

## Connor Donegan, PhD

Curriculum Vitae

[connordonegan.github.io](https://connordonegan.github.io)

### Education

PhD, Geospatial Information Sciences (2019–2023)

The University of Texas at Dallas

Advisor: Dr. Yongwan Chun

Dissertation: Plausible Reasoning and Heuristic Methodology in Human Geography: An Investigation of Colorectal Cancer Incidence and Inequalities in Urban Texas, 1999–2019

MA, Geography (2011–2013)

University of British Columbia

Advisors: Drs. Trevor Barnes and Jamie Peck

BA, Geography (2006–2010)

University of Minnesota

### Appointments

Postdoctoral Scholar (2023–)

O'Donnell School of Public Health &

Simmons Comprehensive Cancer Center

University of Texas Southwestern Medical Center

Advisors: Drs. Henry Luan & Sandi Pruitt

[Connor.Donegan@UTSouthwestern.edu](mailto:Connor.Donegan@UTSouthwestern.edu)

### Book chapters

- [1] Connor Donegan and Yongwan Chun. “Spatial Uncertainty and Probability”. In: *The Oxford Handbook of the Spatial Humanities*. Ed. by John Corrigan and Andrew Gardner. Oxford, UK: Oxford University Press, 2024, Forthcoming.

### Articles

- [1] Connor Donegan. “Investigating Cancer Inequalities in Urbanizing Texas with Plausible Reasoning”. In: *Annals of the American Association of Geographers* (2024), pp. 1–22. DOI: [10.1080/24694452.2024.2425807](https://doi.org/10.1080/24694452.2024.2425807).
- [2] Connor Donegan. “Plausible Reasoning and Spatial-Statistical Theory: A Critique of Recent Writings on ‘Spatial Confounding’”. In: *Geographical Analysis* (Early View) (2024). DOI: [10.1111/gean.12408](https://doi.org/10.1111/gean.12408).
- [3] Connor Donegan. “geostan: An R package for Bayesian spatial analysis”. In: *The Journal of Open Source Software* 7.79 (2022), p. 4716. DOI: [10.21105/joss.04716](https://doi.org/10.21105/joss.04716).
- [4] Connor Donegan, Amy E. Hughes, and Simon J. Craddock Lee. “Colorectal Cancer Incidence, Inequalities, and Prevention Priorities in Urban Texas: Surveillance Study With the ‘surveil’ Software Package”. In: *JMIR Public Health & Surveillance* 8.8 (2022), e34589. DOI: [10.2196/34589](https://doi.org/10.2196/34589).

- [5] Connor Donegan, Yongwan Chun, and Daniel A. Griffith. “Modeling community health with areal data: Bayesian inference with survey standard errors and spatial structure”. In: *Int. J. Env. Res. Public Health* 18.13 (2021), p. 6856. DOI: [10.3390/ijerph18136856](https://doi.org/10.3390/ijerph18136856).
- [6] Connor Donegan, Yongwan Chun, and Amy E. Hughes. “Bayesian estimation of spatial filters with Moran’s eigenvectors and hierarchical shrinkage priors”. In: *Spatial Statistics* 38 (2020), p. 100450. DOI: <https://doi.org/10.1016/j.spasta.2020.100450>.
- [7] Connor Donegan. “The making of Florida’s ‘criminal class:’ race, modernity and the convict leasing program, 1877-1919”. In: *Florida Historical Quarterly* 97.4 (2019), 408-434. DOI (pre-print with additional materials): <https://doi.org/10.31219/osf.io/2wj7s>.
- [8] Tammy Leonard, Amy E. Hughes, **Connor Donegan**, Alejandro Santillan, and Sandi L. Pruitt. “Overlapping geographic clusters of food security and health: Where do social determinants and health outcomes converge in the US?” In: *SSM-Population Health* 5 (2018), pp. 160–170. DOI: <https://doi.org/10.1016/j.ssmph.2018.06.006>.

## Software

- [1] Connor Donegan. *geostan: Bayesian spatial analysis*. The Comprehensive R Archive Network: <https://cran.r-project.org/package=geostan>; <https://connordonegan.github.io/geostan>.  
The geostan R package supports a complete spatial analysis workflow with Bayesian models for areal or network data including exploratory spatial data analysis tools, models for missing and censored outcomes, hierarchical models for count data, and spatial measurement error models designed for working with American Community Survey (ACS) estimates. 2021.
- [2] Connor Donegan. *surveil: Public health surveillance*. The Comprehensive R Archive Network: <https://cran.r-project.org/package=surveil>; <https://connordonegan.github.io/surveil>.  
The surveil R package provides time series models for routine public health surveillance tasks: model time trends in mortality or disease incidence rates to make inferences about levels of risk, cumulative and period percent change, age-standardized rates, and health inequalities. 2021.

## Pre-prints

- [1] Connor Donegan. “Building spatial conditional autoregressive models in the Stan programming language”. OSF Preprint: <https://osf.io/3ey65/>. 2022.

## Current research

- [1] “Bayesian spatial econometrics in an open-source environment”. Research in progress.
- [2] “Emerging geographies of colorectal cancer in Texas: is rising incidence compounding long-term prevention disparities?” Writing in progress.
- [3] “Farewell to Feyerabend: Probability and non-demonstrative logic in realist theories of science”. Working paper (available upon request).

## Conferences

- [1] Connor Donegan. *Case study approaches to spatial data analysis: Strategies for non-replicable health research*. International Medical Geography Symposium (IMGS 2024), Atlanta, GA, July 16. 2024.
- [2] Connor Donegan. *A free and user-friendly GIS application for studying geographic dimensions of the cancer burden: The QGIS Extension to **geostan** (QEg)*. Catchment Area Data Conference: Beyond Definition, Richmond, VA, December 8. 2023.
- [3] Connor Donegan. *Stress-testing epidemiological theory with plausible reasoning: An investigation of colorectal cancer inequalities in Texas, 1999–2019*. Annual Meeting of the American Association of Geographers, Denver, March 24. 2023.
- [4] Connor Donegan. *The **geostan** R package for Bayesian spatial analysis: Strategies for modeling health inequalities*. Annual Meeting of the American Association of Geographers, Virtual. Feb. 2022.
- [5] Connor Donegan, Amy E. Hughes, and Simon J. C. Lee. *Time Series Models for Public Health Surveillance: Colorectal Cancer Incidence, Inequalities, and Prevention Priorities in Urban Texas*. Poster presentation to the Interdisciplinary Association of Population Health Science (IAPHS), Minneapolis. Sept. 2022.
- [6] Connor Donegan, Yongwan Chun, and Danial A. Griffith. *Modeling community health with areal data: Bayesian inference with survey standard errors and spatial structure*. Annual Meeting of the American Association of Geographers, Virtual, April 8. 2021.
- [7] Connor Donegan, Amy E. Hughes, Sandi L. Pruitt, and Simon C. Lee. *Deploying mobile mammography units for more equitable access to care: Can spatial optimization improve deployment strategies?* 67th Annual North American Meetings of the Regional Science Association International, Virtual, November 13. 2020.
- [8] Connor Donegan. *A Bayesian approach to eigenvector spatial filtering with the regularized horseshoe prior*. Special Session on Geocomputation at the 66th Annual North American Meetings of the Regional Science Association International, Pittsburgh, PA, November 16. 2019.
- [9] Connor Donegan. *A sparse Bayesian approach to eigenvector spatial filtering*. Southwest Division of the American Association of Geographers Annual Meeting, Fort Worth, TX, October 11. 2019.
- [10] Connor Donegan. *Convict leasing and the geography of prison sentencing in Jim Crow Florida*. New Scholars Award panel at the Annual Meeting of the Labor Research and Action Network, Washington, DC, June 9. 2017.
- [11] Tammy Leonard, Amy E. Hughes, **Connor Donegan**, Alejandro Santillan, and Pruitt Sandi L. *Food security and poor health: Predicting spatial cluster overlaps*. 64th Annual North American Meetings of the Regional Science Association International, Vancouver, BC, November 15. 2017.
- [12] Connor Donegan. *Peonage, race and law in Florida's convict leasing program, 1877-1919*. Annual Meeting of the American Association of Geographers, Los Angeles, CA, April 1. 2013.

## Invited Talks

- [1] *The geostan R package for Bayesian spatial analysis*. Invited talk. StanConnect 2022: Stan Through Space and Time (Stan modeling language user conference, virtual/international), Oct. 2022.

- [2] *Public health surveillance with the **surveil** R package*. Invited talk. Population and Data Sciences, UT Southwestern Medical Center, Dec. 2021.

### Peer Review Service

2024: Spatial Statistics; Cancer Epidemiology, Biomarkers & Prevention; Environmental and Ecological Statistics; Communications Medicine  
2023: Scientific Reports; BMJ Public Health; Journal of Open Source Software  
2022: Transactions in GIS  
2021: Journal of Urban Health; International Journal of Geographical Information Science  
2020: Health & Place

### Teaching

#### UTD

Graduate Instructor

- Geog/Geos/Gisc 3304: Principles of Geospatial Information Sciences 2023

#### UBC

Graduate Teaching Assistant

- Geog 121: Geography, Environment and Globalization 2012

- Geog 122: Geography, Modernity and Globalization 2013

### Previous Positions

Graduate Research Assistant (2019–2022)

O'Donnell, School of Public Health

(Formerly the Department of Population and Data Sciences)

University of Texas Southwestern Medical Center

Concentration: Cancer prevention and control

Advisors: Amy E. Hughes and Simon Craddock Lee

Support Statistician 2019

College Transition Collaborative

Stanford University/University of Waterloo (Social Psychology)

Data Scientist 2017-2018

Quest Analytics

Appleton, WI & San Francisco, CA

Spatial Statistician (Freelance) 2017-2018

Client: Dr. Tammy Leonard

Chair of Economics, Community Assistance Research (CARE)

University of Dallas

Graduate Teaching Assistant 2012-2013

Department of Geography

University of British Columbia

Graduate Research Assistant 2011

Dr. Jamie Peck

Department of Geography

University of British Columbia

**Awards**

Outstanding Graduate Student (PhD level): Outstanding academic achievement, service, and perseverance. School of Economic, Political and Policy Sciences, UT Dallas (\$500)	2023
Pioneer Graduate Fellowship. GIS Program, UT Dallas. (Annual competition won 4 times: $4 \times \$2,500 = \$10,000$ )	2019–2023
Poster Award (“Time Series Models for Public Health Surveillance” with A. Hughes and S. Lee). Interdisciplinary Association for Population Health Science (IAPHS).	2022
PhD Research Small Award. Office of Graduate Education, UT Dallas (\$1,000)	2021
Esri Development Center Student of the Year Award—UT Dallas. Esri (\$500)	2020
Student Travel Award. Spatial Analysis and Modeling Specialty Group, AAG (\$200)	2020
New Scholars Research Grant. Labor Research and Action Network (\$1,746.50)	2017
Faculty of Arts Graduate Award. University of British Columbia (\$8,000)	2011
Outstanding Graduating Senior. Geography, University of Minnesota (\$100)	2010
Undergraduate Internship Award (with <i>Poor People’s Economic Human Rights Campaign</i> ). College of Liberal Arts, UMN (\$1,500)	2008

**Professional Associations**

American Association of Geographers (AAG)  
International Association for Critical Realism (IACR)  
American Statistical Association (ASA)

**Service**

Vice President, Graduate Student Assembly, UT Dallas Governing Body.	2021–2022
Graduate Student Representative, Dean’s Council—School of Economic, Political, and Policy Sciences. UT Dallas.	2022
Representative—School of Economic Political and Policy Sciences, Graduate Student Assembly, UT Dallas.	2020–2021
Executive Committee Member & Shop Steward. Canadian Union of Public Employees Local 2278.	2012–2013
Equity and Diversity Committee Member, Dept. of Geography, University of British Columbia.	2012
Human rights observer, Brigadas Civiles de Observación, Centro de Derechos Humanos Fray Bartolomé de Las Casas, Chiapas, Mexico (3 weeks).	2009