



CONNOR Y.H. WU

Assistant Professor

PROFILE

Enthusiastic Geographer with 10+ years of experience. Taught 10+ on-campus and online courses (in 3 credits) in Geography and GIS and published 17+ peer-reviewed papers in Health and Transportation Geography

CONTACT

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AREAS OF EXPERTISE

- Personal heat exposure measurement in heat waves
- Spatial analysis for estimating effects of climate change on public health
- Quantitative methods for examining the association between climate change on plague outbreaks
- Quantitative methods on transportation safety and behavior geography

EDUCATION

PhD in Geography

The University of Hong Kong, Hong Kong

2010-2014

- Dissertation – “Motorcycle safety in developing countries: A case study in Maoming, South China.” This dissertation developed a holistic view of motorcycle safety, which identified risk factors in driving behavior and evaluated transportation laws and their law enforcement. Quantitative methods to analyze questionnaire surveys and observational data were used.
- This research was awarded a 4-year Postgraduate Studentship by Research Grant Council, HKSAR (2010-2013)

MSc in Geomatics (GIS)

Hong Kong Polytechnic University, Hong Kong

2007-2009

- Master thesis - “Quality checking for GSI data.” This thesis developed an efficient algorithm to check the spatial relationship among different elements on the map and applied it in ArcEngine and C# in the platform of GRASS.

BEng in Computer Science

Beijing Normal University, China

2003-2007

- Undergraduate thesis-“Researching on the geodatabase management system of Yangjiang nuclear electrical power plant in Guangdong Province, South China.” This thesis elaborated on how to create and maintain an underground pipeline geodatabase by using ArcEngine and C# in the platforms of ArcGIS and Visual Studio.
- The Distinguished Undergraduate Thesis Award

WORK EXPERIENCE

Troy University, Troy AL Assistant Professor (Tenure-track)

Aug 2018 - Present

- Teaching 12-16 credits on Geography and GIS each semester (see the courses in the table of teaching experience)
- Conducting research related to heat waves and climate change using GIS and remote sensing skills (including the estimates of heat exposure and the effects of heat waves on traffic crashes)

- Serving as a voting member of the Troy University Undergraduate Academic Council (2021 to current)

Center of Geographic Analysis, Harvard University, Cambridge, MA Research Associate (Remote)

Oct 2022- Present

- Serving as the Director of the *Spatiotemporal Innovation Lab for Big Data*, a virtual research consortium affiliated with the Future Data Lab and supported by CGA's Spatial Data Lab project (Lab website is <https://labsti.wixsite.com/bigdata>)
- Conducting sentiment analysis on Geo-tweet datasets
- Organizing and teaching spatial analysis and GIS skills in CGA's workshops and webinars

Virginia Tech, Blacksburg VA Postdoctoral Fellow

Feb 2016- Jun 2018

- Developed GIS models (using C# and Python) and used MODIS satellite data to examine the association between heat waves and adverse health outcomes (e.g., preterm birth and non-accidental death). This study is under the NIH-funded project "Environmental exposures across urban and rural communities in the Deep South" with the PI of Dr. Julia M. Gohlke.
- Applied qualitative methods (e.g., the focus group) to investigate environmental health priorities in rural and urban communities in AL, USA. This study is under the NIH-funded project "Environmental exposures across urban and rural communities in the Deep South" with the PI of Dr. Julia M. Gohlke.
- Built spatial analysis models to assess the effects of mining disturbances on adverse health outcomes in VA Appalachia
- Developed GIS approaches to assess the association between radon test values and rock types in southwest Virginia

The University of Hong Kong, Hong Kong Research Associate

Jan 2014- Jan 2016

- Developed GIS models and statistical models on the platforms of ArcGIS and SAS to examine the association between climate change and plague outbreaks in pre-industrial Europe
- Built GSI and statistical models on ArcGIS, SPSS, and R to examine the relationship between volcanic eruptions worldwide and plague outbreaks in Europe
- Developed GIS and statistical models by using panel data to evaluate the contribution of climate change on cannibalism in China
- Applied GIS and wavelet analysis in Matlab to examine the association between plague outbreaks and environmental factors in Northwest China

Apr 2009- Dec2009

- Collected and analyzed traffic crash data from the Department of Transportation
- Launched an investigation on the effects of the *Probationary Driving License Scheme on Motorcycle Safety in Hong Kong*

The University of Hong Kong, Hong Kong Teaching Assistant

Jan 2010- Dec 2013

- Designed and conducted the undergraduate course on transportation geography- GEO 2018
- Provided technical support to more than 30 undergraduate students to design and build websites
- Assisted in organizing academic conferences (e.g., the 17th and 18th International Conference of Hong Kong Society for Transportation Studies) and the Transportography Workshop
- Created and undertook observational surveys on roads for more than 600,000 road users
- Designed a questionnaire survey with an additional observational portion and managed a 48-member team to conduct the survey among more than 3,000 motorcyclists
- Developed a computer program in the Visual Basic language that is used in more than ten elderly centers in Hong Kong to help local academicians investigate how the elderly cross roads

PEER-REVIEWED JOURNAL PAPERS

19. Xinming Xia, Yi Zhang, Wenting Jiang, and **Connor Y.H. Wu*** (Under the First Review). Cautiously Optimistic: The Impact of Stay-at-home Orders on the Twitter Sentiment Geography Index in the United States. *Journal of Medical Internet Research*.
18. Wenting Jiang, **Connor Y.H. Wu**, and Ashish Gupta (Under the First Review). Managing COVID-19 and Cancer Mortality Risks: The County-Level Spatial Analysis in the United States. *Public Administration Review*.
17. Wang, S., **Connor Y.H. Wu**, Austin E., Davis M., & Gohlke, J. M. (2022). Healthcare Visits and Summertime Heat Index in Virginia: An Analysis of Syndromic Surveillance Data Collected From 2015–2020. *Journal of Environmental Health*.

16. Yan, Wei, S.C. Wong, Becky P.Y. Loo, **Connor Y.H. Wu**, Helai Huang, Xin Pei, & Fanyu Meng (2022). An assessment of the effect of green signal countdown timers on drivers' behavior and on road safety at intersections, based on driving simulator experiments and naturalistic observation studies. *Journal of Safety Research* (IF=3.487) [This journal was at the "A" level on the 2022 Australian Business Deans Council (ABDC) Journal Quality List]
15. **Wu, Connor Y. H.*** (2021). Heat waves and road traffic collisions in Alabama, United States. *Annals of the American Association of Geographers*. doi:10.1080/24694452.2021.1960145 (IF=4.683) (This journal ranked #4 in the Category of Geography & Cartography according to Google Scholar Metrics in 2021)
14. Wang, S., **Connor Y.H. Wu**, Richardson, M. B., Zaitchik, B. F., & Gohlke, J. M. (2021). Characterization of heat index experienced by individuals residing in urban and rural settings. *Journal of Exposure Science & Environmental Epidemiology*, 31 (4), 641-653. doi:10.1038/s41370-021-00303-x (IF=3.531) (This journal ranked #15 in the Category of Environmental & Occupational Medicine according to Google Scholar Metrics in 2021)
13. Wang, S., Richardson, M. B., **Connor Y.H. Wu**, Zaitchik, B. F., & Gohlke, J. M. (2020). Effect of an Additional 30 Minutes Spent Outdoors during Summer on Daily Steps and Individually Experienced Heat Index. *International Journal of Environmental Research and Public Health*, 17(20), 7558 (IF=2.849) (This journal ranked #1 in the Category of Public Health according to Google Scholar Metrics in 2021)
12. **Wu, Connor Y. H.***, Lee, H. F., & Liu, H. (2020). Effect of temperature and precipitation change on crime in the metropolitan area in Virginia, USA. *Asian Geographer*, 37(1), 17-31. doi:10.1080/10225706.2019.1678046 (IF=1.286)
11. Richardson, M. B., Chmielewski, C., **Connor Y.H. Wu**, Evans, M. B., McClure, L. A., Hosig, K. W., & Gohlke, J. M. (2019). The effect of time spent outdoors during summer on daily blood glucose and steps in women with type 2 diabetes. *Journal of Behavioral Medicine*, 43(5), 783-790. doi:10.1007/s10865-019-00113-5 (IF=2.868)
10. Wang, S., Richardson, M. B., **Connor Y.H. Wu**, Cholewa, C. D., Lungu, C. T., Zaitchik, B. F., & Gohlke, J. M. (2019). Estimating Occupational Heat Exposure From Personal Sampling of Public Works Employees in Birmingham, Alabama. *Journal of occupational and environmental medicine*, 61(6), 518-524. doi:10.1097/JOM.0000000000001604 (IF=1.355) (This journal ranked #13 in the Category of Environmental & Occupational Medicine according to Google Scholar Metrics in 2019)
9. **Wu, Connor Y. H.**, Bennett, M., Fox, K., Hubbard, A., Parkhurst, L., Sherrod, R., . . . Marmagas, S. W. (2019). Geological data and outreach methods for designing targeted home radon testing programs. *Environmental Earth Sciences*, 78(4), 120. doi:10.1007/s12665-019-8123-5 (IF=2.180)
8. **Wu, Connor Y. H.**, Zaitchik, B. F., Swarup, S., & Gohlke, J. M. (2019). Influence of the Spatial Resolution of the Exposure Estimate in Determining the Association between Heat Waves and Adverse Health Outcomes. *Annals of the American Association of Geographers*, 109(3), 875-886. doi:10.1080/24694452.2018.1511411 (IF=4.082) (This journal ranked #4 in the Category of Geography & Cartography according to Google Scholar Metrics in 2019)
7. **Wu, Connor Y. H.**, Zaitchik, B. F., & Gohlke, J. M. (2018). Heat waves and fatal traffic crashes in the continental United States. *Accident Analysis & Prevention*, 119, 195-201. doi:10.1016/j.aap.2018.07.025 (IF=3.593) [This journal was at the "A*" level on the 2019 Australian Business Deans Council (ABDC) Journal Quality List]
6. Yue, R. P. H., Lee, H. F., & **Connor Y.H. Wu**. (2017). Trade routes and plague transmission in pre-industrial Europe. *Scientific Reports*, 7(1), 12973. doi:10.1038/s41598-017-13481-2 (IF=5.228) (This journal ranked #5 in the Category of Life Sciences & Earth Sciences according to Google Scholar Metrics in 2017)
5. Jian, Y., **Connor Y.H. Wu**, & Gohlke, J. M. (2017). Effect Modification by Environmental Quality on the Association between Heatwaves and Mortality in Alabama, United States. *International Journal of Environmental Research and Public Health*, 14(10), 1143. doi:10.3390/ijerph14101143 (IF=2.145) (This journal ranked #1 in the Category of Public Health according to Google Scholar Metrics in 2021)
4. **Wu, Connor Y. H.**, Evans, M. B., Wolff, P. E., & Gohlke, J. M. (2017). Environmental health priorities of residents and environmental health professionals: implications for improving environmental health services in rural versus urban communities. *Journal of environmental health*, 80(5), 28.
3. **Wu, Connor Y. H.**, & Loo, B. P. Y. (2017). Changes in novice motorcyclist safety in Hong Kong after the probationary driving license scheme. *Transportmetrica A: Transport Science*, 13(5), 435-448. doi:10.1080/23249935.2017.1289277 (IF=1.477) [This journal was at the "B" level on the 2016 Australian Business Deans Council (ABDC) Journal Quality List]
2. Yue, R. P. H., Lee, H. F., & **Connor Y.H. Wu**. (2016). Navigable rivers facilitated the spread and recurrence of plague in pre-industrial Europe. *Scientific Reports*, 6(1), 34867. doi:10.1038/srep34867 (IF=4.259) (This journal ranked #5 in the Category of Life Sciences & Earth Sciences according to Google Scholar Metrics in 2016)
1. **Wu, Connor Y. H.**, & Loo, B. P. Y. (2016). Motorcycle safety among motorcycle taxi drivers and nonoccupational motorcyclists in developing countries: A case study of Maoming, South China. *Traffic Injury Prevention*, 17(2), 170-175. doi:10.1080/15389588.2015.1048336 (IF=1.683)

* is used to denote the Corresponding Author

GRANTS

10. 2023 Paper Presentation Grant at Troy University (\$370): This grant aimed to support the presentation – "Twitter sentiments on the stay-at-home orders in the United States" in the 2023 AAG Annual Meeting, Virtual, March 2023.

9. 2022 Grant Writing Fund at Troy University (\$3,000, October 2022 - September 2023): This grant aimed to support the proposal - "Identifying vulnerable autism communities impacted by COVID-19".
8. 2022 Paper Presentation Grant at Troy University (\$315): This grant aimed to support the presentation- "Effects of heat waves on traffic collisions: A case study in Alabama, United States" in the 2022 AAG Annual Meeting, Virtual, February 2022.
7. 2021 Grant Writing Fund at Troy University (\$3,000, October 2021 - September 2022): This grant aimed to support the proposal - "The inter-relationship between the cancer mortality rates and the COVID-19 death rates: a study from the spatial perspective in the United States"
6. 2021 Paper Presentation Grant at Troy University (\$300): This grant aimed to support the presentation- "Heat exposure of farmworkers in the hand-harvest fields in Alabama, the US" in 2021 AAG Annual Meeting, Virtual, April 2021.
5. 2020 Research Grant at Troy University (\$1,900, October 2020 - September 2021): This study aims to assess the Wet Bulb Globe Temperature (WBGT) in different hand-harvested crop fields (i.e., sweet corn and watermelons) in Alabama.
4. 2020 Paper Presentation Grant at Troy University (\$1,00): This grant aimed to support the presentation- "Temperature assessment of hand-harvested crop fields in Alabama, the US" in the 2020 AAG Annual Meeting, Denver, CO, April 2020.
3. 2019 Research Grant at Troy University (\$2,500, October 2019 - September 2020): This study aims to assess the heat exposure of farmworkers in different hand-harvested crop fields (i.e., sweet potatoes, tomatoes, sweet corn, and watermelons) in Alabama
2. 2019 Paper Presentation Grant at Troy University (\$750): This grant aimed to support the presentation- "Heat Waves and Fatal Traffic Crashes in the Continental United States" in the 2019 AAG Annual Meeting, Washington D.C., April 2019.
1. 2018 Research Grant of Troy University (\$1,600, October 2018 - September 2019): This research focuses on the association between heat waves and traffic crashes in the continental United States

CONFERENCE PAPERS

17. **Connor Y.H. Wu**, Xinming Xia, Wenting Jiang, Yi Zhang, Lingbo Liu, and Kejie Zhou (2023). Twitter sentiments on the stay-at-home orders in the United States. Paper presented at the 2023 Association of American Geographers (AAG) Annual Meeting, Virtual.
16. **Connor Y.H. Wu**, and Abby L. Reed (2022). *Effects of heat waves on traffic collisions: A case study in Alabama, United States*. Paper presented at the 2022 Association of American Geographers (AAG) Annual Meeting, Virtual.
15. Wenting Jiang, **Connor Y.H. Wu**, and Ashish Gupta. (2022). Geographical Clustering of Cancer Mortality Rates and Their Relationship with the Covid-19 Pandemic: County-level Analysis in the United States. Presented at 2022 INFORMS Annual Meeting, Indianapolis, IN.
14. Long Ma, and **Connor Y.H. Wu** (2022). *The Impact of COVID-19 on Crime: A Study from the Spatial-temporal Perspective in the Montgomery County, AL*. Paper presented at the International Conference on Agents and Artificial Intelligence 2022: In Proceedings of the 14th International Conference on Agents and Artificial Intelligence - Volume 3: ICAART, ISBN 978-989-758-547-0, pages 532-539. DOI: 10.5220/0010856700003116.
13. **Connor Y.H. Wu** (2021). *Heat exposure of farmworkers in the hand-harvest fields in Alabama, the US*. Paper presented at the 2021 Association of American Geographers (AAG) Annual Meeting, Virtual.
12. **Connor Y.H. Wu** (2020). *Temperature assessment of hand-harvesting crop fields in Alabama, the US*. Paper presented at the 2020 Association of American Geographers (AAG) Annual Meeting in Denver, CO.
11. **Connor Y.H. Wu**, Benjamin Zaitchik, and Julia M. Gohlke (2019). *Heat waves and fatal traffic crashes in the continental United States*. Paper presented at the 2019 Association of American Geographers (AAG) Annual Meeting in Washington, D.C.
10. **Connor Y.H. Wu**, Anna A. Scott, Molly B. Richardson, Pranavi Ghugare, Samarth Swarup, Benjamin F. Zaitchik, Julia M. Gohlke (2018). *Improving heat stress-related health outcomes through adaptation and mitigation-advances in modeling heat stress hazards, exposure, and vulnerability*. Paper presented at 2018 American Geophysical Union (AGU) Fall Meeting in Washington, D.C.
9. Suwei Wang, Molly B. Richardson, **Connor Y.H. Wu**, Carly D. Cholewa, Claudiu T. Lungu, Benjamin Zaitchik, Julia M. Gohlke (2018). *Estimating Occupational Heat Exposure from Personal Sampling of Public Works Employees in Birmingham, Alabama*. Paper presented at 2018 American Geophysical Union (AGU) in Washington, D.C.
8. **Connor Y.H. Wu**, Benjamin Zaitchik, Samarth Swarup, and Julia M. Gohlke (2018). *Preterm birth and heat waves: Influence of the spatial resolution of the exposure estimate in determining the association*. Paper presented at Teratology Society 58th Annual Meeting.
7. **Connor Y.H. Wu**, Benjamin Zaitchik, Samarth Swarup, and Julia M. Gohlke (2018). *Influence of the spatial resolution of the exposure estimate in determining the association between heat waves and adverse health outcomes*. Paper presented at the 2018 Association of American Geographers (AAG) Annual Meeting

6. **Connor Y.H. Wu**, Julia M. Gohlke, Benjamin Zaitchik, Samarth Swarup, and Sung Kim (2017). *Influence of spatial resolution for exposure estimation in determining the association between heatwaves and adverse health outcomes*. Paper presented at the American Public Health Association (APHA) 2017 annual meeting
5. **Connor Y.H. Wu** (2017). *The association between heat waves and preterm birth using address-level versus ZIP code-level data*. Paper presented at the 2017 Association of American Geographers (AAG) Annual Meeting
4. **Connor Y.H. Wu** (2016). *Effect of Temperature and Precipitation Change on Historical Plague Outbreaks in Europe*. Paper presented at the Urban and Regional Information Systems Association (URISA)'s 2016 GIS and Health Symposium- Mapping the Way to Healthy Communities
3. **Connor Y.H. Wu**, and Becky. P.Y. Loo (2013). *Effects of helmet law enforcement on helmet use: A case study in Maoming, China*. Paper presented at the Transportation Surveys: Proceedings of the 18th International Conference of Hong Kong Society for Transportation Studies, Hong Kong
2. Becky. P.Y. Loo, and **Connor Y.H. Wu** (2013). *Effects of vehicular countdown signals on intersection safety: A case study in Maoming City, China*. Paper presented at the 2013 Association of American Geographers (AAG) Annual Meeting
1. Becky. P.Y. Loo, and **Connor Y.H. Wu** (2012). *Effects of the probationary driving licenses scheme on motorcycle safety in Hong Kong*. Paper presented at the 2012 Association of American Geographers (AAG) Annual meetings

TEACHING EXPERIENCE

Courses taught at Troy University (2018 - 2023)

Undergraduate (3 credits)

- GEO 2210 World Regional Geography (&online course) 14 times
- GEO 2299 Basic GIS 2 times
- GEO 3300 Principles of Physical Geography 4 times
- GEO 3301 Principles of Cultural Geography 2 times
- GEO 3306 Geography of Asia 2021 1 time
- GEO 3307 Geography of Europe 1 time
- GEO 4411 Population and Society 3 times
- GIS 3310 Introduction to Remote Sensing 2 times
- GIS 3320 GIS in the Social Science (&online course) 2 times
- GIS 3390 Fundamentals of Geographical Information & Analysis 8 times
- GIS 3391 Applications of Geospatial Information Science 3 times
- GIS 4401 Spatial Database Design & Management 6 times
- GIS 4405 Spatial Modeling & Programming 6 times
- SS 3375 Introduction to Social Scientific Inquiry 2 times
- SS 3377 Spatial Applications in Social Science 1 time

Graduate

- GEO 5511 Demography 3 times
- GIS 5530 Crime Mapping 1 time
- BIO 6650 Spatial Analysis Using GIS 1 time

VOLUNTEER WORK

Montgomery Area Food Bank, Montgomery AL

June 2020- Present

- Taking the lead in the development of online maps and data visualization

Autism Support of Alabama, Birmingham AL

June 2020- Present

- Conducting spatial analysis and producing high-quality maps in ArcGIS
- Drafting and submitting proposals for funding

Old Dominion University, Norfolk VA

Research Collaborator (Department of Political Science and Geography)

Mar 2015- July 2019

- Evaluated the quality of life in Virginia by analyzing data from 2010 to 2014
- Investigated the relationship between crime and climate change in Hampton Roads

- Investigated the correlation between plague outbreaks and climate change in California
- Mentored students in the GIS course (GEOG402_502) at ODU

Research volunteer (Center for Coastal Physical Oceanography)

Jul 2015- Dec 2015

- Investigated the relationship between global sea level rising and El Nino Southern Oscillation using geospatial analysis and cyclostationary empirical orthogonal function (EOF) analysis in Matlab

Foodbank of Southeastern Virginia and the Eastern Shore, Norfolk VA

GIS Analyst

Jul 2015- Jul 2018

- Conducted spatial analysis and produced high-quality maps in ArcGIS
- Developed empirical models to evaluate the policies of partner agencies
- Performed statistical analysis in MS excel and SPSS
- Assisted in data visualization in MS Office

Mothers Against Drunk Driving, Virginia Beach VA

Volunteer

Mar 21st, 2015

- Assisted in the event of Walk Like MADD

PROFESSIONAL ACTIVITIES

Editorial Board

- Editorial Review Board member, the *Madridge Journal of Behavioral and Social Sciences* (MJBSS) (2019-Present)

Journal Reviewer

- *Atmosphere* (2020)
- *Archives of Environmental and Occupational Health* (2019)
- *Traffic Injury Prevention* (2019)
- *Scientific Reports* (2019-2021)
- *Sustainability* (2020-2021)
- *Environmental Health Perspectives* (2019-2020)
- *Injury Epidemiology* (2021)
- *International Journal of Environmental Research and Public Health* (2021-Present)
- *Journal of Medical Internet Research* (2023-Present)
- *JMIR Public Health and Surveillance* (2023-Present)
- *Journal of Transport Policy* (2019-2020)
- *Journal of Orthopedics and Trauma Research* (2019)
- *Journal of Environmental Earth Sciences* (2018-2021)
- *Journal of International Association of Traffic and Safety Sciences (IATSS) Research* (2018)
- *Journal of Travel Behaviour and Society* (2014 - 2022)
- *Journal of Transport Geography* (2014 - 2018)
- *Open Transportation Journal* (2016)

Memberships

- Association of American Geographers (AAG)
- American Public Health Association (APHA)
- Teratology Society (TS)

AWARDS

- 4-year Postgraduate Studentship provided by Research Grant Council, HKSAR (2010-2013)
- Teratology Society Student and Postdoctoral Fellow Travel Award for presenting research on heat waves and preterm birth in Teratology Society 58th Annual Meeting in 2018 (\$500)

TECHNICAL SKILLS

- KNIME
- GIS: ArcGIS Pro/Desktop, AutoCAD, ArcGIS Server, ArcSDE, ArcIMS, Surfer, GRASS, ERDAS IMAGINE
- Statistical Analysis: SPSS, MATLAB, R, SAS
- Database Management Systems: Oracle, SQL, and MS Access
- Programming: ASP (VBScript), PHP, JavaScript, HTML5, CSS, C, C++, C#, Python, and KML
- Professional: Microsoft Office Suites, Adobe Premiere, Photoshop, Illustrator

- Operating System: Windows and Unix
- Distance teaching environment: Blackboard, Moodle

LANGUAGES

- 100% fluent in English, Mandarin, and Cantonese

INTERESTS

- Skills-based volunteering for the socially vulnerable, such as improving road safety among the elderly and eliminating hunger
- Hiking in national parks and other ecotourism activities