

# Guixing Wei

Spatial Structures in the Social Sciences (S4)  
Population Studies and Training Center (PSTC)  
Brown University

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## EDUCATION

- Ph.D. Department of Geography, Texas State University, TX, USA, 2018  
M.S. School of Geography, Nanjing Normal University, Nanjing, China, 2014  
B.S. School of Geographic Sciences, Southwest University, Chongqing, China, 2011

## APPOINTMENTS

- 2023– Brown University  
Senior Research Scientist, Spatial Structures in the Social Sciences
- 2021–23 Brown University  
Senior GIS Developer and Spatial Scientist, Spatial Structures in the Social Sciences  
Campus Advisory Board Member, Data Science Initiative
- 2018–21 Brown University  
Senior GIS and Spatial Analyst, Spatial Structures in the Social Sciences
- 2014–18 Texas State University  
Instructor of Record, Department of Geography  
GIS Consultant, The Society for Geographic Information Science (SOGIS)  
Research & Teaching Assistant, Department of Geography

## RESEARCH AREAS

GIS, Spatial Analytics, and Spatial Statistics  
Health Geography and Spatial Epidemiology  
Data Mining and Big Data Analysis

## PUBLICATIONS

### Journal Articles

- 2024 KL Diehl, EM Krippaehne, M Minasyan, M Banh, S Yumeen, FN Mirza, K Hajjar, J Ng, N Wais, A Goulding, IO Yu, MD Tran, A Sheikh, C Lai, N Patel, A Kesler, OJ Wisco, T Vance, G Wei “Out of Africa: Human Migration and Skin Pigmentation Adaptation: A Systematic Review on the Evolutionary Vitamin D Adaptation Hypothesis” *J Am Acad Dermatol* [Forthcoming]
- 2024 Kienbacher CL, Wei G, Rhodes JM, Herkner H, Roth D, Williams KA. “Risk Factors for pediatric Intoxications in the prehospital setting. A geospatial Survey” *Front. Public Health* 2024; doi: 10.3389/fpubh.2024.1296250

- 2024 Tran M, Orsillo L, Wei G, Miraza FN, Yumeen S, Wisco O “Methods and Techniques for Skin Research: Applications and Best Practices for Geospatial Analysis Research in Dermatology” *JID* 2024; doi: 10.1016/j.jid.2024.01.016
- 2024 Wei G, Tran M, Orsillo L, Miraza FN, Yumeen S, Yang E, Mehta A, Liu Z, Vance T, Kawaoka J, Qureshi AA, Wisco, O “A Geospatial Analysis of the Association between Access to Tanning Bed Facilities and Melanoma in the United States New England Region” *JID* 2024; [Forthcoming]
- 2024 Orsillo L, Tran M, Miraza FN, Yumeen S, Wei G, Yang E, Mehta A, Vance T, Kawaoka J, Qureshi AA, Wisco, O “Tanning beds in unusual locations: the geographic distribution of non-salon tanning facilities across the US” *Arch. Dermatol. Res.* 2024; [Forthcoming]
- 2024 Wei G, White MJ, Short S. “Bayesian spatial multilevel modeling of Demographic and Health Surveys (DHS) data.” *Int J Geogr Inf Sci* [Under Review]
- 2024 Wei G, Williams KA, Kienbacher CL “Effects of the COVID-19 Pandemic on Pediatric Emergency Calls in Rhode Island: A Second Look, Using Relative Risk and Spatial Point Patterns Analyses.” *Health Place* [Under Review]
- 2023 Kienbacher CL, Wei G, Rhodes J, Herkner H, Williams KA. “Socioeconomic Risk Factors for Pediatric Out-of-hospital Cardiac Arrest: A Statewide Analysis.” *West J Emerg Med.* 2023; 24 doi:10.5811/westjem.2023.2.59107
- 2022 Kienbacher CL, Tanzer JR, Wei G, Rhodes JM, Roth D, Williams KA. “Increases in Ambulance Call Volume Are an Early Warning Sign of Major COVID-19 Surges in Children.” *Int J Environ Res Public Health.* 2022 Dec 2;19(23):16152. doi: 10.3390/ijerph192316152. PMID: 36498225; PMCID: PMC9736099.
- 2022 Audi MN, Mwenda KM, Wei G. “Healthcare accessibility in preconflict Syria: a comparative spatial analysis.” *BMJ Open* 2022;12:e059210. doi: 10.1136/bmjopen-2021-059210
- 2018 Yuan, Y., Wei, G. “Evaluating gender representativeness of location-based social media: A case study of Weibo.” *Annals of GIS*, 24:3, 163-176, DOI: 10.1080/19475683.2018.1471518
- 2017 Yuan, Y., Liu, Y & Wei, G. “Exploring inter-country connection in mass media: A case study of China.” *Computers, Environment and Urban Systems*, 62, 86–96  
<https://doi.org/10.1016/j.compenvurbsys.2016.10.012>

### Conference Proceedings

- 2017 Yuan, Y., Wei, G., Chow, T., & Hagelman R.R “Investigating social media landscapes from Twitter: A case study of Austin, Texas”, 25<sup>th</sup> *Geoinformatics 2017*. Buffalo, NY.
- 2016 Yuan, Y., Wei, G., “Evaluating demographic representativeness of location-based social media: a case study of Weibo”, 19<sup>th</sup> *AGILE Conference on Geographic Information Science*. Helsinki, Finland,  
[https://agile-online.org/conference\\_paper/cds/agile\\_2016/posters/132\\_Paper\\_in\\_PDF.pdf](https://agile-online.org/conference_paper/cds/agile_2016/posters/132_Paper_in_PDF.pdf)

### Reports and Other Publications

- 2020 Mwenda, K., Wei, G., Lei, J, Toussaint, D., Sanders, L., Vivier,P., White, M., “Rhode Island and COVID-19 Tracing the Pandemic” Brown University, Sep 02.  
<https://s4.ad.brown.edu/covid19/report.html>

### Manuscripts under Preparation

- 2024 Wei, G. “Rethink Spatial FCA Method: Access to COVID-19 Test Sites”

- 2024 Wei, G, Sharma Y, Go M, Liu ZJ, Khanna A, Gantenberg J, Lurie, M “Navigating Mobility Data Landscape in the Post-Pandemic Era”

## INVITED TALKS

- 2023 “A Geospatial Analysis of the Association between Access to Tanning Bed Facilities and Melanoma in the New England Region ” Brown University, Brown/Lifespan Center for Clinical Cancer Informatics and Data Science, Providence, RI, Oct. 4
- 2023 “R for Spatial Analysis.” Brown University, Data Science Initiative (DSI). Providence, RI, March 17.
- 2022 “Bayesian Spatial Multilevel Modeling of Demographic and Health Surveys Data.” Brown University, Spatial Structures in the Social Sciences (S4). Providence, RI. Nov 4.
- 2022 “What GIS & Spatial Analysis Can Do for Health Research.” Brown University, Clinical & Translation Research. Providence, RI. May 13.
- 2019 “Social Media Data Analysis in a Geographic Perspective.” Wuhan University. School of Resource and Environmental Science, Wuhan, China. Feb 27.
- 2016 “How Time-activity Patterns Affect your Health?” Southwest University, Department of Geographic Science. Chongqing, China. Jun 20.

## CONFERENCE ACTIVITY

### Conference Papers Presented

- 2024 VanHelene A, Wei G “Travel Distance as a Potential Impediment to Clinical Trial Participation: a GIS Analysis of New England NCI-Designated Centers” Annual Meeting of American Medical Informatics Association. Boston, MA. Mar 18–21.
- 2024 Gantenberg J, Wei, G., “Measuring Human Mobility in Indoor Spaces: The MAPPING@Brown Study” Annual Meeting of Society for Epidemiologic Research. Austin, TX. Jun 18–21.
- 2024 Wei, G., “Navigating Mobility Data Landscape in the Post-Pandemic Era” Annual Meeting of Association of American Geographers. Hawaiian. Apr 16–24.
- 2023 Wei, G., “Bayesian Spatial Multilevel Modeling of Demographic and Health Surveys (DHS) Data.” Annual Meeting of Association of American Geographers. Denver, Colorado. March 23 – 27.
- 2022 Wei, G., “Rethink Spatial FCA Methods: Access to COVID-19 Test Sites.” Annual Meeting of Association of American Geographers. Online. Feb 25–Mar 01.
- 2021 White, MJ., Mwenda, KM., Wei, G., “Developing Spatial Inequality: The Case of Kenya.” Annual Meeting of Association of American Geographers. Online. Apr 07–11
- 2020 White, MJ., Mwenda KM., Wei, G., “Developing spatial inequality: the case of Kenya,” Annual Meeting of The Population Association of America, online. April 22–25
- 2019 Logan, JR., Kisch, A, Bellman, B., Wei, G., “Using City Directories to Build Geocoded Historical Maps,” Annual Meeting of Social Science history Association. Chicago, Illinois. Nov 21–24

- 2019 Mwenda KM., Wei, G., “Assessing Indicators of Chronic Child Undernutrition Using Machine Learning Techniques,” Annual Meeting of The Population Association of America. Austin, Texas. Apr 10–13
- 2018 Wei, G., Zhan, FB., “Spatiotemporal Variability of Personal Exposure to Traffic Emission while Human Dynamics is Considered.” Annual Meeting of Association of American Geographers. New Orleans, Louisiana. Apr 10–14
- 2017 Yuan, Y., Wei, G., Chow, T., Hagelman, R., “Investigating Social Media Landscapes from Twitter: A Case Study of Austin, Texas.” The 25<sup>th</sup> International Conference on Geoinformatics. Buffalo, New York, Aug 02–04
- 2017 Wei, G., Zhan, FB., “A Microenvironmental Exposure Assessment Framework based on the Dynamics of Human Activities in Geographic Space and time.” NSF Mobility Workshop. Columbus, Ohio. May 11–12
- 2017 Yuan, Y., Wei, G., “Evaluating Demographic Representativeness of Location-based Social Media: A Case Study of Weibo.” Annual Meeting of Association of American Geographers. Boston, Massachusetts. Apr 04–09
- 2017 Wei, G., Zhan, FB., “Exploration of variability and uncertainty of personal exposure assessment in geographic space and time.” Annual Meeting of Association of American Geographers. Boston, Massachusetts. Apr 04–09
- 2016 Wei, G., Zhan, FB., “A multi-phase environmental exposure assessment framework based on the dynamics of human activities in geographic space.” Annual Meeting of Association of American Geographers. San Francisco, California. Mar 29–Apr 02

## GRANTS AND AWARDS

### Grants

- 2024–25 (\$58,360). Bridging Lives: Varying Effects of the Closure of Rhode Island’s Washington Bridge on Emergency Medical Service (EMS) Transport Times and Patient Outcomes, Brown University Data Science Institute (DSI), PI. *[Pending]*
- 2024–25 (\$25,000). Climate Change and U.S. Electrical Grid Preparedness, Brown University Data Science Institute (DSI), Co-PI. *[Pending]*
- 2024–25 (\$55,600). Predictive Modeling of Advanced Skin Cancer Risk in the United States, A Geospatial Risk Analysis, Brown University Data Science Institute (DSI), Co-PI. *[Pending]*
- 2024–27 (\$1,199,405). Climate Change and U.S. Electric Grid Reliability: Effects on Socioeconomic Equity and Disaster Preparedness, National Science Foundation (NSF), Co-PI. *[Pending]*
- 2024–31 (\$18,000,000). Mobility Analysis for Pandemic Prevention Strategies (MAPPS) Phase II, National Science Foundation (NSF), Senior Personnel. *[Pending]*
- 2024–27 (\$1,189,000). Development of a Department of Defense Melanoma Prognostic Risk Index and Melanoma Disease Registry Plan, Department of Defense (DOD), Co-PI. *[Unfunded]*
- 2023–24 (\$198,408.3). San Antonio Melanoma Quality Initiative. San Antonio Medical Foundation, Key Personnel. *[Pending]*
- 2023–24 (\$25,000). Trending Elites: New York Times Wedding Announcements. Brown DSI, Co-PI. *[Funded]*

- 2022–24 (\$999,211). PIPP Phase I: Mobility Analysis for Pandemic Prevention Strategies (MAPPS). National Science Foundation (NSF), Senior Personnel. *[Funded]*
- 2022–27 (\$116,614). Individual, Contextual, and Geospatial Influences on Decisions to Drive under the Influence of Cannabis. National Institute on Drug Abuse (NIDA), Senior Personnel. *[Unfunded]*
- 2022-23 (\$24,795). Predictive Modeling of Advanced Skin Cancer Risk in Rhode Island, A Geospatial Risk Analysis. Brown Cancer Center, Co-PI. *[Unfunded]*
- 2019–24 (\$4,008,035). Individual, contextual, and geospatial influences on decisions to drive under the influence of marijuana. National Health Institute (NIH), Senior Personnel. *[Unfunded]*
- 2018–19 (\$4,822) Bobcat Clean Air Project, Texas State University, PI. *[Funded]*

### **Awards, Honors, and Fellowships**

- 2018 Outstanding Doctoral Student in the College of Liberal Arts, Texas State University
- 2018 Student Organization for Geographic Information Science Achievement in GIS Award, Texas State University
- 2018 Wiley Outstanding Graduate Student in Geography, Texas State University
- 2017 Student Government Scholarship Award, Texas State University
- 2017 Graduate College Scholarships, Texas State University
- 2017 Graduate Student Travel Fund, Texas State University
- 2017 Travel Fund from NSF Workshops on Advancing Movement and Mobility Science, NSF
- 2016 Nominee, Outstanding Doctoral Student, College of Liberal Arts, Texas State University
- 2016 Registration Fee Grant Awardees of the 33rd International Geographical Congress, International Geographical Congress
- 2016 Student Government Scholarship Award, Texas State University
- 2016 Graduate College Scholarships, Texas State University
- 2016 Sandra E. Estaville Dissertation Research Scholarship, Texas State University
- 2016 Graduate Student Travel Fund, Texas State University
- 2012 The Third Prize in National Postgraduate Mathematical Contest in Modeling (NPMCM), China
- 2011 Outstanding University Graduates Award, Southwest University
- 2010 The Second Prize Undergraduate Scholarship Southwest University

### **COURSES AND WORKSHOPS TAUGHT**

#### **Brown University**

Get Started with Python and Data Science

#### **Texas State University**

Fundamentals of GIS

## **SERVICE**

### **Academic Journal Peer Review**

*ISPRS International Journal of Geo-Information*

*CEUS Computers, Environment and Urban System*

*Transactions in GIS*

*PLOS ONE*

## **MEMBERSHIPS**

American Association of Geographers (AAG)

Spatial Econometrics Association (SEA)

Population Association of America (PAA)

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