

Chih-Hao Wang, Ph.D.

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Geography and City & Regional Planning
College of Social Science
California State University, Fresno
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Education

The Ohio State University , Columbus, OH	
PhD in City and Regional Planning	August 2013
Dissertation: <i>Land-use Allocation and Earthquake Damage Mitigation: A Combined Spatial Statistics and Optimization Approach</i>	
Master of City and Regional Planning	March 2010
National Taipei University , Taipei, Taiwan	
Master of Land Economics and Administration	June 2002
Thesis: <i>A Study of the Catastrophic Behavior of Population Growth in the Central Region of Taiwan</i>	
Bachelor of Land Economics and Administration	June 2000

Academic Appointments

2019 –	California State University, Fresno Associate Professor
2014 – 2019	California State University, Fresno Assistant Professor
2013 – 2014	The Ohio State University Visiting Assistant Professor

Research Interests

Natural Hazard Mitigation	GIS and Spatial Statistics
Land-Use and Transportation Modeling	Optimization

Refereed Journal Papers

Wang, C-H. and Chen, N. (2022). Are People Equally Exposed to Seismic and Climate-Change-Induced Hazards? Evidence from the San Francisco Bay Area. *Environment and Planning B*; <https://doi.org/10.1177/23998083221100552>.

Dong, H., Li, M., Peres, M. A., and Wang, C-H. (2022). Plan for Healthy Neighbourhoods to Improve Mental Wellbeing: A Pilot Study in Fresno, California. *Computational Urban Science 2* (26); <https://doi.org/10.1007/s43762-022-00057-8>.

Wang, C-H., Chen, N., and Tian, G. (2021). Do Accessibility and Clustering Affect Your Active Travel Behavior in Salt Lake City? *Transportation Research Part D: Transport and Environment* 90: 102655.

Wang, C-H. and Chen, N. (2021). A Multi-Objective Optimization Approach to Balancing Economic Efficiency and Equity in Accessibility to Multi-Use Paths. *Transportation* 48: 1967-1986.

Chen, N. and Wang, C-H. (2020). Does Green Transportation Promote Accessibility for Equity in Medium-Size U.S. Cities? *Transportation Research Part D: Transport and Environment* 84: 102365.

Wang, C-H. and Chen, N. (2020). A Geographically-Weighted Regression Approach to Investigating Local Built-Environment Effects on Home Prices in the Housing Downturn, Recovery, and Subsequent Increases. *Journal of Housing and the Built Environment* 35: 1283-1302.

Olwert, C., Wang, C-H., Arellano, V., and Oulrey, D. (2020). Retailer Behavior Near Fixed Transit Lines in Los Angeles: A Spatial Autoregressive Probit Model to Evaluate Retail Clustering. *Journal of Planning Education and Research*; <https://doi.org/10.1177/0739456X20908945>.

Wang, C-H. (2020). Does Compact Development Promote a Seismic-Resistant City? Application of Seismic-Damage Statistical Models to Taichung, Taiwan. *Environment and Planning B* 47 (1): 84-101.

Chen, N., Lindsey, G., and Wang, C-H. (2019). Patterns and Correlates of Urban Trail Use: Evidence from the Cincinnati Metropolitan Area. *Transportation Research Part D: Transport and Environment* 67: 303-315.

Wang, C-H. (2019). A Land-Use and Capital-Investment Allocation Optimization Model to Develop a Fair Community Opportunity Framework for Columbus, Ohio. *Computers, Environment and Urban Systems* 74: 151-160.

Chen, N, Wang, C-H., and Akar, G. (2017). Geographically Weighted Regression Approach to Investigate Spatial Variations in Activity Space. *Transportation Research Record: Journal of the Transportation Research Board* 2671: 40-50.

Wang, C-H. and Chen, N. (2017). A Geographically Weighted Regression Approach to Investigating the Spatially Varied Built-Environment Effects on Community Opportunity. *Journal of Transport Geography* 62: 136-147.

Wang, C-H. and Dong, H. (2017). Responding to the Drought: A Spatial Statistical Approach to Investigating Residential Water Consumption in Fresno, California. *Sustainability* 9 (2): 240.

Wang, C-H., Chen, N. and Chan, S-L. (2017). A Gravity Model Integrating High-Speed Rail and Seismic-Hazard Mitigation through Land-Use Planning: Application to California Development. *Habitat International* 62: 51-61.

Wang, C-H. and Guldmann, J-M. (2016). A Spatial Panel Approach to the Statistical Assessment of Seismic Impacts and Building Damages: Case Study of Taichung, Taiwan. *Computers, Environment and Urban Systems* 57: 178-188.

Wang, C-H. and Chen, N. (2015). A GIS-Based Spatial Statistical Approach to Modeling Job Accessibility by Transportation Mode: Case Study of Columbus, Ohio. *Journal of Transport Geography* 45: 1-11.

Wang, C-H., Akar, G. and Guldmann, J-M. (2015). Do Your Neighbors Affect Your Bicycling Choice? A Spatial Probit Model for Bicycling to The Ohio State University. *Journal of Transport Geography* 42: 122-130.

Wang, C-H. and Guldmann, J-M. (2015). A Land-Use Allocation Optimization Model to Mitigate Potential Seismic Damages. *Environment and Planning B* 42 (4): 730-753.

Working Papers

Wang, C-H., Chen, N., and Olwert, C. A GIS-Based Network Analysis to Investigating the Vulnerability of Accessibility to Emergency and Lifesaving Facilities under the Threats of Natural Hazards (under review).

Wang, C-H., Huang, K-C., and Chan, S-L. A Gravity Model to Assessing the Cost of Shifting to a Seismic Resistant City (work in progress).

Wang, C-H. and Guldmann, J-M. A Chance-Constrained Optimization Model of Urban Land-Use Allocation under Seismic Hazard (work in progress).

Research Report

Investigating the Resilience of Accessibility to Emergency and Lifesaving Facilities under Natural Hazards, May 2022. Final Report to the Mineta Transportation Institute at San José State University (with Dr. Na Chen).

Increasing the Resiliency of the Northern California Natural Gas System to Reduce Vulnerability to Climate Change, December 2021. Final Report to Energy Research and Development Division of California Energy Commission (with Dr. Yihsu Chen, Dr. Andrew L. Liu, Dr. Na Chen, and Dr. Jean-Michel Guldmann).

Do Multi-Use-Path Accessibility and Clustering Effect Play a Role in Residents' Choice of Walking and Cycling? June 2021. Final Report to the Mineta Transportation Institute at San José State University (with Dr. Na Chen).

A Multi-Objective Optimization Model to Minimize the Gap in Accessibility to Multi-Use Paths while Maximizing the Economic Efficiency of Active Transportation Investments for Fresno, California, June 2020. Final Report to the Mineta Transportation Institute at San José State University.

Climate-Change-Induced Hazards and Vulnerability of the Natural Gas System in North California, September 2019. Technical Report to the California Energy Commission (with Dr. Na Chen, Dr. Jean-Michel Guldmann, and Dr. Yihsu Chen).

Developing a Fair Accessibility Framework through Green (Non-Auto) Transportation Modes for Fresno, California, August 2019. Final Report to the Mineta Transportation Institute at San José State University (with Dr. Na Chen).

Funded Research

PI: A Gravity Model Integrating Transportation Investments and Land-Use Planning for Sustainable Development: Case Study of Fresno, California, Fresno State Transportation Institute at CSU Fresno (\$10,000), 2022.

PI: A GIS-Based Network Analysis to Investigating the Vulnerability of Accessibility to Emergency and Lifesaving Facilities under the Threats of Natural Hazards, Fresno State Transportation Institute at CSU Fresno (\$10,000), 2021.

PI: Does Accessibility Affect Your Cycling Exercise? A Geographically Weighted Regression (GWR) Model to Investigating the Effects of Accessibility to Multi-Use Paths, Fresno State Transportation Institute at CSU Fresno (\$10,000), 2020.

PI: A Green Transportation Allocation Optimization Model to Develop a Fair Community Opportunity Framework for Fresno, California, Fresno State Transportation Institute at CSU Fresno (\$9,922), 2019.

PI: Developing a Fair Accessibility Framework through Green (Non-Auto) Transportation Modes for Fresno, California, Fresno State Transportation Institute at CSU Fresno (\$18,952), 2018-19.

PI: Housing Resilience to the Great Recession: A Geographically Weighted Regression Approach to Investigating the Spatially-Variied Built-Environment Effects on Housing Price, Gazarian Real Estate Center at CSU Fresno (\$6,000), 2018.

Co-PI: Investigating Climate-Change-Induced Vulnerability of the Northern California Natural Gas Energy System and Identifying Resilience Options (PI: Dr. Yihsu Chen at UC Santa Cruz), California Energy Commission (\$600,000), 2017-19.

Senior Personnel: Plan an Integrated Active Travel and Green Infrastructure System for Mental Wellbeing in Disadvantaged Communities through Crowdsourcing Technology (PI: Dr. Hongwei Dong at CSU Fresno), National Science Foundation (\$99,485), 2017-18.

PI: Residential Water Consumption in Fresno, California, The Claude Laval Water Research Fund (\$30,000), 2015-16.

Co-Author: Impact of the Drought in the San Joaquin Valley of California (PI: Dr. Lynnette Zelezny at CSU Fresno), Wells Fargo Bank, 2014-15.

Scholarly Presentations

Wang, C-H., Huang, K-C., and Chan, S-L. (2022). A Gravity Model to Assessing the Cost of Shifting to a Seismic Resistant City. Presented at the *ACSP 61st Annual Conference*, Toronto, Canada (November).

Wang, C-H. and Chen, N. (2022). An Investigation of the Resilience of Accessibility to Emergency and Lifesaving Facilities under the Threats of Natural Hazards. Presented at the *ACSP 61st Annual Conference*, Toronto, Canada (November).

Wang, C-H. and Chen, N. (2021). Social Inequality in Vulnerability to Seismic and Climate-Changed-Induced Hazards. Presented at the *ACSP 60th Annual Conference*, online (October 7).

Wang, C-H., Chen, N., and Olwert, C. (2021). Vulnerability Assessment of Accessibility to Emergency and Lifesaving Facilities. Presented at the *International Association for China Planning (IACP) 15th Annual Conference*, online (September 12).

Wang, C-H., Chen, N., and Tian, G. (2020). Accessibility Research Sonata. Present at the *First Lecture of Future City Series—Urban Spatial Structure and Travel in China*, Beijing Jiaotong University, Beijing, China (December 28).

Wang, C-H. and Chen, N. (2020). A Multi-Objective Optimization Model to Allocate Transportation Investments for Balancing Efficiency and Equity in Accessibility to Multi-Use Paths. Presented at the *International Association for China Planning (IACP) 14th Annual Conference*, online (December 8).

Wang, C-H. and Chen, N. (2020). The Allocation of Transportation Investments Using a Multi-Objective Optimization Approach: Balancing Efficiency and Equity in Accessibility to Multi-Use Paths. Presented at the *ACSP 60th Annual Conference*, online (November 7).

Wang, C-H., Chen, N., and Tian, G. (2020). Accessibility Research Sonata. Present at the *Seminar of Urban Studies*, Northwest A&F University, Yangling, China (October 30).

Chen, N. and Wang, C-H. (2020). Does Green Transportation Promote Accessibility for Equity in Medium-Size US Cities? Present in the *Seminar of Transportation Research Part D: Transport and Environment Special Issue "Planning for Accessibility"*, online (August 20).

Chen, N. and Wang, C-H. (2020). Does Accessibility via Green Transportation Modes Matter for Transportation Equity? An Investigation for Two Medium-size U.S. Cities. Presented at the *TRB 99th Annual Meeting*, Washington DC (January 14).

Dong, H., Li, M., Perez, M. A., and Wang, C-H (2020). Plan for Healthy Neighborhoods to Improve Mental Wellbeing: A Pilot Study in Fresno, California. Presented at the *TRB 99th Annual Meeting*, Washington DC (January 15).

Wang, C-H., Chen, N., and Chen, Y. (2019). Assessing Climate-Change-Induced Sea-Level Rising and Wildfire for the Northern California Natural Gas System. Accepted for presentation at the *ACSP 59th Annual Conference*, Greenville, SC.

Chen, N. and Wang, C-H. (2019). Does Accessibility via Green Transportation Modes Matter for Social Inequality? An Investigation for Two Medium-Size U.S. Cities. Presented at the *ACSP 59th Annual Conference*, Greenville, SC (October 26).

Wang, C-H. (2019). An Optimization Model to Allocate Transportation Infrastructure for Promoting Physical Activities: Case Study of Fresno, California. Presented at the *2019 Fresno Regional Transportation Innovations Summit*, Fresno, CA (October 23).

Chen, N. and Wang, C-H. (2019). Evaluating Social Equity with Accessibility via Green Modes of Transportation: An Empirical Study in Fresno, California, and Cincinnati, Ohio. Presented at the *2nd International Symposium on Smart Transportation and Big Data (ISSTBD2019)*, Jinan, China (July 3).

Chen, N. and Wang, C-H. (2019). Evaluating Social Equity with Accessibility via Green Modes of Transportation: An Empirical Study in Fresno, California, and Cincinnati, Ohio. Presented at the *International Association for China Planning (IACP) 13th Annual Conference*, Chengdu, China (June 15).

Chen, N., Lindsey, G., and Wang, C-H. (2019). Correlates of Urban Trail Use: Differences between Recreational and Utilitarian Users. Presented at the *TRB 98th Annual Meeting*, Washington DC (January 15).

Wang, C-H. (2018). A Land-Use and Capital-Investment Allocation Optimization Approach to Fostering Community Opportunity: Case Study of Columbus, Ohio. Presented at the *ACSP 58th Annual Conference*, Buffalo, NY (October 27).

Wang, C-H. and Chen, N. (2018). Housing Resilience to the Great Recession: A Geographically Weighted Regression Approach to Investigating the Spatially-Variied Built-Environment Effects on Housing Price. Presented at the *ACSP 58th Annual Conference*, Buffalo, NY (October 25).

Dong, H., Li, M., Perez, M. A., and Wang, C-H. (2018). Planning an Integrated Active Transportation and Green Infrastructure System for Mental Well-Being in Disadvantaged Communities. Presented at the *ACSP 58th Annual Conference*, Buffalo, NY (October 25).

Chen, N., Wang, C-H., Li, L-B., and Chan, S-L. (2018). Integrating Land-Use and Transportation Planning Using a Gravity Model: Lessons for Pearl River Delta Region Development. Presented at the *International Association for China Planning (IACP) 12th Annual Conference*, Xi'an, China (July 1).

Dong, H., Li, M., Perez, M. A., and Wang, C-H (2018). Plan an Integrated Active Travel and Green Infrastructure System for Mental Wellbeing. Presented at the *International Association for China Planning (IACP) 12th Annual Conference*, Xi'an, China (June 30).

Wang, C-H., Chen, N., and Chan, S-L. (2018) Integrating High-Speed Rail and Seismic-Hazard Mitigation through Land-Use Planning. Presented at the *2nd World Transport Convention*, Beijing, China (June 29).

Wang, C-H., Chen, N. and Chan, S-L. (2018). A Gravity Model Integrating High-Speed Rail and Seismic-Hazard Mitigation through Land-Use Planning: Case Study of California. Presented at the *San Joaquin Valley Clean Transportation Summit*, Fresno, CA (March 15).

Wang, C-H. (2017). Does Urban Spatial Structure Affect Urban Seismic Risks? Case Study of Taichung, Taiwan. Presented at the *ACSP 57th Annual Conference*, Denver, CO (October 12).

Olwert, C. and Wang, C-H. (2017). Retailers and Station Types: Geography Weighted Regression Identification of Station Types near Rapid Transit in Los Angeles. Presented at the *ACSP 57th Annual Conference*, Denver, CO (October 14).

Wang, C-H. (2017). Do the Neighbors Affect Your Residential Water Consumption? Case Study of Fresno, California. Presented at the *2017 AAG Annual Meeting*, Boston, MA (April 8).

Chen, Y., Wang, C-H., Guldmann, J-M., Liu, A. L. and Chen, N. (2017). Investigating Climate-change-induced Vulnerability of the Northern California Natural Gas Energy System and Identifying Resilience Options. Poster section at the *California Climate Change Symposium 2017 Science to Safeguard California*, Sacramento, CA (January 25).

Chen, N., Wang, C-H. and Akar, G. (2017). A Geographically Weighted Regression Approach to Investigate the Spatial Variations in Activity Space. Presented at the *TRB 96th Annual Meeting*, Washington DC (January 10).

Wang, C-H. and Chen, N. (2016). A Combination of Geographical Mapping and Spatial Statistical Modeling to Assessing Built-Environment Effects on Community Opportunity. Presented at the *ACSP 56th Annual Conference*, Portland, OR (Nonmember 3).

Chen, N., Wang, C-H. and Akar, G. (2016). A Geographically Weighted Regression Approach to Investigate the Spatial Variations in Activity Space. Poster section at the *ACSP 56th Annual Conference*, Portland, OR (Nonmember 4).

Olwert, C. and Wang, C-H. (2016). A Geographical Weighted Regression Approach to the Spatial Variation of Retail Location Choice near Rapid Transit in Los Angeles. Presented at the *ACSP 56th Annual Conference*, Portland, OR (Nonmember 5).

Wang, C-H., Chen, N. and Chan, S-L. (2015). A Gravity Modeling Approach to Intergrade High-Speed Rail and Seismic Hazard Mitigation for Future Land-Use Allocation in California. Presented at the *ACSP 55th Annual Conference*, Houston, TX (October 25).

Wang, C-H. (2015). A Primary Look at Regional Water Use and Residential Water Consumption in the California San Joaquin Valley. Presented at the *Water Resources and Policy Initiatives, The California State University*, Fresno, CA (April 9).

Wang, C-H. and Guldmann, J-M. (2014). A Chance-Constrained Optimization Model of Urban Land-Use Allocation under Seismic Hazard. Presented at the *2014 INFORMS annual meeting*, San Francisco, CA (November 10).

Wang, C-H. and Chen, N. (2014). Spatial Spillover of Public Transit on Job Accessibility: A Spatial Statistical Model for Transportation Equity in Columbus, Ohio. Presented at the *2014 AAG Annual Meeting*, Tampa, FL (April 11).

Wang, C-H. and Guldmann, J-M. (2013). An Optimization Model for Land-Use Allocation to Mitigate Potential Seismic Losses. Presented at the *60th Annual North American Meetings of the Regional Science Association International*, Atlanta, GA (November 14).

Wang, C-H. (2013). Land-Use Allocation and Earthquake Damage Mitigation. Presented at the *Distinguished Speakers Program, California State University, Northridge*, Northridge, CA (October 10).

Wang, C-H., Akar, G. and Guldmann, J-M. (2013). Do your Neighbors Affect your Mode Choice? A Spatial Probit Model for The Ohio State University. Poster section at the *TRB 92nd Annual Meeting*, Washington DC (January 16).

Wang, C-H. and Guldmann, J-M. (2012). A Spatial Panel Modeling Approach for the Assessment of Seismic Losses and Land-use Planning. Presented at the *ACSP 52nd Annual Conference*, Cincinnati, OH (November 4).

Wang, C-H. and Guldmann, J-M. (2011). Spatial Analysis of Land Use and Seismic Risk: Application to Hsinchu City, Taiwan. Poster section at the *2011 Geography and GIS Fair, The Ohio State University*, Columbus, OH (November 15).

Teaching Interests

Environmental Planning

Spatial Statistics

Land-Use and Transportation Planning

GIS and Quantitative Methods

Teaching Experience

Associate/Assistant Professor, Geography and City & Regional Planning, California State University, Fresno

CRP 110 Planning Process and Theory

CRP 125 Environmental Planning

CRP 140 Economics for Planners

GEOG 4 World Geography

GEOG 142 GIS 2: Data Creation

GEOG 143 GIS 3: Spatial Analysis

Visiting Assistant Professor/Instructor, City and Regional Planning, The Ohio State University

CRP 3100 Analyzing the City

CRP 3300 Planning for and with People

CRP 3620 Underground City

CRP 4597 The Global Environment in Planning

CRP 8890 Workshop in Planning Application of Spatial Econometrics

Awards

The College of Social Sciences Research Award, CSU Fresno (2022)
College of Social Sciences, Chancellor's Office, and Provost' Office RSCA, CSU Fresno (2021-2023)
Fresno State Transportation Institute Faculty Fellow, CSU Fresno (2017-2020)
The College Grants Program, CSU Fresno (2016-2018)
The Provost Faculty Scholarship Support Program, CSU Fresno (2015-2016)
Travel Grant for NARSC Conference, Knowlton School of Architecture, OSU (2013)
Travel Grant for ACSP Conference, Knowlton School of Architecture, OSU (2012)
ACSP Student Travel Award, ACSP (2012)
Jerrold R. Voss Scholarship, Knowlton School of Architecture, OSU (2012)

Technical Proficiencies

Geographical Information Systems (GIS): **ArcGIS**
Statistical and data processing software: **R, STATA**
Optimization software: **GAMS**
Programming and algebra software: **MATLAB**
Earthquake simulation model: **TELES** (Taiwan Earthquake Simulation Model)
Spatial interaction model: **TELUM** (DRAM/ EMPAL Model)

Service

Geography and City & Regional Planning, California State University, Fresno University Service

Academic Senator (2016-2017, 2021-2023)
Equal Employment Opportunity Designee (2019-2022)
Member of Untenured Faculty Organization (2015-2018)

College Service

Co-Chair of Curriculum Committee (2020-2023)
Member of Curriculum Committee (2017-2020)
Member of Research Committee (2021-2022)

Department Service

Geography and City and Regional Planning

Chair of Search Committee (2017-2018)
Member of Search Committee (2015-2016)
Member of Research Committee (2016-2018, 2020-2021)
Member of Scholarship Committee (2019-2022)
Member of Curriculum Committee (2015-2018, 2019-2022)
Member of Outreach Committee (2018-2019)
Member of MCRP Program and Curriculum Committee (2015-2016)
Advisor of Geography Club (2015-2017)
Volunteer for the SOAP Assessment Report (2018)

Anthropology

Member of RTP committee for sabbatical review (2021)

Community Service

Appraiser of California Destination Imagination (2020)
Judge of California Geography Bee (2015, 2017, 2018, 2019)
Scorekeeper of California Geography Bee (2016)
Participant in Fresno Park Master Plan Update Stakeholder Meeting (2017)

City and Regional Planning, The Ohio State University

Member of Undergraduate Program and Curriculum Committee (2014)
Volunteer for Study Abroad Workshop with National Taipei University, Taiwan (2014)

Review Activity (Manuscript Reviewer)

Environment and Planning B (2021)
Transportation Research Part D (2019, 2020)
Journal of Transport Geography (2019, 2020, 2021)
International Journal of Sustainable Transportation (2019, 2020)
Journal of Transport and Land Use (2018)
Habitat International (2018)
Applied Geography (2017)
Transportation Research Record (2016)
Urban Studies (2015)

Professional Membership

Association of Collegiate Schools of Planning (ACSP)
American Association of Geographers (AAG)