
AAG - Association of American Geographers  
ACM – Association for Computing Machinery SIGSPATIAL  
AGU - American Geophysical Union  
ASCE - American Society of Civil Engineers  
ASPRS - American Society for Photogrammetry and Remote Sensing  
URISA - Urban and Regional Information System Association

### Professional Society Services

|                   |  |
|-------------------|--|
| 2021 – continuing | Vice President, ASPRS  |
| 2021 – continuing | Member, ASCE Risk and Resilience Measurements Committee<br>( <a href="https://www.asce.org/templates/membership-communities-committee-detail.aspx?committeeid=000010118926">https://www.asce.org/templates/membership-communities-committee-detail.aspx?committeeid=000010118926</a> ) |
| 2020 – 2022       | Chair, AAG Specialty Group - Geographic Information Science and Systems;<br>Mentor, AAG  |
| 2020 – 2022       | Chair, ASPRS - Technical Division Directors Council (TDDC)   |
| 2020 – continuing | Member, ASPRS - Diversity Task Force Committee   |
| 2020 – continuing | Advisory Panel Member, iCAR - University of Southern Florida<br>( <a href="https://www.stpetersburg.usf.edu/resources/icar/contact-us/">https://www.stpetersburg.usf.edu/resources/icar/contact-us/</a> )  |
| 2019 – continuing | Member, URISA Community Resilience Committee<br>( <a href="https://www.urisa.org/communityresilience">https://www.urisa.org/communityresilience</a> )  |
| 2018 – continuing | Working Group Member, American Nuclear Society - ANS-2.35 - Guidelines for Estimating Present & Projecting Future Socioeconomic Impacts from the Construction, Operations, and Decommissioning of Nuclear Sites.   |
| 2018 – 2020       | Vice Chair, AAG Specialty Group - Geographic Information Science and Systems   |
| 2018 – 2020       | Vice-Chair, ASPRS - Technical Division Directors Council (TDDC)  |
| 2017 – 2019       | Director, ASPRS - GIS Division   |
| 2014 – 2015       | Mississippi State Representative, Southeastern Division of AAG   |
| 2010 – 2012       | Member of the Audit Committee, Southeastern Division of AAG  |

### Journal Editor

|                   |   |
|-------------------|---|
| 2019 – continuing | Associate Editor, <i>Springer – Computational Urban Science</i>                                 |
| 2019 – continuing | Associate Editor, <i>GIScience and Remote Sensing</i>   |
| 2016 – continuing | Associate Editor and Social and Behavioral Science Editor, <i>ASCE - Natural Hazards Review</i> |

### Guest Editor

|             |  |
|-------------|--|
| 2022        | <b>B. Kar</b> , G. Cervone, X. Ye (Eds.), Special Issue on “Deep Learning and Big Data Mining with Remote Sensing”, <i>Remote Sensing</i> .  |
| 2022        | L. Zou, F. Chen, X. Huang and <b>B. Kar</b> (Eds.), Special Issue on “Big Earth Data for Disaster Risk Reduction”, <i>Big Earth Data</i> .   |
| 2020        | <b>B. Kar</b> , Xinyue Ye, Z. Li, Q. Huang (Eds.), Special Issue on “Scaling and Spatio Temporal Modeling for Crisis Informatics”, <i>ISPRS International Journal of Geo Information</i> . |
| 2019        | Xinyue Ye, C. Wu, G. Cervone, <b>B. Kar</b> (Eds.), Special Issue on “Integrating Remote Sensing and Social Sensing”, <i>Remote Sensing</i> .  |
| 2010 - 2016 | Guest Associate Editor, <i>Natural Hazards Review</i>  |
| 2016        | <b>B. Kar</b> , M. Haklay, R. Ghose, R. Sieber (Eds.), Special Issue on “Past, Present and Future of Participatory GIS and Public Participation GIS”, <i>The Cartographic Journal</i> .    |

### Journal Editorial Board

|             |                         |
|-------------|-------------------------|
| 2015 - 2019 | Southeastern Geographer |
|-------------|-------------------------|

### Conference Organizer, Program Committee Member, Chair

|      |  |
|------|--|
| 2022 | AAG Annual Meeting<br>( <a href="https://aag-annualmeeting.secure-platform.com/a/solicitations/19/sessiongallery">https://aag-annualmeeting.secure-platform.com/a/solicitations/19/sessiongallery</a> )<br>a. <b>B. Kar</b> , J. Zale, X. Liu (Co-Organizers and Co-Chairs), Paper session on <i>GIScience and Big Data for Hazards Research</i> . |
|------|--|



- b. B. Kar, J. Zale, D. Cochran (Co-Organizers and Co-Chairs), Paper session on *Risk Communication and Resilience*.
- c. **B. Kar, E. Chow, Z. Li and Q. Huang** (Co-Organizers and Co-Chairs), Paper session on *Uncertainties in Big Data Analytics in Disaster Research*.
- d. J. Wilson and **B. Kar** (Co-Organizers and Co-Chairs), *Tobler Lecture and Transactions in GIS Plenary Presentations*.

ASPRS Annual Conference  
Program Committee Member

2021

AGU Annual Meeting  
(<https://agu.confex.com/agu/fm21/meetingapp.cgi/Person/166411>)

- a. **B. Kar, M. Glasscoe and Z. Chen** (Conveners and Chairs), Poster and Paper sessions on *Earth Observations and Imagery Science to Assess and Forecast Risk and Resilience of Communities and Infrastructures due to Climate Change*

ACM SIGSPATIAL

**B. Kar, S. Mohebbi, G. Fu, X. Ye and O. A. Omitaomu** (Co-organizers and Co-Chairs), *4<sup>th</sup> International Workshop on Advances in Resilient and Intelligent Cities* ([ARIC 2021](#))

IGARSS 2021 Invited Paper Session

- a. **B. Kar** and Z. Chen (Co-Chairs), *Integrating Earth Observation and Geospatial Data and Analytics to Monitor and Assess Risk and Resilience*.

AAG Annual Meeting (<https://aag.secure-abstracts.com/am2021>)

- e. **B. Kar** and J. Zale (Co-Organizers and Co-Chairs), Paper sessions on *GIScience and Hazards in the Era of Big Data*.
- f. J. Burnes and **B. Kar** (Co-Organizers and Co-Chairs), Paper sessions on *Risk Communication and Resilience*.
- g. **B. Kar, Z. Li, Q. Huang and E. Chow** (Co-Organizers and Co-Chairs), Paper sessions on *Social Media and Big Data for Disasters*.
- h. J. Wilson and **B. Kar** (Co-Organizers and Co-Chairs), *Tobler Lecture and Transactions in GIS Plenary Presentations*.

ASPRS Annual Conference  
Program Committee Member

2020

AGU Annual Meeting  
(<https://agu.confex.com/agu/fm20/meetingapp.cgi/Person/166411>)

- a. J. 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  
*AAAS – 2021 Annual Meeting*  
Session Reviewer

*NASA-CoVID-19 Challenge and NASA International Space Apps Challenge*  
Subject Matter Expert and Judge

*ASPRS Annual Conference*  
Program Committee Member

2019

*AGU Annual Meeting*  
**B. Kar**, Z. Chen and M. Glasscoe (Co-Organizers and Co-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)*

*AAG Annual Meeting*

- Kar**, M. E. Hodgson, T. Cova (Co-Organizers and Co-Chairs), Paper sessions on *Hazards and GIScience*.
- B. Kar**, D. M. Cochran, X. Liu (Co-Organizers and Co-Chairs), Paper sessions on *Risk Communication and Resilience*.
- B. Kar**, E. Chow, Z. Chen (Co-Organizers and Co-Chairs), Paper sessions on *Social Media and Big Data for Disasters*.
- 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

*Science Gateways*  
Program Committee Member

*Geoinformatics in Sustainable Ecosystem and Society (GSES) and Geospatial Artificial Intelligence for Urban Computing (GeoAI-UC)*  
Program Committee Member

2018

*AGU Annual Meeting*  
**B. Kar**, John J Murray, Andrew Molthan, Jordan R Bell (Co-organizers and Co-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)*

*ACM-SIGSPATIAL 2<sup>nd</sup> International GeoAI Workshop*

Program Committee Member

*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

*Science Gateways*

Program Committee Member

2017

*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*.

*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*.

*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

- 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*

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

- 2006      *ASPRS Annual Meeting*  
Moderator, *Web/Data Transfer II 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. Computers, Environments and Urban Systems
7. Environmental Science and Pollution Research
8. GI Science and Remote Sensing
9. IEEE: Journal of Selected Topics in Earth Observations and Remote Sensing
10. IEEE: Geoscience and Remote Sensing Letters
11. IEEE – Transactions on Engineering Management
12. Information Technology for Development
13. International Journal of Disaster Risk reduction
14. International Journal of Geographic Information Science
15. International Journal of Innovative Technology and Creative Engineering
16. ISPRS International Journal of Geo-Information
17. Journal of Emergency Management
18. Journal of Humanitarian Action
19. Mathematics
20. Natural Hazards

21. Natural Hazards Review
22. Photogrammetric Engineering and Remote Sensing
23. Southeastern Geographer
24. Symmetry
25. Urban Planning

#### Proposal Reviewer

1. National Science Foundation: *Smart and Connected Communities Planning Grant; Civic Innovation Challenge (CIVIC); Convergence Accelerator; Humans, Disasters and the Built Environment; Established Program to Stimulate Competitive Research (EPSCoR); Infrastructure Management and Extreme Events; Geography and Spatial Sciences; Office of International Science and Engineering; Computer and Information Science and Engineering; Natural Hazards, Disaster and Resilience (ENG/CMMI)*
2. National Aeronautics and Space Administration: *Land Cover and Land Use Change program; ROSES 21 – Precipitation Measurement Missions Science Team*
3. Department of Homeland Security: *Science and Technology Directorate; Terrorism Prevention and Counterterrorism Research (TPCR) Center of Excellence*
4. Department of Energy: *National Nuclear Security Administration Minority Serving Institution Partnership Program (NNSA MSIPP).*
5. Social Sciences and Humanities Research Council of Canada
6. AAG Hazard Specialty Group: *Gilbert White Award*
7. Public Entity Risk Institute: *Dissertation Fellowship*

## **X. COLLABORATORS**

1. Argonne National Laboratory: *Lawrence Paul Lewis*
2. Cooperative Institution for Meteorological Satellite Studies: *William C. Straka III, Steve Miller*
3. Colorado School of Mines: *Chris Elvidge*
4. Common-Action: *Ellie Young*
5. Deloitte: *Marija Prica, Ben Turner, Sam Levinson*
6. Dartmouth Flood Observatory: *Guy Schumann*
7. George Mason University: *Shima Mohebbi*
8. ImageCAT Inc.: *Ronald Eguchi, Shubharoop Ghosh, Charles Huyck*
9. Key Logic: *Arun Iyengar, Nizar Diab*
10. NASA Marshall: *Margaret Glasscoe, Lori Schultz*
11. National Energy Technology Laboratory: *John Brewer*
12. National Renewable Energy Laboratory: *Janet Reyna, Henry Horsey, Sherry Stout, Robin Burton*
13. NIYAMIT Inc.: *Doug Bausch*
14. NOAA: *Shobha Kondragunta, Zigang Wei*
15. ORNL: *O. A. Omitaomu, David Hughes, Lexie Yang, Jessica Bobeck, Yang Chen, Nicholas Roberts, Jessica Bobeck, Rebecca Efroymson, Thomaz Carvalhaes, Nasir Ahmad*
16. Pacific Disaster Center: *Chris Chiesa, Greg Hempe*
17. Pacific Northwest National Laboratory: *Dave Anderson*
18. Arizona State University: *Peter Kedron, Patricia Solis*
19. Indiana University: *Marlon Pierce, Kevin Mickey*
20. Michigan State University: *Nathan Moore*
21. National Alliance for Public Safety GIS Foundation (NAPSG): *Tari Martin*
22. Texas A & M University: *Xinyue Ye*
23. Texas State University: *T. Edwin Chow*
24. University of Alaska: *Franz Meyer*
25. University of Arkansas: *Jason A. Tullis, Sean Young, Malcolm Williamson*



26. University of Colorado: *Kristy Tempo*
27. University of California-Irvine: *Avipsa Roy*
28. University of Cincinnati: *Lilit Yeghiazarian*
29. University of Exeter: *Guangtao Fu*
30. University of Missouri – Kansas City: *ZhiQiang Chen*
31. University of South Carolina: *Zhenlong Li*
32. University of South Florida: *Barnali Dixon*
33. USM: *David M. Cochran, Joslyn Zale.*
34. Univ. of Utah: *Xiaohui Liu*
35. Univ. of Wisconsin: *Qunying Huang*

## **XI. PRESS RELEASE**

1. Research Profile - <https://www.ornl.gov/news/researchers-anticipate-help-prevent-national-security-consequences-climate-crises>
2. Career Profile - <http://www.aag.org/careerprofiles>
3. <https://asunow.asu.edu/20201112-asu-student-creates-machine-learning-model-identify-neighborhoods-most-risk-covid-19>
4. <http://news.usm.edu/article/southern-miss-geography-team-studies-emergency-communications-diverse-mississippi-communitie>
5. <http://www.hattiesburgamerican.com/story/news/education/usm/2016/06/26/study-residents-may-ignore-emergency-alerts/86331562/>