

Connor Donegan, PhD

Curriculum Vitae

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 Researcher (2023–)

O'Donnell School of Public Health

University of Texas Southwestern Medical Center

Advisor: Dr. Sandi Pruitt

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, accepted manuscript).
- [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 projects

- [1] “Bayesian spatial econometrics in an open-source environment: Model interpretation, expansion, comparison, and critique”.
- [2] “Probability and non-demonstrative logic in realist theories of science”.
- [3] “Texas geographies of colorectal cancer: incidence, stage at diagnosis, survival, and the theory of ‘fundamental causes’”.

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-friend 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.

Ad-Hoc Peer Review

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

Teaching Assistant

- Geog 121: Geography, Environment and Globalization 2012

- Geog 122: Geography, Modernity and Globalization 2013

Previous Positions

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 Analyst 2017-2018

Quest Analytics

Appleton, WI & San Francisco, CA

Research Assistant 2017-2018

Dr. Tammy Leonard

Community Assistance Research (CARE)

University of Dallas

and:

Dr. Amy Hughes

Department of Clinical Sciences

University of Texas Southwestern Medical Center

Teaching Assistant 2012-2013

Department of Geography

University of British Columbia

Research Assistant 2011

Dr. Jamie Peck

Department of Geography

University of British Columbia

Awards

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| 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

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| American Association of Geographers (AAG) International Association for Critical Realism (IACR) | |
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Service

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| 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 |