Curriculum Vitae

XUN SHI
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Department of Geography
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TEACHING INTERESTS:

- Geographical Information Systems (GIS) and GeoSpatial Analysis
- GeoComputation and GeoAI
- Health-GIS
- Urban-GIS

RESEARCH INTERESTS:

- Spatial analysis and modeling
- Stochastic methods, kernel-based methods, geoComputation, cyberGIS, and GeoAI
- Spatial epidemiology (disease mapping and environmental health)
- Spatial analysis of healthcare service
- GeoAI for healthy communities and healthy cities
- Digital natural resource inventory and mapping (particularly soil)
- Land use modeling
- Terrain analysis
- Spatial analysis for ecohydrology
- Spatial analysis of biofuel

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. Institute of Geography, Chinese Academy of Sciences. Thesis: "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, Department of Geography, Dartmouth College.

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

Teaching Assistant, January 2000–December 2000, Department of Geography, University of Wisconsin-Madison.

PEER-REVIEWED JOURNAL PAPERS:

Jia, Y., Wu, J., **Shi, X.**, Tao, J., Mason, C., Moudon, A., Wu, Z., Ye, Y., Cai, Y., Sun, W., Shi, T., and Wang, L., 2026, The Linkage between Microbial Community Dynamics and Urbanization Age, *Nature Sustainability*, *pp.* 1-12. DOI: 10.1038/s41893-026-01801-2.

Carlos, H.A., Katter, J.E., Weiss, J.E., **Shi, X.**, Loehrer, A.P., 2025, Mapping policy effects: The influence of Medicaid expansion on geospatial hotspots of incidence and late-stage breast cancer in Indiana. *Journal of Clinical Oncology*, 2025 **43**:16_suppl, e23049-e23049. DOI:10.1200/JCO.2025.43.16_suppl.e23049.

Katter, J.E., Weiss, J.E., Leversedge, C.V., Carlos, H.A., **Shi, X.**, Loehrer, A.P., 2025, Understanding place-based inequities in lung cancer care: Trends in geographic hotspots of late-stage diagnoses and rates of cancer-directed surgery after Medicaid expansion in Indiana. *Journal of Clinical Oncology*, **43**:16_suppl, e23050-e23050. DOI:10.1200/JCO.2025.43.16_suppl.e23050.

Beene, D., Lin, Y., Hoover, J. H., and **Shi, X.**, 2025, Deconstructing rurality to better "place" health data, *International Journal of Geographical Information Science*, 1-28, DOI: 10.1080/13658816.2025.2482718.

Wallace, D., Palace, M., Price, L. E., and **Shi, X.**, 2025, Time to Emergence of the Lyme Disease Pathogen in Habitats of the Northeastern USA. *Insects*, **16**(6): 631. DOI: 10.3390/insects16060631.

Hu, G., Li, X., Liu, X., Wang, S., Zhang, X., **Shi, X.**, Bai, X., and Hubacek, K., 2025, Mitigating the ripple effects of urbanization on farmland productivity and ecological security through inclusive urbanization strategies. *npj Urban Sustainability*, 5(12). DOI: 10.1038/s42949-025-00199-8.

Price, L.E., Winter, J.M., Cantoni, J.L., Cozens, D.W., Linske, M.A., Williams, S.C., Dill, G.M., Gardner, A.M., Elias, S.P., Rounsville, T.F. Jr., Smith, R.P. Jr., Palace, M.W., Herrick, C., Prusinski, M.A., Casey, P., Doncaster, E.M., Savage, J.D.T., Wallace, D.I., and **Shi, X.**, 2024, Spatial and temporal distribution of Ixodes scapularis and tick-borne pathogens across the northeastern United States. *Parasites Vectors*, **17**: 481. DOI: 10.1186/s13071-024-06518-9.

Parker, D.M., Stabler, M.E., MacKenzie, T.A., Zimmerman, M.D., **Shi, X.**, Everett, A.D., Bucholz, E.M., and Brown, J.R., 2024, Population-Based Estimates of the Prevalence of Children with Congenital Heart Disease and Associated Comorbidities in the United States, *Cardiovascular Quality and Outcomes*, **17**(9), e010657. DOI:10.1161/CIRCOUTCOMES.123.010657.

Song, C., Wang, X., Ge, E., **Shi, X.**, and Pan, J., 2024, Applications of geospatial information technologies and spatial statistics in health services research, *Frontiers in Public Health*, 11: e1349985. DOI:10.3389/fpubh.2023.1349985.

Shi, X., Zhang, F., Chipman, J.W., Li, M., Khatchikian, C., and Karagas, M.R., 2024, Measuring Greenspace in Rural Areas for Studies of Birth Outcomes: A Comparison of Street View Data and Satellite Data. *GeoHealth*, **8**: e2024GH001012. DOI: 10.1019/2024GH001012.

Chipman, J.W., **Shi, X.**, Gilbert-Diamond, D., Khatchikian, C., Baker, E.R., Nieuwenhuijsen, M., and Karagas, M.R., 2024. Greenspace and land cover diversity during pregnancy in a rural region, and associations with birth outcomes. *GeoHealth*, **8**: e2023GH000905. DOI: 10.1029/2023GH000905.

Iyer, H.S., **Shi, X.**, Satagopan, J.M., Cheng, I., Roscoe, C., McLaughlin, R.H., Stroup, A.M., Setoguchi, S., Bandera, E.V., Hernandez, B.Y., Doherty, J.A., Hsieh, M-C, Knowlton, R., Qin, B., Laden, F., Rebbeck, T.R., Gomez, S.L., 2023, Advancing Social and Environmental Research in Cancer Registries Using Geomasking for Address-Level Data. *Cancer Epidemiology, Biomarkers & Prevention*, **32**(11): 1485-1489. DOI: 10.1158/1055-9965.EPI-23-0790.

Fontanet, C.P., Carlos, H., Weiss, J.E., Gil Diaz, M.C., **Shi, X.**, Onega, T., and Loehrer, A.P., 2023, Evaluating Geographic Health Disparities in Cancer Care: Example of the Modifiable Areal Unit Problem, *Annals of Surgical Oncology*, 30: 6987-6989. DOI: 10.1245/s10434-023-14140-9.

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. DOI: 10.1038/s41598-022-18944-9.

Song, C., Yin, H., **Shi, X.**, Xie, M., Yang, S., Zhou, J., Wang, X., Tang, Z., Yang, Y., Pan, J., 2022, Spatiotemporal disparities in regional public risk perception of COVID-19 using Bayesian Spatiotemporally Varying Coefficients (STVC) series models across Chinese cities, *International Journal of Disaster Risk Reduction*, 77, 103078. DOI: 10.1016/j.ijdrr.2022.103078.

Hohl, A., Tang, W., Casas, I., **Shi, X.**, Delmelle, E., 2022, Detecting space–time patterns of disease risk under dynamic background population. *Journal of Geographical Systems*. DOI: 10.1007/s10109-022-00377-7.

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*. 36(8): 1677-1695. DOI: 10.1080/13658816.2022.2052885.

Andrew, A., Zhou, J., Gui, J., **Shi, X.**, Li, M., Harrison, A., Guetti, B., Nathan, R., Butt, T., Peipert, D., Tischbein, M., Pioro, E.P., Stommel, E., and Bradley, W., 2022, ALS risk factors: Industrial airborne chemical releases, *Environmental Pollution*, 295, 2022, 118658. DOI: 10.1016/j.envpol.2021.118658.

Andrew, A., Zhou, J., Gui, J., Harrison, A., **Shi, X.**, Li, M., Guetti, B., Nathan, R., Tischbein, M., Pioro, E., Stommel, E., and Bradley, W., 2022, Airborne lead and polychlorinated biphenyls (PCBs) are associated with amyotrophic lateral sclerosis (ALS) risk in the U.S, *Science of The Total Environment*, 819, 2022, 153096. DOI: 10.1016/j.scitotenv.2022.153096.

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. DOI: 10.1029/2021GH000450.

Andrew, A., Zhou, J., Gui, J., Harrison, A., **Shi, X.**, Li, M., Guetti, B., Nathan, R., Tischbein, M., Pioro, E.P., Stommel, E., and Bradley, W., 2021, Pesticides applied to crops and amyotrophic lateral sclerosis risk in the U.S, *NeuroToxicology*, 87: 128-135. DOI:

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Li, B., **Shi, X**., Lian, L., Chen, Y., Chen, Z., and Sun, X., 2020, Quantifying the effects of climate variability, direct and indirect land use change, and human activities on runoff, *Journal of Hydrology*, **584**: 124684. DOI: 10.1016/j.jhydrol.2020.124684.
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Li, B., Chen, Y., and **Shi, X.**, 2020, Does elevation dependent warming exist in high mountain Asia? Environmental Research Letters, 15(2): 024012. DOI:10.1088/1748-9326/ab6d7f.
Liu, J., Lawson, D., Hawley, R., Chipman, J., Tracy, B., **Shi, X.**, and Chen, Y., 2020, Estimating the longevity of glaciers in the Xinjiang region of the Tian Shan through observations of glacier area change since the Little Ice Age using high-resolution imagery. *Journal of Glaciology*, 66(257): 471-484. DOI:10.1017/jog.2020.24.
Jia, P, Yu, C., Remais, J. V., Stein, A., Liu, Y., Brownson, R. C., Lakerveld, J., Wu, T., Yang, L., Smith, M., Amer, S., Pearce, J., Kestens, Y., Kwan, M-P., Lai, S., Xu, F., Chen, X., Rundle, A., Xiao, Q., Xue, H., Luo, M., Zhao, L., Cheng, G., Yang, S., Zhou, X., Li, Y., Panter, J., Kingham, S., Jones, A., Johnson, B. T., **Shi, X.**, Zhang, L., Wang, L., Wu, J., Mavoa, S., Toivonen, T., Mwenda, K. M., Wang, Y., Verschuren, W.M. M., Vermeulen, R., and James, P., 2020. Spatial Lifecourse Epidemiology Reporting Standards (ISLE-ReSt) statement. *Health & Place*. 61: 102243. DOI: 10.1016/j.healthplace.2019.102243.
Li, B., **Shi, X.**, Chen Y., and Jiang, Y., 2019, Quantitative assessment of the ecological effects of land use/cover change in the arid region of Northwest China, *Environmental Monitoring and Assessment*, 191: 704. DOI: 10.1007/s10661-019-7911-4.
Qin, Y-H, Li. B-F., Sun, X, Chen, Y-N., **Shi, X.**, 2019, Nonlinear response of runoff to atmospheric freezing level height variation based on hybrid prediction models. *Hydrological Sciences Journal*. 64 (13): 1556–1572. DOI: 10.1080/02626667.2019.1662023.
Chen, Y-J., **Shi, X.（corresponding authors)**, Liu, J-Z, Zhang, T-J, Guo, W-W, 2019, Response of riparian ecosystem to dike construction on the Middle Reaches of the Tarim River. *EcoHydrology*, 12(6). DOI: 10.1002/eco.2117.

Riblet, N., Watts, B., Shiner, B., Gottlieb, D., Cornelius, S., Fan, V., and **Shi, X.**, 2019, Hypoxia-Related Risk Factors for Death by Suicide in a National Clinical Sample. *Psychiatry Research*, 273: 247-251. DOI: 10.1016/j.psychres.2019.01.040.

Li, M., **Shi, X.** (**one of corresponding authors**), Li, X., Ma, W., He, J., and Liu, T., 2019, Sensitivity of disease cluster detection to spatial scales: an analysis with the spatial scan statistic method, *International Journal of Geographical Information Science*. 33(11): 2125 – 2152. DOI: 10.1080/13658816.2019.1616741.

Li, M., **Shi, X.** (**one of corresponding authors**), Li, X., Ma, W., He, J., and Liu, T., 2019, Epidemic Forest: A Spatiotemporal Model of Communicable Diseases. *Annals of the American Association of Geographers*. 109(3): 812-836. DOI: 10.1080/24694452.2018.1511413.

Shi, X., Li, M., Hunter, O., Guetti, B., Andrew, A., Stommel, E., Bradley, W., and Karagas, M., 2019, Estimation of environmental exposure: interpolation, kernel density estimation or snapshotting. *Annals of GIS*. 25 (1): 1-8. DOI: 10.1080/19475683.2018.1555188.

Song, C., **Shi, X.** (**corresponding author**), Bo, Y., Wang, J., Wang, Y., and Huang, D., 2019, Exploring spatiotemporal nonstationary effects of climate factors on hand, foot, and mouth disease using Bayesian Spatiotemporally Varying Coefficients (STVC) model in Sichuan, China. *Science of the Total Environment*. 648(15): 550-560. DOI: 10.1016/j.scitotenv.2018.08.114.

Ransome, Y., Luan, H., **Shi, X.**, Duncan, D., and Subramanian, S.V., 2018, Alcohol Outlet Density and Area-Level Heavy Drinking Are Independent Risk Factors for Higher Alcohol-Related Complaints. *Journal of Urban Health*. 96(6): 889–901. DOI: 10.1007/s11524-018-00327-z.

Song, C., Yang, X., **Shi, X. (one of corresponding authors)**, Bo, Y., and Wang, J., 2018, Estimating missing values in China's official socioeconomic statistics using progressive spatiotemporal Bayesian hierarchical modeling. *Scientific reports*. 8(1): 10055. DOI:10.1038/s41598-018-28322-z.

Ding, Q., Shi, X., Zhuang, D., and Wang, Y., 2018, Temporal and Spatial Distributions of Ecological Vulnerability under the Influence of Natural and Anthropogenic Factors in an Eco-Province under Construction in China. *Sustainability*. 10(9): 3087. DOI:10.3390/su10093087.

Li, B., Chen, Y., Chipman, J.W., and **Shi, X.**, 2018, Why does the runoff in Hotan River show a slight decreased trend in northwestern China? *Atmospheric Science Letters*. 19(1): e800. DOI: 10.1002/asl.800.

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.

Xu, Y., Fu, C., Onega, T., **Shi, X.**, and Wang, F., 2017, Disparities in Geographic Accessibility of National Cancer Institute Cancer Centers in the United States. *Journal of Medical Systems*. 41: 203. DOI:10.1007/s10916-017-0850-0.

Wallace, D., Prosper, O., Savos, J., Dunham, A.M., Chipman, J.W., **Shi, X.**, Ndenga, B., and Githeko, A., 2017, Modeling the Response of Anopheles gambiae (Diptera: Culicidae) Populations in the Kenya Highlands to a Rise in Mean Annual Temperature, *Journal of Medical Entomology*, 54(2): 299–311. DOI: 10.1093/jme/tjw174.

Song, Y. and **Shi, X.**, 2017, The Contingency of Medicare Physician Spending on Population

Densities and Sizes. *GeoJournal*, 82: 597-608. DOI: 10.1007/s10708-016-9705-3.
Chipman, J.W., **Shi, X.**, Magilligan, F.J., Chen, C., Li, B., 2016, Impacts of land cover change and water management practices on the Tarim and Konqi river systems, Xinjiang, China, *Journal of Applied Remote Sensing*, 10(4): 046020. DOI: 10.1117/1.JRS.10.046020.
Pan, J., Zhao, H., Wang, X., and **Shi, X.** (**corresponding author**), 2016, Assessing spatial access to public and private hospitals in Sichuan, China: The influence of the private sector on the healthcare geography in China. *Social Science & Medicine*, 170: 35–45. DOI: 10.1016/j.socscimed.2016.09.042.
Ou, J., Liu, X., Li, X., and **Shi, X.**, Mapping Global Fossil Fuel Combustion CO_2 Emissions at High-resolution by Integrating Nightlight, Population density, and Traffic Network Data, *IEEE Journal Of Selected Topics in Applied Earth Observations And Remote Sensing*, 9(4): 1674–1684. DOI: 10.1109/JSTARS.2015.2476347.
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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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Liu, X., Li, X., **Shi, X.**, Zhang, X., and Chen, Y., 2010, Simulating land use dynamics under planning policies by integrating artificial immune systems with cellular automata. *International Journal of Geographical Information Science*, 24(5):783–802. DOI: 10.1080/13658810903270551.

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Qin, C-Z, Zhu, A-X, **Shi, X.**, Li, B-L., Pei, T. and Zhou, C-H., 2009, Quantification of spatial gradation of slope positions, *Geomorphology*, 110:152–161. DOI: 0.1016/j.geomorph.2009.04.003.

Sloan, C.D., Duell, E.J., **Shi, X.**, Irwin, R., Andrew, A.S., Williams, S.M., Moore, J.H., 2009, Ecogeographic Genetic Epidemiology, *Genetic Epidemiology*, 33:281–289. DOI: 10.1002/gepi.20386.

Shi, X., 2009, A GeoComputational Process for Characterizing the Spatial Pattern of Lung Cancer Incidence in New Hampshire, *Annals of the Association of American Geographers*, 99(3): 521-533. DOI: 10.1080/00045600902931801.

Berke, E. and **Shi, X.** (Corresponding author), 2009, Computing travel time when the exact address is unknown: a comparison of point and polygon ZIP code approximation methods, *International Journal of Health Geographics*, 2009, 8:23. DOI: 10.1186/1476-072X-8-23.

Onega, T, Duell, E. J. **Shi, X.** Demidenko, E., and Goodman, D., 2009, Determinants of NCI Cancer Center Attendance in Medicare Patients with Lung, Breast, Colorectal, or Prostate Cancer, *Journal of General Internal Medicine*, 24(2): 205-210. DOI: 10.1007/s11606-008-0863-y.

Liu, K., Li, X., **Shi, X.**, and Wang S., 2008, Monitoring Mangrove Forest Changes Using Remote Sensing and GIS Data with Decision-Tree Learning, Wetlands, 28(2): 336–346. DOI: 10.1672/06-91.1.

Yang, Q., Li, X., and **Shi, X.**, 2008, Cellular Automata for Simulating Land Use Changes Based on Support Vector Machines, *Computer and Geoscience*, 34: 592-602. DOI: 10.1016/j.cageo.2007.08.003.

Onega, T., Duell, E., **Shi, X.**, Wang, D., Demidenko, E., and Goodman, D., 2008, Geographic Access to Cancer Care in the United States, *Cancer*, 112(4): 909-918. DOI: 10.1002/cncr.23229.

Liu, X., Li, X., **Shi, X.**, Wu, S., and Liu, T., 2008, Simulating Complex Urban Development Using Kernel-Based Nonlinear Cellular Automata, *Ecological Modelling*, 211: 169-181. DOI: 10.1016/j.ecolmodel.2007.08.024.

Shi, X., Elmore, A.J., Li, X., Gorence, N.J., Jin, H., Zhang, X., and Wang, F., 2008, Using Spatial Information Technologies to Select Sites for Biomass Power Plants: A Case Study in Guangdong, China, *Biomass and Bioenergy*, 32: 35-43. DOI: 10.1016/j.biombioe.2007.06.008.

Elmore, A.J., **Shi, X.**, Gorence, N.J., Li, X., Jin H., Wang, F., Zhang, X., 2008, Spatial Distribution of Agricultural Residue from Rice for Potential Biofuel Production in China, *Biomass and Bioenergy*, 32: 22-27. DOI: 10.1016/j.biombioe.2007.06.005.

Shi, X., Duell, E., Demidenko, E., Onega, T., Wilson, B., and Hoftiezer, D., 2007, A Polygon-based Locally Weighted Average Method for Smoothing Disease Rates of Small Units, *Epidemiology*, 18(5): 523-528. http://www.jstor.org/stable/20486422.

Shi, X., 2007, Evaluating the Uncertainty Caused by P. O. Box Addresses in Environmental Health Studies: A *restricted* Monte Carlo Approach, *International Journal of Geographical Information Science,* 21(3): 325-340. DOI: 10.1080/13658810600924211.

Shi, X., Zhu, A-X., Burt, J., Choi, W., Wang, R-X., Pei, T., and Li, B-L., 2007, An Experiment with Circular Neighborhood in the Calculation of Slope Gradient from DEM, *Photogrammetric Engineering & Remote Sensing*, 73(2): 143-154. DOI: 10.14358/PERS.73.2.143.

Shi, X., Hoftiezer, D., Duell, E., and Onega, T., 2006, Spatial Association between Residential Radon Concentration and Bedrock Types in New Hampshire, *Environmental Geology*, 51(1): 65-71. DOI: 10.1007/s00254-006-0304-3.

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Shi, X. and Yeh, A. G. O., 1999, The Integration of Case-Based Systems and GIS in Development Control. *Environment and Planning B: Planning and Design*, 26: 345-364. DOI: 10.1068/b260345.

Yeh, A. G. O. and **Shi, X.**, 1999, Applying case-based reasoning to urban planning: a new

planning support system tool. *Environment and Planning B: Planning and Design*, 26: 101-116. DOI: 10.1068/b260101.

EDITED BOOKS AND JOURNAL SPECIAL ISSUES:

Pan, J., Wang, X., Ge, E., Song, C., and **Shi, X.** (eds), "Applications of Geospatial Information Technologies and Spatial Statistics in Health Services Research", a special issue for the journal *Frontiers in Public Health*. 2022-2023.

Li, B., **Shi, X.**, Zhu, A-X., Wang, C., and Lin, H. (eds), *New Thinking in GIScience*. Springer Nature Singapore. 2022. ISBN-13: 978-9811938153.

Shi, X. and Lin, H. (eds), a special issue for the journal *Annals of GIS* on geospatial health research and GIS. 26(3). 2020.

Lin, H. and **Shi, X.** (eds), *Frontiers in Geoinformatics***.** Higher Education Press of China: Beijing. 2017 (in Chinese).

Shi, X. and Wang, F. (eds), *Applications of Geographic Information Technologies in Public Health.* Higher Education Press of China: Beijing. 2016 (in Chinese).

Shi, X. and Kwan, M-P. (eds), a special issue for the journal *Annals of GIS* on geospatial health research and GIS. 21(2). 2015.

BOOK CHAPTERS:

Li, M., Huang, X., and **Shi, X.**, 2026, Advancing spatial modeling for communicable diseases: From traditional approaches to epidemic forest frameworks, in Tsatsaris, A., Psaroulaki, A., Chochlakis, D., Kalogeropoulos, K., and Stathopoulos, N. (eds.), *Health Geography: Innovative Geospatial Epidemiology, Earth Observation Series*, pp. 29-42. ISBN 9780443291470, doi.org/10.1016/B978-0-443-29147-0.00008-1.

Shi, X., Li, M., and Li, X., 2022, 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*. Springer Nature Singapore, pp. 59-65.

Li, M., Peng, X., and **Shi, X.**, 2022, 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 International Publishing, pp. 151-164.

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:

Song, C., Wang, X., Ge, E., Shi, X., and Pan, J., 2024, Editorial: Applications of geospatial information technologies and spatial statistics in health services research. *Frontiers in Public Health*, 11:1349985. DOI: 10.3389/fpubh.2023.1349985.

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:

2023, *NIH*, 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 (2UG3OD023275-08). $14,160,643 for 2 years. PI: Margaret Karagas; **Xun Shi** is a co-Investigator.

2022, *NIH through DHMC*, Investigating Toxic Elements and Nanoparticles in ALS Etiology: A Geospatial and Toxicological Evaluation of Massachusetts ALS Registry Patients. $953,706 for 5 years. PI: **Xun Shi** (PI of the entire project at DHMC: Elijah Stommel).

2022, *NSF*, Residential Mobility: Implications for the Accuracy of Disease Cluster Detection, $31,389 for 3 years. PI: **Xun Shi** (a subaward of a project granted to University of North Carolina at Charlotte (UNCC), PI: Eric Delmelle).

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 at Texas A&M: 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. $1,212,898 for 4 years. PI: **Xun Shi** (PI of the entire project at University of Idaho: Xiaogang Ma, total $6,430,179).

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, *CDC through DHMC*, Identify, Analyze, and Evaluate Potential Risk Factors for Amyotrophic Lateral Sclerosis (ALS) (GC10112-00-03), $269,919 for 4 years. PI: **Xun Shi** (PI of the entire project at DHMC: 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, *NIH*, 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, *CDC*, Research of Amyotrophic Lateral Sclerosis (ALS) Risk Factors and Burden of Disease to Support the National ALS Registry Effort (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) from the National Center for Advancing Translational Sciences (NCATS) of the National Institutes of Health (NIH)*, Amyotrophic Lateral Sclerosis Risk Factors and Exposure Pathways (UL1TR001086), $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 (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) 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 (UL1TR001086), $50, 000 for one years. PI: Tracy Onega. Co-PI: **Xun Shi**.

2013, *NIEHS/EPA*, 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, *NIEHS/EPA*, 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, *USDA-NRCS*, Development of SIE and its use in producing soil survey information (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, *USDA-NRCS*, Geographic Information System (GIS) and Artificial Intelligence (AI) Based Approach for Automated Soil Mapping (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, *NIH*, 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., March 19, 2026, "How to apply GeoAI to public health research". Invited panelist talk at the Closing Plenary of the *Symposium on GeoAI for Sustainable Cities and Health Research*, American Association of Geographers Annual Meeting, San Francisco.

Shi, X., December 17, 2025, "Comparison of StreetView Images and Satellite Images in Studies of Greenspace". Invited talk at the Nature and Health Workshop, Ho Chi Minh City, Vietnam.

Shi, X., December 13, 2025, "GeoAI in Spatial Epidemiology". Invited talk at the 2025 International Geospatial Health Research Network (IGHRN) Workshop, the Institute of Space and Earth Information Science & Institute of Future Cities, the Chinese University of Hong Kong, Hong Kong.

Shi, X., July 3, 2025, "GeoSpatial Analysis for Public Health in Urban Spaces". Invited keynote speech at the Joint Conference of the 9th Health-GIS Workshop and the 3rd Healthy City Science Conference, Shanghai, China.

Shi, X., March, 2025, "GeoAI, GIS, AI, and Generative AI". Invited panelist talk at the Closing Plenary of the *Symposium on GeoAI Geospatial Approaches to Pressing Grand Challenges: Global Pandemic, Climate Change, and Food Security*, American Association of Geographers Annual Meeting, Detroit.

Shi, X., January 17, 2025, "Incorporating Residential History in Detecting ALS-Environment Association". Invited talk to the New Hampshire House Bill 1171 Commission Meeting.

Shi, X., December 4, 2024, "Integration of Spatialization and Individualization: The Future of Epidemic Modelling for Communicable Diseases". Invited talk at the Department of Land Surveying and Geo-Informatics, Hong Kong Polytechnic University.

Shi, X., October 8, 2024, "Health Geography and GIS: An Introduction". Invited presentation at the John Sloan Dickey Center for International Understanding, Dartmouth College, for the Global Health Fellows program.

Shi, X., July 3, 2024, "Incorporating Multi-year Migration History in Estimation of Environmental Exposure: A case study of detecting spatial association between ALS mortality and airborne lead (Pb) in Ohio." Invited talk at the School of Architecture and Urban Planning, Tongji University.

Shi, X. June 24, 2024, "Quantitative Analysis in Spatial Epidemiology: Basic Principles and Methodologies". Invited lecture at the School of Architecture and Urban Planning, Tongji University.

Shi, X., January 17, 2024, "Incorporating Multi-year Migration History in Estimation of Environmental Exposure: A case study of detecting spatial association between ALS mortality and airborne lead (Pb) in Ohio". Invited talk at the EHCO program, Dartmouth College. Shi, X., December 7, 2023, "Environmental Changes, Vector-borne Diseases, and GIS". Invited talk at *the 1st International Geospatial Health Research Network Workshop Institute of Space and Earth Information Science & Institute of Future Cities*. The Chinese University of Hong Kong, Hong Kong.

Shi, X., November 10, 2023, "GeoSpatial Analysis for Health Studies". Invited talk at Brown University. Providence, Rhode Island.

Shi, X., October 11, 2023, "Environmental Changes, Health, and GIS". Invited talk in *Dartmouth Symposium on Climate, Energy, and Society*. Hanover, New Hampshire. October 11, 2023.

Shi, X., July 16, 2023, "GeoAI for Health". Invited talk in the panel discussion of *"GeoAI for Health" at the Symposium on Spatiotemporal Data Science, sponsored by the Spatial Data Lab (SDL), Harvard CGA*. Online. July 16, 2023.

Shi, X., July 10, 2023, "Incorporating Multi-year Migration History in Estimation of Environmental Exposure: A case study of detecting spatial association between ALS

mortality and airborne lead (Pb) in Ohio". Invited talk at the West China Big Data Center.

Shi, X. and Andrew P. Loehrer, May 3, 2023, "Geospatial Analysis in Health Studies". Invited talk in *the Methodology Series of Association for Academic Surgery (AAS)-Surgical Outcomes Club (SOC)-Academy Health (AH)*. Online webinar.

Shi, X., March 23, 2023, "Environmental Changes, Vector-borne Diseases, and GIS". Invited talk in the Opening Plenary of *Symposium on Geospatial Approaches to Pressing Grand Challenges: Global Pandemics, Climate Change, and Food Security*, Annual Meeting of the American Association of Geographers (AAG), Denver, Colorado. March 23-28, 2023.

Shi, X., February 10, 2023, "Apply Geospatial Analysis to Studies of Infectious/Communicable Diseases". Invited talk in the GeoSpatial Forum at the North Carolina State University. Raleigh, NC.

Shi, X., December 10, 2022. "ArcHealth: A software toolset for geospatial analyses in health studies and practices". Invited talk in the 2nd International Congress on Spatial Lifecourse Health (online). Wuhan, China.

Shi, X., August 11, 2022. "Mapping Health and Disease". Invited talk in the Dartmouth Prospective Student Event (online). Hanover, NH.

Shi, X., July 21, 2022. "GeoSpatial Analyses in Environmental Health Studies". Invited talk for the METALS Superfund Research Center of University of New Mexico (online).

Shi, X., July 16, 2022. "The trend of individualization and spatialization in epidemic modeling". Invited talk for the speaker series of the Center of Urban Health and Planning, Tongji University, Shanghai, China (online, in Chinese).

Shi, X., June 15, 2022. "GeoSpatial Analysis in Health Studies". Invited lecture to the Summer School for the local Native American Community College. University of New Mexico. Albuquerque. NM.

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

Journal Reviewer:

BMJ Open; Community Mental Health Journal; Science of the Total Environment; ISPRS International Journal of Geo-Information; Cartography and Geographic Information Science; Global Environmental Change; Transactions in GIS; Socio-Economic Planning Sciences; Science Bulletin; Environmental Geochemistry; Journal of Transport & Health; Frontiers in Public Health; 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.

Grant Reviewer:

- Member of the Humanities and Social Sciences Panel of the Research Grants Council (RGC) of Hong Kong, 2022-2024.
- 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 Professionals in Geographic Information Science (CPGIS)