

KATE VAVRA-MUSSER

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EDUCATION

PhD, Population, Health, and Place

University of Southern California | 2023

MS, Global Health and Environment

University of California, Berkeley, School of Public Health | 2015

BS, Biology (Ecology and Evolution)

University of Chicago | 2009

PROFESSIONAL EXPERIENCE

Postdoctoral Researcher & Project Consultant

University of Minnesota, ISRD | NSF I-GUIDE | 2024 – Present

- Developed R Spatial Notebooks project: comprehensive tutorials for spatial workflows in R
- Created curriculum modules for NSF I-GUIDE Convergence Curriculum for Geospatial Data Science
- Collaborated with multi-institution teams on climate vulnerability and population impact analysis
- Co-organized training workshops for 100+ researchers nationally

Research Assistant, Environmental Health and Aging

University of Southern California, School of Gerontology | 2020 – 2024

- Contributed novel data products to the Contextual Data Resource (CDR) linking environmental factors to health outcomes
- Co-led research on combined effects of population aging and climate change on heat-related vulnerability
- Integrated large-scale geospatial, meteorological, demographic, and health datasets

Doctoral Researcher

University of Southern California | 2017 – 2023

Dissertation: Environmental Justice and Lead Exposure: Examining Sociodemographic Disparities in Residential Lead Contamination and Cognitive Health Outcomes

- Investigated racial and socioeconomic inequities in residential lead exposure across U.S. urban neighborhoods
- Demonstrated that proximity to lead-emitting facilities was associated with earlier onset and increased rate of cognitive decline

Data Science Fellow

U.S. Census Bureau, Demographic Directorate | Civic Digital Fellowship | 2021

- Developed Physician Linkage Project: data integration framework linking physician demographics and practice locations
- Integrated restricted federal microdata linking over 1 million U.S. physicians to healthcare facilities
- Analyzed geographic disparities in physician-to-population ratios and healthcare facility consolidation

Research Assistant, Environmental Justice

University of Southern California, Department of Population and Public Health Sciences | 2019

- Investigated environmental health impacts of industrial practices on vulnerable rural communities
- Examined gas flaring and adverse birth outcomes, analyzing data from 44,000+ births
- Research published in *Environmental Health Perspectives* and featured in *The New York Times*

TEACHING & MENTORING

Lecturer, GIS for Public Health

California State University, Long Beach | 2022

Teaching Assistant & Laboratory Instructor

University of Southern California | 2018 – 2020

Research Mentorship

Mentored 10+ undergraduate and graduate students in spatial analysis and research methods

SELECTED PUBLICATIONS

Cushing LJ, **Vavra-Musser K**, Chau K, Franklin M, Johnston JE. "Flaring from Unconventional Oil and Gas Development and Birth Outcomes in the Eagle Ford Shale in South Texas." *Environmental Health Perspectives* 128(7):077003, 2020.

Cushing L, **Vavra-Musser K**, Chau K, Franklin M, Johnston J. "Effects of Exposure to Flaring from Unconventional Oil Wells on Adverse Birth Outcomes." *Environmental Epidemiology* 3:86, 2019.

Brooks JC, Shavelle RM, **Vavra-Musser KN**. "Life Expectancy in Pancreatic Neuroendocrine Cancer." *Clinics and Research in Hepatology and Gastroenterology* 43(1):88-97, 2019.

Shavelle R, **Vavra-Musser K**, Lee J, Brooks J. "Life Expectancy in Pleural and Peritoneal Mesothelioma." *Lung Cancer International* 2017:2782590, 2017.

SERVICE & LEADERSHIP

Communications Coordinator & Chair of Communications

University Consortium for Geographic Information Science (UCGIS) | 2019 – 2024

Director of Campus Affairs (elected)

University of Southern California Graduate Student Government | 2021 – 2022

Senator (elected)

USC Graduate Student Government | 2020 – 2021 | Senator of the Year Award

PROFESSIONAL DEVELOPMENT

- UCGIS CyberGIS Summer School Fellow, University of Illinois (2019)
- Data Science for All (DS4A) Program Fellow, Correlation One (2020-2021)
- Civic Digital Fellowship, Coding It Forward (2021)