

# Yongping Zhang, Ph.D., P.E.

## Curriculum Vitae

### Education

- Ph.D. in Civil Engineering (Transportation Planning), the University of Illinois at Chicago, 2008
- M.S. in Traffic Engineering, Tongji University, Shanghai, China, 2004
- B.S. in Civil Engineering (Roadway & Bridge Engineering), Tongji University, Shanghai, China, 2001

### Registrations

- Professional Engineer in Civil Engineering, Texas No. 123487

### Professional Activities

- 4/2019-present, Research Coordinator, Committee on Transportation Planning Analysis and Application (AEP15), the Transportation Research Board of the National Academies
- 2/2021-present, Member, NCHRP Project Panel on Snapshots of Planning Practices, the Transportation Research Board of the National Academies
- 8/2011-4/2021, Member, Task Force on Understanding New Directions for the National Household Travel Survey (ABJ45T), the Transportation Research Board of the National Academies
- 9/2021-present, President, International Chinese Transportation Professionals Association—Southern California Chapter (ICTPA-SCC)

### Professional Experience

- **Associate Professor, California State Polytechnic University, Pomona 8/2021 – present**
  - PI: “Enhancing Older Adults’ Mobility in Active Living and Tiered Living Communities”, SJSU Research Foundation, State of California, ongoing, Amount: \$75,000
  - PI: “Integrating 3D Design with Virtual Reality for Transportation Engineering Education”, SPICE Grant, Cal Poly Pomona, 2021-2022, Amount: \$15,150
- **Assistant Professor, California State Polytechnic University, Pomona 9/2015 – 7/2021**
  - PI: “Enhancement of Multimodal Traffic Safety in High-Quality Transit Areas”, SJSU Research Foundation, State of California, Amount: \$73,353
  - PI: “National Transportation Summer Institute”, FHWA/Caltrans, 2018, Amount: \$69,277
  - PI: “Advanced Research on the Built Environment and Collisions”, Southern California Association of Governments (SCAG), 2017, Amount: \$49,817
  - PI: “Enhanced Campus-wide Traffic Simulation for Transportation Engineering Education”, SPICE Grant, 2020-2021, Cal Poly Pomona, Amount: \$16,144
  - PI: “Active Learning in Transportation Engineering”, SPICE Grant, Cal Poly Pomona, 2019-2020, Amount: \$15,744
  - PI: “Promotion of Active Transportation in High-Quality Transit Areas”, SIRG Grant, Cal Poly Pomona, 2019-2020, Amount: \$15,000
  - PI: “Development of Campus-wide Traffic Simulation for Transportation Education”, SPICE Grant, Cal Poly Pomona, 2018-2019, Amount: \$15,448
  - PI: “A Pilot Study: Cal Poly Pomona Campus Transportation Plan”, RSCA Grant, Cal Poly Pomona, 2018-2019, Amount: \$5,000
  - PI: “Developing a Virtual Lab for Transportation Education”, SPICE Grant, Cal Poly Pomona, 2017-2018, Amount: \$13,048

- Co-PI: Administration of the Dwight David Eisenhower Transportation Fellowship Program (DDETFP) Local Competition, FHWA (6/2021-5/2022, \$50,000)
- Co-PI: Administration of the Dwight David Eisenhower Transportation Fellowship Program (DDETFP) Local Competition, FHWA (6/2020-5/2021, \$50,000)
- Co-PI: Comprehensive Evaluation of Crowdsourcing Non-motorist Count Data, CSUTC SB1 Program (5/2020-4/2021, \$75,000.00).
- Co-PI: UCCONNECT Summer Research Programs, UCCONNECT (6/2016~9/2016), Amount: \$105,000
  
- **Senior Transportation Modeler/Project Manager, Southern California Association of Governments, Los Angeles, CA 11/2009 – 9/2015**
  - Project management in 2012 Trip-Based Model Calibration and Validation, Transit Level of Service Data Collection (2008, 2012), and Modeling Support (2008, 2012); administered the contracts and reviewed consulting firm's work to ensure the quality of products; worked closely with staff from transit operators, Caltrans, and CTCs to collect and verify data and model assumptions
  - Key member in developing and applying regional travel demand models in support of Regional Transportation Plan (RTP), Federal Transportation Improvement Program (FTIP), Air Quality Management Plan (AQMP), State Implementation Plan (SIP), and Regional Congestion Pricing. The regional significant projects studied include East-West Freight Corridor, I-710 Truck Lane, 710 Gap Closure, Regional HOT Network, I-405 Improvement, High Desert Corridor, High-Speed Rail, Regional Rail Expansion and Improvement, etc.
  - Key member in the 2011-2012 California Household Travel Survey
  - Technical lead in development and quality control of highway and transit networks based on base year condition and RTP/FTIP project database
  - Technical lead in developing various model modules including external trip model, parking cost model, toll schedule file, station file, and auto operating cost
  - Technical lead in development and quality control of various databases for model validation (vehicle counts, transit boardings, VMT, speeds, etc.)
  - Coordinated Modeling Task Force meetings, frequently presented at MTF meetings and Regional Transit Technical Advisory Committee meetings
  - Department liaison for travel demand modeling activities related to transit, toll/HOT, freight, etc.
  - Member of Steering Committee for California Household Travel viewing survey design, pilot-survey, and main-survey studies
  - Supported Metrolink staff for their 2015-2025 Strategic Plan
  - Participated in task force led by Caltrans to develop California Statewide Model and California Statewide Freight Model
  
- **Senior Transportation Analyst, Wilbur Smith Associates, Lisle/Chicago, IL 10/2007 – 8/2009**  
**Chicago Regional Congestion Pricing Study, Illinois State Toll Highway Authority (ISTHA) –**
  - 2004-2006 Traffic Crash Data Report and 2007 Traffic Data Report, ISTHA
  - US-23 Managed Lanes and Toll Finance Assessment, Michigan DOT
  - Traffic and Revenue Update, ISTHA
  - I-88 at IL-47 Interchange Study, ISTHA
  
- **Jan 2004 – Jul 2004, Assistant Transportation Planner, Atkins (China) Consultants Co., Ltd., Shenzhen, China**

- Feasibility Study on Redeveloping CBD of Shenzhen City, China
- Updating Traffic Analysis Models for Hong Kong, China

### **Awards**

- Charley V. Wootan Award for Outstanding Paper in Transportation Policy and Organization, Transportation Research Board of the National Academies, Washington DC, Jan 2008
- World Conference on Transport Research Fellowship, World Conference on Transport Research Society, Berkeley, CA, Jun 2007
- George Krambles Transportation Scholarship (1st Place Prize), George Krambles Scholarship Fund, Chicago, IL, Sep 2006

### **Peer-Reviewed Journal Papers**

1. Zhang, Y., G. Gill, W. Cheng, P. Reina, M. Singh, J. Ensich, Exploring Influential Factors and Endogeneity of Traffic Flow of Different Lanes on Urban Freeways using Bayesian Multivariate Spatial Models. *Journal of Traffic and Transportation Engineering*. 2021 (Accepted)
2. Lin, H., Y. Zhang. Optimal Deployment of Cordon Sanitaire with Available Testing Capacity, *Transportation Research Record: Journal of the Transportation Research Board* (Accepted)
3. Lin, H., Y. Zhang. Traffic Inflow Control Problem on Urban Freeway Network for Disease Prevention, *Journal of Transportation Engineering, Part A: Systems*, 2021  
<https://doi.org/10.1061/JTEPBS.0000581>
4. Lin, H., Y. Zhang. Transportation-oriented Spatial Allocation of Land Use Development: A Simulation-based Optimization Method, *Simulation: Transactions of the Society for Modeling and Simulation International*, 2020, <https://doi.org/10.1177/0037549720920374>
5. Lin, H., Y. Zhang. Strategic Environmental Assessment with the Penetration of Electric Vehicles in Transport Network, *Environmental Modeling & Assessment*, 2020, <https://doi.org/10.1007/s10666-020-09691-0>
6. Shao, M., Y. Zhang, X. Shao, and L. Sun. Speed Choice Behaviour Based Methodology for Evaluating the Effects of Pavement Roughness on Travel Time Cost and Discomfort Cost, *International Journal of Pavement Engineering*, 2020, <https://doi.org/10.1080/10298436.2020.1730836>
7. Cheng, W., G. Gill, Y. Zhang, T. Vo, F. Wen, Y. Li. Exploring the Modeling and Site-ranking Performance of Bayesian Spatiotemporal Crash Frequency Models with Mixture Components, *Journal of Accident Analysis and Prevention*, 2020, 135, 135037
8. Cheng, W., G. Gill, Y. Zhang, Z. Cao. Bayesian Space-Time Crash Frequency Models with Mixture Components for Spatiotemporal Interaction, *Journal of Accident Analysis and Prevention*, 112, 2018, pp. 84-93. <https://doi.org/10.1016/j.aap.2017.12.020>
9. Mohammadian, A., Javanmardi, M., and Zhang, Y., Synthetic Household Travel Survey Data Simulation, *Transportation Research, Part C: Emerging Technologies*, Vol. 18, Issue 6, 2010, pp. 869-878
10. Rashidi, T., Mohammadian, A., and Zhang, Y., Effect of Variation in Household Sociodemographics, Lifestyles, and Built Environment on Travel Behavior, *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2156, 2010, pp. 64-72
11. Zhang, Y., and Mohammadian, A., Examining Common Distributional Assumptions of Travel Characteristics for Data Simulation, *Transportation Research Record: Journal of Transportation Research Board*, Vol. 2121, 2009, pp. 63-73
12. Zhang, Y. and Mohammadian, A., Bayesian Updating of Transferred Household Travel Data Using Markov Chain Monte Carlo Simulation with Gibbs Sampler, *Transportation Research Record: Journal of Transportation Research Board*, Vol. 2049, 2008, pp. 111-118

13. Mohammadian, A., and Zhang, Y., Investigating the Transferability of National Household Travel Survey Data, *Transportation Research Record: Journal of Transportation Research Board*, Vol. 1993, 2007, pp. 67-79
14. Mohammadian, A., and Zhang, Y., Investigating the Transferability of National Household Travel Survey Data, *Transportation Research Record: Journal of Transportation Research Board*, Vol. 1993, 2007, pp. 67-79

### **Peer-Reviewed Conference Proceedings**

1. Cheng, J., Y. Zhang, Y. Wu, L. Zhou, Y. Zhang. Identifying the Combination of Smartphone Use and Hedonic Motivation for Increasing Public Transit Loyalty: An FsQCA Approach, , *Proc. of the 101st Annual Meeting of the Transportation Research Board*, 2022. Washington DC. (Accepted)
2. Liang, V., X. Wu, Y. Zhang, L. Chu, X. Jia, A. Chen, L. Sy, G. Magana. Investigating Correlations among Traffic Flow, Air Pollution, and Meteorological Factors at Freeway Level: A Case Study on the I-210 Freeway, *Proc. of the 101st Annual Meeting of the Transportation Research Board*, 2022. Washington DC. (Accepted)
3. Singh, M., W. Cheng, Y. Zhang, E. Clay, Y. Li. Developing Motorcycle Crash Frequency Model Using Bayesian Multivariate Multi-Seasonal Random Effect Specification, *Proc. of the 101st Annual Meeting of the Transportation Research Board*, 2022. Washington DC. (Accepted)
4. Cheng, W., M. Singh, Y. Zhang, T. Truong, and Y. Li. Analyzing County-Level Crash Counts Using Bayesian Spatio-temporal Dynamic Model, *Proc. of the 101st Annual Meeting of the Transportation Research Board*, 2022. Washington DC. (Accepted)
5. Romero, D., X. Liang, X. Wu, Y. Zhang, and L. Chu. Invited Student Paper: Air Quality Evaluation on I-210 Freeway Before-and-After Safer-at-Home Order during the COVID-19 Pandemic, *Proc. of the 101st Annual Meeting of the Transportation Research Board*, 2022. Washington DC. (Accepted)
6. Dardoon, D., Y. Zhang, X. Wu, The Impacts of Virtual Teaching Technologies on Transportation Education during the Pandemic, *2021 ASEE Pacific Southwest Conference*, April 2021.
7. Singh, M., Y. Zhang, W. Cheng, H. Tang, and E. Clay (2021). Exploration of Transit Station-Oriented Active Transportation Safety Using Bivariate Spatial Models with Different Covariate Inputs, *Proc. of the TRB 100th Annual Meeting*, 2021. Washington DC. Virtual Meeting.
8. Clay, E., B. Li, Y. Zhang, M. Singh, and W. Cheng (2021). Invited Student Paper: Exploration of COVID-19's Impact on Freeway Traffic Volume Using Distinct Bayesian Hierarchical Temporal Models. *Proc. of the TRB 100th Annual Meeting*, 2021. Washington DC. Virtual Meeting.
9. Lin, H., Y. Zhang, How Much Transportation Investment is Needed for Expected Accessibility Enhancement Goal, *the ASCE International Conference on Transportation & Development (ICTD)*, 2020, ID 1203313
10. Garcia, C.; Zhang, Y. ; Wu, D.; Cheng, W.; Li, S. Design Optimization of Single Lane Entrance and Exit Ramps, *Proc. of the 99th Annual Meeting of the Transportation Research Board*, Washington, D.C. January 2020
11. Lin, H., and Y. Zhang. A Multiple Attribute Decision Making Method for Sustainable Transportation Network Design. *Proc. of the 99th Annual Meeting of the Transportation Research Board*, Washington, D.C. January 2020
12. Zhang, Y., & Gad, G. M., & Cheng, W., & Elaksher, A., & Jia, X. (2019). Inspiring the Next Generation: Lessons Learned from the National Summer Transportation Institute Program, Paper presented at *2019 Pacific Southwest Section Meeting of the American Society for Engineering Education*, California State University, Los Angeles, California. <https://peer.asee.org/31833>
13. Gill, G., W. Cheng, G. X. Jia, J. Zhou, Y. Zhang, Evaluation of Alternative Bayesian Semiparametric Spatial Crash Frequency Models, *Proc. of the 98th Annual Meeting of the Transportation Research Board*, Washington, D.C. January 2019

14. Zhang, Y., T., Vo, F., Wen, G., Gill, C., Wen, Identification of High Crash-Risk Zones in Southern California, Full Paper Presented at *the 57th Annual Meeting of the Western Regional Science Association*, Pasadena, CA, Feb 11-14, 2018
15. Gill, G., W., Cheng, Y., Zhang, T., Vo, F., Wen, Simultaneous Investigation of Different Severity Crashes on Roadway Segments Using Highway Safety Information Systems Data of California, Full Paper Presented at *the 57th Annual Meeting of the Western Regional Science Association*, Pasadena, CA, Feb 11-14, 2018
16. Zhang, Y., & Jia, X., & Bumps, J., & Lu, D., Learn by Doing: Lessons Learned from the Ten-Year Senior Projects through University-Agency Partnership Paper presented at *2019 Pacific Southwest Section Meeting of the American Society for Engineering Education*, Tempe, Arizona, April 2017.  
<https://peer.asee.org/29221>
17. Wu, X., Chia, I., Thai, J., Jia, X., Zhang, Y., Evaluation of Actuated, Coordinated, and Adaptive Signal Control Systems: A Case Study, Proc. of *the 95th Annual Meeting of the Transportation Research Board*, Washington, D.C. January 2016
18. Zhang, Y., Hu, H., et.al., Application of Web-Based Databases to Develop/Update Parking Cost Models, *the 15th TRB Transportation Planning Application Conference*, Atlantic City, NJ, May 17-21, 2015
19. Stecher, C., and Zhang, Y., Herding Tigers: Lessons Learned from the California Household Travel Survey, Proc. of *the 93rd Annual Meeting of the Transportation Research Board*, Washington, D.C. January 2014
20. Zhang, Y., Huang, G., Lam, J., Freimer, R., Ershaghi, M., Automating the Process of Updating Regional Transit Network: the SCAG Experience, Proc. of *the 13th National Transportation Planning Applications Conference*, Reno, NV, May 8-12, 2011
21. Rashidi, T., Mohammadian, A., and Zhang, Y., How Variation in Household Socio-Demographic Attributes, Lifestyles and Built Environment Can Affect Household and Individual Travel Behavior?, Proc. of *the 89th Annual Meeting of the Transportation Research Board*, Washington, D.C. January 2010
22. Rashidi, T., Mohammadian, A., and Zhang, Y., Travel Behavior and the Effects of Household Demographics and Lifestyles, Proc. of *the 88th Annual Meeting of the Transportation Research Board*, Washington, D.C. January 2009
23. Zhang, Y., and Mohammadian, A., Synthetic Household Travel Survey Data Simulation, Proc. of *the 3rd International Symposium on Transport Simulation*, Gold Coast, Queensland, Australia, August 6-8, 2008
24. Zhang, Y., and Mohammadian, A., Examining Common Distributional Assumptions of Travel Characteristics for Data Simulation, Proc. of *the 87th Annual Meeting of the Transportation Research Board*, Washington, D.C. January 2008
25. Zhang, Y., and Mohammadian, A., Microsimulation of Household Travel Survey Data, Proc. of *the 87th Annual Meeting of the Transportation Research Board*, Washington, D.C. January 2008
26. Zhang, Y. and Mohammadian, A., Household Travel Data Simulation. Proc. of *the 11th World Conference on Transport Research Society*, Berkeley, CA. June 24-28, 2007
27. Zhang, Y. and Mohammadian, A., Enhancing the Quality of Transferred Household Travel Survey Data: A Bayesian Updating Approach Using MCMC with Gibbs Sampling, Proc. of *the 11th TRB Transportation Planning Application Conference*, Daytona Beach, FL. May 6-10, 2007
28. Zhang, Y. and Mohammadian, A., An Exploratory Analysis of the Household Travel Behavior and Lifestyle Choices, Proc. of *the ASCE's 9th International Conference of Application of Advanced Technology in Transportation*, Chicago, IL, August 13-16, 2006. pp. 665-670
29. Zhang, Y. and Mohammadian, A., National Level Analysis of Lifestyle Choices Using NHTS, Proc. of *the*

- 85th Annual Meeting of the Transportation Research Board, Washington, D.C. January 2006*
30. Zhang, Y. and Mohammadian, A., An Explanatory Analysis of Lifestyle Choice, Neighborhood Effects, and Travel Behavior: Applications to the Transferability of Household Travel Data, Proc. of *the Association of American Geographers' 102nd Annual Meeting*, Chicago, IL, March 7-11, 2006
  31. Mohammadian, A. and Zhang, Y., Transferability of National Household Travel Survey Data to Local Areas. Proc. of *the 85th Annual Meeting of the Transportation Research Board, Washington, D.C. January 2006*