

# Guangqing Chi

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## PERSONAL STATEMENT

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I am an environmental demographer with a focus on socio-environmental systems. My goal is to understand the interactions between human populations and the built and natural environments and to identify important social, environmental, infrastructural, and institutional assets to help vulnerable populations adapt and become resilient to environmental changes. A key characteristic of my research is the attempt to integrate social systems and the built and natural environments in understanding population dynamics by developing and applying innovative spatial and big data methods to traditional and nontraditional data.

In the substantive area of socio-environmental systems, I investigate community development and resilience in response to climatic and environmental changes as well as the impacts of transportation and infrastructure on population change, inequality, and health at multi-scales over time and across space. My current research focuses on climate change impacts on coastal communities in the Arctic and the pasture–migrant system in Central Asia. I lead several NSF-funded projects, including the \$3 million multi-institutional, transdisciplinary POLARIS project to investigate how environmental changes and the COVID pandemic impact social well-being, the subsistence way of life, food security, migration, and community infrastructure in Alaskan rural communities by working with local stakeholders and other researchers.

In the methodological domain, my work has led to innovative methods for identifying and measuring human–environment hotspots relating to land developability, population stress, wildfire–population corridors, ecosystems–development stress areas, rural land vulnerable to abandonment, critical riparian zones, and urban areas with high heat risks. I also led the development of spatiotemporal regression methods and applied them to migration, poverty, and fertility research. I am lead author of the textbook *Spatial Regression Models for the Social Sciences* (SAGE 2019). My work in applied demography has led to state-of-the-art spatial methods for population forecasting. My current methodological focus is to build an infrastructure for collecting, integrating, and analyzing multi-dimensional and multi-scale data, including big social data (60+ TB; Twitter, Facebook, mobile phones, credit cards, web scraping). I currently lead an NSF project to study the (mis)representativeness of Twitter data and to develop weights to generalize the data, which will create myriad opportunities for social scientists to take advantage of rich social media data.

My research has been supported by more than \$50 million through 60+ grants from NSF, NIH, NASA, USDOT, DOD, SSRC, and others. I have authored or co-authored more than 140 publications, including 80+ peer-reviewed journal articles, that contribute to foundational advances in environmental demography, spatial demography, and the population–infrastructure nexus. My gasoline price research has been highlighted more than 2,000 times by such news outlets as National Public Radio, *Money*, and *Huffington Post*. I have published op-ed articles for *Slate*, *Philadelphia Inquirer*, *The Conversation*, among others. My work on developing spatial methods for small-area population forecasting was awarded the E. Walter Terrie Best Paper Award twice by the Southern Demographic Association. I served as a deputy editor of *Demography*, and I currently serve on the editorial boards of *Population and Environment* and *Spatial Demography*. I am the director and PI of the Computational and Spatial Analysis (CSA) Core of the Social Science Research Institute and Population Research Institute at Penn State, which is funded in part by the NICHD. My work is often collaborative and transdisciplinary, aiming to create significant impacts through the integration of research, education, community engagement and outreach, and sometimes international collaboration.

## EDUCATION

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Ph.D., Environmental Demography, University of Wisconsin-Madison, 2006  
M.S., Environmental Policy, Michigan Technological University, 2002  
B.S., Environmental Science, East China Normal University, 1999

## POSITIONS AND AFFILIATIONS

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### Pennsylvania State University (2015–present)

#### *Faculty Appointments:*

Professor (2020–present) and Associate Professor (2015–2020) of Rural Sociology, Demography, and Public Health Sciences, Department of Agricultural Economics, Sociology, and Education  
Director, Computational and Spatial Analysis Core, Social Science Research Institute and Population Research Institute (2015–present)

#### *Faculty Affiliations:*

Professor (2020–present) and Associate Professor (2016–2020) of Sociology  
Research Associate, Population Research Institute (2015–present)  
Associate, Institute for Computational and Data Sciences (2017–present)  
Graduate Faculty, Social Data Analytics (2016–present)  
Graduate Faculty, Applied Demography (2016–present)  
Graduate Faculty, International Agriculture and Development (2017–present)  
Faculty Affiliate, Engineering Systems and Policy Program (2015–present)  
T32 Training Faculty, Social Environments and Population Health Program (2020–present)

### Professional Appointments

Editorial Board Member, *Social Forces* (2023–2026)  
Advisory Board Member, *Population and Environment* (2019–present)  
Editorial Board Member, *Spatial Demography* (2012–present)  
Editorial Board member, *SN Social Sciences* (2022–present)  
Deputy Editor, *Demography* (2016–2019)  
Rural Sociology Society, Publication Committee Chair-Elect (2022–2023) & Council Member (2022–2025)  
Member, NAS Board on Environmental Change and Society's Integrating Human Sciences Planning Committee (2023)

### Previous Employment

South Dakota State University (2014–2015)  
State Demographer of South Dakota  
Associate Professor, Department of Sociology and Rural Studies  
Director, Rural Life and South Dakota Census Data Center  
Mississippi State University (2006–2014)  
Associate Professor (2013–2014) and Assistant Professor (2008–2013), Department of Sociology  
Research Scientist (2008–2014) & Postdoc Fellow (2006–2008), Social Science Research Center

## RESEARCH GRANTS

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PI = Principal Investigator; Co-PI = Co-Principal Investigator; Co-I = Co-Investigator; SP = Senior Personnel  
NSF = National Science Foundation; NIH = National Institutes of Health; NASA = National Aeronautics and Space Administration;  
USDOT = U.S. Department of Transportation; NHTSA = National Highway Traffic Safety Administration; DOD = Department of Defense; HHS CMS = U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services

## Active External Grants

1. **NSF** Navigating the New Arctic Program. "NNA Track 1: Pursuing Opportunities for Long-term Arctic Resilience for Infrastructure and Society (POLARIS)" (Award # NNA-1927827). 1/1/2020–12/31/2023. **PI**. \$3,009,000.
2. **NSF** Navigating the New Arctic Program. "Collaborative Research: NNA Research: Arctic, Climate, and Earthquakes (ACE): Seismic Resilience and Adaptation of Arctic Infrastructure and Social Systems amid Changing Climate" (Award # NNA-2220219). 1/1/2023–12/31/2027. **PI**. \$550,000. (Lead PI: Majid Ghayoomi, U New Hampshire. Total award: \$3,000,000.)
3. **NSF**. "Planning: Collaborative: Food Security and Traditional Foods in Urban Spaces" (Award # OPP-2306041). **Co-PI** with Megan Mucioki (PI). 5/1/2023–4/30/2025. \$200,000.
4. **NSF** Office of Polar Program. "RAPID: Using Mobile Phone Data to Understand the Impacts of the COVID-19 Pandemic on Food Assistance Use in Alaska" (Award # OPP-2207436). 2/1/2022–1/31/2024. **PI**. \$200,000.
5. **NSF** Environmental Sustainability Program. "CAS-Climate: An Integrated Framework to Investigate Thermal Resilience of Sustainable Buildings and Living Environments for Greater Preparedness to Extreme Temperature Events" (Award # CBET-2215421). 9/1/2022–8/31/2026. **Co-PI** with Julian Wang (PI). \$500,000.
6. **NSF** Strengthening American Infrastructure Program. "EAGER: SAI: Collaborative Research: Community-Driven Innovation for Resilient Bridges in Remote Communities" (Award # BCS-2121909). 10/1/2021–9/30/2023. **PI**. \$259,112.
7. **NSF** Office of Polar Program. "Planning: Building Community Resilience in the Food-Energy-Water and Society Nexus" (Award # OPP-2225982). 10/1/2022–9/30/2024. **Co-PI** with Somayeh Asadi (PI). \$200,000.
8. **NSF** Sociology Program. "RR: The Generalizability and Replicability of Twitter Data for Population Research" (Award # SES-1823633). 7/15/2018–6/30/2023. **PI**. \$500,000.
9. **NIH**. "The Impact of Structural Racism on Racial/Ethnic Disparities in End-Stage Kidney Disease from Healthy Population to Mortality" (Award # 1R01DK132953-01). 8/1/2022–5/31/2026. **Co-I** with Jonathan Daw (PI). \$2,646,872.
10. **NIH/NICHD**. "Population Research Institute" (Award # 2P2C HD041025). 6/1/2021–5/31/2026. **SP (PI** of the Computational and Spatial Analysis Core) with Jennifer Glick (PI). \$3,530,135.
11. **NSF** Office of Polar Program. "Convergence NNA: Coordinate a Transdisciplinary Research Network to Identify Challenges and Solutions of Permafrost Coastal Erosion and Its Socioecological Impact in the Arctic" (Award # OPP-1745369). 1/1/2018–12/31/2023. **Co-PI** with Ming Xiao (PI). \$500,000.
12. **NIH**. "Play & Learning Across a Year (PLAY)." 4/1/2018–3/31/2023. Consultant with Karen E. Adolph, Catherine Tamis-LeMonda, and Rick Gilmore (PIs). \$8.5 million.
13. **Pittsburg Supercomputer Center**. "The Generalizability and Replicability of Twitter Data for Population Research" (Award # SES180006). 4/15/2018–10/16/2023. **PI**. Memory: 50,000 SUs; Storage: 30,000 GB.
14. **NIH**. "The Center for Innovation in Intensive Longitudinal Studies (CIILS)" (Award # U24 AA027684). 9/20/2018–8/31/2023. **Co-I** with Sy-Miin Chow (PI). \$1,835,411.

## Completed External Grants

15. **NSF** Office of Polar Program. "RAPID: Collaborative Research: COVID-19 Preparedness in Remote Fishing Communities in Rural Alaska" (Award # OPP-2032790). 6/15/2020–5/31/2022. **PI**. \$119,868.

16. **The Food and Agriculture Organization of the United Nations.** "Drivers of Deforestation Analysis and Synthesis Research Project." 1/1/2022–6/30/2022. **SP** with Katie Bernhard and Edwin Sabuhoro (co-PIs). \$40,000.
17. **Social Science Research Council.** "Are We More Willing to Speak Up When We Share Without Clicking? A Study of Political Content Sharing on Facebook" (Award # 228621). 7/1/2020–6/30/2022. **Co-PI** with Shyam Sundar (PI). \$49,017.
18. **NIH.** "Population Research Institute" (Award # P2C HD041025). 9/4/2016–5/31/2021. **Co-I (PI** of the Scientific and Technical Core) with Jennifer Van Hook (PI). \$13,179,754.
19. **FWD.us.** "Twitter Data for Environmental Migration from Central America." 8/23/2021–10/15/2021. **PI.** \$7,798. [contract]
20. **DOD.** "Permanent Change of Station and Variation in Cancer Prevention and Care in the Military Health System" (Award # HQ0034-20-1-0002). 9/29/2019–9/28/2021. **Co-I** with Joel Segel (PI). \$717,562.
21. **NSF** Innovations in Graduate Education Program. "IGE: Individualized Pathways and Resources to Adaptive Control Theory-Inspired Scientific Education (iPRACTISE)" (Award # DGE-1806874). 7/1/2018–6/30/2021. **SP** with Sy-Miin Chow (PI). \$490,804.
22. **HHS CMS.** "Pennsylvania Rural Health Model" (Award # 4400015622). 11/7/2019–10/20/2020. **Co-I** with Lisa Davis and Chris Hollenbeak (co-PIs). \$4,957,486.
23. **NASA** Land Use and Land Cover Change Program. "How Environmental Change in Central Asian Highlands Impacts High Elevation Communities" (Award # NNX15AP81G). 7/1/2015–6/30/2020. **Co-I** with Geoffrey Henebry (PI). \$969,551.
24. **HHS CMS.** "Pennsylvania Rural Health Model" (Award # 4400015622). 4/17/2019–10/20/2019. **Co-I** with Lisa Davis and Dennis Scanlon (co-PIs). \$4,426,440.
25. **NSF** Critical Resilient Interdependent Infrastructure Systems and Processes Program. "CRISP Type 1/Collaborative Research: Population-Infrastructure Nexus: A Heterogeneous Flow-based Approach for Responding to Disruptions in Interdependent Infrastructure Systems" (Award # CMMI-1541136). 1/1/2016–12/31/2018. **PI.** \$150,000.
26. **Microsoft Azure for Research Program.** "Data Science: Mining Twitter User Demographics as a First-Step in Big Data for Population Research with Microsoft Azure." 3/14/2018–12/31/2018. **PI.** \$10,000.
27. **PA Tobacco Settlement Fund.** "Neighborhood Effects on Health in Pennsylvania." 6/1/2016–12/31/2017. **Co-I** with Cynthia Chuang (PI). \$107,494.
28. **USDOT** National Center for Intermodal Transportation for Economic Competitiveness. "The Economic Demography of Passenger Intermodal Transportation: Opportunities and Challenges" (Award # DTRT12GUTC14-201307). 07/1/2013–12/31/2015. **PI.** \$199,858.
29. **USDOT** National Center for Intermodal Transportation for Economic Competitiveness. "Economic and Demographic Impacts of Passenger Rail Systems: A Scenario Analysis of Restoring the Passenger Rail Corridor between New Orleans and Orlando" (Award # DTRT12GUTC14-201308). 05/15/2013–12/31/2015. **PI.** \$201,226.
30. **South Dakota Rapid City School District.** "School Enrollment Projections." 11/1/2014–2/28/2015. **PI.** \$11,500. [Contract]
31. **NHTSA,** Mississippi Highway Patrol, and Mississippi Department of Public Safety. "Mississippi Highway Patrol Data and Analysis Program: Year Six" (Award # 14-MC-401-1). 10/01/2013–09/30/2014. **Co-PI** with Tonya Thornton-Neaves (PI). \$238,811.
32. **USDOT** National Center for Intermodal Transportation for Economic Competitiveness. "Passenger Usages of the Intermodal Transportation System: An Analysis of the 2009 National Household Travel Survey Data" (Award # DTRT12GUTC14-12050543). 07/01/2012–08/15/2013. **PI.** \$65,459.

33. **USDOT** University Transportation Center Program. "National Center for Intermodal Transportation and Economic Competitiveness." 2012–2014. Faculty Affiliate with Burak Eksioğlu (PI). \$3,500,000.
34. **NHTSA**, Mississippi Highway Patrol, and Mississippi Department of Public Safety. "Mississippi Highway Patrol Data and Analysis Program: Year Five" (Award # 13-K9-401-1). 10/01/2012–09/30/2013. **Co-PI** with Tonya Thornton-Neaves (PI). \$194,557.
35. **NHTSA**, Mississippi Highway Patrol, and Mississippi Department of Public Safety. "Mississippi Highway Patrol Data and Analysis Program: Year Four" (Award # 12-K9-401-1). 10/01/2011–09/30/2012. Research Scientist with Arthur G. Cosby (PI). \$270,466.
36. **NHTSA**, Mississippi Highway Patrol, and Mississippi Department of Public Safety. "Mississippi Highway Patrol Data and Analysis Program: Year Three" (Award # 11-K9-401-1). 10/01/2010–09/30/2011. Research Scientist with Arthur G. Cosby (PI). \$277,225.
37. **USDOT** National Center for Intermodal Transportation. "Assessing Economic and Demographic Impacts of Intermodal Transportation Systems" (Award # 363010100-07070609). 08/16/2009–08/15/2010. **PI**. \$44,112.
38. **NHTSA**, Mississippi Highway Patrol, and Mississippi Department of Public Safety. "Mississippi Highway Patrol Data and Analysis Program: Year Two" (Award # 10-K9-401-1). 10/01/2009–09/30/2010. Research Scientist with Arthur G. Cosby (PI). \$392,160.
39. **USDOT** National Center for Intermodal Transportation. "Modeling Economic Benefits of Resilience Enhancement Strategies for Intermodal Transportation Systems." (Award # 363010100-009067-018). 07/01/2009–06/30/2010. **Co-PI** with Li Zhang (PI). \$57,519.
40. **NHTSA**, Mississippi Highway Patrol, and Mississippi Department of Public Safety. "Mississippi Highway Patrol Data and Analysis Program: Year One" (Award # 09-K9-401-1). 10/01/2008–09/30/2009. Research Scientist with Arthur G. Cosby (PI). \$516,632.

## PUBLICATIONS

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### Book

1. Chi, Guangqing and Jun Zhu. 2019. *Spatial Regression Models for the Social Sciences*. Volume 14 of *Advanced Quantitative Techniques in the Social Sciences*. SAGE Publications: Thousand Oaks, CA. 272 pages. ISBN: 9781544302072; 154430207X. [Reviewed in *Environment and Planning B* (2019); *Spatial Demography* (2020)]

### Commissioned White Paper

2. Chi, Guangqing. 2019. "Demographic Forecasting and Future Interstate Highway System Demands." In: *Renewing the National Commitment to the Interstate Highway System: A Foundation for the Future*, pp. 313–350 by the Future Interstate Study Committee of the Transportation Research Board in response to a Congressional request for the Fixing America's Surface Transportation Act of 2015. Washington, D.C.: The National Academies Press. DOI: 10.17226/25334.

### Peer-Reviewed Journal Articles (and Forthcoming)

\* indicates student authors at submission

3. Smith, M. Luke and Guangqing Chi. Accepted. "Spatial Proximity to Wildfires as a Proxy for Measuring PM<sub>2.5</sub>: A Novel Method for Estimating Exposures in Rural Settings." *Journal of Climate Change and Health*.

4. Park, Hyun Joon\*, Sara Francisco\*, Rosemary Pang\*, Lulu Peng\*, and Guangqing Chi. Forthcoming. "Exposure to Anti-Black Lives Matter Movement and Obesity of the Black Population." *Social Science & Medicine*. DOI: 10.1016/j.socscimed.2021.114265.
5. Li, Chuo, Jing Zhao\*, Junjun Yin, and Guangqing Chi. Forthcoming. "Park Access Affects Physical Activity: New Evidence from Geolocated Twitter Data Analysis." *Journal of Urban Design*. DOI: 10.1080/13574809.2022.2118698.
6. Yin, Junjun and Guangqing Chi. Forthcoming. "A Tale of Three Cities: Uncovering Human-Urban Interactions with Geographic-Context Aware Social Media Data." *Urban Informatics*. DOI: 10.1007/s44212-022-00020-2.
7. Hofmann, Erin and Guangqing Chi. 2022. "Bride Kidnapping and Gendered Labor Migration: Evidence from Kyrgyzstan." *Journal of Ethnic and Migration Studies* 48(11): 2493–2514.
8. Yin, Junjun, Yizhao Gao, and Guangqing Chi. 2022. "An Evaluation of Geo-located Twitter Data for Measuring Human Migration." *International Journal of Geographic Information Science* 36(9): 1830–1852.
9. Liang, Yun\*, Junjun Yin, Bing Pan, Michael Lin\*, Lauren Miller\*, Derrick Taff, and Guangqing Chi. 2022. "Assessing the Validity of Mobile Device Data for Estimating Visitor Demographics and Visitation Patterns in Yellowstone National Park." *Journal of Environmental Management* 317: 115410.
10. Chen, Wanxu and Guangqing Chi. 2022. "Spatial Mismatch of Ecosystem Service Demands and Supplies in China, 2000–2020." *Environmental Monitoring and Assessment* 194: 295.
11. Zhou, Shuai\* and Guangqing Chi. 2022. "Farmland Rental: The Impacts of Household Demographics and Livelihood Strategies in China." *Land* 11(8): 1318.
12. Chen, Wanxu and Guangqing Chi. 2022. "Ecosystem Services Trade-Offs and Synergies in China, 2000–2015." *International Journal of Environmental Science and Technology*. DOI: 10.1007/s13762-022-04141-8.
13. Li, Yanling\*, Zita Oravec, Shuai Zhou\*, Yosef Bodovski, Ian J. Barnett, Guangqing Chi, Yan Zhou, Maomi Friedman, Scott Vrieze, and Sy-Miin Chow. 2022. "Bayesian Forecasting with a Regime-Switching Zero-Inflated Multilevel Poisson Regression Model: An Application to Adolescent Alcohol Use with Spatial Covariates." *Psychometrika* 87(2): 376–402.
14. Chen, Wanxu and Guangqing Chi. 2022. "Urbanization and Ecosystem Services: The Multi-Scale Spatial Spillover Effects and Spatial Variations." *Land Use Policy* 114: 105964.
15. Yin, Junjun and Guangqing Chi. 2021. "Characterizing People's Daily Activity Patterns in the Urban Environment: A Mobility Network Approach with Geographic Context-Aware Twitter Data." *The Annals of the American Association of Geographers* 111(7): 1967–1987.
16. Wang, Donghui\*, Annelise D. Hagedorn\*, and Guangqing Chi. 2021. "Remittances and Household Spending Strategies: Evidence from the Life in Kyrgyzstan Study, 2011–2013." *Journal of Ethnic and Migration Studies* 47(13): 3015–3036.
17. Pinto, Casey N., Justin K. Niles, Harvey W. Kaufman, Elizabeth M. Marlowe, Damian P. Alagia, Guangqing Chi, and Barbara Van Der Pol. 2021. "Impact of the COVID-19 Pandemic on Chlamydia and Gonorrhea Screening in the U.S." *American Journal of Preventive Medicine* 61(3): 386–393.
18. Xu, Feng, Zhanqi Wang, Guangqing Chi, Donghui Wang, Zhexi Zhang, and Danyu Zuo. 2021. "Differentiation and Progress of Urban Regionalization in China: Perspectives of Land Use and Geography." *Applied Geography* 137: 102600.
19. Xiao, Chenghan\*, Yang Yang, and Guangqing Chi. 2021. "Subway Development and Obesity: Evidence from China." *Journal of Transport & Health* 21: 101065.
20. Moss, Jennifer L., Siddhartha Roy, Karl T. Clebak, Julie Radico, Jarrett Sell, Christina Scartozzi, Shuai Zhou\*, Guangqing Chi, and Tamara Oser. 2021. "Area- and Individual-Level Correlates of

- Self-Rated Health: Implications for Geographic Health Disparities." *Journal of Primary Care and Community Health*. 12: 1–8.
21. Mohanty, Somya D., Brown Biggers\*, Saed Sayedahmed\*, Nastaran Pourebrahim, Evan B. Goldstein, Rick Bunch, Guangqing Chi, Fereidoon Sadri, Tom McCoy, and Arthur Cosby. 2021. "A Multi-Modal Approach Towards Mining Social Media Data During Natural Disasters – A Case Study of Hurricane Irma." *International Journal of Disaster Risk Reduction* 54: 102032.
  22. Zhou, Shuai\*, Yanling Li\*, Guangqing Chi, Junjun Yin, Zita Oravec, Yosef Bodovski, Naomi Friedman, Scott Vrieze, and Sy-Miin Chow. 2021. "GPS2space: An Open-Source Python Library for Spatial Measure Extraction from GPS Data." *Journal of Behavioral Data Science* 1(2): 127–155.
  23. Chi, Guangqing, Jing Gao, Donghui Wang\*, Annelise D. Hagedorn\*, Kamilya Kelgenbaeva, M. Luke Smith, and Geoffrey M. Henebry. 2020. "Agricultural Productivity at the Oblast Level in Post-Soviet Kyrgyzstan, 1990–2014: Implications of Demographic and Climate Changes." *Research in Globalization* 2: 100027.
  24. Chi, Guanghua\*, Fengyang Lin, Guangqing Chi, and Joshua Blumenstock. 2020. "A General Approach to Detecting Migration Events in Digital Trace Data." *PLoS ONE* 15(10): e0239408.
  25. Xu, Feng\*, Zhanqi Wang, Guangqing Chi, and Zhexi Zhang. 2020. "The Impacts of Population and Agglomeration Development on Land Use Intensity: New Evidence behind Urbanization in China." *Land Use Policy* 95: 104639.
  26. Xiao, Chenghan\*, Yang Yang, and Guangqing Chi. 2020. "Does the Mental Health of Migrant Workers Suffer from Long Commute Time? Evidence from China." *Journal of Transport & Health* 19: 100932.
  27. Abdar, Moloud, Mohammad Ehsan Basiri, Junjun Yin, Mahmoud Habibnezhad, Guangqing Chi, Shahla Nemati, and Somayeh Asadi. 2020. "Energy Choices in Alaska: Mining People's Perception and Attitudes from Geotagged Tweets." *Renewable & Sustainable Energy Reviews* 124: 109781.
  28. Chen, Wanxu\*, Guangqing Chi, and Jiangfeng Li. 2020. "The Spatial Aspect of Ecosystem Service Balance and Its Determinants." *Land Use Policy* 90: 104263.
  29. Chen, Wanxu\*, Guangqing Chi, and Jiangfeng Li. 2020. "Ecosystem Services and Their Driving Forces in the Middle Reaches of the Yangtze River Urban Agglomerations, China." *International Journal of Environmental Research and Public Health* 17(10): 3717.
  30. Yang, Fan, Guangqing Chi, Ge Wang, Shirui Tang, Yunting Li, and Cong Ju. 2020. "Untangle the Complex Stakeholder Relationships in the Consolidation of Rural Settlements in China: A Social Network Approach." *Land* 9(7): 210.
  31. Wang, Ming, Guangqing Chi, Yosef Bodovski, Sheldon L. Holder, Eugene J. Lengerich, Emily Wasserman, and Alicia C. McDonald. 2020. "Temporal and Spatial Trends and Determinants of Aggressive Prostate Cancer among Black and White Men with Prostate Cancer." *Cancer Causes and Control* 31(1): 63–71.
  32. Chi, Guangqing, Derrick Shapley, Tse-Chuan Yang, and Donghui Wang\*. 2019. "Lost in the Black Belt South: Health Outcomes and Transportation Infrastructure." *Environmental Monitoring and Assessment* 191(S2): 297.
  33. Chi, Guangqing, Donghui Wang\*, and Annelise D. Hagedorn\*. 2019. "Future Interstate Highway System Demands: Predictions Based on Population Projections." *Case Studies on Transport Policy* 7(2): 384–394.
  34. Pu, Yingxia, Xinyi Zhao\*, Guangqing Chi, Jin Zhao, and Fanhua Kong. 2019. "A Spatial Dynamic Panel Approach for Modeling the Space-time Dynamics of Interprovincial Migration Flows in China." *Demographic Research* 41: 913–948.



35. Xu, Feng\* and Guangqing Chi. 2019. "Spatiotemporal Variations of Land Use Intensity and Its Driving Forces in China, 2000–2010." *Regional Environmental Change* 19(8): 2583–2596.
36. Kamenetsky, Maria\*, Guangqing Chi, Donghui Wang\*, and Jun Zhu. 2019. "Spatial Regression Analysis of Poverty in R." *Spatial Demography* 7(2): 113–147.
37. Parsafard, Mohsen\*, Guangqing Chi, Xiaobo Qu, Xiaopeng Li, and Haizhong Wang. 2019. "Error Measures for Trajectories Estimations with Geo-tagged Mobility Sample Data." *IEEE Transactions on Intelligent Transportation Systems* 20(7): 2566–2583.
38. Pu, Yingxia, Xiao Han\*, Guangqing Chi, Yaping Wang, Ying Ge, and Fanhua Kong. 2019. "The Impact of Spatial Spillovers on Interprovincial Migration in China, 2005–2010." *Regional Studies* 53(8): 1125–1136.
39. Kasu, Bishal\* and Guangqing Chi. 2019. "Transportation Infrastructures and Socioeconomic Statuses: A Spatial Regression Analysis at the County Level in the Continental United States, 1970–2010." *Spatial Demography* 7(1): 27–56.
40. Chen, Wanxu\*, Guangqing Chi, and Jiangfeng Li. 2019. "The Spatial Effects of Land Use and Land Cover Change on Ecosystem Services Intensity at the County Level in China, 1995–2015." *Science of the Total Environment* 669: 459–470.
41. Pu, Yingxia, Xinyi Zhao\*, Guangqing Chi, Shuhe Zhao, Jiechen Wang, Zhibin Jin, and Junjun Yin. 2019. "Design and Implementation of a Parallel Geographically Weighted k-Nearest Neighbor Classifier." *Computers and Geosciences* 127: 111–122.
42. Xu, Feng\*, Hung Chak Ho, Guangqing Chi, and Zhanqi Wang. 2019. "Abandoned Rural Residential Land: Using Machine Learning Methods to Identify Rural Residential Land Vulnerable to be Abandoned in Mountainous Areas." *Habitat International* 84: 43–56.
43. Chi, Guangqing and Donghui Wang\*. 2018. "Population Projection Accuracy: The Impacts of Sociodemographics, Accessibility, Land Use, and Neighbor Characteristics." *Population, Space and Place* 24(5): e2129. [Winner of the 2017 E. Walter Terrie Best Paper Award in Applied Demography, Southern Demographic Association]
44. Chi, Guangqing and Hung Chak Ho. 2018. "Population Stress: A Spatiotemporal Analysis of Population Change and Land Development at the County Level in the Continental United States, 2000–2010." *Land Use Policy* 70(1): 128–137.
45. Kasu, Bishal\* and Guangqing Chi. 2018. "The Evolving and Complementary Impacts of Transport Infrastructures on Population and Employment Change in the United States, 1970–2010." *Population Research and Policy Review* 37(6): 1003–1029.
46. Kasu, Bishal\* and Guangqing Chi. 2018. "Intercity Passenger Rails: Facilitating the Spatial Spillover Effects of Population and Employment Growth in the United States, 2000–2010." *Journal of Urban Planning and Development* 144(4): 04018037.
47. Li, Chuo, Guangqing Chi, and Robert Jackson\*. 2018. "Neighborhood Built Environment and Walking Behaviors: Evidence from the Rural American South." *Indoor and Built Environment* 27(7): 938–952.
48. Li, Chuo, Amir Ghiasi\*, Xiaopeng Li, and Guangqing Chi. 2018. "Sociodemographics and Access to Organic and Local Food: A Case Study of New Orleans, Louisiana." *Cities: The International Journal of Urban Policy and Planning* 79: 141–150.
49. Chen, Xinxiang, Guanghua Chi\*, and Guangqing Chi. 2018. "Do Airports Boost Economic Development by Attracting Talent? An Empirical Investigation at the Sub-County Level." *Social Science Quarterly* 99(1): 313–329.
50. Ho, Hung Chak\*, Anders Knudby, Guangqing Chi, Mehdi Aminipouri, and Derrick Yuk-Fo Lai. 2018. "Spatiotemporal Analysis of Regional Socio-Economic Vulnerability Change Associated with Heat Risks in Canada." *Applied Geography* 95(1): 61–70.



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### Book Chapters, Law Review Articles, and Encyclopedia Entries

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93. Parisi, Domenico, Steven M. Grice, Guangqing Chi, and Jed Pressgrove\*. 2011. "Poverty, Work, and the Local Environment: TANF and EITC." In: *Economic Restructuring and Family Well-Being in Rural America*, pp. 320–335, edited by Ann Tickamyer and Kristin Smith. University Park, PA: Pennsylvania State University Press.
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95. Chi, Guangqing, Junjun Yin, Jennifer Van Hook, Eric Plutzer, and Heng Xu. 2020. "Estimation of Twitter user demographics in the USA, 2014." [python package and data]. Available at <https://doi.org/10.7910/DVN/PKKAPK>. Released on November 23, 2020.
96. Kamenetsky, Maria\*, Guangqing Chi, and Jun Zhu. 2020. "strm: Spatio-Temporal Regression Modeling." [R package]. Available at <https://cran.r-project.org/web/packages/strm/index.html>. Released on November 2, 2020.
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### Opinion Articles

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103. Chi, Guangqing and Erin Hofmann. 2022. "The Russia-Ukraine War Will Hurt Millions in Central Asia." *Philadelphia Inquirer*. August 8, 2022. Available at <https://www.inquirer.com/opinion/commentary/central-asia-migrants-russia-ukraine-war-20220808.html>
104. Chi, Guangqing, Davin Holen, Heather Randell, Megan Mucioki, and Rebecca Napolitano. 2021. "Rural Alaska Needs New Bridges as Permafrost Thaws and River Ice Gets Dangerously Thin – The Infrastructure Bill Is Only a Start." *The Conversation*. October 12, 2021. Available at <https://theconversation.com/rural-alaska-needs-new-bridges-as-permafrost-thaws-and-crossing-river-ice-gets-riskier-the-infrastructure-bill-is-only-a-start-169345>
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106. Hofmann, Erin and Guangqing Chi. 2021. "'Bride Kidnapping' Haunts Rural Kyrgyzstan, Causing Young Women to Flee Their Homeland." *The Conversation*. June 7, 2021. Available at <https://theconversation.com/bride-kidnapping-haunts-rural-kyrgyzstan-causing-young-women-to-flee-their-homeland-158404>
107. Chi, Guangqing. 2020. "#SocialScience: Mining Twitter for Social and Behavioural Research." *Research Outreach* 115: 22–25. Available at <https://researchoutreach.org/articles/social-science-mining-twitter-social-behavioural-research/>
108. Kasu, Bishal\* and Guangqing Chi. 2019. "The Evolving and Complementary Impacts of Transportation Infrastructures on Growth and Development." N-IUSSP, The International Union for the Scientific Study of Population's online news magazine. Available at <http://www.niussp.org/article/the-impact-of-transportation-infrastructures-on-growth-and-development/>
109. Wang, Donghui\* and Guangqing Chi. 2018. "The Spatial Heterogeneity of County-Level Fertility in China." Report No. 85, The Young Scholar Committee of Chinese Population Association. Available at <https://mp.weixin.qq.com/s/iJvn7cu6trpPYKhM6reNAA>. [in Chinese]

### Journal Special Issues

110. Gao, Jinlong, Yurui Li, Guangqing Chi, and David W. Marcouiller (eds). 2022. "Rural Restructuring and Pathways Towards Revitalization in Transitional China and Beyond." *Growth and Change*.
111. Zhang, Jianjun, Guangqing Chi, Yongheng Rao, and Feng Xu (eds). 2022. "Land Use Change and Anthropogenic Disturbances: Relationships, Interactions, and Management." *Land*. [https://www.mdpi.com/journal/land/special\\_issues/land\\_anthropogenic](https://www.mdpi.com/journal/land/special_issues/land_anthropogenic)
112. Chen, Wanxu, Jie Zeng, and Guangqing Chi (eds). 2022. "Ecosystem Health and Human Well-Being." *International Journal of Environmental Research and Public Health*. [https://www.mdpi.com/journal/ijerph/special\\_issues/0CLH08QMIO](https://www.mdpi.com/journal/ijerph/special_issues/0CLH08QMIO)

## Refereed Conference Proceedings

113. Liang, Yun\*, Junjun Yin, Bing Pan, Michael Lin\*, and Guangqing Chi. 2021. "Assessing the Validity of SafeGraph Data for Visitor Monitoring in Yellowstone National Park." The Travel and Tourism Research Association, June 14–16, 2021, Fort Worth, TX.
114. Liang, Yun\*, Junjun Yin, Bing Pan, Guangqing Chi, Clio Andris, Zach Miller, Jack Jorgenson, and Norma Nickerson. 2020. "Understanding Demographics and Experience of Tourists in Yellowstone National Park through Social Media." The Travel and Tourism Research Association, June 16–18, 2020, Victoria, Canada.
115. Aidaraliev AA, GM Henebry, G Chi, P Groisman, M Tomaszewska, MS Baihodjoev, KA Kelgenbaeva, 2019. "Climatic impacts on mountainous livelihood in Kyrgyzstan." Proceedings of the 15th anniversary of the Foundation of CAIAG "Remote and Terrestrial Research of the Land in Central Asia", September 17–18, 2019, Bishkek, Kyrgyzstan, pp. 148–153 (in Russian).
116. Yin, Junjun, Guangqing Chi, and Jennifer Van Hook. 2018. "Evaluating the Representativeness in the Geographic Distribution of Twitter User Population." GIR'18 Proceedings of the 12th Workshop on Geographic Information Retrieval, ACM SIGSPATIAL, November 6, 2018, Seattle, WA.
117. Wang, Donghui\*, Annelise D. Hagedorn\*, Guangqing Chi, Guljamal Ibraimova, Kamilya Kelgenbaeva, and Geoffrey M. Henebry. 2016. "Agricultural Productions in Kyrgyzstan, 1990–2014." The International University of Kyrgyzstan Journal 29(1): 11–16.
118. Li, Chuo, Amir Ghiasi\*, Xiaopeng Li, and Guangqing Chi. 2016. "Socio-demographic Characteristics Associated with Access to Organic and Local Food." #16–2058. The Transportation Research Board, January 10–14, 2016, Washington, D.C.
119. Chi, Guangqing and Jamie Boydstun\*. 2013. "Rising Gasoline Prices and Residential Relocation Closer to Workplaces." #13–1686. The Transportation Research Board, January 13–17, 2013, Washington, D.C.
120. Chi, Guangqing, Jeremy R. Porter, Arthur G. Cosby, and David Levinson. 2013. "Understanding the Impact of Gasoline Price Changes on Traffic Safety: A Time Geography Approach." #13–1687. The Transportation Research Board, January 13–17, 2013, Washington, D.C.
121. Chi, Guangqing, Mohammed A. Quddus, Arthur Huang\*, and David Levinson. 2013. "Urban-Rural Difference of Gasoline Price Effects on Traffic Safety." #13–1688. The Transportation Research Board, January 13–17, 2013, Washington, D.C.
122. Chi, Guangqing and Yanbing Zheng. 2012. "Estimating Transport Footprint along Highways at Local Levels: Combination of Network Analysis and Kriging Methods." #12–0754. The Transportation Research Board, January 22–26, 2012, Washington, D.C.
123. Chi, Guangqing. 2010. "Land Developability and Population Dynamics: Developing an Index of Land Use and Development for Sustainability Research." #3D7–ICSU10387. The First International Conference on Sustainable Urbanization, December 15–17, 2010, Hong Kong.
124. Chi, Guangqing. 2010. "Estimating Transport Ecological Footprint at Local Levels: An Ordinary Kriging Approach." #8A02–ICSU10386. The First International Conference on Sustainable Urbanization, December 15–17, 2010, Hong Kong.

## Other Publications

125. Xu, Feng, Guangqing Chi, Yongheng Rao, and Jianjun Zhang. 2022. "Editorial for the Special Issue 'Land Use Change and Anthropogenic Disturbances: Relationships, Interactions, and Management.'" *Land* 11: 1522. DOI: 10.3390/land11091522.
126. Singh, Lisa, Leticia Bode, Pamela Davis-Kean, Tanya Berger-Wolf, Ceren Budak, Guangqing Chi, Andy Guess, Jennifer Hill, Adam Hughes, Brad Jensen, Frauke Kreuter, Jonathan Ladd,

- Margaret Little, Zeina Mneimneh, Kevin Munger, Josh Pasek, Trivellore Raghunathan, Rebecca Ryan, Stuart Soroka, and Michael Traugott. 2020. "Study Designs for Quantitative Social Science Research Using Social Media." [PsyArXiv, DOI: 10.31234/osf.io/zp8q2]
127. Singh, Lisa, Shweta Bansal, Leticia Bode, Ceren Budak, Guangqing Chi, Kornraphop Kawintiranon, Colton Padden, Rebecca Vanarsdall, Emily Vraga, and Yanchen Wang\*. 2020. "A First Look at COVID-19 Information and Misinformation Sharing on Twitter." [arXiv:2003.13907]
  128. Chi, Guangqing, Bishal Kasu\*, and Annelise D. Hagedorn\*. 2016. "The Economic Demography of Passenger Intermodal Transportation: Opportunities and Challenges." Project Report No. 13-007. National Center for Intermodal Transportation for Economic Competitiveness, U.S. Department of Transportation. Available at <https://trid.trb.org/view.aspx?id=1400760>.
  129. Chi, Guangqing and Bishal Kasu\*. 2016. "Economic and Demographic Impacts of Passenger Rail Systems: The Impact of Intercity Passenger Rails on Population and Employment Change in the United States, 2000–2010." Project Report No. 13-008. National Center for Intermodal Transportation for Economic Competitiveness, U.S. Department of Transportation. Available at <https://trid.trb.org/view.aspx?id=1400761>.
  130. Chi, Guangqing and Mary Killsahundred\*. 2015. "Rapid City School District School-Level Enrollment Projections 2015–2024." Project Report. The Black Hills Knowledge Network, Rapid City, SD.
  131. Chi, Guangqing. 2014. "South Dakota State Data Center Newsletter, Winter 2014 Issue." Rural Life and State Data Center, Department of Sociology and Rural Studies, South Dakota State University.
  132. Chi, Guangqing. 2014. "South Dakota State Data Center Newsletter, Fall 2014 Issue." Rural Life and State Data Center, Department of Sociology and Rural Studies, South Dakota State University.
  133. Chi, Guangqing. 2014. "Traffic Fatalities Have Been Declining Steadily Since 2005: Why?" In: *Mississippi Traffic Safety Data Book 2014*, pp. 13–16, edited by McKee, C., Burns, M.A., Farrell, B., Neaves, T., Falls, A., Singletary, K., Nguyen, J., & Ginn, A. Starkville, MS: Social Science Research Center, Mississippi State University.
  134. Chi, Guangqing and Willie Brown. 2014. "Rising Gasoline Prices Lead to the Reduction in Drunk-Driving Crashes." Policy Brief. Public Safety Data Laboratory, Social Science Research Center, Mississippi State University. Available at <http://psdl.ssrc.msstate.edu/wp-content/uploads/GasolinePricesandDrunk-DrivingCrashes.pdf>.
  135. Chi, Guangqing. 2013. "Applied Spatial Data Analysis with R" by Roger S. Bivand, Edzer J. Pebesma, and Virgilio Gómez-Rubio (New York, NY: Springer. 374 + xiv. ISBN: 978-0-387-78170-9). *Spatial Demography* 1(2): 227–228. [Book review]
  136. Chi, Guangqing and Jamie Boydston. 2013. "Passenger Usages of the Intermodal Transportation System: An Analysis of the 2009 National Household Travel Survey Data." Project Report. National Center for Intermodal Transportation for Economic Competitiveness, U.S. Department of Transportation.
  137. Chi, Guangqing and Jamie Boydston. 2012. "Passenger Responses to Gasoline Price Increases: Residential Relocation and Intermodal Transportation." Project Report. Henry Family Research Fund, College of Arts and Sciences, Mississippi State University.
  138. Chi, Guangqing. 2010. "Assessing Economic and Demographic Impacts of Intermodal Transportation Systems." Project Report. National Center for Intermodal Transportation, U.S. Department of Transportation.
  139. Mo, Xiugen\*, Guangqing Chi, and Charles A. Campbell. 2009. "The Temporal and Spatial Effect of Highways on China's Economic Growth." Working Paper. Social Science Research Network. Available at SSRN: <http://ssrn.com/abstract=1580246>.
  140. Voss, Paul R. and Guangqing Chi. 2004. "On the Causality between Highway Expansion and

- Population Change: A Spatial Multivariate Regression Analysis." *Applied Demography* 17(2): 5–6.
141. Chi, Guangqing. 1999. "Identifying and Weighing Environmental Factors in Communities." *Shanghai Property Management* 24: 24–25. [in Chinese]
  142. Chi, Guangqing. 1999. "Applying the ISO14001 Environmental Management System to Manage Communities: A Case Study of Ching Chu Garden, Shanghai." *Shanghai Property Management* 24:18–20. [in Chinese]
  143. Wang, Xiangrong and Guangqing Chi. 1999. "Implementing the ISO14001 Environmental Management System to Improve the Ecological Construction of Urban Communities." *Shanghai Property Management* 24:10–13, 17. [in Chinese]

## RESEARCH GRANTS (INTERNAL)

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1. PSU Center for Socially Responsible Artificial Intelligence and College of Information Science and Technology. "Predicting Number of Tenants At-Risk of Eviction in High Resolution using Social Media, E-Commerce Data, Sociological Insights, and Low-Resolution Eviction Data." 5/1/2023–10/30/2024. Co-PI with Dongwon Lee (PI). \$40,000.
2. PSU C-SoDA Accelerator. "Expanding Methods and Understanding of Trail Use and Users at Grand Canyon National Park with Spatial Applications of Big Data." 1/1/2023–10/31/2023. Co-PI with Colby Parkinson (PI). \$5,000.
3. PSU C-SoDA Accelerator. "# BlackHiker: A Black Perspective on Outdoor Recreation by Tweets." 1/1/2023–7/31/2023. Co-PI with Yun Liang (PI). \$5,000.
4. NIH Interdisciplinary Network on Rural Population Health and Aging (INRPHA). "Aging Amish: Toward Usable Population Microdata and an Investigation of Residence Proximity, Occupational Change, and Informal Care Practices for the Elderly." 4/15/2021–6/30/2022. Co-I with Cory Anderson (PI). \$15,000.
5. PSU Social Science Research Institute. "Mobility Patterns and Their Influence on Food Security in Alaskan Communities: Using Digital Trace Data for Social and Behavioral Research during the COVID-19 Pandemic." 4/1/2021–3/31/2023. Co-PI with Junjun Yin (PI). \$30,000.
6. PSU Institution for Computational and Data Sciences. "A Deep Learning-enabled Dasymmetric Mapping Approach for Fine-Scale Population Estimation in Alaska." 5/1/2021–4/30/2023. Co-PI with Junjun Yin (PI). \$35,000.
7. PSU C-SoDA Accelerator. "Who Visits Yellowstone National Park during the COVID-19 Pandemic? A Gravity Model Analysis by Mobile Device Data." 2/1/2022–10/31/2022. Co-PI with Yun Liang (PI). \$6,500.
8. PSU Institutes of Energy and the Environment. "Urban Microclimate, Outdoor Thermal Comfort, and Socio-Economic Mapping: A Case Study of Two High-Density Cities." 4/16/2021–6/30/2022. Co-PI with Ute Poerschke (PI). \$26,420.
9. PSU Social Science Research Institute. "Revisiting Secular Trends on Migration." 7/1/2019–6/30/2020. Co-PI with Elisa Giannone (PI). \$5,000.
10. PSU Social Science Research Institute, Institute for CyberScience, and College of Information Science and Technology. "Regional Differences in Opinions Toward Climate Change Among Twitter Users." 3/1/2019–12/31/2020. Co-PI with Ting-Hao Huang (PI). \$30,000.
11. PSU Social Science Research Institute and Institute for CyberScience. "Food-Water-Energy Choices in Alaska: Mining People's Perception and Attitudes from Geotagged Tweets." 3/1/2019–3/1/2020. Co-PI with Somayeh Asadi (PI). \$5,000.
12. PSU Social Science Research Institute and Institute for CyberScience. "What Can Social Media Sentiment Analysis of Flu Risk and Vaccine Efficacy Tell Us About Regional and Demographic



- Variations in Flu Vaccination Rates?" 3/1/2019–2/28/2021. Co-PI with Suresh Kuchipudi (PI). \$20,000.
13. Penn State's 2016-2020 Strategic Plan. "Pennsylvania Population Network." 7/1/2018–6/30/2021. Collaborator with Jennifer Glick (PI). \$243,423.
  14. PSU Social Science Research Institute. "Spatial Economic Patterns in Refugee Integration: An Analysis of TurkTelecom Call Data Records and Geographic Information Systems." 8/1/2018–7/31/2019. Co-PI with Clio Andris (PI). \$20,000.
  15. PSU Social Science Research Institute. "An Innovative Approach to Tackle the Opioid Epidemic: Utilizing Twitter Data and Integrating Big Data Analytics and Spatial and Social Network Analyses." 5/1/2018–6/30/2019. Co-PI with Zhen Lei (PI). \$20,000.
  16. Penn State's 2016-2020 Strategic Plan. "Individualized Pathways and Resources to Adaptive Control Theory-Inspired Scientific Education (iPRACTISE)." 7/1/2018–6/30/2020. Co-I with Sy-Miin Chow (PI). \$250,000.
  17. PSU Human Health and Environment. "Heavy Metal Exposures and Aggressive Prostate Cancer." 7/1/2018–6/30/2020. Co-I with Alicia C. McDonald and Ming Wang (PIs). \$50,000.
  18. PSU Institute for CyberScience. "The Generalizability and Replicability of Twitter Data for Population Research." 5/1/2018–6/30/2019. PI. \$35,000.
  19. PSU Social Science Research Institute and Institutes of Energy and the Environment. "From Environmental Change to Left-behind Children's Well-being in Rural Highlands: The Nexus of Pasture Productivity, Family Processes, Labor Migrants, and Child Development." 7/1/2017–6/30/2019. PI. \$50,000.
  20. Penn State's 2016-2020 Strategic Plan. "Integrated Data Systems Solutions for Health Equity." 7/1/2017–6/30/2019. Co-I with Susan McHale (PI). \$180,000.
  21. Penn State's 2016-2020 Strategic Plan. "Digital Collaboratory for Precision Health Research." 7/1/2017–6/30/2019. Co-I with Vasant Honavar (PI). \$250,000.
  22. PSU Human Health and Environment. "Predictive Modeling of Health Risks and Outcomes from Clinical, Environmental, Contextual, Behavioral Data: A Proof-of-Concept Study Focused on Breast Cancer in Central Pennsylvania." 6/1/2017–5/31/2018. Co-PI with Vasant Honavar and Eugene Lengerich (PIs). \$50,000.
  23. PSU Institutes of Energy and the Environment. "Ecological Migration in a Large-Scale Quasi-Experiment Design in China: Implications of Climate Change, Landscape Structure, Ecosystem Services and Government Intervention." 4/1/2017–6/30/2018. PI. \$25,000.
  24. PSU Pathway to Partnership Stage I. "Aggressive Prostate Cancer in Pennsylvania: Health Disparities and Environmental Risk Factors." 8/1/2016–2/1/2017. Co-I with Ming Wang and Alicia C. McDonald (Co-PIs). \$5,000.
  25. PSU Social Science Research Institute. "The Computational and Spatial Analysis Core's Twitter Initiative as Part of Social Science Research Institute's Strategic Area in Innovative Methods." 6/1/2016–6/1/2019. PI. \$83,585.
  26. PSU Social Science Research Institute and Institutes of Energy and the Environment. "A Household-level Longitudinal Investigation into the Food Environment's Impact on Food Behavior and Health." 7/1/2015–6/30/2016. Co-I with Jennifer Van Hook (PI). \$20,000.
  27. PSU Pathway to Partnership Stage I. "Population Health Research in the Era of Big Data." 6/1/2015–11/1/2015. Co-PI with Cynthia Chuang (co-PI). \$5,000.
  28. MSU Office of Research and Economic Development. "Big Data Analysis in Transportation and Sociology." 8/16/2013–8/15/2014. Co-PI with Xiaopeng Li (PI). \$2,000.
  29. MSU Office of Research and Economic Development. "Infrastructure and Livable Community." 8/16/2012–8/15/2013. Co-PI with Xiaopeng Li (PI). \$2,000.

30. MSU College of Arts and Sciences, Henry Family Research Fund. "Social and Spatial Implications of Gasoline Price Changes on Commuting Behaviors." 06/01/2011–05/31/2012. PI. \$5,000.

## TEACHING AND SUPERVISING

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PSU = Pennsylvania State University; SDSU = South Dakota State University; MSU = Mississippi State University

### Courses Taught at PSU

RSOC 597 Spatial Analysis of Social Data. Spring 2016; Spring 2019; Spring 2021.  
RSOC 597 Elements of Social Statistics. Spring 2018.  
CED 410 Population and Environment. Spring 2017; Spring 2020.

### Courses Taught at MSU

SO4703/6703 Population Problems. Fall 2012; Fall 2013.  
SO4990/6990 Transportation and Society. Spring 2012; Spring 2013.  
SO8243 Spatial Analysis of Social Data. Fall 2008; Summer 2011; Spring 2014.  
SO8274 Graduate Social Statistics I. Spring 2009; Spring 2010; Spring 2011.  
SO8284 Graduate Social Statistics II. Fall 2009; Fall 2010; Fall 2011.

### Ph.D. and M.S. Advisees

Ayse Akyildiz, Rural Sociology and Demography, PSU, PhD in progress  
Jessica Miller, Rural Sociology and Demography, PSU, PhD in progress  
Yining Feng, Rural Sociology and Demography, PSU, PhD in progress  
Shuai Zhou, Rural Sociology and Demography, PSU, PhD in progress  
Christian Scott, Rural Sociology and International Agriculture and Development, PSU, PhD 2021  
(Postdoc, Mississippi State)  
Xiaoran Sun, Social Data Analytics, PSU 2019 (research rotation advisee)  
Shuai Zhou, Rural Sociology and Demography, PSU, MS 2019  
Donghui Wang, Rural Sociology and Demography, PSU, PhD 2018 (Assistant Professor, Renmin University of China; co-advised with Leif Jensen)  
Bridget Ward, Geographic Information Systems, PSU, MS 2017 (GIS Analyst, HDR, Inc.)  
Bishal Kasu, Sociology and Rural Studies, SDSU, PhD 2017 (Postdoc, South Dakota State U)  
Derrick Shapley, Sociology, MSU, PhD 2015 (Associate Professor, Talladega College)

### Faculty and Postdoc Mentees

Cory Anderson, Postdoctoral Fellow, Population Research Institute, PSU, 2020–present (co-mentored with Mary Shenk)  
Casey Pinto, Assistant Professor of Public Health Sciences, PSU, 2016–present  
Heng Xu, Associate Professor of Information Sciences and Technology, PSU, 2017–2018 (SSRI Faculty Fellow)

### Ph.D. Dissertation and M.S. Thesis Committees

Rachel L. McNealey (Criminology, PSU, PhD in progress); Bianca Wirth (Criminology, PSU, PhD in progress); Haoyang Zhang (Sociology, PSU, PhD in progress); Chen Xia (Architectural Engineering, PSU, PhD in progress); Jessie Slepicka (Criminology, PSU, PhD in progress); Yun Liang (Recreation, Park, and Tourism Management, PSU, PhD in progress); Katrina Alford (Rural Sociology and Demography, PSU, PhD in progress); Megan Evans (Sociology and Demography, PSU, PhD in progress); Grace Wildermuth (Rural Sociology and Demography, PSU, PhD 2022); Dylan Davis (Anthropology, PSU, PhD 2022); Kaida Zhang (Economics, PSU, PhD 2022); Katie Sneeringer (Public Health Sciences, PSU, PhD 2021); Laura Stiberman (Sociology and Demography, PSU, MS 2021); Xuetao Huang (Agricultural, Environmental, and Regional Economics and Demography, PSU, PhD 2021); Richard Bankoff (Bioethics and Anthropology, PSU, PhD 2020); Qiong Zhu (Higher Education, PhD

2019); Wei-Lin Wang (Rural Sociology and Demography, PSU, PhD 2019); Abou Traore (Rural Sociology, PSU, PhD 2018); Bo Bian (Economics, PSU, PhD 2018); Yunmei Lu (Sociology, PSU, PhD 2018); Mohsen Parsafard (Civil and Environmental Engineering, U South Florida, PhD 2017); Chia-Yueh Hus (Social Work and Social Administration, U of Hong Kong, PhD 2017); Andrew Gladfelter (Criminology, PSU, PhD 2016); Danya Kim (Urban and Regional Planning, U of Wisconsin-Madison, PhD 2016); Jamie Boydston (Sociology, MSU, PhD 2014); Onyumbwe E. Lukongo (Finance and Economics, MSU, PhD 2014); Li Zheng (Sociology, MSU, PhD 2013); Philip Mason (Sociology, MSU, PhD 2012); Kaustav Misra (Finance and Economics, MSU, PhD 2010); John S. McCown (Sociology, MSU, MS 2011); Jamie Boydston (Sociology, MSU, MS 2009)

### Research Associates/Assistants Funded/Supervised

RA = Research Associate; GRA = Graduate Research Assistant; GTA = Graduate Teaching Assistant; URA = Undergraduate Research Assistant

Megan Mucioki (PSU RA 2020–); M. Luke Smith (PSU RA 2020–); Junjun Yin (PSU RA 2016–); Supriya Joshi (PSU RA 2018–2019, 2022–); Ayse Akyildiz (PSU GRA 2022–); Jessica Miller (PSU GRA 2020–); Yining Feng (PSU GRA 2019–); Shuai Zhou (PSU GRA 2017–); Ekrem Korkut (PSU Postdoc 2021–); Caroline McGonigle (PSU URA 2021–); Sarah Paterno (PSU URA 2021–2022); Emma Chiaroni (PSU GRA 2021–2022); Casey Hamilton (PSU GRA 2021–2022); Christian Scott (PSU GRA 2016–2020); Matthew Brooks (PSU GRA 2019–2020); Tracy Shen (PSU GRA 2019); Katrina Alford (PSU GRA 2019); Samarth Gupta (PSU GRA 2019); Donghui Wang (PSU GRA 2015–2018); Wei-Lin Wang (PSU GRA 2016–2017); Annelise D. Hagedorn (PSU GRA 2015–2017); Xuetao Huang (PSU GRA 2015–2016); Bishal Kasu (SDSU GRA 2014–2015); Mary Kill-A-Hundred (SDSU GRA 2014–2015); Susan Yerhot (SDSU GRA 2014–2015); Jamie Boydston (MSU GRA 2011–2013); Willie Brown (MSU RA 2013–2014); Paul Gilbert (MSU GRA 2008–2010); Taylor Hackemack (MSU URA 2011–2014); Derrick Ho (MSU GRA 2012); Bishal Kasu (MSU GRA 2013–2014); Tim McClure (MSU GRA 2011–2012); Xiaojin Song (MSU GTA 2012); Xuan Zhou (MSU GRA 2009–2011); John McCown (MSU GTA 2009–2011)

### Visiting Scholars/Students Hosted

Chao Wang (Beijing Normal University, 2019–2020); Fan Yang (Huazhong Agriculture University, 2019–2020); Chenghan Xiao (Sichuan University, 2019–2020); Yingxia Pu (Nanjing University, 2018); Feifei Chen (Renmin University of China, 2018); Wanxu Chen (China University of Geosciences, 2017–2019); Kun Li (Fudan University, 2017); Myrzagul Mamadiarova (International University of Kyrgyzstan, 2017); Feng Xu (China University of Geosciences, 2016–2018)

## PROFESSIONAL SERVICE (selected)

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### Disciplinary Service

Deputy Editor, *Demography* (2016–2019)

Editorial Board Member, *Social Forces* (2023–2026)

Advisory Board member, *Population and Environment* (2019–)

Editorial Board member, *Spatial Demography* (2012–)

Editorial Board member, *SN Social Sciences* (2022–)

National Academies Board on Environmental Change and Society (2023)

Member of Planning Committee for the workshop “Integrating the Human Sciences to Scale Societal Responses to Environmental Change”

NAS Advisory Panel member for

TRB/American Association of Motor Vehicle Administrators: Project 19-01 Demographic and Technological Trends Impacting the DMV of the Future (2019–2020)

Grant panelist/reviewer for

NSF: Coastlines and People Hubs for Research and Broadening Participation (2022), Human, Disaster, and the Built Environment (2022), Civic Innovation Challenge (2021), Human Networks and Data Science–Infrastructure (2021), NSF Research Traineeship (2020), Sociology (2020, 2018), Methodology, Measurement, and Statistics (2020, 2014), Smart

& Connected Communities (2018), Engineering Research Centers (2015), Geography and Spatial Sciences (2013)  
 NIH: COBRE P20 (2023), 10 ZRG1 RPHB-R (2018), 01 ZAG1 ZIJ-5 (2017), ZRG1 PSE-C 04 (2016), Social Science and Population Studies B (2015)  
 NASA: Postdoctoral Program (2016)  
 European Research Council (ERC): Advanced Grant (2017)  
 Trans-Atlantic Platform (T-AP) for Social Sciences and Humanities (2021)  
 U.S.-Israel Binational Science Foundation (2019)  
 UCLA Institute of Transportation Studies (2020)  
 Review project reports for USDA Forest Service (2013)  
 Review manuscripts for journals  
*American Journal of Agricultural Economics; American Journal of Public Health; American Journal of Preventive Medicine; Annals of the American Association of Geographers; Annals of Operations Research; Annals of Regional Science; Applied Ecology and Environmental Research; Applied Spatial Analysis and Policy; BMC Public Health; Bulletin of Geography, Socio-economic Series; Computers, Environment and Urban Systems; Demographic Research; Demography; Ecological Economics; Ecological Processes; Economic Papers; Environment and Planning A; Environmental Research Letters; Environmental Monitoring and Assessment; Geographical Analysis; Growth and Change; Habitat International; International Journal of Digital Earth; International Journal of Geographical Information Science; Jahrbuch für Regionalwissenschaft (Review of Regional Research); International Migration Review; Journal of Appalachian Studies; Journal of Environmental Planning and Management; Journal of Geographical Systems; Journal of Healthcare Informatics Research; Journal of Maps; Journal of Regional Analysis and Policy; Journal of Transport and Land Use; Journal of Urban Technology; Land; Land Use Policy; Landscape and Urban Planning; Mathematical Population Studies: An International Journal of Mathematical Demography; Papers in Regional Science; Population and Environment; Population Research and Policy Review; Population, Space and Place; Preventive Medicine; Review of Regional Studies; Regional Studies; Rural Sociology; Social Forces; Social Science and Medicine; Social Science Research; Sociological Inquiry; Sociological Perspectives; Spatial Demography; Spatial Economic Analysis; Scientific Reports; Sustainability; The Rangeland Journal; Theory, Culture & Society; Transport Findings; Transport Policy; Transportation Research Part A: Policy and Practice; Transportation Research Record; Urban Studies*  
 Article Editor, *SAGE Open* (2014)  
 Review books for publisher: *Routledge* (2013); *Springer* (2022)  
 US Bureau of the Census 2014–2015  
 Member, Federal-State Cooperative Program for Population Estimates; Member, 2020 Census Redistricting Data Program  
 Invited Participant, Towards Scenarios of U.S. Demographic Change, the Scenarios and Interpretive Science Coordinating Group, U.S. Global Change Research Program, 2014  
 Population Association of America: Annual Meeting Program Committee Member, 2022, 2018; Session Organizer, 2018, 2017; Session Chair, 2018, 2017; Session Discussant, 2017, 2010  
 Rural Sociology Society: Publication Committee Chair-Elect, 2022–2023; Council Member, 2022–; Panelist, 2016; Session Chair, 2009  
 Southern Demographic Association: Member, Walter E. Terrie Award Committee, 2009, 2010, 2012  
 Promotion and Tenure review: University of Texas Medical Branch

### **University Service**

Member, Research Computing and Cyberinfrastructure (RCCI) Governance Council's Executive Committee, 2022–  
 Member, Advisory Board, Data-to-Policy and Evidence-to-Impact Collaborative, 2019–  
 Member, Steering Committee, Social Science Research Institute, 2017–  
 Member, Steering Committee, Institute for CyberScience, 2017–2018  
 At-Large Representative, Internal Advisory Board, Population Research Institute, 2016–2019  
 Member, Advisory Board, Graduate Program in Demography, 2016–

Delegate of Population Research Institute and Social Science Research Institute to the University Consortium for Geographic Information Science (UCGIS), 2015–2020  
Member, The Scientific Advisory Committee for the Community Sciences and Health Outcomes Shared Resources, Penn State Cancer Institute, 2016–2018  
Chair, Graduate Faculty Review Committee, College of Agricultural Sciences, 2019–2020  
Liaison, ME John Seminars Committee, AESE, 2018–2020  
Member, Promotion and Tenure Committee, AESE, 2016–2020, 2021–2023  
Member, Faculty Search Committee, AESE, 2015–2016, 2017–2018

## **MEDIA COVERAGE**

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*ABC, Aberdeen News, American Thinker, BNET, Chron, Forbes, Fortune, Fox 5 News, Huffington Post, Kiplinger's Personal Finance, Money, National Public Radio, Star Tribune, South Dakota Public Broadcasting, The Conversation, The Oregonian, The Weather Channel, U.S. News and World Reports, VOAnews, WalletHub, and WAMC Northeast Public Radio, among over 2,000 media appearances.*

## **AWARDS AND HONORS (selected)**

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E. Walter Terrie Best Paper Award in Applied Demography (2017), Southern Demographic Association (with Donghui Wang)  
Faculty Research Award in Social and Behavioral Sciences (2013), College of Arts and Sciences, Mississippi State University  
2nd Place Award (2012), Transportation Workshop, Mississippi State University (with Jamie Boydston)  
Cherri M. Musser State Pride Faculty Award (2011), Mississippi State University  
Researcher of the Month (February 2011), College of Arts and Sciences, Mississippi State University  
William N. Clark State Pride Faculty Award (2010), Mississippi State University  
Research Fellow (2008), Social Science Research Center, Mississippi State University  
E. Walter Terrie Best Paper Award in Applied Demography (2007), Southern Demographic Association

## **REFERENCES**

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Available upon request.