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A. Name and Contact Information

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B. Education and Degrees

2008	**Ph.D.**, Department of Geography, University of Iowa, Iowa City, USA *Geographically-Aware Intelligent Agents*
2001	**M.S.**, Department of Geography, Nanjing University, Nanjing, China *Open Web-based GIS*
1998	**B.S.**, Department of Geography, East China Normal University, Shanghai, China *The Calculation of Shortest Paths in GIS*
1998	**B.S. (Minor)**, International Trade, East China Normal University, Shanghai, China

C. Academic Positions Held

2017- present	Associate Professor	Department of Geography and Earth Sciences (GES), University of North Carolina at Charlotte (UNCC)
2016-present	Executive Director	Center for Applied GIScience, UNCC
2020-present	Affiliate Faculty	School of Data Science, UNCC
2012-2017	Assistant Professor	GES, UNCC
2013-2016	Interim Executive Director	Center for Applied GIScience, UNCC
2010-2012	Lecturer	GES, UNCC
2010-2013	Director of Computing and Technology	Center for Applied GIScience, UNCC
2009-2010	Research Scientist	University of Illinois at Urbana-Champaign (UIUC)
2008-2010	Guest Researcher	National Center for Supercomputing Applications (NCSA), UIUC
2008-2009	Post-doc	Geography and NCSA, UIUC
2001-2008	Research Assistant	Department of Geography, University of Iowa
2006-2006	Teaching Assistant	Department of Geography, University of Iowa

D. Research and Creative Activity

Publication

Peer-reviewed Journal Articles (67) (Students or Visiting Scholars were underlined)

JA1. Dai, Z., Trettin, C.C., Mangora, M., and Tang, W., accepted, Soil carbon with the mangrove landscape in Rufiji River Delta, Tanzania, *Wetlands*.

JA2. Hohl, A., **Tang, W**., Casas, I., Shi, X., Delmelle, E., 2022, Detecting space-time patterns under non-stationary background population, *Journal of Geographical Systems*. 24: 389-417 DOI: https://doi.org/10.1007/s10109-022-00377-7

JA3. Chen, S.E., Lin, S., Cheng, C.T., Bhowmik, S., **Tang, W.**, Baez-Rivera, Y. and Martinez, R., 2022. Two-Story Residential Structure Damages after the 2020 Puerto Rico Earthquake. *Journal of Performance of Constructed Facilities*, *36*(2), p.04022006.

JA4. Chavan, V.S., Chen, S.E., Shanmugam, N.S., **Tang, W.**, Diemer, J., Allan, C., Braxtan, N., Shukla, T., Chen, T. and Slocum, Z., 2022. An Analysis of Local and Combined (Global) Scours on Piers-on-Bank Bridges. *CivilEng*, *3*(1), pp.1-20.

JA5. An, L., Grimm, V., Sullivan, A., Turner II, B.L., Malleson, N., Heppenstall, A., Vincenot, C., Robinson, D., Ye, X., Liu, J. Lindkvist, E., and **Tang, W.**, 2021. Challenges, tasks, and opportunities in modeling agent-based complex systems. *Ecological Modelling*, *457*, p.109685.

JA6. Trettin, C.C., Dai, Z., **Tang, W.**, Lagomasino, D., Thomas, N., Lee, S.K., Simard, M., Ebanega, M.O., and Fatoyinbo, T.E., 2021, Mangrove carbon stocks in Pongara National Park, Gabon. *Estuary Coast and Shelf Science*. 259: 107432.

JA7. Gibas, C., Lambirth, K., Mittal, N. Juel, M., Barua, V., Brazell, L., Hinton, K., Lontai, J.., Stark, N., Yound, I., Quach, C., Russ, M., Kauer, J., Nicolosi, B., Akella, S., **Tang, W.**, Chen, D., Schlueter, J., Munir, M., Implementing building-level SARS-CoV-2 wastewater surveillance on a University campus, *Science of The Total Environment*, *782*, p.146749.

JA8. Li, Z., **Tang, W.**, Huang, Q., Shook, E. and Guan, Q., 2020. Introduction to Big Data Computing for Geospatial Applications. *ISPRS International Journal of Geo-Information*, 9(8): 487.

JA9. Lan, Y., Tang, W., Dye, S. and Delmelle, E., 2020. A web-based spatial decision support system for monitoring the risk of water contamination in private wells. *Annals of GIS*, pp.1-17.

JA10. Owusu, C., Delmelle, E., **Tang, W.**, Silverman, G., and Dye, S., 2020, A multi-stage geocoding approach for the development of private wells database, Gaston County, North Carolina. *Journal of Environmental Health*. 83(4): 8-15.

JA11. **Zheng, M., Tang, W**., Akinwumi Ogundiran, Jianxin Yang, 2020, Spatial simulation modeling of settlement distribution driven by random forest: Consideration of landscape visibility, Sustainability 12(11): 4748.

JA12. Chen, S.E., Tang, W., Irizarry, A.A., Baez-Rivera, Y., Pando, M.A., Majrekar, M., Young, D. and Ng, Y., 2020. Posthurricane Investigation of a Critical Component toward Improved Grid Resiliency in Puerto Rico. *Journal of Performance of Constructed Facilities*, *34*(4), p.02520001.

JA13. **Tang, W.**, and Yang, J., 2020, Agent-based land change modeling of a large watershed: Space-time locations of critical threshold, *Journal of Artificial Societies and Social Simulation*. 23(1): 15. Online available at: http://jasss.soc.surrey.ac.uk/23/1/15.html

JA14. Yang, J., Gong, J., **Tang, W.**, and Liu, C., 2020, Patch-based cellular automata model of urban growth simulation: Integrating feedback between quantitative

composition and spatial configuration, *Computers, Environment and Urban Systems*, 79, 101402.

JA15. Zhao, X., Ma, X., **Tang, W.** and Liu, D., 2019. An adaptive agent-based optimization model for spatial planning: A case study of Anyue County, China. *Sustainable Cities and Society*, p.101733.

JA16. Yang, J., Gong, J. and **Tang, W.**, 2019. Prioritizing Spatially Aggregated Cost-Effective Sites in Natural Reserves to Mitigate Human-Induced Threats: A Case Study of the Qinghai Plateau, China. *Sustainability*, *11*(5), p.1346.

JA17. Zheng, M., **Tang, W.**, and Zhao, X., 2019, Hyperparameter optimization of neural network-driven spatial models accelerated using cyber-enabled high-performance computing, *International Journal of Geographical Information Science*, 33(2), 314-345.

JA18. Shoffner, A., Wilson, A.M., **Tang, W.**, and Gagne, S.A., 2018, The relative effects of forest amount, forest configuration, and urban matrix quality on forest breeding birds. *Scientific Reports.8(1): p. 17140*

JA19. Yu, Y., Han, Q., **Tang, W.**, Yuan, Y., and Tong, Y., 2018, Exploration of the industrial spatial linkages in urban agglomerations: A case of urban agglomeration in the Middle Reaches of the Yangtze River, China, *Sustainability*, 10 (5): 1469.

JA20. Yu, Y., He, J., **Tang, W.**, and Li, C., 2018, Modeling urban collaborative growth dynamics using a multiscale simulation model for the Wuhan Urban Agglomeration Area, China, *ISPRS International Journal of Geo-Information*, 7(5), 176.

JA21. **Tang, W.**, Zheng, M., Zhao, X., Shi, J., Yang, J., and Trettin, C.C., 2018, Big geospatial data analytics for global mangrove biomass and carbon estimation. *Sustainability*. 10(2): 472.

JA22. Yu, Y., Tong, Y., **Tang, W.**, Yuan, Y., Chen, Y., 2018, Identifying the spatiotemporal interaction between urbanization and eco-environment in the urban agglomeration in the Middle Reaches of the Yangtze River, China, *Sustainability*. 10(1): 290.

JA23. Gong, J., Li, J., Yang, J., Li, S. and **Tang, W.**, 2017. Land Use and Land Cover Change in the Qinghai Lake Region of the Tibetan Plateau and Its Impact on Ecosystem Services. *International Journal of Environmental Research and Public Health*, *14*(7), p.818.

JA24. Liu, D., **Tang, W.**, Liu, Y., Zhao, X., and He, J., 2017, Optimal rural land use allocation in central China: linking the effect of spatiotemporal patterns and policy interventions. *Applied Geography*. 86, 165-182.

JA25. Saule, E., Panchananam, D., Hohl, A. *, **Tang, W.,** & Delmelle, E. (2017). Parallel Space-Time Kernel Density Estimation. arXiv preprint arXiv:1705.09366.

JA26. Zhang, Z., **Tang, W.**, Gong, J., and Huan, J., 2017, Property rights of urban underground space in China: A public good perspective, *Land Use Policy*, 65, 224-237.

JA27. Zhu, Q., and **Tang, W.**, 2017, Regional-level carbon allocation in China based on sectoral emission, *Sustainability*. 9(4): 552

JA28. **Tang, W.**, Feng, W., Jia, M., Shi, J., Zuo, H., Stringer, C.E., and Trettin, C.C., 2017, A cyber-enabled spatial decision support system to inventory mangroves in Mozambique: Coupling scientific workflows with cloud computing. *International Journal of Geographical Information Science*. 31(5): 907-938

JA29. **Tang, W.**, and Feng, W., 2017, Parallel map projection of vector-based big spatial data using general-purpose Graphics Processing Units, *Computers, Environment and Urban Systems*, 61: 187-197

JA30. Hohl, A., Delmelle, E., and **Tang, W.**, Casas, I., 2016, Accelerating the detection of space-time patterns of vector-borne diseases using parallel computing, *Spatial and Spatio-temporal Epidemiology*. 19: 10-20

JA31. Niu, J., **Tang, W.**, Xu, F., Zhou, X., and Song, Y., 2016, Global research on artificial intelligence from 1990-2014: Spatially explicit bibliometric analysis, *ISPRS International Journal of Geo-Information*. 5(5): 66-66

JA32. Zhang, Z., and **Tang, W.**, 2016, Analysis of spatial patterns of public attention on housing prices in Chinese cities: A Web search engine approach, *Applied Geography*, 70: 68-81

JA33. **Tang, W.**, Feng, W., Jia, M., Shi, J., Zuo, H., and Trettin, C.C., 2016, Assessment of mangrove biomass and carbon in West Africa: A spatially explicit analytical framework. *Wetland Ecology and Management*. 24(2): 153-171

JA34. Gong, J., Yang, J., and **Tang, W.**, 2015. Spatially Explicit Landscape-level Ecological Risks Induced by Land Use and Land Cover Change in a National Ecologically Representative Region in China, *International Journal of Environmental Research and Public Health*, 12(11): 14192-14215

JA35. Hohl, A., Delmelle, E. M**.,** and **Tang, W**., 2015, Spatiotemporal domain decomposition for massive parallel computation of space-time kernel density, *ISPRS Annals of Photogrammetry. Remote Sensing and Spatial Information Science*, II-4/W2, 7-11.

JA36. Stringer, E.C., Trettin, C.C., Zarnoch, S.J., and **Tang, W.**, 2015, Carbon stocks of intact mangroves in the Zambezi River Delta, Mozambique, *Forest Ecology and Management*. 354, 139-148.

JA37. Zhang, Z, Tan, S., and **Tang, W.**, 2015, A GIS-based spatial analysis of housing price and road density in proximity to urban lakes in Wuhan City, China, *Chinese Geographical Science*, 25(6) pp. 775-790

JA38. **Tang, W.**, Feng, W., and Jia, M., 2015, Massively parallel spatial point pattern analysis: Ripley's K function accelerated using Graphics Processing Units. *International Journal of Geographical Information Science*. 29(3): 412-439.

JA39. Delmelle, E.M., Zhu, H., **Tang, W.**, and Cacas, I., 2014, A web-based geospatial toolkit for the monitoring of dengue fever, *Applied Geography*, 52: 144-152.

JA40. Delmelle, E., Dony, C., Casas, I., Jia, M., **Tang, W.**, 2014, Visualizing the impact of space-time uncertainties on Dengue Fever patterns. *International Journal of Geographical Information Science.* 28(5): 1107-1127

JA41. **Tang, W.**, and Jia, M., 2014, Global sensitivity analysis of large agent-based modeling of spatial opinion exchange: A heterogeneous multi-GPU acceleration approach, *Annals of Association of American Geographers*. 104(3): 485-509

JA42. Fagan, W. Lewis, M., Auger-Méthé, M. Avgar, T., Benhamou, S., Breed, G., LaDage, L., Schlaegel, U., **Tang, W.**, Papastamatiou, Y.; Forester, J.; Mueller, T., 2013, Spatial memory and animal movement, *Ecology Letters*. 16(10): 1316-1329

JA43. **Tang, W.**, 2013, Parallel construction of large circular cartograms using Graphics Processing Units, *International Journal of Geographical Information Science*, 27(11): 2182-2206.

JA44. Shook, E., Wang, S., and **Tang, W.**, 2013, A communication framework for parallel spatially explicit agent-based models, *International Journal of Geographical Information Science*. 27(11): 2160-2181.

JA45. Gong, Z, **Tang, W.**, Bennett, D.A., and Thill, J.C., 2013, Parallel agent-based simulation of individual-level spatial interactions within a multi-core computing environment. *International Journal of Geographical Information Science*, 27 (6): 1152-1170.

JA46. Meentemeyer, R.K., **Tang, W.,** Dorning, M.A., Vogler, J.B., Cunniffe, N.J. and Shoemaker, D.A., 2013, FUTURES: Multi-level spatial modeling of per capita land consumption and fragmentation of human-modified landscapes, *The Annals of the Association of American Geographers*, 103 (4): 785-807.

JA47. He, J., Liu, Y., Yu, Y., **Tang, W.**, and Liu, D., 2013, A counterfactual scenario simulation approach for assessing the impact of farmland preservation policies on urban sprawl and food security in a major grain-producing area of China, *Applied Geography*, 37, 127-138.

JA48. **Tang, W.** and Bennett, D.A., 2012, Reprint of: Parallel agent-based modeling of spatial opinion diffusion accelerated using Graphics Processing Units, *Ecological Modelling* 229: 108-118.

JA49. **Tang, W.** and Bennett, D.A., 2011, Parallel agent-based modeling of spatial opinion diffusion accelerated using Graphics Processing Units, *Ecological Modelling* 222: 3605-3615.

JA50. **Tang, W.**, Wang, S., Bennett, D.A., and Liu, Y., 2011, Agent-based modeling within a cyberinfrastructure environment: A service-oriented computing approach, *International Journal of Geographical Information Science*. 25(9): 1323-1346.

JA51. Bennett, D.A., **Tang, W.,** and Wang, S., 2011, Toward an understanding of provenance in complex land use dynamics. *Journal of Land Use Science*. 6(2): 211-230

JA52. **Tang, W.,** Bennett, D.A., and Wang, S., 2011, A parallel agent-based model of land use opinions. *Journal of Land Use Science*, 6(2): 121-135

JA53. **Tang, W.,** and Bennett, D.A., 2010, The explicit representation of context in agent-based modeling of complex adaptive spatial systems, *The Annals of the Association of American Geographers*, 100(5): 1128-1155.

JA54. **Tang, W.,** and Bennett, D.A., 2010, Agent-based modeling of animal movement: A review. *Geography Compass*, 4(7): 682-700.

JA55. **Tang, W.**, and Wang, S., 2009, HPABM: A hierarchical parallel simulation framework for spatially-explicit agent-based models, *Transactions in GIS* 13(3): 315-333.

JA56. **Tang, W.**, Malanson, G.P., and Entwisle, B., 2009, Simulated village locations in Thailand: A multi-scale model including a neural network approach. *Landscape Ecology*, 24(4): 557-575.

JA57. **Tang, W.**, 2008, Simulating complex adaptive geographic systems: A geographically aware intelligent agent approach. *Cartography and Geographic Information Science*, 35(4): 239-263.

JA58. Bennett, D.A., and **Tang, W.**, 2006, Modeling adaptive, spatially aware, and mobile agents: Elk migration in Yellowstone, *International Journal of Geographical Information Science*, 20(9): 1039-1066.

JA59. Martini, I.P., Wang, Y., Zhu, D., Zhang, Y., and **Tang, W.**, 2004, Coastal sandy ridges and reefs of southern Hainan Island (China) developed during Quaternary sea-level variations, *Quaternaria Nova*, Vol. VIII: 277-296.

JA60. Yin, Y., Zhu D.K., Martini, I.P., **Tang W.**, and Xu Y., 2004. Application of Ground-penetrating Radar for spit stratigraphic interpretation, Hainan Island, China. *Journal of Coastal Research*, 43: 179-201.

JA61. Yin, Y., Zhu, D.K., **Tang, W.**, and Martini, P.I., 2002, The application of GPR to barrier-lagoon sedimentation study in Boao of Hainan Island, *Journal of Geographical Sciences*, 12(3): 313-320.

JA62. Yin, Y., Zhu, D.K., **Tang, W.**, Ge, C., and Martini, I.P., 2002, On barrier-lagoon development and GPR application in Boao area, *ACTA Geographia Sinica*, 57(3): 301-309.

JA63. Yin, Y., Zhu, D., Guan, H. **Tang, W.**, and Martini, I.P., 2002, Application of ground-penetrating radar to coastal bar studies in Boao in eastern Hainnan Island of China, *Marine Geology & Quaternary Geology*, 3: 121-129 (in Chinese).

JA64. Gao, Y., Xu, J., and **Tang, W.**, 2002, A new algorithm for generation of arc-arc topological relationship on the same vertices, *Journal of Computer Application and Research of China*, 19: 58-59 (in Chinese)

JA65. **Tang, W.**, Zhu, D, Ge, C., Jiang, S., and Martini, I.P., 2001, The application of ground penetrating radar to the survey of the coast environment, *Marine Geology & Quanternary Geology*, 2: 102-108 (in Chinese).

JA66. Wang, Y., Martini, I.P., Zhu, D., Zhang, Y., and **Tang, W.**, 2001, Coastal plain evolution in southern Hainan Island, China, *Chinese Science Bulletin*, 46 Supp., 90-96 (in Chinese).

JA67. **Tang, W.**, Zhu, D.K., and Shi, X.D., 2000, Calculation of shortest paths using a modified Dijkstra algorithm in GIS, *Journal of Image and Graphics of China*, 5(12): 1019-1023 (in Chinese).

Journal Articles in review, revision, or preparation (7)

JA1. Volker Grimm, Turner, B. II, **Tang, W.**, Vincenot, C., An, L., Ye, X., Liu, J., Sullivan, A., Wang, Z., Malleson, N., Huang, R., Heppenstall, A., Robinson, D., Lindvist, E., in review, Agent-based complex systems science in the light of data science and artificial intelligence, submitted to *Nature*.

JA2. **Tang, W.**, Chen, T., Slocum, Z., Lan, Y., Delmelle, E., Chen, D., Mittal, N., Rice-Boayue, J., Shukla, T., Lin, S. Akella, S., Schlueter, J., Munir, M., and Gibas, C., 2022. A Web-based Spatial Decision Support System of Wastewater Surveillance for COVID-19 Monitoring: A Case Study of a University Campus. *medRxiv*, pp.2021-12. https://doi.org/10.1101/2021.12.29.21268516

JA3. Yang, J., **Tang, W.**, Gong, J., Shi, R., and Zheng, M., in review, Simulating urban expansion using cellular automata model with spatiotemporally explicit representation of urban demand, submitted to *Landscape and Urban Planning*.

JA4. Zhang, Z., **Tang, W.**, in review, High-rise buildings in a developing city: A spatial analysis integrating horizon-vertical dimension in natural-human urban systems, submitted to: Computers, Environment and Urban Systems.

JA5. Ng, Y., Chen, S., Pando, M.A., Irizarry, A.A., Baez-Rivera, Y., Tang, W., Majrekar, M., Martinez, R., in review, Storm effect binomial analysis for Puerto Rico after Maria, submitted to: Journal of Performance of Constructed Facilities.

JA6. Chavan, V., Chen, S.,Shanmugam, N., **Tang, W.**,Diemer, J., Allen, C., Shukla, T., Chen, T.,Slocum, Z. in review. Finite Element Modelling of Local Scour of Bridge Piers. *Journal of Performance of Constructed Facilities*. (Status: in review and revision submitted)

JA7. **Tang, W.**, and Armstrong, M.P., in preparation, All-pair shortest path computation using a parallel matrix sum approach driven by Graphics Processing Units, To be summitted to: *Geographical Analysis*.

Books (2)

Tang, W., and Wang, S. (ed), 2020, *High Performance Computing for Geospatial Applications*, Springer Nature.

Li, Z., **Tang, W**., Huang, Q., Shook, E., and Guan, Q., (eds.) 2020, *Big Data Computing for Geospatial Applications*, MDPI Books, https://doi.org/10.3390/books978-3-03943-245-5

Peer-reviewed Book Chapters (18)

BC1. Chen, S.E., Pando, M.A., Irizarry, A.A., Baez-Rivera, Y., Tang, W. and Ng, Y., 2021, July. Resiliency of Power Grid Infrastructure Under Extreme Hazards-Observations and Lessons Learned from Hurricane Maria in Puerto Rico. In *Civil Infrastructures Confronting Severe Weathers and Climate Changes Conference* (pp. 1-17). Springer, Cham.

BC2. Slocum, Z., and **Tang, W.**, 2020, Integration of Web GIS with high performance computing: A container-based cloud computing approach. In: *High Performance*

Computing for Geospatial Applications, edited by Wenwu Tang and Shaowen Wang, Springer, pp. 135-157.

BC3. **Tang, W.**, Volker Grimm, Leigh Tesfatsion, Eric Shook, David Bennett, Li An, Zhaya Gong, and Xinyue Ye, 2020, Code reusability and transparency of agent-based modeling: A review from a cyberinfrastructure perspective. In: *High Performance Computing for Geospatial Applications*, edited by Wenwu Tang and Shaowen Wang, Springer, pp. 115-134.

BC4. Hohl, A., Saule, E., Delmelle, E., and **Tang, W.**, 2020, Spatiotemporal domain decomposition for high performance computing: A flexible splits heuristic to minimize redundancy. In: *High Performance Computing for Geospatial Applications*, edited by Wenwu Tang and Shaowen Wang, Springer, pp. 27-50.

BC5. Zheng, M., **Tang, W.,** Ogundiran, A., Chen, T., and Yang, J., 2020, Parallel landscape visibility analysis: A case study in archaeology. In: *High Performance Computing for Geospatial Applications*, edited by Wenwu Tang and Shaowen Wang, Springer, pp. 77-96

BC6. Gong, Z., and **Tang, W.**, 2020, Domain applications of high-performance computing in urban studies, In: *High Performance Computing for Geospatial Applications*, edited by Wenwu Tang and Shaowen Wang, Springer, pp. 211-225.

BC7. **Tang, W.**, 2020, Cartographic mapping driven by high performance computing: A review. In: *High Performance Computing for Geospatial Applications*, edited by Wenwu Tang and Shaowen Wang, Springer, pp. 159-172.

BC8. **Tang, W.,** and Wang, S., 2020, Navigating high-performance computing for geospatial applications. In: *High Performance Computing for Geospatial Applications*, edited by Wenwu Tang and Shaowen Wang, Springer, pp. 1-5

BC9. Zheng, M., **Tang, W.**, Lan, Y., Zhao, X., Jia, M., Allan, C., and Trettin, C., 2018, Parallel generation of very high resolution digital elevation models: High-performance computing for big spatial data analysis, In: *Big Data in Engineering Applications*, edited by Sanjiban Sekhar Roy, Springer. Pp: 21-39

BC10. Hohl, A., Zheng, M., **Tang, W.**, Delmelle, E., Casas, I., 2017, Spatiotemporal point pattern analysis using Ripley's K function, *Geospatial Data Science Techniques and Applications*, Edited by: Hassan A. Karimi, Bobak Karimi, Taylor & Francis. Pp: 155-175

BC11. Owusu, C., Lan, Y., Zheng, M., **Tang, W.**, Delmelle, E., accepted, Geocoding fundamentals and associated challenges, *Geospatial Data Science Techniques and Applications*, Edited by: Hassan A. Karimi, Bobak Karimi, Taylor & Francis. Pp: 41-62

BC12. **Tang, W.**, Feng, W., Zheng, M., and Shi, J., 2017, Land cover classification of fine-resolution remote sensing data driven by cyber-enabled high-performance and parallel computing, Comprehensive *Remote Sensing: Volume 9: Applications for Societal Benefits*, edited by Shunlin Liang, Elsevier. Pp.: 17-27

BC13. **Tang, W.**, Feng, W., Deng, J., Jia, M., and Zuo, H., 2018, Cyberinfrastructure-enabled high performance and parallel computing and geocomputational modeling, edited by Dragicevic, S., and Thill, J-C., *Geocomputational Analysis and Modeling of Regional Systems*.

BC14. Gong, Z., **Tang, W.**, and Thill, J., 2017. A graph-based locality-aware approach to scalable parallel agent-based models of spatial interactions, *Advances in Geocomputation*, edited by Daniel Griffith, Yongwan Chun, Dean D.. Springer, Cham

BC15. **Tang, W.**, 2017, GPU computing, edited by Doulas Richardson, Noel Castree, Michael F. Goodchild, Audrey Kobayashi, Weidong Liu, and Richard A. Marston, *International Encyclopedia of Geography*. John Wiley & Sons

BC16. Delmelle, E., Jia, M., Dony, C., Casas, I., **Tang, W.**, 2015, Space-time visualization of dengue fever outbreaks. *Spatial Analysis in Health Geography, edited by Kanaroglou, P., Delmelle, E., Paez, A.*, Ashgate, Surrey, UK. pp. 85-100

BC17. **Tang, W.**, 2013, Accelerating agent-based modeling using Graphics Processing Units, edited by Shi, X., Vlad, Yang, C., *Modern Accelerator Technologies for Geographic Information Science, Springer, New York, pp. 113-129*.

BC18. Bennett, D.A., and **Tang, W.**, 2008. Mobile aware intelligent agents, In: *Understanding Dynamics of Geographic Domains*, edited by M. Yuan and K. Stewart. CRC Press/Taylor & Francis, Boca Raton, pp. 171-186.

Conference Proceedings (12)

CP1. Erik Saule, Dinesh Panchananam, Alexander Hohl, **Wenwu Tang**, and Eric Delmelle, (2017), Parallel space-time kernel density estimation, Proceedings of ICPP-2017.

CP2. Gong, Z., **Tang, W.**, Thill, J., 2017, Massively parallel simulations of agent-based spatial interaction: A Many-core computing approach with spatial big data, The 20th AGILE Conference on Geographic Information Science. May 9-12, 2017, Wageningen, Netherlands.

CP3. Hohl, A., Casas, I., Delmelle, E.M., **Tang, W.**, 2016, Hybrid indexing for parallel analysis of spatiotemporal point patterns. *Proceedings of the Ninth International Conference on Geographic Information Science*, Montreal, Canada, September 27-30, 2016.

CP4. Gong, Z., **Tang, W.**, Thill, J-C, 2015, A Locality-aware Approach to Scalable Parallel Agent-based Models of Spatially Heterogeneous Interactions, *Proceedings of Geocomputation 2015*.

CP5. Gong, Z, **Tang, W.**, and Thill, J.C., 2012, Parallelization of ensemble neural networks for spatial land-use modeling, *Proceedings of ACM SIGSPATIAL IWGS Workshop*, p48-54.

CP6. Bennett, D.A., Zeng, Y., Tang, W., Kling, C., Heriges, J., Evans, K., McGinnis, S., Gilbertz, S., McGinnis, D., Robbins, P., 2010, Capturing human/environment feedback processes in an agent-based model, Proceedings of Sixth International Conference on Geographic Information Science, Zurich, 14-17th September, 2010.

CP7. Bennett, D. A., **Tang, W.**, and Mount, J., 2010, Cyberinfrastructure-enabled agent-based modeling of complex adaptive spatial systems, NSF TeraGrid Workshop on Cyber-GIS, Washington, DC, USA, February 2-3, 2010. Available at: http://www.cigi.illinois.edu/cybergis/docs/Bennett_Position_Paper.pdf

CP8. Bennett, D. A., and **Tang, W.**, 2009, GAIA-RM: A Geographically Aware Intelligent Agents framework for Rangeland Management, *Geocomputation 2009*, Sydney, Australia, November 30th to December 2nd, 2009.

CP9. **Tang, W.**, and Bennett, D.A., 2009, Parallel agent-based modelling of land-use opinion dynamics using Graphics Processing Units, *Geocomputation 2009*, Sydney, Australia, November 30th to December 2nd, 2009.

CP10. Wang, S., Padmanabhan, A., Myers, J.D., **Tang, W.**, Liu, Y., 2008, Towards provenance-aware geographic information systems, *Proceedings of 16th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems* (*ACM GIS 2008*), Irvine, California, USA.

CP11. **Tang, W**., 2007, Development of a spatially-explicit agent-based simulation package for modeling complex adaptive geographic systems. *Proceedings of the UCGIS Summer Assembly, 2007*, Yellowstone National Park, USA.

CP12. Bennett, D.A., and **Tang, W.**, 2005, An agent-based simulation of Yellowstone's Northern Range elk herd: A cognitive approach, *Proceedings of Geocomputation International Conference 2005*, Ann Arbor, Michigan, USA (CD-ROM).

Other Publication (2)

1. **Tang, W.** (2017). Graphics Processing Units. *The Geographic Information Science & Technology Body of Knowledge (2nd Quarter 2017 Edition)*, John P. Wilson (ed.), doi: 10.22224/gistbok/2017.2.8 (URL: http://gistbok.ucgis.org/bok-topics/graphics-processing-units-gpus)
2. **Tang, W.**, Malanson, G.P., and Walsh, S.J., 2004, Model for land use changes in Thailand, *Asian Surveying and Mapping*, 2, 1-3.

Grants (about $5.93M funded in total)

External (funded)

1. 2022-2023, **Co-PI**, Public health region 4 wastewater surveillance, Cabarrus County, ($315,000), [PIs: Cynthia Gibas, Jessica Schlueter, Mariya Munir, Wenwu Tang]
2. 2022-2023, **Co-PI**, Mecklenburg County Health Department, Analyzing samples of COVID-19 within Mecklenburg County, ($660,961), [PIs: Cynthia Gibas, Jessica Schlueter, Kevin Lambirth, **Wenwu Tang**]
3. 2022-2024, **Co-PI**, NCDOT, Evaluating primary and secondary roadway pavement conditions using deep learning, ($442,060), [PIs: Don Chen, **Wenwu Tang**, Christopher Vaughan]
4. 2022-2023, **Co-PI**, NCDOJ, Engaging citizens to increase their awareness of groundwater contamination found in private wells across Gaston County, NC, ($49,364, amounts to UNCC: $49,364), [PIs: Eric Delmelle, **Wenwu Tang**, Douglas Shoemaker, Samantha Dye]
5. 2022-2023, PI, EPRI, Subgrade corrosion mapping and utility interaction mapping in the United States, ($26,000), [PIs: **Wenwu Tang**]

6. 2021-2022, Co-PI, NCDHHS (via UNC Chapel Hill), CORonavirus Variant SEQencing, (749,999), [PIs: Jessica Schlueter, Cynthia Gibas, Kevin Lambirth, Wenwu Tang]
7. 2021-2023, **PI**, NCDOT, Geo-FRIT: A web-based geospatial analytics tool for quantifying freight risk and resilience in transportation, ($323,065, amounts to UNCC: $323,065), [PIs: **Wenwu Tang**, Wei Fan, Eric Delmelle, Shen-En Chen]
8. 2021-2022, **Co-PI**, UCAR, Remote collaborative geoscience learning through distributed file servers and dedicated web server system, ($12,414), [PIs: Xin Zhang (UNC Pembroke), **Wenwu Tang**, Madan Maharjan (UNC Pembroke)]
9. 2020-2025, **Co-PI**, CDC (via Gaston County, NC), Healthy Well II, ($873,669) [PIs: Eric Delmelle, Wenwu Tang, Craig Allan, Olya Keen].
10. 2020-2022, **PI**, EPRI, Subgrade corrosion mapping of steel, zinc, and copper in the United States, ($46,254) [PIs: Wenwu Tang]
11. 2020-2022, **Co-PI**, WRRI, GastonWaterMap: A webGIS to inform private well owners in Gaston County of groundwater quality, ($60,000, amount to UNCC: $42,000) [PIs: Eric Delmelle, **Wenwu Tang**, David Vinson, Douglas Shoemaker, Gary Silverman, Marc Serre, Samantha Dye].
12. 2019-2019, **PI**, EPRI (Electric Power Research Institute), Utility Interaction Mapping of the United States, (**$15,200**) [PIs: Wenwu Tang]
13. 2018-2021, **PI**, NC Department of Transportation, *DeepHyd: A Deep Learning-based Artificial Intelligence Approach for the Automated Classification of Hydraulic Structures from LiDAR and Sonar Data*, ($396,989) [PIs: **Wenwu Tang**, Shenen Chen, John Diemer, and Craig Allan]
14. 2018-2022**, PI**, USDA Forest Service (Santee Experiment Forest), Development and Operation of a Web GIS-enabled Data Management System for the Santee Experimental Forest. (**$84,788**) [PIs: **Wenwu Tang**].
15. 2018-2018**, PI,** Electric Power Research Institute (EPRI), Soil Corrosivity Mapping of US**, (**$45,502**;** amounts to UNCC: $45,502**)** [PI: **Wenwu Tang**]
16. 2018-2018, **PI,** USDA Forest Services, Southern Research Station, Geospatial analyses of mangrove data, ($8,800, amount to UNCC: $8,800), [PIs **Wenwu Tang**] Supplementary grant to USAD Forest Service grant "Development and Operation of a Web GIS-enabled Data Management for the Santee Experimental Forest".
17. 2018-2018, **Participant** (Wenwu Tang), NSF Rapid, IRMA-Florida/Maira-Puerto Rico ($72,420; amounts to UNCC: $72,420; amount to CAGIS: $8,000) [PIs: Shenen Chen, Madhav Manjrekar, Yamilka Baez-Rivera, Miguel Pando]
18. 2017-2018**, PI,** Electric Power Research Institute (EPRI), Atmospheric corrosion map for Ontario, Canada**, (**$3,364**;** amounts to UNCC: **$**3,364**)** [PI: **Wenwu Tang**] [starting from 12/01/2017-03/30/2018**]**
19. 2017-2018, **PI**, NSF XSEDE Supercomputing Resource Allocation Award, *Accelerating and enhancing multi-scale spatiotemporally explicit analysis and modeling of geospatial systems*, (200,000 supercomputing service hours)
20. 2017-2017, **PI**, Mooresville Soup Kitchen, *Poverty Mapping for the Mooresville Soup Kitchen*. ($1,260)
21. 2016-2016, **PI**, Electric Power Research Institute (EPRI), *Atmospheric corrosion map*, ($16,000) [PI: **Wenwu Tang**]

22. 2015-2020 **Co-PI,** U.S. Center for Disease Control and Prevention (CDC). *Healthy Wells* (through NC Gaston County Department of Health and Human Services). $666,665 [PIs: G. Silverman, E. Delmelle, and **W. Tang**]
23. 2015-2020 **PI**, USDA Forest Services: *Development and Operation of a Web GIS-enabled Data Management System for the Santee Experimental Forest*. ($109,155) [PIs: **Wenwu Tang**].
24. 2013-2016 **Co-PI**, U.S. Fish & Wildlife Service, South Atlantic Landscape Conservation Cooperative, *Smart-SLEUTH: Augmenting the SLEUTH urban growth model with new smart-growth scenario-building capabilities*, ($294,154) [PIs: Ross Meentemeyer, **Wenwu Tang**, John Vogler, Douglas Shoemaker]
25. 2012-2015 **Co-PI**, North Carolina Department of Transportation, *Improvements to NCDOT's Lidar-based wetland prediction model*, ($287,189), [PIs: Sheng-guo Wang, Shen-en Chen, and **Wenwu Tang**]
26. 2012-2014 **PI**, NC Forest Service, *Assessment of urban forests for water quality*, ($101,520) [PIs: **Wenwu Tang**, Craig Allan, Sandra Clinton, Ross Meentemeyer]
27. 2011-2015 **PI**, USDA Forest Services: *Development and Operation of a Web GIS-enabled Data Management System for the Santee Experimental Forest*. ($99,755) [PIs: **Wenwu Tang**].
28. 2008-2015 **Co-PI**, NSF TeraGrid Supercomputing Resource Award: *Extending and Sustaining GISolve as a GIScience Gateway Toolkit for Geographic Information Analysis*, [PI: Shaowen Wang (University of Illinois at Urbana-Champaign, UIUC); 20,000,000+ supercomputing service hours]

Internal (funded)

1. 2022-2022, UNC Charlotte School of Data Science, Understanding campus human movement pattern for COVID prediction through Wi-Fi log data modeling and analysis, ($15,000), [PIs: Lei Zhu, Wenwu Tang]
2. 2021-2021, PI, UNC Charlotte CARES Fund, GIS-based Analytics and Computational Modeling for the Monitoring of Covid-19 Outbreak via Wastewater Surveillance: Spatially Informed Decision Making Support, ($104,875), [PIs: **Wenwu Tang**, Srinivas Akella, Jacelyn Rice-Boayue, Eric Delmelle, Don Chen, Cynthia Gibas, Jiancheng Jiang, Taufiquar Khan]
3. 2018-2019, co-PI, CRI-TRISP, Development of an integrated GIS-based Pavement Management System, ($53,152.50) [PIs: Don Chen, **Wenwu Tang**, Umit Cali]
4. 2015-2016 **PI**, UNC Charlotte, Light rail mapping and spatial analysis for faculty/staff and students at UNC Charlotte. ($12,000) [PIs: **Wenwu Tang**, Eric Delmelle, Elizabeth Delmelle].
5. 2013-2014 **PI**, UNC Charlotte, Faculty Research Grant, *An advanced parallel spatial analysis framework for computationally intensive sensitivity analysis of spatial agent-based models, ($6,000)*
6. 2011-2012 **PI**, UNC Charlotte, *Improving geographic knowledge discovery and spatial reasoning with mobile and Web-based Geographic Information Systems*, ($11,852), [PIs: Eric Delmelle, Wenwu Tang, and Laurie Garo]

Grants (Pending)

1. 2022-2027, Co-PI, CDC (via Mecklenburg County Health Department), North Carolina Pathogen Genomics Center of Excellence, ($24,367,242), [PIs: Cynthia Gibas, Jessica Schlueter, Mariya Munir, Robert Reid, Kevin Lambirth, Alexis Dornburg, Richard White, Laurel Yohe, Shi Chen, Anthony Fodor, Wenwu Tang, Srinivas Akella, Jacelyn Rice-Boayue, Eric Delmelle, Don Chen, Lei Zhu, Shian Sung, Quinne Murphy]
2. 2022-2024, Co-PI, NCDOT, Community-Informed Transportation Needs and Impacts Assessment in North Carolina: Spatially Explicit Environmental Justice Study, ($454,953), [PIs: Fushcia-Ann Hoover, Michelle Zuniga, Katherine, Idziorek, Wenwu Tang]
3. 2022-2023, PI, EPRI, Subgrade corrosion mapping and utility interaction mapping in the United States, ($26,000) [PIs: Wenwu Tang]
4. 2022-2026, Co-PI, FEMA, Development of a Lithium-ion Battery Risk Analysis Repository (LIBRAR), ($1,499,404), [PIs: Jeffery Kimble, Nicole Braxtan, Shenen Chen, **Wenwu Tang**, Jun Xu, Tiefu Zhao, Jake Smithwick, Eric Huhn]
5. 2022-2025, Co-PI, EPA, Optimization of collaborative wastewater monitoring strategies for widespread public health surveillance of viral pathogens, (1,238,207), [PIs: Cynthia Gibas, Jessica Schlueter, Mariya Munir, **Wenwu Tang**, Srinivas Akella, Jacelyn Rice-Baoyue, Eric Delmelle, Don Chen]
6. 2022-2023, Senior Personnel, NSF, PIPP Phase I: Preventing Pre-emergence of Zoonotic Pathogens: Detection, Evolution, Ecosystems, Social Behavior and Education, ($997,422), [PIs: Daniel Janies, Jesse Kwiek, Cody Thompson, Jeffrey Townsend, McDown, Jessica Schlueter, Cynthia Gibas; Senior Personnel: Adam Reitzel, Laurel Yohe, Alexis Dornburg, Kevin, McGoff, Shian Way Sung, Richard White, Todd Steck,, Jiancheng Jiang, Srinivas Akella, Taufiquar Khan, Jacelyn Rice-Boayue, Mariya Munir, Shi Chen, Benjamin Radford, Ian Binns, Eric Delmelle, **Wenwu Tang**]

Patent (1)

1) Wang, S., Bai, L., Deng, J., Jia, M., Weatherford, M., Paugh, L., **Tang., W.**, Chen, M, Chen, S., 2015, Wetland modeling and prediction. US Patent Number: 20140347673.

Invited Talks (22)

1. **Tang, W.**, Chen, T., Slocum, Z., Lan, Y., Delmelle, E., Chen, D., Mittal, N., Rice-Boayue, J., Shukla, T., Lin, S. and Akella, S., 2022. A Web-based Spatial Decision Support System of Wastewater Surveillance for COVID-19 Monitoring: A Case Study of a University Campus. Weill Cornell Medicine, Cornell University, March 17th, 2022.
2. **Tang, W.**, Chen, S., Diemer, J., Allan, C., and Lauffer, M.S., 2021, Deep learning-based detection of 3D hydraulic structures from point cloud data: Acceleration via a cyberinfrastructure-enabled high-performance computing approach, INES Seminar, UNC Charlotte, September 7th, 2021.
3. **Tang, W.**, Chen, S., Diemer, J., Allan, C., and Lauffer, M.S., 2021, Deep learning-based detection of 3D hydraulic structures from point cloud data: Acceleration via a cyberinfrastructure-enabled high-performance computing approach, Research

Seminar of College of Computing and Informatics, UNC Charlotte, January 29th, 2021.

4. **Tang, W.**, Chen, S., Diemer, J., Allan, C., and Lauffer, M.S., 2019, Deep learning-based classification of point cloud data for the automated detection of hydraulic structures driven by cyberinfrastructure-enabled high-performance computing, Department of Geography, Virginia Tech. October 25th, 2019.
5. **Tang, W.**, 2019, Large-scale agent-based simulation of urban-rural land development: A cyberinfrastructure-enabled approach, Department of Geography and the Environment, the University of Denver, May 2nd, 2019.
6. **Tang, W.**, 2019, Cyberinfrastructure-enabled GIS for Large-Scale Spatial Problem-solving: Coupling Spatial and Computational Thinking, Department of Geography and the Environment, the University of Denver, May 3rd, 2019. Guest lecture for *GEOG2990 Professional Development for Geography & Environmental Science*.
7. **Tang, W.**, 2019, A cyberinfrastructure approach for big spatial data analytics of global mangrove carbon, invited by Dr. Harrison Campbell for the course "Research Design Fundamentals"
8. **Tang, W.**, 2018, *Cyberinfrastructure-enabled GIS for large-scale spatial problem-solving: Coupling spatial and computational thinking*, invited by Dr. Wei-Ning Xiang for the course "Spatial Thinking" (GEOG 1103)
9. Yamilka Baez-Rivera, Miguel A., Pando, Shen-en, Chen, **Wenwu Tang**, 2018, EPIC Energy Seminar: Impact of natural disasters on the Grid: A Puerto Rico case study, EPIC, UNC Charlotte, October 16th, 2018.
10. **Tang., W.**, 2018, Accelerated assessment of wetland areas and carbons in Alaska using cyberinfrastructure-enabled high-performance and parallel computing, June 28th, 2018, China University of Geosciences, Beijing, China.
11. **Tang, W.**, 2018, Large-scale agent-based simulation of urban-rural development: Cyberinfrastructure-enabled model performance evaluation driven by big data. *International Workshop on New Technologies and Methods for Socio-Ecological Practice Research*, June 25-26, 2018. Tongji University, China.
12. **Tang., W.**, 2018, Accelerated assessment of wetland areas and carbons in Alaska using cyberinfrastructure-enabled high-performance and parallel computing, June 15th, 2018, China University of Geosciences, Wuhan, China.
13. **Tang, W.,** 2018, Accelerated assessment of wetland areas and carbons in Alaska using cyberinfrastructure-enabled high-performance and parallel computing, Wuhan University, Wuhan, China. June 14th, 2018.
14. **Tang, W.**, 2015, Large-scale parallel land change simulation, The Video and Image Analysis Lab (VIA lab), Department of Computer Science, the University of North Carolina at Charlotte. December 4th, 2015.
15. **Tang, W.,** 2015, Large-scale spatial analysis and modeling: A cyberinfrastructure-enabled approach, Wuhan University, Wuhan, China, July 27th, 2015.
16. **Tang, W.,** 2015, Cyberinfrastructure-enabled parallel spatiotemporal simulation: Big data and land change modeling, China University of Geosciences, Wuhan, China, July 30th, 2015.
17. **Tang, W.,** 2014, *The Use of CyberGIS for Large-Scale Spatial Problem-solving: Coupling Spatial and Computational Thinking*, China University of Geosciences, Beijing, China, December 26th, 2015.

18. **Tang, W.,** 2014**,** *Coupling spatiotemporal and computational thinking for big data analytics*, UNC Charlotte Big Data Workshop "A Conversation on Social Sciences and Data Sciences" organized by Project Mosaic and Data Science and Business Analytics Initiative, October 16th, 2014
19. **Tang, W.,** 2014, Panelist**,** *Symposium on Synergistic Advances of CyberGIS and Geography: Roles of CyberGIS and Geography for Turning Big Data to Rich Data and Knowledge*, *The 109th Annual Meeting of AAG*, April 4-8, 2014, Tampa, FL, USA.
20. **Tang, W.**, 2014, Discussant, Paper Session for *Spatiotemporal Thinking, Computing and Applications (STCA) Session: Visualization*. *The 109th Annual Meeting of AAG*, April 4-8, 2014, Tampa, FL, USA.
21. **Tang, W.**, 2013, Advanced spatial modeling using Graphics Processing Units, *Charlotte Metropolitan GIS User Group Meeting*, Charlotte, May 23rd, 2013.
22. **Tang, W.**, 2012, Cyberinfrastructure-enabled simulation of space-time movement phenomena: Elk migration in Yellowstone. *The Banff International Focused Research Group*, October 21-28, 2012, Banff, Canada.

Presentations (119) (Students or visiting scholars were underlined)

1. **Tang, W.**, Chen, T., Slocum, Z., Lan, Y., Delmelle, E., Chen, D., Mittal, N., Rice-Boayue, J., Shukla, T., Lin, S. Akella, S., Schlueter, J., Munir, M., and Gibas, C., 2022. A Web-based Spatial Decision Support System of Wastewater Surveillance for COVID-19 Monitoring: A Case Study of a University Campus. Annual Meeting of American Association of Geographers 2022, February 25 to March 1, 2022
2. Chen, T., **Tang, W.,** Chen, S., Allan, C., Diemer, J., Shukla, T., Slocum, Z., Shanmugam, N., Chavan, V., and Lauffer, M.S. 2022. Empirical knowledge related to deep learning-based 3D point cloud classification in 3D GIS. American Association of Geographers Annual Meeting 2022, February 25 to March 1, 2022
3. Chavan, V., Chen, S., **Tang, W.**, Allen, C., Diemer, J., Shanmugam, N., Chen, T., Shukla, T., Slocum, Z., Lauffer, M. 2021. Effect of Scour on Stability of Drilled Pier (Pile) Foundation Using Three-Dimensional Finite Element Analysis Method. NCDOT Research & Innovation Summit 2.0. Virtual. October 5-6, 2021.
4. Chen, T., **Tang, W.**, Chen, S., Allan, C., Diemer, J., Shukla, T., Slocum, Z., Shanmugam, N., Chavan, V., and Lauffer, M.S., 2021. Automated Semantic segmentation of point cloud data driven by deep learning. NCDOT Summit 2021, October 5th, 2021
5. Shukla, T., **Tang, W.**, Allan, C., Chen, S., Diemer, J., Chen, T., Slocum, Z., Shanmugam, N., Chavan, V., and Lauffer, M.S., 2021. Scour Monitoring of Hydraulic Structures using Unmanned Aerial System and Sonar. NCDOT Summit 2021, October 6th, 2021
6. Slocum, Z., **Tang, W.**, Allan, C., Diemer, J., Chen, T., Chavan, V., Shanmugam, N., Shukla, T., Lauffer, M.S. 2021. A Web-based approach for the application of deep learning to the automated point cloud classification of hydraulic structures. NCDOT Research & Innovation Summit 2.0. Virtual. October 5-6, 2021.
7. Shukla, T., **Tang, W.**, Allan, C., Diemer, J., Chen, S., Chen, T., Slocum, Z., and Lauffer, M.S., 2021. The fusion of Unmanned Aerial System and sonar data for the assessment of scours of hydraulic structures, STRATUS, May 17th-19th, 2021.

8. Chen, T., **Tang, W.**, Chen, S., Allan, C., Diemer, J., Shukla, T., Shanmugam, N., Chavan, V., Lauffer, M.S. 2021. Deep learning-based 3D semantic segmentation: a practical case in hydrualic structures, Annual Meeting of the American Association of Geographers, Virtual Conference., April 7th, 2021.
9. Chavan, V., Chen, S., Allan, C., Diemer, J., **Tang, W.**, Shanmugam, N., Slocum, Z., Shukla, T., Chen, T., and Lauffer, M.S., 2020, Bridge Pier Scour-Induced Loading Effect Using Finite Element Modeling, NCDOT Research & Innovation Virtual Summit, October 13th-14th, 2020. (poster presentation).
10. Chen, T., **Tang, W.**, Chen, S., Allan, C., Diemer, J., Shukla, T., Slocum, Z., Shanmugam, N., Chavan, V., and Lauffer, M.S., 2020. 3D Point Cloud Semantic Segmentation: A practical case in bridge detection. USGIF GEOINTegration Summit, September 28th, 2020 (poster presentation)
11. Chen, T., **Tang, W.**, Chen, S., Chavan, V., Shanmugam, N., Slocum, Z., Shukla, T., Allan, C., Diemer, J., and Lauffer, M.S., 2020. Deep Learning-based Semantic Segmentation of 3D Point Clouds: A Case Study for Hydraulic Structures and its components. NCDOT Research & Innovation Virtual Summit, October 13th-14th, 2020. (Lightning Talk)
12. Shanmugam, N., Chen, S., Allan, C., Diemer, J., **Tang, W.**, Chavan,V., Slocum, Z., Shukla, T., Chen, T., and Lauffer, M.S., 2020, Quantification of Bridge Pier Scour from 3D Point Cloud Data Using Spatial Interpolation, NCDOT Research & Innovation Virtual Summit, October 13th-14th, 2020. (poster presentation).
13. Shukla, T., Allan, C., **Tang, W.**, Chen, S., Diemer, J., Chen, T., Slocum, Z., Shanmugam, N., Chavan, V., and Lauffer, M.S., 2020, Bathymetric Surveys of Hydraulic Structures using unmanned aerial systems and sonar, NCDOT Research & Innovation Virtual Summit, October 13th-14th, 2020. (poster presentation).
14. **Tang, W.**, Chen, S., Diemer, J., Allan, C., and Lauffer, M.S., 2020, The automation and acceleration of deep learning-based detection of 3D hydraulic structures from point cloud data: A cyberinfrastructure-enabled approach, NCDOT Research & Innovation Virtual Summit, October 13th-14th, 2020.
15. **Tang, W.**, Chen, S., Diemer, J., Allan, C., and Lauffer, M.S., 2019, DeepHyd: A deep learning-based artificial intelligence approach for the automated classification of hydraulic structures from LiDAR and Sonar data, NCDOT Research & Innovation Summit, May 7th, 2019, Greensboro, NC.
16. Chen, T., **Tang, W.**, Chen, S., Allan, C., Diemer, J., Shukla, T., Shanmugam, N., Chavan, V., Lauffer, M.S., 2019, Massive 3D scene reconstruction of hydraulic structures accelerated using high-performance computing, NCDOT Research & Innovation Summit, May 7th, 2019, Greensboro, NC. (poster presentation).
17. Shukla, T., Chen, T., **Tang, W.**, Chen, S., Allan, C., Diemer, J., Shanmugam, N., Chavan, V., and Lauffer, M.S., 2019, Bridge inspection based on unmanned aerial systems and photogrammetry techniques, NCDOT Research & Innovation Summit, May 7th, 2019, Greensboro, NC. (poster presentation).
18. Chen, T., and **Tang, W.**, 2019, When geospatial big data meets high performance computing in 3D GIS, Annual Meeting of the American Association of Geographers, Washington D.C., April 3-7th, 2019

19. Owusu, C., Dye, S., **Tang, W.**, Delmelle, E., , 2019, Detecting space-time patterns under non-stationary background population, Annual Meeting of the American Association of Geographers, April 3-7th, 2019, Washington D.C.
20. Hohl, A., Delmelle, E., **Tang, W.**, Shi, X., 2019, Detecting space-time patterns under non-stationary background population, Annual Meeting of the American Association of Geographers, April 3-7th, 2019, Washington D.C.
21. Lan, Y., **Tang, W.**, Delmelle, E., Dye, S., 2019, An online GIS-based data collection, management and analysis system for private wells, Annual Meeting of the American Association of Geographers, April 3-7th, 2019, Washington D.C.
22. Slocum, Z., **Tang, W.**, Chen, D., and Zheng, M., and Yang, J., 2019, A Web GIS-based approach for pavement distress management, Annual Meeting of the American Association of Geographers, April 3-7th, 2019, Washington D.C.
23. **Tang, W.**, Zheng, M., Slocum, Z., Yang, J., Allan, C., 2019, A cyberinfrastructure approach for big data-driven microtopographic analysis, Annual Meeting of the American Association of Geographers, April 3-7th, 2019, Washington D.C.
24. Zheng, M., **Tang, W.**, Zhao, X., 2019, Spatially explicit hyperparameter optimization, Annual Meeting of the American Association of Geographers, April 3-7th, 2019, Washington D.C.
25. Delmelle, E., Lan, Y., Owusu, C., and **Tang, W.**, 2019, Healthy Wells, Charlotte-Metropolitan GIS User Group Meeting, February 15th, 2019, Charlotte, NC, USA.
26. Shukla, T., Chen, T., and **Tang, W.**, 2019, Topographical surveying using UAS photogrammetry, Charlotte-Metropolitan GIS User Group Meeting, February 15th, 2019, Charlotte, NC, USA.
27. Kolka, R., C. Trettin, **W. Tang**, K. Krauss, S. Bansal, J. Drexler, K. Wickland, R. Chimner, D. Hogan, E. J. Pindilli, B. Benscoter, B. Tangen, E. Kane, S. Bridgham, and C. Richardson, 2019: Chapter 13: Terrestrial Wetlands Webinar. *From Science to Solutions: The State of the Carbon Cycle Seminar Series, sponsored by NOAA and US Carbon Cycle Program.*
28. Kolka, R., C. Trettin, **W. Tang**, K. Krauss, S. Bansal, J. Drexler, K. Wickland, R. Chimner, D. Hogan, E. J. Pindilli, B. Benscoter, B. Tangen, E. Kane, S. Bridgham, and C. Richardson, 2019: Chapter 13: Terrestrial Wetlands Webinar. *First Friday All Climate Change Talks, sponsored by USDA Forest Service Research and Development.*
29. Kolka, R., C. Trettin, **W. Tang**, K. Krauss, S. Bansal, J. Drexler, K. Wickland, R. Chimner, D. Hogan, E. J. Pindilli, B. Benscoter, B. Tangen, E. Kane, S. Bridgham, and C. Richardson, 2018: State of the Carbon Cycle in Terrestrial Wetlands of North America. American Geophysical Union, Fall Meeting, December, 2018.
30. Allan, C., Farley, B., Vinson, D., Zheng, M., **Tang, W.**, and Trettin, C., 2018, Soil respiration and methane emissions in freshwater tidal bottomland forests, Southeastern U.S.A., Annual Meeting of Society of Wetland Scientists (SWS), May 31st, 2018, Denver, Colorado.
31. **Tang, W.**, Yang, J., Zheng, M., Allan, C., Trettin, C., 2018, Accelerated extraction of microtopographic features using very high resolution digital elevation models: A parallel computing approach. 2018 AWRA Spring Specialty Conference: GIS& Water

Resources X: Spatial Analysis of Watersheds: Ecological, Hydrological and Societal Responses. April 22-25th, 2018, Orlando FL.

32. **Tang, W.**, Zheng, M., Zhao, X., 2018, Accelerating the assessment of wetland areas and carbons in Alaska using cyber-enabled high-performance and parallel computing, Annual Meeting of the American Association of Geographers, April 10-14, 2018, New Orleans, LA
33. Zheng, M., **Tang, W.**, 2018, Multilevel analysis of spatially explicit model, Annual Meeting of the American Association of Geographers, April 10-14, 2018, New Orleans, LA
34. Minrui Zheng, Wenwu Tang, 2017, Multilevel analysis of neural network-driven spatial models, The 65th Annual Meeting of the North American Regional Science Council, November 8th -11th, 2017, Vancouver, Canada.
35. Zheng, M., **Tang, W.**, Zhao, X., 2017. Hyperparameter optimization of neural network-driven spatial models accelerated using cyber-enabled high-performance computing, The 2nd International Symposium of Spatiotemporal Computing, Cambridge, MA, USA. August 7-9, 2017.
36. **Tang, W.**, Shi, J., Zheng, M., Trettin, C., 2017. A Cyberinfrastructure Approach for Big Spatial Data Analytics of Global Mangrove Carbon. Annual Meeting of the American Association of Geographers, Boston, MA, USA. April 4-9, 2017.
37. Alexander Hohl, Minrui Zheng, Meijuan Jia, **Wenwu Tang** and Eric M Delmelle. Sensitivity Analysis of a High-Performance Spatiotemporal Pattern Mining Algorithm. Annual Meeting of the American Association of Geographers, Boston MA April 2017
38. Zheng, M., **Tang, W.**, 2017. Selection of non-linear spatial models accelerated using cyber-enabled high-performance computing: a case study of High Rock Lake Watershed. Annual Meeting of the American Association of Geographers, Boston, MA, USA. April 4-9, 2017.
39. Lan, Y., **Tang, W.**, Delmelle, E., Owusu, C., 2017. Fusion of multiple Web-based geocoding services for improved address matching. Annual Meeting of the American Association of Geographers, Boston, MA, USA. April 4-9, 2017.
40. Owusu, C., Delmelle, E., **Tang, W.**, Lan, Y., Major, G., Shi, J., Silverman, G., Dye, S., 2017. Hybrid Geocoding and Text Matching: A Multi-stage Process to Improve Geocoding Accuracy and Match Rate of Historical Records. Annual Meeting of the American Association of Geographers, Boston, MA, USA. April 4-9, 2017.
41. Ma, X., **Tang, W.**, Zhao, X., 2017. Optimizing Land-use allocation by using multi-objective artificial immune algorithm and multi-agent system. Annual Meeting of the American Association of Geographers, Boston, MA, USA. April 4-9, 2017.
42. Zhao, X., **Tang, W.**, Ma, X., Liu, D., Liu, Y, 2017. A High Performance and Spatially Explicit Multi-objective Artificial Immune Algorithm for Large scale Land Use Allocation. Annual Meeting of the American Association of Geographers, Boston, MA, USA. April 4-9, 2017.
43. Zheng, M., **Tang, W.**, Shi, J., Lan, Y., Feng, W., Shoemaker, D., Trettin, C.C., 2016, Scientific workflow-driven automation of wetland assessment for the United States: High-performance computing for big spatial data analytics, The 71st Annual SEDAAG

(SouthEastern Division of the American Association of Geographers) Meeting, Columbia, SC, November 20-22, 2016

44. Owusu, C., Delmelle, E., **Tang, W.**, Lan, Y., Major, E., Shi, J., Silverman, G., Dye, S., 2016, Improving geocoding accuracy of private water wells in Gaston County, NC using a context-based approach, The 71st Annual SEDAAG (SouthEastern Division of the American Association of Geographers) Meeting, Columbia, SC, November 20-22, 2016
45. Hohl, A., Casas, I., Delmelle, E.M., **Tang, W.**, 2016, Hybrid indexing for parallel analysis of spatiotemporal point patterns. *The Ninth International Conference on Geographic Information Science*, Montreal, Canada, September 27-30, 2016.
46. **Tang, W.**, Feng, W., Zheng, M., and Shi, J., 2016, Large-scale agent-based modeling of urban growth: Spatiotemporal simulation driven by big data and cybverinfrastructure, International Conference on Geographies of Health and Living in Cities: Making Cities Healthy for All. Hongkong, China. June 21-24, 2016.
47. Shi, J., **Tang, W.**, Feng, W., Zheng, M., Trettin, C.C., 2016, MangroveCarbon: A scientific workflow-driven GIS toolkit for the estimation of mangrove biomass and carbon stock, The 2016 ESRI Southeast User Conference, Charlotte, NC. May 2-4, 2016
48. **Tang, W.**, Feng, W., Zheng, M., Shi, J., 2016. Cyber-enabled model performance analysis of large-scale agent-based land change simulation. Annual Meeting of the American Association of Geographers, San Francisco, CA, USA. March 29-April 2, 2016.
49. Feng, W., **Tang, W.,** and Zheng, M., 2016, Explore urban sprawl with a cyberinfrastructure-enabled agent-based modeling: Local decision-making and its consequences. Annual Meeting of the American Association of Geographers, San Francisco, CA, USA. March 29-April 2, 2016.
50. Shi, J., Feng, W., **Tang, W.,** and Trettin, C., 2016, The estimation of global-level mangrove biomass and carbon: a high performance computing approach combined with Web GIS, Annual Meeting of the American Association of Geographers, San Francisco, CA, USA. March 29-April 2, 2016.
51. Zheng, M., **Tang, W.**, and Feng, W. 2016. Automated selection of spatial models accelerated using cyber-enabled high-performance computing: a case study of High Rock Lake Watershed. Annual Meeting of the American Association of Geographers, San Francisco, CA, USA. March 29-April 2, 2016.
52. Zuo, H., Wang, C., **Tang, W.**, & Rorrer, A. 2016. Investigations of neighborhood conditions under the context of the academic achievement gap. North Carolina Association for Research in Education (NCARE), Charlotte, NC.
53. Hohl, A., Delmelle, E., and **Tang, W.**, 2015, Spatiotemporal domain decomposition for massive parallel computation of space-time kernel density, The First International Symposium on Spatiotemporal Computing, July 13-15, 2015, George Mason University, Fairfax, Virginia, USA.
54. Deng, J., **Tang, W.**, Griffith, A., and Shi, J., 2015, A cyber-based framework for large-scale spatio-temporal analysis of landscape pattern change, The First International Symposium on Spatiotemporal Computing, July 13-15, 2015, George Mason University, Fairfax, Virginia, USA.

55. **Tang, W.,** Feng, W., Deng, J., and Jia, M., 2015, Parallel spatial simulation of urban agglomeration in North Carolina, USA, The 9th International Association of Landscape Ecology World Congress, July 5-10, 2015, Portland, Oregon, USA. [invited]
56. Gong, Z., **Tang, W.**, Thill, J-C, 2015, A Locality-aware Approach to Scalable Parallel Agent-based Models of Spatially Heterogeneous Interactions, Geocomputation 2015.
57. Griffith, A.D., Deng, J., and **Tang, W.**, 2015, Spatial agent-based modeling of coastal land ownership changes in North Carolina and South Carolina, *The 110th Annual Meeting of AAG*, April 21-25, 2015, Chicago, IL, USA.
58. Zheng, M., Deng, J., Feng, W., and **Tang, W.**, 2015, Spatially explicit variation in land price: spatial hedonic modeling based on artificial neural networks, *The 110th Annual Meeting of AAG*, April 21-25, 2015, Chicago, IL, USA.
59. Zuo, H., **Tang, W.**, and Wang, C., 2015, Impact of neighborhood institutional resources on Middle School students' achievement, *The 110th Annual Meeting of AAG*, April 21-25, 2015, Chicago, IL, USA.
60. Hohl, A., Delmelle, E., and **Tang, W.**, 2015, 3D domain decomposition for parallel processing of massive spatiotemporal geographic data, *The 110th Annual Meeting of AAG*, April 21-25, 2015, Chicago, IL, USA.
61. Deng, J., and **Tang, W.**, 2015, A cyber-enabled spatial data mining approach: An analysis of cause-effect relationships in land use systems, *The 110th Annual Meeting of AAG*, April 21-25, 2015, Chicago, IL, USA.
62. Feng, W., and **Tang, W.**, 2015, Parallel spatial autocorrelation analysis within a cyberinfrastructure environment, *The 110th Annual Meeting of AAG*, April 21-25, 2015, Chicago, IL, USA.
63. **Tang, W.**, Feng, W., Deng, J., and Jia, M., 2015, Cyber-enabled parallel spatial simulation of large-scale land change, *The 110th Annual Meeting of AAG*, April 21-25, 2015, Chicago, IL, USA.
64. Strict, C., Trettin, C.C., Tang, W., 2015, Carbon stocks of intact mangroves in the Zambezi River Delta, Mozambique, the 2015 Annual Meeting of Society of Wetland Scientists (SWS), Providence, Rhode Island, May 31st-June 4th, 2015
65. Gerow, T., **Tang, W.**, 2015, Assessment of forest cover in the High Rock Lake Watershed, *Water Resource Research Institute 2015 Annual Conference*, March 18-19, 2015, Raleigh, NC, USA.
66. Gerow, T., Jones, D., **Tang, W.**, 2015, Assessing the relationship between forests and water in the High Rock Lake Watershed of North Carolina, *The Fifth Interagency Conference on Research in the Watersheds*, March 2-6, 2015, Charleston, SC, USA.
67. **Tang., W.**, Feng, W., Harrison, C., Amatya, D., Arnold, J., Trettin, C.C., 2014, The development of an advanced Web GIS portal of Santee Experiment Forest, The 2014 South Carolina Water Resources Conference, October 14th, 2014, Clemson University,
68. **Tang, W.**, 2014, Massively parallel spatial point pattern analysis: Ripley's K function accelerated using general-purpose Graphics Processing Units, *The 109th Annual Meeting of AAG*, April 4-8, 2014, Tampa, FL, USA.
69. Feng, W., and **Tang, W.**, 2014, The use of heterogeneous high-performance computing for parallel map projection, *The 109th Annual Meeting of AAG*, April 4-8, 2014, Tampa, FL, USA.

70. Deng, J., and **Tang, W.**, 2014, Dynamic parallel implementation of Douglas-Peucker algorithm with GPGPUs, *The 109th Annual Meeting of AAG*, April 4-8, 2014, Tampa, FL, USA.
71. Jia, M., and **Tang, W.**, 2014, Spatiotemporal sensitivity analysis of an agent-based model of Artificial Anasazi, *The 109th Annual Meeting of AAG*, April 4-8, 2014, Tampa, FL, USA.
72. Gong, Z., Thill, J-C., **Tang, W.,** 2013, Computational performance, scalability and spatial heterogeneity in parallel agent-based modeling of spatial interaction, 60th *North American Regional Science Council*, Atlanta, GA, November 13-16th, 2013.
73. **Tang, W.**, Feng, W., Deng, J., Jia, M., and Zuo, H., 2013, Cyberinfrastructure-enabled high performance and parallel computing and geocomputational modeling, 60th *North American Regional Science Council*, Atlanta, GA, November 13-16th, 2013.
74. Deng, J., **Tang, W.**, Meentemeyer, R.K., Zheng, X., 2013, Automatic calibration of a multi-level land change model: A combined evolutionary optimization and high-performance computing approach, *The 108th Annual Meeting of AAG*, April 9-13, 2013, Los Angeles, CA, USA.
75. Deng, J., **Tang, W.**, Meentemeyer, R.K., 2013, Comparison of land change models to simulate landscape fragmentation, *The 28th Annual US-IALE Symposium*, April 14-18, 2013, Austin, TX.
76. Feng, W., **Tang, W.**, Meentemeyer, R.K., 2013, Agent-based simulation of land competition between developers and conservationists: a cyberinfrastructure-enabled approach, *The 108th Annual Meeting of AAG*, April 9-13, 2013, Los Angeles, CA, USA.
77. Feng, W., **Tang, W.**, Meentemeyer, R.K., 2013, Spatially explicit simulation of land development coupled with smart growth and land conservation, *The 28th Annual US-IALE Symposium*, April 14-18, 2013, Austin, TX.
78. Gong, Z., Thill, J-C., **Tang, W.**, 2013, Multi-scale modeling of land-use change in a polycentric urban system: A cyber-enabled high-performance computing approach, *The 108th Annual Meeting of AAG*, April 9-13, 2013, Los Angeles, CA, USA.
79. Jia, M., **Tang, W.**, 2013, Comparative sensitivity analysis for spatial agent-based modeling, *The 108th Annual Meeting of AAG*, April 9-13, 2013, Los Angeles, CA, USA.
80. **Tang, W.**, Gong, Z., Feng, W., Meentemeyer, R.K., 2013, Parallel implementation of a spatially explicit multi-level simulation model of land development, *The 108th Annual Meeting of AAG*, April 9-13, 2013, Los Angeles, CA, USA.
81. **Tang, W.**, Jia, M., and Bennett, D.A., 2013, Sensitivity analysis of an intelligent agent-based simulation of elk migration: A cyberinfrastructure-enabled supercomputing approach, *The 28th Annual US-IALE Symposium*, April 14-18, 2013, Austin, TX.
82. Gong, Z, **Tang, W.**, and Thill, J.C., 2012, Parallelization of ensemble neural networks for spatial land-use modeling, *Proceedings of ACM SIGSPATIAL IWGS Workshop*.
83. **Tang, W.**, Jia, M., 2012, Sensitivity analysis of a parallel agent-based model of spatial opinion exchange: Accelerated using Graphics Processing Units, *International Conference on Space, Time, and CyberGIS*, August 6-9, Urbana, IL, USA.
84. **Tang, W.**, Bennett, D.A., and Gong, Z., 2012, Parallel agent-based simulation within heterogeneous many-core computing environments, *The 107th Annual Meeting of AAG*, February 24-28, 2012, New York, NY, USA.

85. Deng, J., **Tang, W.**, Feng, W., Meentemeyer, R.K., 2012, Automatic calibration of a spatial simulation of land development with a high-performance computing approach, *The 107th Annual Meeting of AAG*, February 24-28, 2012, New York, NY, USA.
86. Feng, W., **Tang, W.**, Deng, J., Vogler, J., and Meentemeyer, R.K., 2012, Spatial simulation of land development in a mountainous area within a cyberinfrastructure environment, *The 107th Annual Meeting of AAG*, February 24-28, 2012, New York, NY, USA.
87. Zhu, H, **Tang, W.**, and Delmelle, E., 2012, Design and implementation of a web based geospatial analysis toolkit—A case study in epidemiology, *The 107th Annual Meeting of AAG*, February 24-28, 2012, New York, NY, USA.
88. Bennett, D.A., **Tang, W.**, Xu, S., and Zeng, Y., 2011, The influence of population dynamics on consensus building and land use policies. *The 4th ICA Workshop on Geospatial Analysis and Modeling*, Simon Fraser University, Canada. August 10-12.
89. Gong, Z. **Tang, W.**, and Bennett, D.A., 2011, Development of a shared-memory parallel agent-based model of opinion exchange within a multi-core computing environment. *The 4th ICA Workshop on Geospatial Analysis and Modeling*, Simon Fraser University, Canada. August 10-12.
90. **Tang, W.**, Shoemaker, D., Dorning, D., Vogler, J.B., and Meentemeyer, R., 2011 Spatiotemporal simulation of urban-rural interaction within a high-performance computing environment, *The 106th Annual Meeting of AAG, 2011*, Seattle, Washington, USA, April 12-16.
91. Jia, M., Delmelle, E., and **Tang, W.**, 2011, Simulating individual parking behavior using spatially aware intelligent agents. *The 106th Annual Meeting of AAG, 2011,* , Seattle, Washington, USA, April 12-16.
92. **Tang, W.,** Bennett, D.A., and Zeng, Y., 2010, Adaptive consensus formation: The case of land use regulation in Southwest Montana. The 57th Annual North American Meetings of the Regional Science Association International, Denver, CO, November 10-13, 2010.
93. Padmanabhan, A., **Tang, W.**, and Wang, S., 2010, Agent-based modeling of agricultural land use on TeraGrid, The 5th Annual TeraGrid Conference, TG'10, Pittsburgh, PA, August 2-5, 2010.
94. Shook, E., Wang, S., and **Tang, W.**, 2010, Toward a parallel spatially explicit agent-based modeling framework, The 5th Annual TeraGrid Conference, TG'10, Pittsburgh, PA, August 2-5, 2010.
95. Bennett, D.A., and **Tang, W.,** 2010, Modeling the adaptive use of common-pool resources using geographically aware intelligent agents, *The 105th Annual Meeting of AAG, 2010*, Washington DC, USA, April 14-18, 2010.
96. Shook, E., Wang, S., and **Tang, W.**, 2010, Examining the influence of spatial patterns on parallel agent-based modeling performance, *The 105th Annual Meeting of AAG, 2010*, Washington DC, USA, April 14-18, 2010.
97. **Tang, W.,** Bennett, D.A., and Wang, S., 2010, Parallel agent-based modeling for large-scale geographic systems, *The 105th Annual Meeting of AAG, 2010*, Washington DC, USA, April 14-18, 2010.
98. Bennett, D. A., **Tang, W.**, and Mount, J., 2010, Cyberinfrastructure-enabled agent-based modeling of complex adaptive spatial systems, NSF TeraGrid Workshop on Cyber-GIS, Washington, DC, USA, February 2-3, 2010.

99. Bennett, D. A., and **Tang, W.**, 2009, GAIA-RM: A Geographically Aware Intelligent Agents framework for Rangeland Management, *Geocomputation 2009*, Sydney, Australia, November 30th to December 2nd, 2009.
100. **Tang, W.**, and Bennett, D.A., 2009, Parallel agent-based modelling of land-use opinion dynamics using Graphics Processing Units, *Geocomputation 2009*, Sydney, Australia, November 30th to December 2nd, 2009.
101. Bennett, D.A., and **Tang, W.** 2009, Modeling complex adaptive rangeland systems, *The 104th Annual Meeting of AAG, 2009*, Las Vegas, NV, USA.
102. Shook, E., **Tang, W.,** and Wang, S., 2009, A parallel computing approach for spatially-explicit agent-based models, *The 104th Annual Meeting of AAG, 2009*, Las Vegas, NV, USA.
103. **Tang, W.,** Bennett, D.A., and Wang, S., 2009, Cyberinfrastructure-enabled agent-based modeling, *The 104th Annual Meeting of AAG, 2009*, Las Vegas, NV, USA.
104. Wang, S., **Tang, W.**, Bennett, D. A., and Padmanabhan, A., 2009, An Open Science Grid Approach to Understanding the Complexity of Coupled Human and Natural Systems. *The 2009 Open Science Grid All Hands Meeting*, March 2-5, 2009, Baton Rouge, LA, USA
105. **Tang, W.**, Wang, S., Bennett, D.A. & Liu, Y., 2008. Design and implementation of a service-oriented agent-based simulation architecture. In: *Workshop of the Design of Service-Oriented Architecture (SOA) for Geospatial Science for 5th International Conference on Geographic Information Science*, Park City, Utah, USA.
106. **Tang, W.** and Bennett, D.A., 2008, Modeling the adaptive behavior of individuals to capture the emergence of complex landscape patterns: An intelligent agent approach, *Annual Meeting of US-IALE, 2008*, Madison, WI, USA.
107. **Tang, W.** and Bennett, D.A., 2008, A context-driven representation for spatiotemporally-explicit agent-based models, *The 103th Annual Meeting of AAG, 2008*, Boston, MA, USA.
108. Bennett, D.A., and **Tang, W.**, 2008, The Provenance of Complexity, *The 103th Annual Meeting of AAG, 2008*, Boston, MA, USA.
109. **Tang, W.** and Bennett, D.A., 2007, Agent-based modeling of adaptive spatial decision-making in complex geographical systems: A reinforcement learning approach, *The 102th Annual Meeting of AAG, 2007*, San Francisco, CA, USA.
110. Bennett, D.A., McGinnis, D.L., and **Tang, W.**, 2006, The emergence of complex landscape dynamics, *Evolution, Emergence, Generation Workshop, European Conference on Complex System '06*, Oxford, UK.
111. **Tang, W.** and Bennett, D.A., 2006, Simulating risk-avoidance behavior of elk in Northern Yellowstone Park by using evolutionary neural networks, *The 101th Annual Meeting of AAG, 2006*, Chicago, IL, USA.
112. **Tang, W.** and Bennett, D.A., 2005, Identifying spatially-explicit migration patterns of elk using machine learning, The 57th Meeting of the West Lakes Division, AAG, 2005, The University of Iowa, Iowa City, IA, USA.
113. Bennett, D.A., **Tang, W.**, and McGinnis, D., 2005, Modeling elk migration and trophic cascades in the Greater Yellowstone Ecosystem: An agent-based approach, *The Open Science Conference on Global Change in the Mountain Regions*, Perth, Scotland, UK.

114. Bennett, D.A. and **Tang, W.**, 2005, Modeling complex trophic relations among elk, wolves, and humans in the Greater Yellowstone Ecosystem, *The 101th Annual Meeting of AAG, 2005*, Denver, CO, USA.
115. **Tang, W.** and Bennett, D.A., 2005, Simulating adaptive winter migratory behaviors of elk in Northern Yellowstone National Park, *The 101th Annual Meeting of AAG*, 2005, Denver, CO, USA.
116. **Tang, W.**, Malanson, G.P., and Walsh, S.J., 2004, Agent-based simulation of pattern formation of village territory in Thailand, *The 100th Annual Meeting of AAG*, 2004, Philadelphia, PA, USA.
117. **Tang, W.**, Malanson, G.P., and Entwisle, B., 2003, Agent-based modeling of village location in Thailand, *The 99th Annual Meeting of AAG, 2003*, New Orleans, LA, USA.
118. **Tang, W.** and Malanson, G.P., 2002, Habitat generalists and specialists in the competition-colonization model, *Annual Meeting of US-IALE*, 2002, Lincoln, NE, USA.
119. Zhu, D.K., Martini, I.P., and **Tang, W.**, 2000, Coastal plain evolution indicated by barrier systems in southern Hainan Island, China, *Thematic Conference of International Association of Geomorphologists*, Nanjing, China, August 25-29, 2000.

E. Teaching and Instructional Activities

Teaching Activities – (number of students)

2022 (Fall)	Instructor	*Web GIS (11)*	UNCC
2022 (Spring)	Instructor	*Spatial Statistics (18)*	UNCC
2021 (Fall)	Instructor	*Web GIS (11)*	UNCC
2021 (Spring)	Instructor	*CyberGIS and Big Data (6)*	UNCC
2020 (Fall)	Instructor	*Web GIS (6)*	UNCC
2020 (Spring)	Instructor	*Spatial Statistics (6)*	UNCC
2019 (Fall)	Instructor	*Web GIS *(18)*	UNCC
2019 (Spring)	Instructor	*Spatial Statistics*	UNCC
2018 (Fall)	Instructor	*Web GIS * (15)*	UNCC
2018 (Spring)	Instructor	*Spatial Statistics ** (5)*	UNCC
2017 (Fall)	Instructor	*Web GIS*	UNCC
2017 (Spring)	Instructor	*Spatial Statistics **(7)*	UNCC
2016 (Fall)	Instructor	*Web GIS **(19)*	UNCC
2016 (Spring)	Instructor	*Spatial Statistics **(11)*	UNCC
2015 (Fall)	Instructor	*Web GIS * (15)*	UNCC
2015 (Spring)	Instructor	*Spatial Statistics ** (6)*	UNCC
2014 (Fall)	Instructor	*CyberGIS and Big Data ** (9)*	UNCC
2014 (Spring)	Instructor	*Web GIS * (5)*	UNCC
2013 (Fall)	Instructor	*Agent-based Modeling of Complex Adaptive Spatial Systems ** (7)*	UNCC
2013 (Spring)	Instructor	*Internet GIS * (6)*	UNCC
2012 (Fall)	Instructor (co-teaching)	*Coupled Human and Natural Systems ** (14)*	UNCC
2012 (spring)	Instructor	*Web GIS * (13)*	UNCC
2011 (fall)	Instructor	*Agent-based Modeling of Complex Adaptive Spatial Systems ** (5)*	UNCC
2011 (spring)	Instructor	*Web-based GIS * (12)*	UNCC
2009 (fall)	Instructor	*Computer Cartography and Geovisualization * (16)*	UIUC
2010 (spring)	Guest Instructor	*Advanced GIS **	UIUC
2008 (spring)	Guest Instructor	*Introduction to GIS **	UIUC

2006 (fall)	Laboratory Instructor and Teaching Assistant	*GIS for Environmental Studies: Introduction* *** (28)	UIowa

UNCC: University of North Carolina at Charlotte; UIUC**:** University of Illinois at Urbana-Champaign; UIowa: University of Iowa
* Undergraduate and graduate course ** Graduate course *** Undergraduate only

Graduate Students, main advisor (7 Ph.D., 6 Master, 8 completed)

Tianyang Chen (PhD)	Geography; Direction: CyberGIS and Spatiotemporal Modeling (in progress)
Zachery Slocum (PhD)	Geography: Direction: CyberGIS (in progress)
Yanfang Su (PhD)	Geography: Direction: CyberGIS (in progress)
Jiaxin Liu (PhD)	Geography: Direction: CyberGIS (in progress)
Ian Fisher (MA)	Geography.
Heidi Hearne (MA)	"GIS-based Scientific Workflows for Automating Spatially Driven Sea Level Rise Modeling" (completed in August 2021)
Minrui Zheng (PhD)	"Spatially explicit hyperparameter optimization for neural networks" (completed in August 2020; working as Assistant Professor at Renmin University, China)
Zachery Slocum (MA)	Geography; "Integration of Web GIS with high performance computing: A container-based cloud computing approach" (completed in December, 2019)
Alex Hohl (PhD)	"Accelerating the detection of space-time patterns under non-stationary background population" (co-supervised with Dr. Eric Delmelle, completed in May 2018; working as Assistant Professor at the University of Utah)
Wenpeng Feng (PhD)	*Large-scale spatiotemporal modeling of urban growth with cyberinfrastructure: A surrogate-based approach* (completed in May 2017)
Meijuan Jia (MA)	*Spatiotemporal sensitivity analysis of an agent-based model of Artificial Anasazi with parallel computing* (completed in May, 2016)
Jiyang Shi (MA)	*A high-performance computing approach combined with Web GIS for the estimation of global-level mangrove biomass and carbon* (completed in December 2016)
Huifang Zuo (MA)	"Integrating spatial analysis into temporal growth analysis for investigating the effect of neighborhood-based school attendance zone on academic achievement of students in elementary schools" (completed in December 2018)

Graduate Students, committee member (39: 19 Ph.D., 20 Master)

2022 Tarini Shukla (Ph.D., TBD), INES
Navanit Sri Shanmug, Ph.D., TBD, ongoing.
Archit Parnami, Ph.D., Computer Science, completed in August 2022.
Jennifer Bates, Ph.D., TBD, Geography
Steven Porson, Ph.D., Geography, ongoing

Yang Zhao, Ph.D., INES
Tianjia Yang, Ph.D., INES
Chengying Hua, Ph.D., INES
Sarah Moses, MA, Geography, ongoing

2021 Vidya Subhash Chavan, Ph.D., INES, completed in December 2021
Behnam Nikparvar, Ph.D., INES, completed in December 2021
Sara Kamanmalek, Ph.D., Civil and Environmental Engineering, December 2021.

2020 Daidai Shen (Ph.D., completed in August 2020)
Caroline Brinegar, (MA, Geography, completed in December, 2020)

2019 Greg Docekal, (MA, completed in December 2019)
Yenki Ng (MS, completed in December 2019)

2018 Marilyn R. Brown (MA, completed in December 2018)
Payal Bordia (MS, completed in May 2018)
Juan Geng (MA, completed in May 2018)

2017 Jenberu Feyyisa (Ph.D., completed in December 2017)
Ran Tao (Ph.D., completed in May 2017)
Huifang Zuo (Ph.D., completed in May 2017)
Catherine Grenfell (MA, expected in December 2017)
Elizabeth Major (MA, completed in May 2017)
Megan Sirbaugh (MS; completed in August 2017)

2016 Yuhong Zhou (Ph.D., completed in May 2016)
Michael Desjardins (MA, completed in May 2016)
Allie Shoffner (MA; completed in May 2016)

2015 Zhaoya Gong (PhD, completed in December 2015)
Chengjun Lin (MA, completed in December 2015)
Griffen Angel (MA, completed in May 2015)
Kelly Brawn (MA, completed in August 2015)

2014 Mona Kashiha (PhD, completed in December 2014)
Peter Sherman (MA, completed in May 2014)
Derek Marsh (MA, completed in December 2014)

2013 Thil Hong Diep Dao (PhD, completed in December 2013)

2012 Min Chen (MA, completed in May 2012)

2011 Meng Jia (MA, completed in May 2011)
Hongmei Zhu (MA, completed in May 2011)

Visiting Scholar Mentoring (27)

Yan Shi (Guangzhou University, China)
Yunhao Zhang (Southwest Jiaotong University, China)
Jing Sun (Wuhan University, China)
Yang Liu (Wuhan University, China)
Liu Yang (*Guizhou University, China*)
Yan Yu (*Associate Professor, Wuhan University of Technology, China*)
Jianxin Yang (*Co-educating student, China University of Geoscience, Wuhan, China*)
Xiaochu Du (*Associate Professor, Hubei University, China*)
Jianhua He (*Professor, Wuhan University, China*)
Xiang Zhao (*Lecturer, Wuhan University, China*)

Xiaoya Ma (*Wuhan University, China*)
Jian Ye (*Associate Professor, Southwest Jiaotong University, China*)
Kaili Dou (*Associate Professor, Wuhan University, China)*
Jian Gong *(Associate Professor, China University of Geosciences, Wuhan)*
Jing Deng *(Co-educating PhD student, China University of Geosciences, Beijing)*
Yu He *(Lecturer, Three Gorge University, China)*
Dianfeng Liu *(Associate Professor, Wuhan University, China)*
Shenghua Liu *(Associate Professor, Wuhan University, China)*
Jiqiang Niu *(Associate Professor, Xinyang Normal University, China)*
Feng Xu *(Lecturer, Xinyang Normal University, China)*
Junmei Zang *(Associate Professor, South China University of Technology, China)*
Zhi Zhang *(Lecturer, China University of Geosciences, Wuhan)*
Zuo Zhang *(Associate Professor, Hubei University)*
Jun Zhang *(Wuhan University)*
Xinqi Zheng *(Professor, China University of Geosciences, Beijing)*
Jun Zhu *(Professor, Southwest Jiaotong University, China)*
Qianting Zhu *(Lecturer, China Petroleum University)*

F. Professional Services/Leadership

Grant Review (15 proposals)

2020	Canada Foundation for Innovation (1 proposal)
2019	US NC WRRI (1 proposal)
2018	US NSF Geography and Spatial Science (1 proposal)
2017	National Geographic Society (1 proposal)
	US NSF Geography and Spatial Science (1 proposal)
2016	Natural Sciences and Engineering Research Council of Canada (NSERC) (1 proposal)
2015	US NSF Geography and Spatial Science (1 proposal)
2014	US NSF Geography and Spatial Science (1 proposal)
	Canada Alberta Livestock and Meat Agency Ltd. (1 proposal)
2013	Technology Foundation STW, Netherland (1 proposal)
	Research Council of Canada (1 proposal)
2012	Research Council of Canada (1 proposal)
2011	US NSF Geography and Spatial Science (2 proposals)
	Research Council of Canada (1 proposal)

Manuscript Reviews since 2007 (197 manuscripts; 49 journals)

1) *Advances in Mechanical Engineering*
2) *Annals of the Association of American Geographers*
3) *Area, Royal Geographical Society*
4) *Automation in Construction*
5) *Applied Geography*
6) *Big Data and Cognitive Computing*
7) *Chemosphere*

8) *Cities*
9) *Computers and Geosciences*
10) *Computer, Environment, and Urban Systems*
11) *Concurrency and Computation: Practice and Experience*
12) *Earth Science Informatics*
13) *Ecological Modeling*
14) *Ecological Processes*
15) *Environmental Modelling & Software*
16) *Environment Research Letter*
17) *GCB Bioenergy*
18) *Geoinformatica*
19) *Geographical Journal*
20) *Habitat International*
21) *IEEE Access*
22) *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*
23) *International Journal of Applied Geospatial Research*
24) *International Journal of Digital Earth*
25) *International Journal of Geo-Information*
26) *International Journal of Geographical Information Science*
27) *International Journal of Healthcare Technology and Management*
28) *International Journal of Strategic Property Management*
29) *Journal of Ambient Intelligence and Humanized Computing*
30) *Journal of Computational and Graphical Statistics*
31) *Journal of Computational Methods in Sciences and Engineering*
32) *Journal of Environmental Management*
33) *Journal of Geovisualization and Spatial Analysis*
34) *Journal of Vegetation Science*
35) *Journal of Artificial Society and Social Simulation*
36) *Land Degradation and Development*
37) *Land Use Policy*
38) *Landscape and Urban Planning*
39) *Marine Environmental Research*
40) *Method in Ecology and Evolution*
41) *OMEGA*
42) *One Earth*
43) *Physical Geography*
44) *PLOS ONE*
45) *Professional Geographer*
46) *Remote Sensing*
47) *Sustainability*
48) *Sensors*
49) *Transactions in GIS*

Chapter/workshop Proceeding Review (44 manuscripts)

2020 AutoCarto 2020 (3 manuscripts)

2018 Book proposal for "*Spatial Statistical Methods for Geography*", Sage Publishing
GIS&T Body of Knowledge, UCGIS, (1 manuscript)
2017 The 2017 International Symposium on Spatiotemporal Computing (10 manuscripts for Student Paper Competition)
Book proposal for "An Introduction to Big Data and Spatial Data Analytics in R", Sage Publishing
Book chapter for "Big Data in Engineering Applications", Springer
2016 The Third International Conference on CyberGIS and Geospatial Data Science (CyberGIS'16) (1 regular paper, 1 short paper)
SAGE Book proposal review (1 proposal)
2015 *The First International Workshop on Spatiotemporal Computing (*4 abstracts*)*
2014 Book chapter for *Geocomputational Analysis and Modeling of Regional Systems* (2 book chapter)
The 22nd International Conference on Geoinformatics (9 manuscripts)
2012 *The ACM SIGSPATIAL International Workshop on High Performance and Distributed GIS* (2 manuscripts)
*2012 International Conference on GIScience (*1 workshop proposal*)*
2011 *The ACM SIGSPATIAL International Workshop on High Performance and Distributed GIS* (3 manuscripts)
2010 *The ACM SIGSPATIAL International Workshop on High Performance and Distributed GIS* (2 manuscripts)
2009 *Advanced Geosimulation Models* (1 book chapter)
17th ACM SIGSPATIAL GIS 2009 (2 manuscripts)
2008 International Workshop on Grid Computing Environments (http://www.collab-ogce.org/gce08/; 2 manuscripts) (external reviewer)
11th AGILE International Conference on Geographic Information Science (http://www.agile2008.es/; 1 manuscript) (external reviewer)

Book Review

2015 Book review of *GIS Algorithms* by Ningchuan Xiao, Sage Publishing

Professional Services

2022 *Program Committee, The 5th ACM SIGSPATIAL International Workshop on Geospatial Simulation (GeoSim 2022).*
2022 *Program Committee: AutoCarto 2022.*
2022 *Chair*, Paper Sessions for AAG 2022 Symposium on Data-intensive Geospatial Understanding in the Era of AI and CyberGIS: CyberGIS and High-Performance Geospatial Computing, Annual Meeting of the American Association of Geographers, 2022.
2021-2022 *Organizing Committee,* AAG 2022 Symposium on Data-intensive Geospatial Understanding in the Era of AI and CyberGIS, Annual Meeting of the American Association of Geographers, 2022.
2021 *Program Committee, The 4th ACM SIGSPATIAL International Workshop on Geospatial Simulation (GeoSim 2021).*
2021 *Review Committee, Geocomputation 2021.*

2021-2022 *Guest Editor* for Special Issue of *Sustainability: Advances in Sustainable Utilization and Optimal Decision of Land Resources.*

2021-2022 *Guest Editor* for Special Issue of *Sustainability: Coupled Human and Natural Systems Driven by Innovation in Geospatial Technologies.*

2019-present *Guest Editor* for Special Issue of *International Journal of Geo-Information: Advances in Computational Approaches for Spatial Analysis and Modeling.*

2018-present *Academic Editor for PLOS One*

2018-present *Editorial Board Member, Landscape and Urban Planning.*

2018-2020 Editor for Springer Book "*High Performance Computing for Geospatial Applications*" [Editors: Wenwu Tang, Shaowen Wang]

2018-2020 *Guest Editor* for Special Issue of *International Journal of Geo-Information*: Big Data Computing for Geospatial Applications.

2018-2020 *Guest Editor for* Special Issue of *Sustainability*: Applications of Artificial Intelligence in the Study of Land Use and Land Cover Change.

2019 *Organizer, Paper session for Symposium on Frontiers in CyberGIS and Geospatial Data Science: Big Data Computing for Geospatial Applications, Annual Meeting of AAG, Denver, CO.*

2019-2020 *Program Committee: AutoCarto 2020.*

2019-2020 *Program Committee: AAG 2020 Symposium on Frontiers in Geospatial Data Science,* Annual Meeting of the American Association of Geographers, 2019 [Co-Chairs: Guofeng Cao, Jing Gao, Harvey Miller, Shaowen Wang, Dawn Wright, Dandong Yin]

2018 *Organizer,* Panel session for *2018 Robert Raskin CyberGIS Student Competition Finalist Oral Presentation,* Annual Meeting of the American Association of Geographers, 2018.

2018 *Organizer*, Panel session for *Spatiotemporal Symposium: Big Data Computing for Geospatial Applications,* Annual Meeting of the American Association of Geographers, 2018.[Organizers: Zhenlong Li, Qunying Huang, Wenwu Tang]

2018 *Discussant,* Panel session for: *Spatiotemporal Study: Big Geospatial Data Challenges and Best Practices*, Chair: Chaowei Yang, Panelists: Sphia Liu, Weihe Guan, Shaohua Wang, Andrei Kirilenko, Discussant: Wenwu Tang, Annual Meeting of the American Association of Geographers, 2018.

2018 *Discussant,* Paper Sessions for *Spatiotemporal Symposium- Spatiotemporal visualization: concepts, tools, platforms and related topics,* Annual Meeting of the American Association of Geographers, 2018.

2018-2019 *Program Committee: AAG 2019 Symposium on Frontiers in Geospatial Data Science,* Annual Meeting of the American Association of Geographers, 2019 [Co-Chairs: Guofeng Cao, Jing Gao, Harvey Miller, Shaowen Wang, Dawn Wright, Dandong Yin]

2017-2018 *Chair*, Cyberinfrastructure Specialty Group of the American Association of Geographers

2017 *Judge, Best Paper Competition for the 2nd International Symposium on Spatiotemporal Computing, Harvard University, August 7-9, 2017*

2016-2017	*Organizer*, Panel session for *2017 Robert Raskin CyberGIS Student Competition Finalist Oral Presentation*
2017	*Panelist*, *CyberGIS reflections from the Past and Projections for the Future*, Chair: Eric Shook, Panelists: Michael F. Goodchild, Wendy Guan, Wenwu Tang, Chuanrong Zhang, Discussant: Shaowen Wang, Annual Meeting of the American Association of Geographers, 2017.
2017	*Panelist*, *Agent-based Modeling: Challenges and Opportunities*, Chair: Li An, Panelists: Steven M. Mason, Wenwu Tang, Dawn C. Parker, Tom Evans, Annual Meeting of the American Association of Geographers, 2017.
2016-2017	*Science Committee Member, "Agent-based Modeling (ABM): 17: A Symposium that Advances the Science of ABM"*, April 20-22, 2017 at San Diego, USA. (http://complexities.org/ABM17/)
2016-2016	*Program Committee, "The Third International Conference on CyberGIS and Geospatial Data Science, CyberGIS'16", July 26-28, 2016, Urbana, Illinois, USA.*
2016-2017	*Vice Chair*, Cyberinfrastructure Specialty Group of the American Association of Geographers
2016	*Organizer*, Paper session for *"Land Change Modeling and CyberGIS"* and *"Spatial Analysis and Modeling with High-performance Computing"*, Annual Meeting of the American Association of Geographers
2015-2016	*Organizer*, Panel session for *Robert Raskin CyberGIS Student Competition Finalist Oral Presentation*
2015	*Organizer*, Paper session for *"Land Change Modeling and CyberGIS"*, Annual Meeting of the Association of American Geographers
2015	*Programming Committee*, The 2016 International Conference on CyberGIS
2015	*Programming Committee*, The 1st International Workshop on Spatiotemporal Computing
2014-2016	*Board member*, Cyberinfrastructure Specialty Group of the Association of American Geographers
2014	*Panelist*, *Symposium on Synergistic Advances of CyberGIS and Geography: Roles of CyberGIS and Geography and Turning Big Data to Rich Data and Knowledge*, Annual Meeting of the Association of American Geographers, 2014.
2014	*Discussant*, *Spatiotemporal Thinking, Computing and Applications (STCA) Session: Visualization*, Annual Meeting of the Association of American Geographers, 2014.
2014	*Organizer and Chair*, *Symposium on Synergistic Advances of CyberGIS and Geography: Multi-scale Spatiotemporal Modeling and Simulation*. Annual Meeting of the Association of American Geographers, 2014.
2014	*Student Paper Competition Committee*, the 22nd International Conference on Geoinformatics
2010, 2013	*Chair*, Geocomputation Session, NARSC (North American Regional Science Council) Conferences.

2013-present *Director*, NVIDIA CUDA Research Center at the University of North Carolina at Charlotte

2013-present *Director*, Open-source Geospatial Laboratory at the University of North Carolina at Charlotte

2013-present *UNC-Charlotte Delegate*, UCGIS,

2010-present *Program committee member*, the ACM SIGSPATIAL International Workshop on High Performance and Distributed GIS (HPDGIS)

2010 *Judge*, City of Charlotte Business Intelligence Olympiad

University, College and Departmental Services

2022-2023 *Department Review Committee*, Department of Geography and Earth Sciences, UNCC

2022-2023 GES Comprehensive Chair Review Committee, CLAS, UNCC

2021-2022 *Faculty Advisory Committee*, Department of Geography and Earth Sciences, UNCC

2020- Environmental Monitoring Task Force, UNCC (campus wastewater surveillance)

2018-2019 Faculty search committee (Environmental Health), Department of Geography and Earth Sciences, UNCC

2016-2017 *Faculty search committee (Urban Geographer)*, Department of Geography and Earth Sciences, UNCC

2015-2016 *Search committee chair for CAGIS Director of Research and Outreach*, Department of Geography and Earth Sciences, UNCC

2013-2014 *Faculty search committee (Hydrologist)*, Department of Geography and Earth Sciences, UNCC

2012 *Faculty search committee (Lecturer in GIS)*, Department of Geography and Earth Sciences, UNCC

2015-2020 *Faculty Advisory Committee*, Department of Geography and Earth Sciences, UNCC

2014-2015 *Working Group for Redefining the Role of CAGIS*, Department of Geography and Earth Sciences and Center for Applied GIScience (CAGIS), UNCC

2013-2015 *Graduate advisory committee*, Department of Geography and Earth Sciences, UNCC

2012 *Mentoring committee*, Department of Geography and Earth Sciences, UNCC

2010-present *Course development*: *Web GIS* (GEOG4180/5180), *Agent-based Modeling of Complex Adaptive Spatial Systems* (GEOG6000/8000), *Coupled Human and Natural Systems* (GEOG6000/8000; with Dr. Ross Meentemeyer), *CyberGIS and Big Data* (GEOG6000/8000), Spatial Statistics (GEOG6120/8120; GRAD6104/8104; in Graduate School Catalog)

2012-present *Mapping services*: for Dr. Akinwumi Ogundiran (Africana Studies) and Dr. Edd Hauser (Center for Transportation Policy)

2013-present *Organizer* for CAGIS Seminar

2010-present Tour of CAGIS Facility

2013-2014 Development of Undergraduate and Graduate Certificate Programs in Geographic Information Science (with GIS faculty and Dr. Craig Allan)

Fall 2013 *Organizer* for the event of *GIS Institute* to introduce University faculty and graduate students to GIS tools and resources (sponsors: the Digital Scholarship Lab, Center for Applied GIScience, the College of Liberal Arts & Sciences Office of Academic Technologies).

G. Recognition and Awards

2012 NSF CyberGIS Junior Faculty Travel Award

2008 *NASA-MSU Professional Enhancement Awards* from Center for Systems Integration and Sustainability at Michigan State University

2008 Final list on William L. Garrison Award for Best Dissertation in Computational Geography.

2008 *Travel award from Center for Global and Regional Environmental Research* at the University of Iowa

2007 *Cartography and Geographic Information Science Best Paper Award* for papers presented at UCGIS Summer Assembly

2007 *Travel award for student papers* presented at UCGIS Summer Assembly

2002 *Travel award from Graduate Senate* at the University of Iowa

2000 *First-ranked Student Scholarship* at Nanjing University

1996 *First-ranked Student Scholarship* at East China Normal University

H. Professional Memberships

Member, The American Association of the Geographers