

Susan (Su) Burtner

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About Me

I currently serve as the Director of Quantitative Research at the Center for Neighborhood Engaged Research and Science (CORNERS), a research center focused on understanding and preventing gun violence at Northwestern University. With over 9 years of research experience, 2 at the leadership level, I am passionate about advancing the field of violence prevention and supporting the growth of safe and healthy communities.

Education

- PhD, Geography** [University of California, Santa Barbara \(UCSB\)](#) 03/2023
- Dissertation: Network and computational approaches for measuring human interaction
 - Emphasis: Information, technology, and society
- Master's, Urban Spatial Analytics** [University of Pennsylvania](#) 05/2015
- Concentration: Transportation planning
- BA, Operations Research and Management Science** [University of California, Berkeley](#) 05/2014

Professional Experience

- Director of Quantitative Research** [CORNERS, Northwestern University](#) **Evanston, IL** 11/2022 - present
- Supervise 6 data analysts and 1 database systems engineer, and support 20+ staff members and students across 10 research and evaluation projects to measure the impact of gun violence prevention programs
 - Develop and guide quantitative research, including social network analyses, hot spot analyses, mixture modeling, and other advanced statistical modeling using R and Python programming languages
 - Oversee data infrastructure, ETL processes, and analytical protocols, including maintaining a Google Cloud Platform, GitHub organization account, and systematic code reviews, to ensure accurate and secure analysis of sensitive data
- Research Assistant** [UCSB](#) **Santa Barbara, CA** 06/2021 - 01/2022
- Leveraged high performance computing and social theory to examine residential sorting and political partisanship for over 4 million registered voters in Los Angeles and Orange Counties
 - Disentangled the methodological impact of spatial and social definitions to examine their impact on the measurement of political homophily
- Research Assistant** [What Every1 Says Project](#) **Santa Barbara, CA** 11/2018 - 12/2020
- Analyzed topic models, created word embeddings, and generated visuals for hundreds of thousands of unstructured American media sources to assess public discourse of the humanities
 - Drew novel connections between social groups and their portrayal in the media by examining word use patterns around identity markers such as race, gender, sexuality, etc.
- Research Associate** [Oak Ridge National Laboratory](#) **Knoxville, TN** 09/2015 - 08/2017
- Collected and harmonized census and other administrative survey data to create a spatially enabled database of global building information for use in spatial analyses by other national laboratory research teams
 - Contributed machine learning annotation, training, and technical documentation to support federal mapping efforts

Teaching Experience

- Instructor** [UCSB](#) **Santa Barbara, CA**
- GEOG 172: Intermediate Geographic Information Analysis Summer 2020

Teaching Assistant (TA) [UCSB](#)

- GEOG 500: Teaching Assistant Training (Department Lead TA)
- GEOG 190: Location Theory and Modeling
- GEOG 191: Introduction to Optimization Methods for Geographic Problems
- GEOG W12: Maps and Spatial Reasoning
- GEOG 109: Economic Geography
- GEOG 176B: Technical Issues in Geographic Information Systems
- GEOG 172: Intermediate Geographic Information Analysis

Santa Barbara, CA
Fall 2021

Spring 2021

Winter 2021

Fall 2020

Spring 2020

Winter 2022, Winter 2020

Fall 2019

Certificates & Workshops [UCSB](#)

- Community of Practice: Course Design for Equity
- Lead TA Institute
- Summer Teaching Institute for Associates

Santa Barbara, CA
Winter 2022, Fall 2021

Summer 2021

Summer 2020

Publications & Presentations

Ross, M., **Burtner, S.**, & Papachristos, A. (2025). Characterizing CVI street outreach participants and service dosage: Implications for measurement and evaluation. *Inquiry*.

Murray, A. T., & **Burtner, S.** (2023). Physical distancing as an integral component of pandemic response. *Letters in spatial and resource sciences*, 16(1), 8.

Burtner, S., & Murray, A. T. (2022). COVID-19 and minimizing micro-spatial interactions. *ACM Transactions on Spatial Algorithms and Systems (TSAS)*, 8(3), 1–17.

Burtner, S., & Murray, A. T. (2021). Urban mobility and segregation examined through networked travel activity. In *Handbook of Cities and Networks* (pp. 331–349). Edward Elgar Publishing.

Murray, A. T., Xu, J., Baik, J., **Burtner, S.**, Cho, S., Noi, E., ... Zhou, E. (2020). Overview of contributions in geographical analysis: Waldo Tobler. *Geographical Analysis*, 52(4), 480–493.

Publications in Review

Bagley, R., Voigt, R., **Burtner, S.**, & Papachristos, A. (2025). Quantifying racial disparities in media representations of gun violence at scale. *PNAS*.

Invited Talks

Burtner, S. (2024, May 02). *Beyond research: Understanding and addressing gun violence with a data-informed and community-engaged approach*. The Higher Education Cloud Forum. Palo Alto, California.

Burtner, S. (2020, December 3). *Networks as tools for measuring interaction and complexity*. Center for Spatial Studies at UCSB. Virtual.

Selected Conference Proceedings

Burtner, S., & Anderson, N. (2025, April 09). *The state of co-offending networks in Chicago in the wake of COVID-19: Implications for gun violence prevention*. Society for Advancement of Violence and Injury Research. New York City, NY.

Burtner, S., Wright, D., & Ross, M. (2023, November 03). *Evaluating impact: Applications and challenges of quasi-experimental research designs for assessing the effect of street outreach on reducing gun violence*. National Research Conference for the Prevention of Firearm-Related Harms. Chicago, Illinois.

Burtner, S., Cho, S., Noi, E., & Xu, J. (2021, December 13). *Spatial optimization for planning and decision-making*. Spatial Data Science Symposium. Virtual.

Burtner, S., & Murray, A. (2020, November 9). *COVID-19 and minimizing spatial interactions in micro-spatial environments*. Annual North American Meetings of the Regional Science Association International. Virtual.

Burtner, S., & Moehl, J. (2017, April 5). *Generating building exterior wall material estimates using Google Street View imagery*. American Association of Geographers Annual Meeting. Boston, Massachusetts.

Honors & Awards

- Excellence in Teaching Award, UCSB, Graduate Student Association 2022
- David S. Simonett Memorial Award, UCSB, Department of Geography 2022
- Jack and Laura Dangermond Fellowship, UCSB, Department of Geography 2022
- Excellence in Service Award, UCSB, Department of Geography 2021
- Graduate Student Minigrant, Multidisciplinary Research on COVID-19 and its Impacts, UCSB 2020
- Best Use of Google Cloud Platform, Womxn-Hacks 2019
- Finalist, SAP and Esri Spatial Hackathon, Esri Developer Summit 2018
- Network Science and Big Data Fellowship, National Science Foundation 2017
- Robert and Susan Heidenberg Scholarship, University of Pennsylvania 2014
- Frank H. and Eva B. Buck Foundation Scholarship 2010
- National Merit Scholarship 2010
- UC Berkeley's Regents' and Chancellor's Scholarship 2010
- Elk Grove Regional Foundation Scholarship 2010

Service

Department/University

- Mentor: Graduate Scholars Program, UCSB 2021 - 2022
- Member: Equity, Diversity, and Inclusion Working Group, UCSB, Department of Geography 2021 - 2022
- Member: Placemaking Initiative, UCSB 2020 - 2021
- Graduate Student Leader: Women in Geographical Sciences, UCSB, Department of Geography 2019 - 2021
- Graduate Student Representative: Urban Inequality and Health Disparities Search Committee, UCSB 2018 - 2019

Community

- Presenter: Mikva Challenge's Safety and Justice Council 2024
- Mentor: Buck Scholars Association 2020 - 2022
- Mentor: Science Research Program, Laguna Blanca School 2019 - 2020

Journal Peer Review

- Injury Prevention
- Transactions in GIS
- Applied Spatial Analysis and Policy

Skills

- **Software:** R, Python, ArcGIS, Leaflet, JavaScript, HTML, CSS, LaTeX
- **Data management:** SQL, PostgreSQL, BigQuery, Git/GitHub
- **Research project management:** Grant writing, The Management Center training, media training, Asana
- **Soft skills:** Egalitarian leadership style, empathetic listener, process-oriented