Kenan Li, Ph.D.

Associate Professor

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Education

2011 – 2015	**Ph.D. Environmental Science**, Louisiana State University Dissertation title: *A spatial dynamic model of population changes in a vulnerable coastal environment*
2009 – 2011	**M.S. Environmental Science**, Louisiana State University Thesis title: *Temporal changes of coastal community resilience in the Gulf of Mexico region*
2005 – 2009	**B.S. Environmental Science**, Minor in Applied Mathematics, Nankai University

Academic Appointments

2025 – ⋯	**Associate Professor,** Department of Epidemiology and Biostatistics, Saint Louis University, Saint Louis, MO.
2023 – ⋯	**Primary Investigator,** Water Access, Technology, Environment and Resources (WATER) Institute, Saint Louis University, Saint Louis, MO.
2022 – 2025	**Assistant Professor,** Department of Epidemiology and Biostatistics, Saint Louis University, Saint Louis, MO.
2022 – ⋯	**Geospatial Data Scientist,** Institute of Clinical and Translational Sciences (Health Data Analytics Core), Washington University in St. Louis, Saint Louis, MO.
2019 – 2022	**Research Scientist,** Spatial Sciences Institute, University of Southern California, Los Angeles, CA.
2020 – 2021	**Lecturer,** Spatial Sciences Institute, University of Southern California, Los Angeles, CA.
2017 – 2019	**Postdoctoral Research Associate,** Department of Population and Public Health Sciences, Keck School of Medicine of USC, Los Angeles, CA.
2009 – 2016	**Research Assistant,** Department of Environmental Sciences, Louisiana State University, Baton Rouge, LA.

Publications

Journal Articles

1. R. Dong, C. Fu, Y. Liu, Y. Xu, and **K. Li**, "Modeling china's carbon emission reduction trajectory and peak path using a system dynamic approach," *Ecological Modelling*, vol. 505, p. 111 104, 2025, ISSN: 0304-3800. DOI: https://doi.org/10.1016/j.ecolmodel.2025.111104.

2. **K. Li**, E. Shacham, D. Brown, M. Blake, Y. Zhu, J.-F. Trani, and G. M. Babulal, "Association of environmental exposome and cognitive function among older adults with and without preclinical alzheimer's disease," *Alzheimer's & Dementia*, vol. 21, no. 6, e70373, 2025. DOI: https://doi.org/10.1002/alz.70373.

3. A. Tadesse, **K. Li**, and J. Helton, "Stress and traditional support: The role of orphans' and vulnerable children's primary caregivers in rural ethiopia," *Children*, vol. 12, no. 1, 2025, ISSN: 2227-9067. DOI: 10.3390/children12010096.

4. A. Tadesse, **K. Li**, J. Helton, J. Huang, and D. Ansong, "The links between community-based financial inclusion and household food availability: Evidence from mozambique," *Foods*, vol. 14, no. 2, 2025, ISSN: 2304-8158. DOI: 10.3390/foods14020212.

5. A. Tadesse, J. J. Helton, and **K. Li**, "Perceived worries and spirituality: A mixed methods study of the primary caregiver well-being of orphan and vulnerable children in ethiopia," *Children*, vol. 11, no. 4, 2024, ISSN: 2227-9067. DOI: 10.3390/children11040380.

6. X. Zhang, **K. Li**, Y. Dai, and S. Yi, "Modeling the land cover change in chesapeake bay area for precision conservation and green infrastructure planning," *Remote Sensing*, vol. 16, no. 3, 2024, ISSN: 2072-4292. DOI: 10.3390/rs16030545.

7. Y. Zhang, **K. Li**, and J. Huang, "Do female-headed households have poorer financial health compared to male-headed households? evidence from china," *International Journal of Population Studies*, vol. 11, no. 2, pp. 95–108, 2024, ISSN: 2424-8150. DOI: https://doi.org/10.36922/ijps.4403.

8. B. Guo, **K. Li**, and C. Fu, "Utilizing multilevel modeling to measure neighborhood dynamics and their impact on house prices," *Applied Sciences*, vol. 13, no. 8, 2023, ISSN: 2076-3417. DOI: 10.3390/app13085180.

9. **K. Li**, S. P. Eckel, E. Garcia, Z. Chen, J. P. Wilson, and F. D. Gilliland, "Geographic variations in human mobility patterns during the first six months of the covid-19 pandemic in california," *Applied Sciences*, vol. 13, no. 4, 2023, ISSN: 2076-3417. DOI: 10.3390/app13042440.

10. **K. Li** and J. P. Wilson, "Modeling the health benefits of superblocks across the city of los angeles," *Applied Sciences*, vol. 13, no. 4, 2023, ISSN: 2076-3417. DOI: 10.3390/app13042095.

11. S. Liu, **K. Li**, X. Liu, and Z. Yin, "Geospatial ai in earth observation, remote sensing, and giscience," *Applied Sciences*, vol. 13, no. 22, 2023, ISSN: 2076-3417. DOI: 10.3390/app132212203.

12. M. S. Livings, J. Wilson, S. Miller, W. Bruine de Bruin, K. Weber, M. Babboni, M. Xu, **K. Li**, and K. de la Haye, "Spatial characteristics of food insecurity and food access in los angeles county during the covid-19 pandemic," *Food Security*, vol. 15, no. 5, pp. 1255–1271, Oct. 2023, ISSN: 1876-4525. DOI: 10.1007/s12571-023-01381-5.

13. Y. Xu, Y. Liu, R. Chen, Y. Meng, **K. Li**, and C. Fu, "Study on the spatio-temporal evolution characteristics and driving mechanism of china's carbon emissions," *Humanities and Social Sciences Communications*, vol. 10, no. 1, p. 786, Nov. 2023, ISSN: 2662-9992. DOI: 10.1057/s41599-023-02262-0.

14. W. Zheng, M. Liu, **K. Li**, and X. Liu, "Ai for computational vision, natural language processing, and geoinformatics," *Applied Sciences*, vol. 13, no. 24, 2023, ISSN: 2076-3417. DOI: 10.3390/app132413276.

15 W. Zheng, M. Liu, C. Liu, D. Wang, and **K. Li**, "Recent advances in sensor technology for healthcare and biomedical applications (volume ii)," *Sensors*, vol. 23, no. 13, 2023, ISSN: 1424-8220.   DOI: `10.3390/s23135949`.

16 B. Marian, Y. Yan, Z. Chen, F. Lurmann, **K. Li**, F. Gilliland, S. P. Eckel, and E. Garcia, "Independent associations of short- and long-term air pollution exposure with covid-19 mortality among californians," *Environmental Advances*, vol. 9, p. 100 280, Oct. 2022, Epub 2022 Aug 9, ISSN: 2666-7657.   DOI: `10.1016/j.envadv.2022.100280`.

17 E. Garcia, S. P. Eckel, Z. Chen, **K. Li**, and F. D. Gilliland, "Covid-19 mortality in california based on death certificates: Disproportionate impacts across racial/ethnic groups and nativity," *Annals of Epidemiology*, vol. 58, pp. 69–75, Jun. 2021, Epub 2021 Mar 18, ISSN: 1873-2585.   DOI: `10.1016/j.annepidem.2021.03.006`.

18 E. Garcia, B. Marian, Z. Chen, **K. Li**, F. Lurmann, F. Gilliland, and S. Eckel, "Long-term ambient air pollution associated with weekly covid-19 mortality counts in california census tracts," *ISEE Conference Abstracts*, vol. 2021, no. 1, 2021.   DOI: `10.1289/isee.2021.P-538`. eprint: `https://ehp.niehs.nih.gov/doi/pdf/10.1289/isee.2021.P-538`.

19 **K. Li**, H. Deng, J. Morrison, R. Habre, M. Franklin, Y.-Y. Chiang, K. Sward, F. D. Gilliland, J. L. Ambite, and S. P. Eckel, "W-tss: A wavelet-based algorithm for discovering time series shapelets," *Sensors*, vol. 21, no. 17, 2021, ISSN: 1424-8220.   DOI: `10.3390/s21175801`.

20 **K. Li**, K. Sward, H. Deng, J. Morrison, R. Habre, M. Franklin, Y.-Y. Chiang, J. L. Ambite, J. P. Wilson, and S. P. Eckel, "Using dynamic time warping self-organizing maps to characterize diurnal patterns in environmental exposures," *Scientific Reports*, vol. 11, no. 1, p. 24 052, 2021, ISSN: 2045-2322.   DOI: `10.1038/s41598-021-03515-1`.

21 **K. Li**, R. Habre, H. Deng, R. Urman, J. Morrison, F. D. Gilliland, J. L. Ambite, D. Stripelis, Y.-Y. Chiang, Y. Lin, A. A. Bui, C. King, A. Hosseini, E. Van Vliet, M. Sarrafzadeh, and S. P. Eckel, "Applying multivariate segmentation methods to human activity recognition from wearable sensors' data," *JMIR mHealth and uHealth*, vol. 7, no. 2, e11201, Feb. 2019, Epub 2019 Feb 7.   DOI: `10.2196/11201`.

22 N. S.-N. Lam, Y. Qiang, **K. Li**, H. Cai, L. Zou, and V. Mihunov, "Extending Resilience Assessment to Dynamic System Modeling: Perspectives on Human Dynamics and Climate Change Research," *Journal of Coastal Research*, vol. 85, no. sp1, pp. 1401–1405, 2018.   DOI: `10.2112/SI85-281.1`.

23 N. S.-N. Lam, Y. J. Xu, K.-b. Liu, D. E. Dismukes, M. Reams, R. K. Pace, Y. Qiang, S. Narra, **K. Li**, T. A. Bianchette, H. Cai, L. Zou, and V. Mihunov, "Understanding the mississippi river delta as a coupled natural-human system: Research methods, challenges, and prospects," *Water*, vol. 10, no. 8, 2018, ISSN: 2073-4441.   DOI: `10.3390/w10081054`.

24 **K. Li** and N. S. N. L. and, "A spatial dynamic model of population changes in a vulnerable coastal environment," *International Journal of Geographical Information Science*, vol. 32, no. 4, pp. 685–710, 2018.   DOI: `10.1080/13658816.2017.1407415`.

25 **K. Li** and N. S. N. L. and, "Geographically weighted elastic net: A variable-selection and modeling method under the spatially nonstationary condition," *Annals of the American Association of Geographers*, vol. 108, no. 6, pp. 1582–1600, 2018.   DOI: `10.1080/24694452.2018.1425129`.

26 H. Cai, N. S.-N. Lam, L. Zou, Y. Qiang, and **K. Li**, "Assessing community resilience to coastal hazards in the lower mississippi river basin," *Water*, vol. 8, no. 2, 2016, ISSN: 2073-4441.   DOI: `10.3390/w8020046`.

27 N. S. N. Lam, M. Reams, **K. Li**, C. Li, and L. P. Mata, "Measuring community resilience to coastal hazards along the northern gulf of mexico," *Natural Hazards Review*, vol. 17, no. 1, p. 04 015 013, Feb. 2016, Epub 2015 Jul 20, ISSN: 1527-6988.   DOI: `10.1061/(ASCE)NH.1527-6996.0000193`.

28 X. Li, N. Lam, Y. Qiang, **K. Li**, L. Yin, S. Liu, and W. Zheng, "Measuring county resilience after the 2008 wenchuan earthquake," *International Journal of Disaster Risk Science*, vol. 7, no. 4, pp. 393–412, 2016, ISSN: 2192-6395.   DOI: `10.1007/s13753-016-0109-2`.

29 L. Zou, J. Kent, N. S.-N. Lam, H. Cai, Y. Qiang, and **K. Li**, "Evaluating land subsidence rates and their implications for land loss in the lower mississippi river basin," *Water*, vol. 8, no. 1, 2016, ISSN: 2073-4441. DOI: `10.3390/w8010010`.

30 **K. Li**, N. S. N. Lam, Y. Qiang, L. Zou, and H. C. and, "A cyberinfrastructure for community resilience assessment and visualization," *Cartography and Geographic Information Science*, vol. 42, no. sup1, pp. 34–39, 2015. DOI: `10.1080/15230406.2015.1060113`.

31 Z. Cai, Q. Zhou, S. Peng, and **K. Li**, "Promoted biodegradation and microbiological effects of petroleum hydrocarbons by impatiens balsamina l. with strong endurance," *Journal of Hazardous Materials*, vol. 183, no. 1-3, pp. 731–737, Nov. 2010, Epub 2010 Jul 30, ISSN: 0304-3894. DOI: `10.1016/j.jhazmat.2010.07.087`.

Book Chapters

1 N. S.-N. Lam, Y. J. Xu, R. K. Pace, K.-b. Liu, Y. Qiang, S. Narra, T. A. Bianchette, H. Cai, L. Zou, **K. Li**, S. Joshi, and V. Mihunov, "Collaboration across boundaries: Reflections on studying the sustainability of the mississippi river delta as a coupled natural-human system," in *Collaboration Across Boundaries for Social-Ecological Systems Science: Experiences Around the World*, S. G. Perz, Ed. Cham: Springer International Publishing, 2019, pp. 361–393, ISBN: 978-3-030-13827-1. DOI: `10.1007/978-3-030-13827-1_11`.

Technical Reports

1 K. de la Haye, J. Wilson, W. Bruine de Bruin, **K. Li**, M. Livings, M. Xu, S. Miller, M. Solanky, K. Weber, M. Babboni, R. Wald, and A. Frazzini, "Enough to eat: The impact of covid-19 on food insecurity and the food environment in l.a. county april 2020 – september 2021," Dornsife Public Exchange, University of Southern California, Technical Report, 2021, Public Policy Brief. URL: `https://publicexchange.usc.edu/food-insecurity-in-la-county/`.

2 A. Adiwidjaja, **K. Li**, A. Owens, and J. P. Wilson, "La county-analytics pilot: Building a geo-cyberinfrastructure for emergency management of trail systems in los angeles county," Spatial Sciences Institute, University of Southern California, Technical Report, 2020, Project report.

Software and Tools

1 **K. Li**, *Dynamic time warping self-organizing map*, Available from Python Package Index (PyPI) as DtwSom, 2019. URL: `https://pypi.org/project/DtwSom/`.

2 **K. Li**, *Geographically weighted elastic net*, Available upon request, 2019.

3 **K. Li**, *Abshape: A gis based platform for agent-based modeling in python*, Available upon request, 2017.

Manuscripts Under Review

1 A. S. Kuhlmann, **K. Li**, M. MacMaster, S. Gellner, A. Gilmore, and E. Shacham, "Availability, accessibility, and functionality of public restrooms in the city of st. louis, missouri," Manuscript under review at *Health and Place*, 2025.

2 G. Little, E. Shacham, K. Enard, **K. Li**, and J. Josephsen, "Sociodemographic predictors of neonatal complications in a midwestern u.s. health system: A 10-year cross-sectional analysis," Manuscript under review at *Maternal and Child Health Journal*, 2025.

3 G. Little, E. Shacham, **K. Li**, K. Enard, and J. Josephsen, "Missing shade, missing health: Tree canopy disparities and neonatal sepsis in a midwestern u.s. city," Manuscript under review at *Health and Place*, 2025.

4 Y. Liu, Z. Chen, Y. Xu, M. Wang, H. Fan, **K. Li**, Y. Li, Y. Meng, S. Zhang, Z. Huang, and M. Yan, "Satellite-mapped sargassum inundation drive respiratory disease disparities: Spatial heterogeneity mediated by socioeconomic vulnerability in coastal zones," Manuscript under review at *Science of the Total Environment*, 2025.

5 B. Marian, Y. Zhang, **K. Li**, S. P. Eckel, and E. Garcia, "Unsupervised clustering and validation techniques for time series data: Evaluation using benchmark and simulated datasets," Manuscript under review at *International Journal of Data Science and Analytics*, 2025.

6 A. Tadesse, J. Huang, Y. Zhang, and **K. Li**, "Help-seeking behaviors and depression symptoms among low-income female participants of village savings groups in mozambique," Manuscript under review at *Social Sciences & Humanities Open*, 2025.

7 Z. Xia, W. Zhao, **K. Li**, Y. Li, C. Li, R. Dong, Y. Li, S. Yang, and Y. Xu, "Optimizing urban land use and carbon storage under multi-objective constraints: A scenario-based analysis using the plus model," Manuscript under review at *Land Use Policy*, 2025.

8 W. Zhao, Z. Xia, Y. Xu, **K. Li**, Z. Huang, F. Xie, Y. Li, and C. Li, "Top-down inversion of urban-scale sectoral methane (ch_4) emissions and their response to environmental drivers," Manuscript under review at *Environmental Science & Technology*, 2025.

9 H. Zhou, Y. Meng, X. Tang, R. Zhu, Y. Li, **K. Li**, and Y. Xu, "Long-term no_2 exposure and mortality disparities in the u.s.: Evidence from a panel-based intersectional analysis," Manuscript under review at *ISPRS International Journal of Geo-Information*, 2025.

Presentations

Conferences and Workshops

2025   **Spatial Statistics 2025: At the Dawn of AI.** *Clustering Post-hurricane mobility using spatial graphs and LLM-derived semantic Embeddings* (co-author of poster presentation). NH Leeuwenhoorst, Noordwijk, The Netherlands

           Joint Annual Meeting of the International Society of Exposure Science and the International Society for Environmental Epidemiology 2025. *Analyzing Driving Behavior and Environmental Interactions to Assess Cognitive Decline in Preclinical Alzheimer's Disease* (poster presentation). Atlanta, Georgia.

           I-GUIDE Forum and Sustainability Research & Innovation Congress 2025. *Modeling Community Resilience through Spatiotemporal Trajectory Clustering: A Deep Generative Approach to Hurricane Evacuation Analysis* (co-author of poster presentation). Chicago, Illinois.

           The American Association of Geographers' Annual Meeting. *Environmental Exposures and Cognitive Function in Aging Adults: Insights from a Preclinical Alzheimer's Cohort.* Detroit, Missouri.

2024   **American Public Health Association Annual Meeting and Expo.** *Assessing the role of maternal and infant sociodemographic variables with neonatal health outcomes: A 10-year analysis* (co-author). Minneapolis, Minnesota.

           Society for Social Work and Research 29th Annual Conference. *The Role of Community-Based Financial Inclusion Strategies in Addressing FOOD Security: Evidence from Southern Africa* (co-author). Seattle, Washington.

2024 Joint Statistical Meetings. *Evaluating Performance of Unsupervised Machine Learning Methods for Time Series Clustering* (co-author). Portland, Oregon.

The American Association of Geographers' Annual Meeting. *Assessing Socio-Economic Impacts on Evacuation Compliance During Hurricane Ian Through Mobility Data Analysis.* Honolulu, Hawaii.

2023   **AGU Advancing Earth and Space Sciences Annual Meeting 2024.** *Residential Green Spaces and Birth Outcomes: A Decade-long Study in a Neonatal Intensive Care Unit (NICU) Cohort* (poster presentation). San Francisco, California.

University Consortium for Geographic Information Science Symposium 2023. *Modeling the Health Benefits of Superblocks in a Physical-Virtual World Era.* New Haven, Connecticut.

SLU 16th Annual Senior Legacy Symposium. *Green Urban Design: Potential for Implementing Superblocks and Mini-Blocks in the City of Saint Louis* (co-author of poster presentation). Saint Louis, Missouri.

SLU Sigma Xi Annual Research Symposium 2023. *Identification of Broadly Neutralizing Antibody (bNAb) Epitope Analogues using an AI-Driven Platform Technology for Vaccine Development* (co-author of poster presentation). Saint Louis, Missouri.

SLU Sigma Xi Annual Research Symposium 2023. *Financial Inclusion and Food Insecurity among Low-Income Households: Evidence from a Community Intervention in Central Mozambique* (co-author of poster presentation). Saint Louis, Missouri.

The American Association of Geographers' Annual Meeting. *Geographic variations in human mobility patterns during the first six months of the COVID-19 pandemic in California.* Denver, Colorado.

2022   **Annual Conference of the International Society for Environmental Epidemiology.** *Time series clustering using self-organizing maps to identify longitudinal pollutant exposure profiles* (co-author). Athens, Greece.

2021   **Urban and Regional Information Systems Association GIS-Pro 2021.** *Building Geo-Cyberinfrastructures for Emergency Management of Trail Systems in LA.* Baltimore, Maryland.

Annual Conference of the International Society for Environmental Epidemiology. *Long-term Ambient Air Pollution Associated with Weekly COVID-19 Mortality Counts in California Census Tracts* (co-author). New York, New York.

The American Association of Geographers' Annual Meeting. *Modeling the health benefits of traffic related air pollution abatement across the City of Los Angeles.* Virtual Session.

2019   **The American Association of Geographers' Annual Meeting.** *Predicting asthma symptoms with a Long-Short-Term Memory neural network and Automatic Feature Extraction using Convolutional Autoencoder.* Washington, D.C.

Presentations (continued)

2018   **The American Association of Geographers' Annual Meeting.** *Deep Learning in Geographical Object Detection: The Gap, the Trend, and the Future.* New Orleans, Louisiana.

            Annual Conference of the International Society for Environmental Epidemiology. *A Mobile Health Approach to Improving Personal Exposure Assessment: Using Mobile Sensor Data and Machine Learning to Predict Key Microenvironments* (co-author). Ottawa, Canada.

2017   **Agent-Based Modeling: A Symposium That Advances the Science of ABM.** *Introduction to an open-source python platform for agent-based modeling in coupled natural and human systems.* San Diego, California.

2016   **Southern California Data Science Conference.** *Integrating Geospatial Analytics into Traditional Machine Learning Algorithms.* Los Angeles, California.

            The American Association of Geographers' Annual Meeting. *An Agent-Based Model of Population Changes in a Vulnerable Coastal Environment.* San Francisco, California.

2015   **The American Association of Geographers' Annual Meeting.** *A Cyberinfrastructure for Community Resilience Assessment and Visualization.* Chicago, Illinois.

2014   **The American Association of Geographers' Annual Meeting.** *A Hybrid Model of Cellular Automata, Markov, and Logistic Regression for Land Change Prediction in the Lower Mississippi River Basin.* Tampa, Florida.

2013   **The American Association of Geographers' Annual Meeting.** *Residential Relocation and Local Resilience in the Lower Mississippi River Basin.* Los Angeles, California.

2012   **State of the Coast Conference.** *Temporal Changes of Coastal Community Resilience in Gulf of Mexico Region.* New Orleans, Louisiana.

2011   **The American Association of Geographers' Annual Meeting.** *Temporal Changes of Coastal Community Resilience in Gulf of Mexico Region* (chair of session). Seattle, Washington.

Invited Lectures, Seminars, & Talks

2025   **IdeaBounce®, Transdisciplinary Institute in Applied Data Science, Washington University in St. Louis.** *Pitch Talk at Bridging Data Divides: Collaborating for Impact Summit.* Saint Louis, Missouri.

            SLU Summit for Water: Nature-Based Solutions: Science to Policy to Practice, Saint Louis University. *Environmental Exposures, Cognitive Health, and Policy Solutions: Integrating Science into Practice.* Saint Louis, Missouri.

2024   **Dine with Data Series, The Advanced HEAlth Data (AHEAD) Institute, Saint Louis University School of Medicine.** *Integrating Multisource Big Data to Model Health Impacts of Human Interventions on Environment.* Saint Louis, Missouri.

Presentations (continued)

STL Data Fest 2024, Washington University in St. Louis. *Integrating Multisource Big Data to Model Health Impacts of Human Interventions on Environment.* Saint Louis, Missouri.

2023   **SSCI 583 Spatial Analysis, Spatial Sciences Institute, University of Southern California.** *Agent-Based Modeling for Spatial Analysis* (Guest Lecture). Los Angeles, California.

PUBH 5950 Special Study for Examinations, College for Public Health and Social Justice, Saint Louis University. *Environmental and Occupational Health Study Guide for CPH Exam* (Guest Lecture). Saint Louis, Missouri.

2022   **SSCI 582 Spatial Databases, Spatial Sciences Institute, University of Southern California.** *Introduction to open-source object-oriented databases and NoSQL databases* (Guest Lecture). Los Angeles, California.

SSCI 583 Spatial Analysis, Spatial Sciences Institute, University of Southern California. *Agent-Based Modeling: Methods and Platforms* (Guest Lecture). Los Angeles, California.

Biostatistics Seminar, College for Public Health and Social Justice, Saint Louis University. *Challenges and Solutions of Spatiotemporal Analytics in Building Smart and Connected Health* (Faculty Interview). Saint Louis, Missouri.

2021   **Geospatial Webinar Series, The American Association of Geographers' Online Event.** *Social Determinants of Human Mobility Change Patterns and Their Impacts on Mortality and Food Insecurity.*

SSCI 582 Spatial Databases, Spatial Sciences Institute, University of Southern California. *Introduction to open-source object-oriented databases and NoSQL databases* (Guest Lecture). Los Angeles, California.

SSCI 583 Spatial Analysis, Spatial Sciences Institute, University of Southern California. *Agent-Based Modeling: Methods and Platforms* (Guest Lecture). Los Angeles, California.

SSCI 684 Spatial Modeling with GIS, Spatial Sciences Institute, University of Southern California. *Agent-Based Modeling: Methods and Platforms* (Guest Lecture). Los Angeles, California.

SSCI 214 Human Populations and Natural Hazards, Spatial Sciences Institute, University of Southern California. *Modeling Population Changes under Coastal Hazard Impacts* (Guest Lecture). Los Angeles, California.

2020   **SSCI 383 Geospatial Modeling and Customization, Spatial Sciences Institute, University of Southern California.** *Introduction to Agent-based Modeling* (Guest Lecture). Los Angeles, California.

SSCI 383 Geospatial Modeling and Customization , Spatial Sciences Institute, University of Southern California. *Programming Fundamentals* (Guest Lecture). Los Angeles, California.

Presentations (continued)

SSCI 583 Spatial Analysis, Spatial Sciences Institute, University of Southern California. *Principles and Implementations of Agent-based Modeling* (Guest Lecture). Los Angeles, California.

SSCI 214 Human Populations and Natural Hazards, Spatial Sciences Institute, University of Southern California. *Modeling Population Changes under Coastal Hazard Impacts* (Guest Lecture). Los Angeles, California.

International Young Scholar Symposium, College of Surveying and Geo-Informatics, Tongji University. *Deep Learning and Complex System Approaches in Geo-informatics.* Shanghai, China.

Biostatistics Seminar, Department of Preventive Medicine, University of Southern California. *Deep Learning and Complex System Approaches in Epidemiology: Agents, Dynamics and Networks* (Faculty Interview). Los Angeles, California.

2019   **Smart City and GIS Application Training Programs by NSF Spatiotemporal Innovation Center, USC.** *Assessing the Sustainability of Coupled Natural-Human Systems Using Coupled Differential Equations.* Los Angeles, California.

International Young Scholar Symposium, College of Surveying and Geo-Informatics, Tongji University. *Spatial data sciences in environmental health.* Shanghai, China.

2018   **2nd Donghua University Shangshi Symposium.** *Integrating deep learning in social resilience assessment.* Shanghai, China.

2018 mHealth Collaboratory Inaugural Mobile/Connected Health Symposium, University of Southern California. *Applying Multivariate Segmentation Methods to Human Activity Recognition from Wearable Sensors Data.* Los Angeles, California.

2017   **Geo-sciences Symposium, Department of Geography, University of Missouri.** *Geographically Weighted Elastic Net: A Variable-Selection and Modeling Method under the Spatially Nonstationary Condition* (Faculty Interview). Columbia, Missouri.

Grants and Contracts

Saint Louis University

2025–2026   **Principal Investigator**, *Modeling Spatio-temporal Patterns of Environmental Determinants in Stroke Risk for Early Detection and Intervention.* Funded by the Health Research Grant from the Saint Louis University Research Institute. **$10,000**.

2025   **Co-Principal Investigator**, *Trajectory Analysis in Disaster Response: Uncovering Socioeconomic Disparities Through Geospatial Mobility Research.* Principal Investigator: Nan Lin. Funded by the Geospatial Research Seed Grant from Washington University in St. Louis. **$19,912**.

Grants and Contracts (continued)

2024–2025   **Co-Investigator**, *Investigating Geographic Disparities in Social Determinants of Health and Hypertension in the Greater St. Louis Area.* Principal Investigator: Lindsay J. Underhill. Funded by the Longer Life Foundation Pilot & Feasibility 2024 from Washington University School of Medicine in St. Louis and Reinsurance Group of America Incorporated. **$50,000**.

                     Co-Investigator, *Geospatial Characterization of APOL1 Patient Population: Identifying Intervention Opportunities to Improve Kidney Health.* Principal Investigator: Enbal Shacham. Funded by the Mid-America Transplant Foundation. **$141,586**.

                     Co-Investigator, *Investigating Geographic Disparities in Social and Environmental Determinants of Hypertension in the Greater St. Louis Area.* Principal Investigators: Lindsay J. Underhill and Jenna Ditto. Funded by the Transdisciplinary Institute in Applied Data Sciences Seed Grant Program from Washington University in St. Louis. **$60,000**.

2024–2027   **Principal Investigator**, *ATD: Modeling Spatiotemporal Patterns of Human Dynamics in Response to Natural Hazard Events.* Funded by the National Science Foundation (Award #2427928). **$99,229**.

2024–2025   **Co-Principal Investigator**, *Trees as Medicine: Exploring Tree Canopy and its Relationship to Pediatric Asthma.* Principal Investigator: Enbal Shacham. Funded by the Health Research Grant from the Saint Louis University Research Institute. **$10,000**.

                     Co-Principal Investigator, *Geospatial Analysis of Healthcare Access, Disparities, and Motility Service Utilization in Pediatric Gastrointestinal Dysmotility Disorders.* Principal Investigator: Dhiren Patel. Funded by the Health Research Grant from the Saint Louis University Research Institute. **$5,000**.

                     Principal Investigator, *Geospatial Analysis of Accessibility and Sociodemographic Influence on Dialysis Treatment in End-Stage Renal Disease Patients.* Funded by the Clinical and Translational Research Funding Program from Washington University Institute of Clinical and Translational Sciences. **$24,936**.

2023–2026   **Principal Investigator at SLU**, *A Cyberinfrastructure for Multiscale Human Dynamics and Resilience (HDR) Research.* Overall PI: Nina N.S. Lam. Funded by the National Science Foundation (Total: **$1,096,843**; SLU: **$170,942**, Award #2318205).

2023–2024   **Co-Principal Investigator**, *Detecting Movement Impairments in a Real-world Environment in Women with Knee Pain: A Proof-of-Concept and Feasibility Study.* Principal Investigator: Gretchen B. Salsich. Funded by the Health Research Grant from the Saint Louis University Research Institute. **$10,000**.

                     Co-Investigator, *WhereRisk: A Multimodal Platform for Early Sensing of Infectious Diseases.* Principal Investigator: Enbal Shacham. Funded by the Geospatial Institute Seed Grant Program of Taylor Geospatial Institute. **$200,000**.

Grants and Contracts (continued)

2022–2027   **Co-Investigator**, *Washington University Institute of Clinical and Translational Sciences* (sub-award). Principal Investigator: Enbal Shacham. Funded by the National Center for Advancing Translational Sciences. **$218,690**.

Principal Investigator, *Taylor Fellows Program*. Funded by the Taylor Geospatial Institute and College of Public Health and Social Justice of Saint Louis University. **$226,203**.

University of Southern California

2021–2026   **Co-Investigator**, *Southern California Center for Chronic Health Disparities in Latino Children and Families*. Principal Investigator: Michael Goran. Funded by the National Institute on Minority Health and Health Disparities, National Institutes of Health. **$5.05 million**.

2021–2025   **Co-Investigator**, *Using Community Partnerships, Novel Data Streams, and a Data Portal to Strengthen Food Systems, Security, and Justice*. Principal Investigator: Kayla de la Haye. Funded by the National Science Foundation. **$2,054,156**.

2021–2022   **Co-Investigator**, *Novel Characterization of 24-Hour Air Pollution Mixtures and their Association with Airway Inflammation*. Principal Investigator: Erika Garcia. Funded by the Southern California Environmental Health Sciences Center. **$43,005**.

2020–2021   **Principal Investigator**, *Modeling the Human Mobility Impacts on the Spread of the COVID-19 Pandemic*. Funded by the National Science Foundation "Geospatial Fellows for Advancing COVID-19 Research & Education". **$4,500**.

Principal Investigator, *Modeling the Health Benefits of Near Roadway Traffic Pollution Abatement in the City of Los Angeles*. Co-Principal Investigator: John P. Wilson. Funded by the Southern California Environmental Health Sciences Center. **$30,000**.

Co-Investigator, *Environmental Determinants of COVID-19 Mortality in California*. Principal Investigator: Erika Garcia. Funded by the USC Keck School of Medicine COVID-19 Research Fund. **$54,731**.

Co-Investigator, *COVID-19 Impacts on Food Access, Food Insecurity, and Informal Food Assistance in Los Angeles County*. Principal Investigator: Kayla de la Haye. Funded by the USC Keck School of Medicine COVID-19 Research Fund. **$94,105**.

2020   **Co-Principal Investigator**, *Automatically Geo-reference and Geo-tag Historical Aerial Images*. Co-Principal Investigator: John P. Wilson. Funded by the U.S. Army Corps of Engineers and Defense Imagery Management Operations Center. **$81,000**.

Co-Principal Investigator, *Developing Los Angeles County Trail Address Systems*. Co-Principal Investigator: John P. Wilson. In collaboration with the Los Angeles County Government and Accenture plc. (Pro Bono).

2017–2020   **Co-Investigator**, *PRISMS Data and Software Coordination and Integration Center (DSCIC)*. Principal Investigators: Jose-Louis Ambite and Frank Gilliland. Funded by the National Institute of Biomedical Imaging and Bioengineering, National Institutes of Health. **$5.25 million**.

Grants and Contracts (continued)

Louisiana State University

2014–2016   **Graduate Assistant**, *Coastal SEES Collaborative Research: Sustainability of Deltaic Coasts – The Trillion Dollar Problem*. Principal Investigator: Robert Twilley. Funded by the National Science Foundation. **$1.1 million**.

2011–2015   **Graduate Assistant**, *CNH: Coupled Human and Natural Dynamics in a Vulnerable Coast System*. Principal Investigator: Nina Lam. Funded by the National Science Foundation. **$1.5 million**.

2010–2013   **Graduate Assistant**, *Development of an Empirical Model for Measuring Community Resilience*. Principal Investigator: Nina Lam. Funded by the U.S. Department of Agriculture and the National Science Foundation. **$390,000**.

2009–2011   **Graduate Assistant**, *Developing Indicators to Measure Socio-economic Impacts of OCS Activities*. Principal Investigators: Margaret Reams and Nina Lam. Funded by the Bureau of Ocean Energy Management. **$186,000**.

     Graduate Assistant, *Geographic Units for Socioeconomic Impact Analysis in the Gulf of Mexico Region*. Principal Investigator: Nina Lam. Funded by the Bureau of Ocean Energy Management. **$440,000**.

Awards and Honors

2017   **Top Reviewer**, University of Southern California (Computer Science). Recognized by Web of Science Group – Clarivate.

     Star Award, 2017 Agent-Based Modeling Symposium. Sponsored by the National Science Foundation (BCS #1638446).

     Professional Enhancement Award, 2017 Agent-Based Modeling Symposium. Sponsored by the National Science Foundation (BCS #1638446).

2015   **STEM Student Research Poster Award**, 2015 LSU Board of Supervisors Meeting.

2014   **Top 10 Submission**, ESRI Global Disaster Resilience App Challenge. App: "Community Resilience Inference Measurement."

     10 Runners-Up, ESRI Climate Resilience App Challenge. App: "Community Resilience Inference Measurement."

     Third Place, Student Poster Competition, 28th Louisiana Remote Sensing and GIS Workshop. Poster: "A Hybrid Model of Cellular Automata, Markov, and Logistic Regression for Land Change Prediction in the Lower Mississippi River Basin."

Awards and Honors (continued)

2012   **Sustainable Environment Award**, Department of Environmental Sciences, Louisiana State University. Master's thesis: "Temporal Changes of Coastal Community Resilience in the Gulf of Mexico Region."

                 First Place, Student Poster Competition, 26th Louisiana Remote Sensing and GIS Workshop. Poster: "Temporal Changes of Coastal Community Resilience in the Gulf of Mexico Region."

2009   **First Prize**, Creative Experimental Project of National Undergraduate Students. Ministry of Education of China. Project: "In-situ restoration of oil contaminated soil by plant."

                 Hundred Young Teachers Award, Nankai University. Awarded to top 5% academic performers.

2007   **Third Prize**, Excellent Undergraduate Scholarship, Nankai University.

2006   **Second Prize**, Excellent Undergraduate Scholarship, Nankai University.

Academic Journal and Book Reviews

Annals of the American Association of Geographers

Applied Geography

Applied Sciences

Environmental Research

Expert Systems

Healthcare

IEEE Access

IEEE Internet of Things Journal

IEEE Sensors Letter

IEEE Transactions on Computational Social Systems

IEEE Transactions on Cybernetics

IEEE Transactions on Emerging Topics in Computational Intelligence

International Journal of Disaster Risk Reduction

International Journal of Geographical Information Science

International Journal of Geriatric Psychiatry

ISPRS International Journal of Geo-Information

Transactions in GIS

Teaching Experience

Saint Louis University

Instructor

Fall 2024–	PHS 6990 Dissertation Research
Spring 2024	PUBH 5985 Independent Study

Teaching Experience (continued)

Spring 2024–	PUBH 5060 Environmental and Biological Determinants of Health
Spring 2023–	BST 5600 R for Spatial Analysis
Fall 2022–	BST 5500 Statistical Learning

Teaching Assistant

PPHS 1050 Medical Scholar Seminar

PPHS 2930 Pre-Health Committee on Evaluation Process

Directed Undergraduate Student Awards

Eden Che, Recipient of SLU Scholarly Undergraduate Research Grants and Experiences (SURGE), B.S. in Public Health, College for Public Health and Social Justices, Saint Louis University.

Manali Avinash Gaikwad, Recipient of SLU Scholarly Undergraduate Research Grants and Experiences (SURGE), B.S. in Computer Sciences, School of Sciences and Engineering, Saint Louis University.

Riley Demo, Recipient of SLU Honors Program, B.S. in Environmental Sciences, School of Sciences and Engineering, Saint Louis University.

Directed Graduate Students

Avery Lyons, M.P.H. in Maternal & Child Health, College for Public Health and Social Justices, Saint Louis University.

Aweke Tadesse, Ph.D. in Social Work, School of Social Work, Saint Louis University.

Geoffery Kangogo, Ph.D. in Public Health Studies, College for Public Health and Social Justice, Saint Louis University.

Germysha Little, Ph.D. in Public Health Studies, College for Public Health and Social Justice, Saint Louis University.

Henli Shih, M.P.H. in Biostatistics, College for Public Health and Social Justice, Saint Louis University.

Kaiwen Guan, M.S. in Biostatistics and Health Analytics, College for Public Health and Social Justice, Saint Louis University.

Nicole Fuhler, M.S. in Biostatistics and Health Analytics, College for Public Health and Social Justice, Saint Louis University.

Nikolaos Theodorou, M.S. in Biostatistics and Health Analytics, College for Public Health and Social Justice, Saint Louis University.

Ruoyun Wang, Ph.D. in Public Health Studies, College for Public Health and Social Justice, Saint Louis University.

Sai Kiran Ramanujam, M.S. in Biostatistics and Health Analytics, College for Public Health and Social Justice, Saint Louis University.

Samuel L. Kruger, M.S. in Biostatistics and Health Analytics, College for Public Health and Social Justice, Saint Louis University.

Timothy Ezebuiro, M.S. in Biostatistics & Geospatial Health Analytics, College for Public Health and Social Justice, Saint Louis University.

William G. Drexler, M.S. in Biostatistics & Health Analytics, College for Public Health and Social Justice, Saint Louis University.

Directed Theses and Dissertations

In Progress   Andrew Oberle (At-large Committee Member). The Effects of Trauma Survivor Support Programs on Patient Experience and the Mediating Role of Compassionate Connected Care. College for Public Health and Social Justice, Saint Louis University.

Firas Bafageeh (Committee Member). The Impact of CrossFit Participation on Mental Health and Identifying Geographic Areas for Potential Affiliate Expansion. College for Public Health and Social Justice, Saint Louis University.

Kenneth Kibii (At-large Committee Member). Exploring the Association Between Nativity and Diabetes Outcomes in Older Adults: An Analysis of the 2010–2020 Health and Retirement Study. College for Public Health and Social Justice, Saint Louis University.

Meghan Taylor (At-large Committee Member). The Campus Climate, Campus Mental Health Services, and Help-Seeking Behaviors. College for Public Health and Social Justice, Saint Louis University.

Shreyasingh Chhatri (Committee Member). Effects of Fatty Acids on Methylation of Genes in Leptin Signaling Pathway in Development of Obesity. Doisy College, Saint Louis University.

2025   Kaiwen Guan (Committee Chair). Mapping Vessel Trajectories Using Automated Information Systems to Enhance the Pharmaceutical Supply Chain. College for Public Health and Social Justice, Saint Louis University.

Nicole Fuhler (Committee Member). Bayesian Spatial Mapping of Alzheimer's Disease in the Contiguous United States. College for Public Health and Social Justice, Saint Louis University.

Sai Kiran Ramanujam (Committee Chair). Temporal Analysis of Ozone and PM2.5 Air Pollution Impact on Asthma Patient. College for Public Health and Social Justice, Saint Louis University.

Yuki Sugawara (Committee Member). Mental Health Disorders in St. Louis City: A Spatio-temporal Analysis. College for Public Health and Social Justice, Saint Louis University.

2024   Geoffery Kangogo (Committee Member). The Intersection of Climate Change and HIV/AIDS: Investigating the Impact of Climate Change Factors on HIV Transmission and Health Outcomes in Kenya. College for Public Health and Social Justice, Saint Louis University.

Germysha Little (Committee Member). Assessing the Conditions in which Mothers Live and Their Associations with Neonatal Health Outcomes: A 10-year Analysis. College for Public Health and Social Justice, Saint Louis University.

Nikolaos Theodorou (Committee Chair). Health Behaviors and Mental Health: Geographical and Demographic Trends in the United States. College for Public Health and Social Justice, Saint Louis University.

Samuel L. Kruger (Committee Chair). Neurodegeneration and Alzheimer's Disease: An Assessment of Familial Risk. College for Public Health and Social Justice, Saint Louis University.

Teaching Experience (continued)

2023	Sibelle Aurelie Yemele Kitio (Committee Member). Predicting Obesity in Adults in the United States: Using Machine Learning Techniques. College for Public Health and Social Justice, Saint Louis University.
	Timothy Ezebuiro (Committee Chair). Exploring Chlamydia Transmission in Georgia: An Optimized SIR Model Approach. College for Public Health and Social Justice, Saint Louis University.
	William G. Drexler (Committee Chair). Investigating Spatial Cross Correlation of Influenza and COVID-19 in Tennessee using Interactive Mapping. College for Public Health and Social Justice, Saint Louis University.

University of Southern California

Instructor

Spring 2020	SSCI 383 Geospatial Modeling and Customization Lab
Fall 2019–Spring 2020	SSCI 265 The Water Planet Lab

Directed Undergraduate Student Awards

Adam Owens, Recipient of University of Southern California Student Opportunities for Academic Research and Undergraduate Research Associates Program, B.S. in Geo-design, Spatial Sciences Institute, University of Southern California.

Alicia Adiwajaja, Recipient of University of Southern California Student Opportunities for Academic Research, B.S. in Geo-design, Spatial Sciences Institute, University of Southern California.

Directed Graduate Students

Brittney Marian, Ph.D. in Biostatistics, Keck School of Medicine, University of Southern California. Recipient of Ruth L. Kirschstein National Research Service Award Individual Predoctoral Fellowship to Promote Diversity in Health-Related Research.

Xiangyi Qi, M.S. in Spatial Data Sciences, Spatial Sciences Institute, University of Southern California.

Meng Hu, M.S. in Spatial Economics and Data Analysis, Spatial Sciences Institute, University of Southern California.

Directed Thesis

2021	Philip Griffin (Spring 2021, Committee Member). Automated Assessment of Potential Cell Tower Signal Interference with High Accuracy Surveys in Los Angeles County. Spatial Sciences Institute, University of Southern California.

Louisiana State University

Teaching Assistant

Fall 2009–Spring 2015	ENVS 4149 Design of Environmental Management Systems
	ENVS 7050 Spatial Modeling of Environmental Data

Services and Memberships

University Service

2025–	Faculty Mentor for Undergraduate Students, College of Public Health and Social Justice of Saint Louis University.
2024–2026	Committee Member, Taylor Geospatial Startup Evaluation Committee.
2024–	Member, Faculty Mentoring Program, College of Public Health and Social Justice of Saint Louis University.
2023–2024	Committee Member, New Faculty Hire Committee for Taylor Geospatial Institute and College of Public Health and Social Justice of Saint Louis University.
2023–	Committee Member, PhD Comprehensive Written Exam Grading Committee, College of Public Health and Social Justice of Saint Louis University.
2023–2024	Faculty Assembly Secretary, College of Public Health and Social Justice of Saint Louis University.
2022–	Committee Member, Pre-Health Committee on Evaluations, Saint Louis University.
2020	Committee Member, USC Esri Development Center Student of the Year Award Committee.
2019–2022	University Advisor, Chinese Career Assistant, University of Southern California Chapter.
	Vice President, AI Innovation Club, University of Southern California.

Professional Service

2024	Guest Editor, *Land*, Special Issue: GeoAI for Land Use Observations, Analysis and Forecasting.
2023–	Review Editor, Environmental Informatics and Remote Sensing (Frontiers journals).
2023–2024	Guest Editor, *Remote Sensing*, Special Issue: Integrating Remote Sensing and GIS in Environmental Health Assessment.
2023–	Grant Reviewer, Just-In-Time Core, Institute of Clinical and Translational Sciences, Washington University in St. Louis.
2022–2023	Guest Editor, *Applied Sciences*, Special Issue: AI for Computational Vision, Natural Language Processing, and Geoinformatics.
	Guest Editor, *Applied Sciences*, Special Issue: AI for Medical, Social, and Geoinformatics.
	Guest Editor, *Applied Sciences*, Special Issue: Geospatial AI in Earth Observation, Remote Sensing and GIScience.
	Guest Editor, *Sensors*, Special Issue: Recent Advancements in Sensor Technologies for Healthcare and Biomedical Applications II.
2017–2022	Editorial Board Member, *Remote Sensing*, PiscoMed Publishing.

Broader Initiatives

2022–	Taylor Fellow, Taylor Geospatial Institute.
2020–2022	Consortium Member, COVID-19 Healthcare Initiative Consortium, USC Center for Global Chain Management.
2020–2021	Geospatial Fellow, Geospatial Software Institute, University of Illinois Urbana-Champaign.

Services and Memberships (continued)

Memberships

2023–	Life-time Member, International Association of Chinese Professionals in Geographic Information Sciences.
2022–	Member, Advanced HEAlth Data (AHEAD) Research Institute, Saint Louis University.
	Life-time Member, American Association of Geographers.
	Member, International Faculty and Staff Association of Saint Louis University.
	Member, Institute of Clinical and Translational Sciences, Washington University in St. Louis Geospatial.