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TEACHING INTERESTS:

- Spatial Analysis and Modeling
- Applications of Geographical Information Systems (GIS)

RESEARCH INTERESTS:

- Spatial analysis and modeling
- Stochastic methods, kernel-based methods, geoComputation, and cyberGIS
- Spatial epidemiology (Disease mapping and environmental health)
- Spatial analysis of healthcare service
- Digital natural resource inventory and mapping (particularly soil)
- Land use modeling
- Terrain analysis
- Spatial analysis of biofuel
- WebGIS

EDUCATION:

Ph.D. May 2002. Department of Geography, University of Wisconsin-Madison. Dissertation: "A Case-based Reasoning Approach to Fuzzy Soil Mapping".

M.Phil. December 1998. Center of Urban Planning and Environmental Management, University of Hong Kong. Dissertation: "Integrating Case-based Reasoning and GIS for Urban Planning".

M.S. June 1994. The Institute of Geography, Chinese Academy of Sciences. Dissertation: "Agroforestry: An Effective Approach to Soil-Water Conservation in the Three-Gorge Area of China".

B.S. June 1991. Department of Geography, Peking University. Thesis: "A Landscape Ecology Study on the Macaque (*Macaca mulatta*) Reserve of Jiyuan County, Henan Province, China".

PROFESSIONAL EXPERIENCE:

Professor, July 2016 – present, Department of Geography, Dartmouth College.

Associate Professor, July 2008–June 2016, Department of Geography, Dartmouth College.

Assistant Professor, July 2002–June 2008, the Department of Geography, Dartmouth College.

Lecturer, January 2001–January 2002, Department of Geography, University of Wisconsin-Madison.

PEER REVIEWED JOURNAL PAPERS:

Li, M., **Shi, X. (corresponding author)**, Gui, J., Song, C., Andrew, S. A., Pioro, E. P., Stommel, E. W., Tischbein, M., and Bradley, W. G., 2022, A new method for estimating under-recruitment of a patient registry: a case study with the Ohio Registry of Amyotrophic Lateral Sclerosis. *Scientific Report*, **12**(1), 1-11, 14721. https://doi.org/10.1038/s41598-022-18944-9.

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Yao, Y., **Shi, X. (corresponding author)**, and Wang, Z., 2022, An efficient multiple scanning order algorithm for accumulative least-cost surface calculation, *International Journal of Geographical Information Science*, in press. https://doi.org/10.1080/13658816.2022.2052885.

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Li, Y., Rice, M., Li, M., Du, C., Xin, X., Wang, Z., **Shi, X.**, and Yang, C., 2021, New metrics for assessing the state performance in combating the COVID-19 pandemic. *GeoHealth*, 5, e2021GH000450. https://doi.org/10.1029/2021GH000450.

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Torbick, N., Ziniti, B., Stommel, E., Linder, E., Andrew, A., Caller, T., Haney, J., Bradley, W., Henegan, P.L., **Shi, X.**, 2018, Assessing Cyanobacterial Harmful Algal Blooms as Risk Factors for Amyotrophic Lateral Sclerosis. *Neurotoxicity Research*. 33: 199-212. DOI: 10.1007/s12640-017-9740-y.

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actually used? An assessment of travel time estimation based on mammography facilities. *International Journal of Health Geographics*, 15:8. DOI: 10.1186/s12942-016-0039-7.

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Shi, X., Ayotte, J.D., Onda, A., Miller, S., Rees, J., Gilbert-Diamond, D., Onega, T., Gui, J., Karagas, M., and Moeschler, J., 2015, Geospatial association between adverse birth outcomes and arsenic in groundwater in New Hampshire, USA. Environmental Geochemistry and Health, 37(2): 333-351. DOI: 10.1007/s10653-014-9651-2.

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Onega, T., Alford-Teaster, J., Andrews, S., Ganoe, C., Perez, M., King, D., and **Shi, X.**, 2014, Why Health Services Research Needs Geoinformatics: Rationale and Case Example, *Journal of Health and Medical Informatics*, 2014, 5:6, DOI: 10.4172/2157-7420.1000176.

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Chen, Y., Li, B., Li, Z., **Shi, X.**, 2014, Quantitatively evaluating the effects of CO2 emission on temperature rise, *Quaternary International*, 336(26): 171-175. DOI: 10.1016/j.quaint.2013.11.031.

Deng, H., Chen, Y., **Shi, X.**, Li, W., Wang, H., Zhang, S., Fang, G., 2014, Dynamics of temperature and precipitation extremes and their spatial variation in the arid region of northwest China, *Atmospheric Research*, 138: 346–355.

Shi, X., Miller, S.D., Mwenda, K.M., Onda, A., Rees, J.R., Onega, T.L., Gui, J., Karagas, M.R., Demidenko, E., and Moeschler, J.B., 2013, Mapping Disease at an Approximated Individual Level Using Aggregate Data: A Case Study of Mapping New Hampshire Birth Defects, *International Journal of Environmental Research and Public Health*, 10: 4161-4174. DOI:10.3390/ijerph10094161.

Li, B., Chen, Y., **Shi, X.**, Chen, Z., and Li, W., 2013, Temperature and precipitation changes in different environments in the arid region of northwest China. *Theoretical and Applied Climatology***,** 112(3-4): 589-596. DOI:10.1007/s00704-012-0753-4.

Wang, H., Chen, Y, **Shi, X.**, Lai, D., Fan, Y., and Li, Z., 2013, Changes in daily climate extremes in the arid area of northwestern China. *Theoretical and Applied Climatology***,** 112(1-2): 15-28. DOI:10.1007/s00704-012-0698-7.

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Sloan, C.D., Andrew, A.S., Gruber, J.F., Mwenda, K.M., Moore, J.H., Onega, T., Karagas, M.R., **Shi, X.**, Duell, E.J., 2012, Indoor and outdoor air pollution and lung cancer in New Hampshire and Vermont. *Toxicological and Environmental Chemistry*. 94(3):605-615.

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Shi, X., Girod, L, Long, R., Dekett, R., Philippe, J., and Burke, T., 2012, A Comparison of LiDAR-based DEMs and USGS DEMs in Terrain Analysis for Digital Soil Mapping. *Geoderma*, 170: 217-226.

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BOOK CHAPTERS:

Shi, X., Li, M., and Li, X., The Bottom-up Approach and De-mapping Direction of GIS, in Li, B., Shi, X., Zhu, A-X., Wang, C., and Lin, H. (eds), *New Thinking in GIScience*. Higher Education Press of China and Springer. 2022.

Li, M., Peng, X., and **Shi, X.,** Chapter 13. Mapping COVID-19: Should it be based on the incidence rate? A case study in China, in Laituri, M., Richardson, R.B., and Kim J. (eds), *Geospatial Stories of the Global COVID-19 Pandemic*, Springer. In press.

Zhang, C., Zuo, R., Xiong, Y., **Shi, X.**, and Donnelly, C., GIS, Geostatistics and Machine Learning in Medical Geology, in Siegel, M., Selinus O., and Finkelman, R. (eds.), *Practical Applications of Medical Geology*, Springer Nature Switzerland AG, pp. 215-234.

Fu, C., Wang, F., and **Shi, X.**, 2015, Planning Towards Maximum Equality in Accessibility to NCI Centers in the U.S., in Kanaroglou, P.S., Delmelle, E., Ghosh, D., and Paez, A. (eds.), *Spatial Analysis in Health Geography*, Ashgate Publishing Ltd.

McKay, J., Grunwald, S., **Shi, X.**, and Long, R.F., 2010, Evaluation of the Transferability of a Knowledge-Based Soil-Landscape Model, in Boettinger, J. L., Howell, D. W., Moore, A. C., Hartemink, A. E., and Kienast-Brown, S. (eds.), *Digital Soil Mapping: Bridging Research, Environmental Application, and Operation, Book Series of Progress in Soil Science*, Vol. 2, Part II, Section C, pp. 165-178.

Shi, X., Zhu, A-X., and Wang, R-X., 2005, Fuzzy Representations of Special Terrain Features using a Similarity-based Approach. Cobb, M., Petry, F., and Robinson, V. (eds.), *Fuzzy Modeling with Spatial Information for Geographic Problems*, Springer-Verlag, pp. 233-251.

Yeh, A. G. O. and **Shi, X.**, 2001, The Application of Case-based Reasoning in Development Control, in Geertman, S. and Stillwell, J. (eds.), *Planning Support Systems in Practice*. Berlin: Springer-Verlag, pp. 223-248.

OTHER PUBLICATIONS:

Shi, X. and Lin, H., 2020, Introduction: advances in geospatial analysis for health research (the introduction to a special issue of the journal), *Annals of GIS*, 26(3): 217-218.

Shi, X., 2019, GIS&T and Public Health. *The Geographic Information Science & Technology Body of Knowledge* (4th Quarter 2019 Edition), John P. Wilson (ed.). DOI: 10.22224/gistbok/2019.4.13.

Shi, X. and Kwan, M-P., 2015, Introduction: Geospatial Health Research and GIS (the introduction to a special issue of the journal), *Annals of Geographic Information Science*, 21(2): 93-95.

Shi, X., Yang, Q., 2014, Ecological Security: Land Use Pattern and Simulation Modeling, entry for the *Encyclopedia of Natural Resources*. Taylor & Francis.

Shi, X., Wang, S., and Padmanabhan, A., 2013, "A High-Throughput Computational Approach to Environmental Health Study Based on CyberGIS", a position paper for the NSF CyberGIS Project All-Hands Meeting, University of Washington (http://cybergis.cigi.uiuc.edu/cyberGISwiki/doku.php/ahm13/index/pospapers).

Yao, Y.; Tao, H.; and **Shi, X.**, 2012, Multi-type sweeping for improving the efficiency of flow accumulation calculation, Proceedings of the 20th International Conference on Geoinformatics (GEOINFORMATICS), Hong Kong, June 15-18, 2012, DOI: 10.1109/Geoinformatics.2012.6270266.

Shi, X., 2010., entries of "Terrain Analysis" and "Resource Mapping" in Barney Warf (eds.), *Encyclopedia of Geography*, Sage Publications.

Shi, X., Alford-Teaster, J., and Onega, T., Kernel density estimation with geographically masked points, in Proceedings of The 17th International Conference on Geoinformatics, Fairfax, VA, August 12-14, 2009. DOI: 10.1109/GEOINFORMATICS.2009.5292881.

Cook, A. J., Onega, T. L., **Shi, X.**, Kirlin, B. A., and Buist, D. SM., Influence of Travel Time on the Receipt of Surveillance Mammograms for Women With History of Breast Cancer, Selected abstracts of HMORN 2009, *Clinical Medicine & Research*, 8(1): 35. doi:10.3121/cmr.8.1.35-a.

Qin C, Zhu, A-X., **Shi, X.**, Li, B., Zhou, C., Pei, T., Fuzzy representation of spatial gradation of slope position. International Symposium on Terrain Analysis and Digital Terrain Modeling, Nanjing, China, Nov. 23-25, 2006.

Shi, X., 2005, Mapping Infectious Disease: Using SARS Maps as Examples, *GIS Development*, **9**(6): 30-32.

Zhu, A-X. and **Shi, X.**, 2005, Quantification of Detail Spatial Gradation of Terrain Position Using Fuzzy Logic and GIS Techniques. In Y. Liu, G. Chen, M. Ying (eds.): Fuzzy Logic, Soft Computing and Computational Intelligence: Eleventh International Fuzzy Systems Association World Congress, vol. 2, pp. 1200-1204. Tsinghua University Press & Springer, Beijing 2005. - Presented at the 11th IFSA World Congress, Beijing 2005.

Yeh, A.G.-O. and **Shi, X.**, 1998, The Integration of Case-based Reasoning and GIS for Handling Planning Applications in Hong Kong, in Sikdar, P. K., Dhingra, S. L. and Krishna Rao, K. V. (eds.), *Computers in Urban Planning and Urban Management, Vol. 2*, New Delhi: Narosa Publishing House.

Yeh, A.G.-O. and **Shi, X**., 1997, An Experimental System in Integrating Case-based Reasoning and GIS for Processing Planning Applications in Hong Kong, in the *Proceedings of GIS AM/FM ASIA '97 & Geoinformatics '97: Mapping the Future of Asia-Pacific*, Taipei, Taiwan.

GRANTS:

2022, NSF, A subaward of CREST Center for Geomatic and Environmental Informatics, Modeling and Simulation, awarded to Texas A&M University - Corpus Christi. $250,761 for 5 years. PI: Xun Shi (PI of the entire project: Lea Der Chen).

2020, NSF, A subaward of RII Track-2 FEC: Leveraging Big Data to Improve Prediction of Tick-Borne Disease Patterns and Dynamics. 1.2 million for 4 years. PI: **Xun Shi** (PI of the entire project, 5.86 million for 4 years: Xiaogang Ma).

2020, Scholar Innovation and Advancement Awards of Dartmouth, "Governmental Restriction of Individual Lives in an Epidemic Outbreak: How Far Should It Go? A Case Study of Current Coronavirus Situation in China". $47,000 for 2 years. PI: **Xun Shi**.

2019, NCI (NIH), "Linking environmental contamination to residential history for risk identification". $123,000 for 2 years. **Xun Shi** is a co-Investigator (a subcontract of an R21 granted to DHMC, PI: Angeline Andrew).

2019, HVH Precision Analytics, Mitsubishi Tanabe Pharma America, Inc., "Geospatial Analysis and Machine Learning for Identifying Environment-gene Interactions in the ALS Disease". $220,000 for 2 years. PI: **Xun Shi**.

2018, Centers for Disease Control and Prevention (CDC), "Identify, Analyze, and Evaluate Potential Risk Factors for Amyotrophic Lateral Sclerosis (ALS)" (GC10112-00-03), $269,919 for 4 years. PI: **Xun Shi** (a subcontract of a project granted to DHMC, PI: Elijah Stommel).

2018, Scholar Innovation and Advancement Awards of Dartmouth, "An interdisciplinary exploration of big data for modeling spatiotemporal pattern of vector-borne diseases". $41,000 for 2 years. PI: **Xun Shi**.

2018, CompX Faculty Grant of the Neukom Institute at Dartmouth, "Spatiotemporal analysis of communicable diseases based on epidemic trees: A case study of dengue fever in China". Research computing support for 1 year. PI: **Xun Shi**.

2018, Munck-Pfefferkorn Novel and Interactive Grant of Dartmouth Geisel School of Medicine, "Geospatial big data approaches to cancer clusters and environmental risk", $80,000 for 1 year. Co-PIs: Judy Rees, **Xun Shi**, Angeline Andrew, Jiang Gui, and Tracy Onega.

2016, National Institutes of Health, A prospective study of critical environmental exposures in formative early life that impact lifelong health in rural US children: the New Hampshire Birth Cohort Study (1UG3OD023275-01). 42 million for 7 years. PI: Margaret Karagas; **Xun Shi** is a co-Investigator.

2015, *Neukom Institute/IQBS CompX Faculty Grants Program at Dartmouth*, A GeoComputational Approach to Giving Population Context to Social Media: 'Textation' without Representation? $25,097 for one year. PI: Tracy Onega; Co-PI: **Xun Shi**.

2014, Centers for Disease Control and Prevention, *Research of Amyotrophic Lateral Sclerosis (ALS) Risk Factors and Burden of Disease to Support the National ALS Registry Effort*, Contract Number 200-2014-59046, $714,630 for two years, PIs: Walter Bradley and Elijah Stommel; **Xun Shi** is a co-Investigator.

2014, Internal fund from the Dartmouth Clinical and Translational Science Institute (SYNERGY Fund), award number UL1TR001086 from the National Center for Advancing Translational Sciences (NCATS) of the National Institutes of Health (NIH), *Amyotrophic Lateral Sclerosis Risk Factors and Exposure Pathways*, $50,000 for one year. Co-PIs: Stommel, **Xun Shi**, and James Haney.

2014, ALS Association, *Environmental risk factors for ALS – the North New England ALS database, cyanobacteria and methyl mercury*, Contract Number: 15-IIP-213, $240,000 for three years. PI: Elijah Stommel; **Xun Shi** is a co-Investigator.

2014, Internal fund from the Dartmouth Clinical and Translational Science Institute (SYNERGY fund), award number UL1TR001086 from the National Center for Advancing Translational Sciences (NCATS) of the National Institutes of Health (NIH), *Development of a dynamic web-integrated spatio-temporal platform for national monitoring of technology diffusion: the example of digital breast tomosynthesis*, $50, 000 for one years. PI: Tracy Onega. Co-PI: **Xun Shi**.

2013, *National Institute of Environmental Health Sciences/U.S. Environmental Protection Agency*, Children's Environmental Health and Disease Prevention Research Center at Dartmouth (P01 ES022832, RD 83544201), 2.76 million for 5 years, PI: Margaret Karagas. **Xun Shi** is a co-Investigator.

2013, *Porter Faculty Research Grant at Dartmouth*, Maintaining Environmental Flows and Sustainable Water Use Strategies in a Rapidly Developing Watershed: Tarim Basin, China, $50,000 for two years. PI: **Xun Shi**.

2012, *Neukom Institute/IQBS CompX Faculty Grants Program at Dartmouth*, Enhance GeoComputational Capability for Environmental Health Studies, $19,670 for one year. PI: **Xun Shi**.

2012, *Rockefeller Center at Dartmouth College*, Rockefeller Research Grant: How Much Water Does Nature Get? Evolving Water Resource Problems in Xinjiang, China, $8,000 for one year, PI: **Xun Shi**.

2010, *Rockefeller Center at Dartmouth College*, Rockefeller Research Grant: Assessing the Association between Metropolitan Gentrification and Urban Health Policy, $16,741.80 for one year, PI: **Xun Shi**.

2010, *National Institute of Environmental Health Sciences/U.S. Environmental Protection Agency*, An integrated geospaital and epidemiological study of associations between birth defects and arsenic exposure in New England, $319,782 for three years, PI: **Xun Shi**. This is Project 3 in the P20 grant "Children's Environmental Health & Disease Prevention Research Center at Dartmouth" (ES018175), 2.19 million for three years, PI: Margaret Karagas.

2009, *United States Department of Agriculture – Natural Resources Conservation Service*, Development of SIE and its use in producing soil survey information (Contract No. AG-7482-C-09-0002), $175,000 for two years, PI: **Xun Shi**.

2008, *Cancer Research Network*, Across Health Care Systems Pilot Funds (5U19CA079689-10): Development of a Versatile Geospatial Database within the CRN, $45,000 for one year, PI: Tracy Onega, co-investigator: **Xun Shi**.

2005, *United States Department of Agriculture – Natural Resources Conservation Service*, Geographic Information System (GIS) and Artificial Intelligence (AI) Based Approach for Automated Soil Mapping (Contract No. 53-7482-5-466), $79,816 for four years, PI: **Xun Shi**.

2005, *Rockefeller Center at Dartmouth College*, Social Science–Public Policy Grant: Utilization and Impact of Advanced Biomass Energy Production in China, $17,466 for one year, PI: **Xun Shi**.

2004, *Rockefeller Center at Dartmouth College*, Public Responses to the Results of an Environmental Health Research, $2,500 for one year, PI: **Xun Shi**.

2003, *National Institute of Health*, Environmental Epidemiology of Lung Cancer in New Hampshire: A Multilevel Approach using GIS and Case-Control Method, $1,900,000 for 5 years, PI: Eric Duell, Co-PI: **Xun Shi**.

2003, *Rockefeller Center at Dartmouth College*, Using GIS in Environmental Health, $2,500 for one year, PI: **Xun Shi**.

HONORS AND AWARDS:

- Fellowship of the Geospatial Software Institute (GSI) Conceptualization Project, sponsored by NSF. Nationwide 16 fellowships were granted to researchers at 13 institutions to tackle COVID-19 challenges using geospatial software and advanced capabilities in cyberinfrastructure and data science (https://gsi.cigi.illinois.edu/geospatial-fellows-members/) (2020).
- Dartmouth College: Linda B. and Kendrick R. Wilson III 1969 Fellowship (2016).
- Service Award of the International Association of Chinese Professionals in Geographic Information Science (CPGIS) (2013).
- "Selection of bandwidth type and adjustment side in kernel density estimation over inhomogeneous backgrounds" was selected as one of 25 "classic or to-be classic" papers published in *International Journal of Geographical Information Science* (IJGIS), and was included in IJGIS 25th Anniversary Virtual Issue (2011).
- Dartmouth College: Petitt Family Fellowship (2008).
- Dartmouth College: Junior Faculty Fellowship (2005).
- Department of Geography, University of Wisconsin-Madison: The Meritorious Teaching Award (2001).
- The Remote Sensing, GIS, and Cartography Specialty Groups, The Association of American Geographers: The first place award of the student illustrated paper competition (2001).
- The University of Hong Kong: Scholarship (1995 – 1997).

INVITED PRESENTATIONS:

Shi, X., February 27, 2022, "Major topics/issues in cyberGIS-enabled spatial epidemiology: an epidemiological perspective", in the panel discussion (chaired by Shi, X.) "cyberGIS-enabled Spatial Epidemiology", in the Symposium on Data-Intensive Geospatial Understanding in the Era of AI and CyberGIS (organized by Vandewalle, R., Wang, S., and Zhang, Z.), in the Annual Meeting of American Association of Geographers 2022.

Shi, X., January 6, 2022, "GeoSpatial Analysis in Health Studies", Department of Geography, University of Oregon.

Shi, X., November 2, 2021, "Similarity in the Third Law of Geography". Oral presentation in GeoInformatics 2022 Conference. Virtual.

Shi, X., April 29, 2021, "Using Telescope as Microscope: Applying Geospatial Analysis within an Anatomical Context". Oral presentation in the Annual Conference of Histochemical Society 2021. Virtual.

Shi, X. and Li, M., April 9, 2021, "Spatiotemporal analytics on COVID-19". Oral presentation in a panel discussion in the Annual Meeting of American Association of Geographers 2021.

Shi, X., March 25, 2021, "GeoSpatial Analysis in Health Studies", Department of Social Sciences, Illinois Institute of Technology. Virtual.

Shi, X., Winter, J., and Wallace, D., March 23, 2021, "Spatiotemporal Analysis of Climate Change Impacts on Lyme Disease and Tick Dynamics: A Pilot Study in New Hampshire", in Annual meeting of NSF Rll Track-2 FEC: Leveraging Big Data to Improve Prediction of Tick-borne Disease Patterns and Dynamics. Virtual.

Shi, X. and Li, M., February 25, 2021, "Tracking and Modeling Diseases in Urban Spaces", The international Association of Chinese Professionals in Geographic Information Sciences. Virtual.

Shi, X., Li, M., , Yang, H., and Song, H. "A bottom-up approach to epidemic modeling". December 5, 2020. The Symposium on Public Security and Health: Urban Health 2020 – Theory, Method, and Applications. Sun Yat-sen University. Virtual.

Shi, X., "A bottom-up approach to epidemic modeling", October 9, 2020. Chinese University of Hong Kong.

Shi, X. and Li, M., "A bottom-up approach to epidemic modeling". August 30, 2020. Spatial Social-Humanity Research Forum. Virtual.

Shi, X., and Li, M., "Surveillance and Modeling of COVID-19 Pandemic with Human Movement Trajectory Data". May 1, 2020. Harvard CGA Virtual Forum: Responding to the COVID-19 Pandemic with Geospatial Research and Applications.

Shi, X. and Li, M., "Using individual trajectory data for the surveillance, analysis, modeling, and prediction of COVID-19". April 2, 2020. China Association for Geospatial Information Society. Virtual.

Shi, X., October 11, 2019, "Geospatial analysis in health studies", Department of Epidemiology, Human Genetics and Environmental Sciences, The University of Texas School of Public Health, Houston, TX.

Shi, X., July 16, 2019, "Kernel density estimation", School of Business, Peking University, Beijing, China.

Shi, X., July 20, 2018, "Geospatial Analysis of Healthcare Costs", Shanghai Health Policy Forum, Shanghai, China.

Shi, X., June 21, 2018, "Health GIS and ArcHealth", GIS and Cloud Computing Conference, Nanjing, China.

Shi, X., December 7, 2017, "A Computational Approach to Spatial Analysis for Health Studies", School of Forestry, Yale University, New Haven, CT.

Shi, X., July 3, 2017, "Land Use Implications of Decadal Water Conveyances on Tarim River, China", Qufu Normal University, Rizhao, Shandong Province, China.

Shi, X., August 30, 2016, "Ecological Consequences of Decadal Water Conveyances on Tarim River, China", the Institute of Botany, Chinese Academy of Sciences, Beijing.

Shi, X., August 22, 2016, "Digital Soil Mapping in the United States", the Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences, Beijing.

Shi, X., July 6, 2015, "Principles of Disease Mapping", East China Normal University, Shanghai.

Shi, X., June 23, 2015, "Applications of the Computational Approach in Public Health Studies", High Level Forum: Fostering International Geospatial Health Research Collaborations, Wuhan University, Wuhan.

Shi, X., July 3, 2014, "Knowledge-based Raster Soil Mapping", the Research Institute of Forestry of Chinese Academy of Forestry, Beijing.

Shi, X., July 1, 2014, "An Introduction to Disease Mapping", at the Workshop of Spatial Analysis for Health Studies, Beijing.

Shi, X., June 17, 2014, "GeoComputational Approach in Health Geography Studies", High Level Forum: Fostering International Geospatial Health Research Collaborations: Challenges and Opportunities, Chinese University of Hong Kong, Hong Kong.

Shi, X., Wang, S., and Padmanabhan, A., September, 15, 2013, "A High-Throughput Computational Approach to Environmental Health Study Based on CyberGIS", a plenary talk at the NSF CyberGIS Project All-Hands Meeting, University of Washington.

Shi, X., August 16, 2013, "Knowledge-based Raster Mapping in Natural Resource Inventory and Management", the School of Environment, Tsinghua University, Beijing.

Shi, X., August 7, 2013, "A Geocomputational Approach to Disease Mapping", the School of Geography, Beijing Normal University, Beijing.

Shi, X., June 27, 2013, "An Introduction to Disease Mapping", at the Workshop of Spatial Analysis for Health Studies, Beijing.

Shi, X., June 26, 2013, "An Introduction to Disease Mapping", Xinxiang Medical University, China.

Shi, X., June 19, 2013 (invited), "Using Detailed Population Data to Improve Quality of Health Studies", at the 3rd Forum of Spatial Analysis for Humanity and Social Science, Kaifeng, China.

Shi, X., June 17, 2013, "An Introduction to Disease Mapping", Jiangxi Normal University, China.

Shi, X., Padmanabhan, A., Liu, Y, and Wang S. December 13, 2012, "A CyberGIS Approach to Computationally Intensive Disease Mapping", a webinar to the CyberInfrastructure & Geospatial Information Laboratory at University of Illinois at Urbana-Champaign.

Shi, X., May 18, 2012, "Dealing with Spatial Uncertainty in Health Studies", monthly Geography Colloquium, Harvard University, Cambridge, MA.

Shi, X., August 6, 2011, "Disease Mapping with GIS: An Introduction", Workshop on Cyanobacteria and Human Health: Merging Ecology, Epidemiology and Neurologic Disorders, New Brunswick, ME.

Shi, X., July 3, 2011, "Kernel Density Estimation and Its Applications in Health-related Spatial Analysis", Peking University, Beijing, China.

Shi, X., June 28, 2011, "GIS Data Infrastructure for Research of Water Resource under Global Change", Xinjiang Institute of Ecology and Geography, Chinese Academy of Sciences, Urumch, Xinjiang, China.

Shi, X., June 26, 2010, "Monitoring, Simulation, and Prediction of Land Use/Land Cover in the Tarim Region under Global Change: A Pre-Proposal", The 3rd International Symposium on Eco-hydrological Processes in Arid Areas and Environmental Development, June 26-30, 2010, Xinjiang, China.

Shi, X., September 2, 2009, "Raster soil mapping and the development of Soil Inference Engine", USDA-NRCS, Soil Survey Division Leadership Meeting, Lincoln, NE.

Shi, X., August 17, 2009, "Soil Inference Engine - Overview of tool and its development" and "Knowledge Discoverer and ArcPen - soil survey update tools", USDA-NRCS Major Land Resource Area Office (MO) Leaders Summer Meeting, Amherst, MA.

Shi, X., October 8, 2008, "A Polygon-based Method for Smoothing Disease Rates of Small Units", The New Hampshire Public Health Association Fall Forum, Bedford, New Hampshire.

Shi, X., March 21, 2008, "WikiGIS and Its Applications in New Orleans Post-Katrina Rebuilding", Spatial Structure in the Social Science Center, Brown University.

Shi, X., July 23, 2007, "Spatial Analysis of Lung Cancer Incidence in New Hampshire", State Department of Health and Human Services, New Hampshire.

Shi, X., February 11, 2007, "Bring the Globe to Fingertips: Teaching Geography with GIS", Dartmouth Alumni Club and Affiliated Group Officers Weekend (CAGOW).

Shi, X., September 27, 2006, "Knowledge-based Raster Mapping and SIE", USDA-NRCS Vermont-New Hampshire Digital Soil Mapping Workgroup Meeting, New Port, VT.

COURSES TAUGHT:

- Introduction to Geographical Information Systems (GIS)
- Geographies of Health and Diseases
- Urban Applications of GIS
- Environmental Applications of GIS

REVIEWER

Applied Geography; Annals of American Association of Geographers; Annals of Geographic Information Science; Biomass and Bioenergy; BMC Health Services Research; Computers & Geosciences; Computers, Environment and Urban Systems; Cultural Geographies; EcoHydrology; Energies; Environmental Health; Environmental International; Environmental Monitoring and Assessment; Environmental Pollution; Epidemiology and Infection; Geoderma; Geographical Analysis; Geoinformatica; Health and Place; Hydrological Sciences Journal; International Journal of Digital Earth; International Journal of Environmental Research and Public Health; International Journal of Geographical Information Science; International Journal of Health Geographics; International Regional Science Review; Journal of Community Medicine & Health Education; Journal of Environmental Management; Journal of Geographical Systems; Journal of Hydrology; Journal of Spatial Science; Landscape and Urban Planning; Natural Hazards; Pedosphere; PLOS ONE; Physica A; Remote Sensing; Scientific Report; Social-Economic Planning Sciences; Social Science and Medicine; Soil Science Society of America Journal; Transaction of GIS; The Arab World Geographer; The Geographical Journal; Theoretical and Applied Climatology; The Professional Geographer.

External Reviewer of the Department of Geography, Vassar College (2019).

External Reviewer of University of Texas' Good System Grand Challenge Program (2019).

The Ralph E Powe Junior Faculty Enhancement Awards 2019, Oak Ridge Institute for Science and Education, managed by Oak Ridge Associated Universities (ORAU) for Department of Energy.

External Reviewer of the Department of Geology and Geography, Mount Holyoke College (2017)

National Science Foundation (NSF).

Belgian RESEARCH PROGRAMME FOR EARTH OBSERVATION "STEREO II" (Support to Exploitation and Research in Earth Observation).

EDITORIAL BOARD

Annals of GIS (2020 – present; Taylor & Francis)
Annals of American Association of Geographers (2008 – 2018; Taylor & Francis)
Frontiers of Earth Science (2013 – 2016; Springer)

SERVICE

- Chair of the Health and Medical Geography Special Group, American Association of Geographers (AAG), 2015-2016.
- Vice Chair of Health and Medical Geography Special Group, American Association of Geographers (AAG), 2014-2015.
- Chair of the Health-GIS Committee, the International Association of Chinese Professional in Geographic Information Science (CPGIS), 2013-present.
- Member of the Board of Directors of the International Association of Chinese Professional in Geographic Information Science (CPGIS), 2008-2016.
- Chair of the Board of Directors of the International Association of Chinese Professional in Geographic Information Science (CPGIS), 2011-2012.
- President of the International Association of Chinese Professional in Geographic Information Science (CPGIS), 2010-2011.

PROFESSIONAL MEMBERSHIPS

Association of American Geographers (AAG)
Soil Science Society of America (SSSA)
The International Association of Chinese Professional in Geographic Information Science (CPGIS)