



Chao Wang, Ph.D., P.E.

Research Associate

Triangle Regional Model Service Bureau
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EDUCATION

Ph.D. in Civil Engineering, The Ohio State University, Columbus, OH
M.S. in Statistics, The Ohio State University, Columbus, OH
M.S. in Civil Engineering, Tsinghua University, Beijing, China
B.S. in Civil Engineering, Tsinghua University, Beijing, China

REGISTRATION

Registered Professional Engineer in Ohio # 71786

PROFESSIONAL EXPERIENCE

Institute for Transportation Research and Education, North Carolina State University
(November 2007 – Present)
Research Associate

- Development and Maintenance of Triangle Regional Travel Demand Model
- Development of Model Supporting Tools Using GISDK
- Weighting and Statistical Analysis of Household Survey and Transit On-board Survey
- Development of Discrete Choice Models for Trip Generation, Trip Distribution and Mode Choice
- Transit Modeling
- Technical Support for Long Range Transportation Planning (LRTP) and Air Quality (AQ) Conformity Analysis
- Participation in the National Cooperative Highway Research Program (NCHRP) Project 25-36 "Impacts of Land Use Strategies on Travel Behavior in Small Communities and Rural Areas"
- Participation in the North Carolina Department of Transportation (NCDOT) Project "Land Use Forecasting Models for Small Areas in North Carolina"
- Development and Writing of Project Proposals

**Durham – Chapel Hill – Carrboro Metropolitan Planning Organization (DCHC MPO) /
Transportation Division, City of Durham**

(April 2007 – November 2007)
Transportation Systems Engineer

- Supervision of Three Projects: DCHC MPO UrbanSim Land Use Model, DCHC MPO Non-motorized Trip Model and DCHC MPO GIS Integration (Data Warehouse) and Automation
- Development and Application of Triangle Regional Travel Demand Model
- Travel Demand Analysis for Long Range Transportation Planning (LRTP) Development and Air Quality (AQ) Conformity Analysis
- Select Link Analysis and Sub Area Analysis
- Document Writing such as Request for Proposal (RFP) and Technical Memo

Durham – Chapel Hill – Carrboro Metropolitan Planning Organization (DCHC MPO) / Transportation Division, City of Durham

(June 2005 – March 2007)

Transportation Planner II (Modeling)

- Travel Demand Model Calibration, Validation, and Sensitivity Analysis
- Network and Socio-economic Data Collection
- Network Coding and TAZ Creation
- Design and Review of the Survey Questionnaires and Sampling Methodologies of Travel Behavior Survey, Transit On-board Survey and External Station Survey
- Document and Map Preparation for Unified Planning Work Program (UPWP) Development, Transportation Advisory Committee (TAC) Meetings and Technical Coordinating Committee (TCC) Meetings

Department of Civil Engineering, The Ohio State University

(September 2001 – June 2005)

Graduate Research Assistant

- Relationship between Traffic Delay and Lane Change Maneuvers (LCM) on Congested Freeway Segments
- Quantification of LCMs based on Loop Detector Data
- Impact of LCMs on Car-following Theories
- Vehicle Reidentification (Match Vehicle Observations at Two Different Locations) based on Loop Detector Data
- Benefits of Improving OD Estimation in Signal Design
- Dynamic OD Estimation Incorporating Turning Movement at Intersections

Department of Civil Engineering, Tsinghua University, Beijing, China

(September 1998 – July 2001)

Graduate Research Assistant

- Optimization of Transportation Network in Wenzhou City
- Decision Support Software on Transportation Planning for the Downstream Area of Lancangjiang River in Yunnan Province
- Travel Demand Analysis for Light Rail Project in Dalian City
- Structure Design of Intelligent Transportation Systems (ITS) for Guangzhou City
- Internship as a Modeler in CHELBI Engineering Consultants, Inc.
- Internship as Production Assistant in Kvaerner International Ltd., Working on the Construction Project of Jiangying Yangzi River Bridge, the 4th Longest Suspension Bridge in the World

MAIN AWARDS

- Eisenhower Graduate (GRAD) Fellowship, Federal Highway Administration (FHWA)

- ITS Mid-America Scholarship, ITS Mid-America
- University Fellowship, Ohio State University
- Graduate with Honor, Tsinghua University, China

SELECTED PUBLICATIONS and PRESENTATIONS

- Chao Wang, Benjamin Coifman. "The Effect of Lane Change Maneuvers on a Simplified Car-following Theory", IEEE Transactions on Intelligent Transportation Systems, Vol. 9, No.3, pp. 523-535, 2008
- Benjamin Coifman, Chao Wang, Yiguang Xuan. "The Butterfly Effect- Imbalances in Lane Change Accommodation Time and Lasting Disturbances", presented at Symposium on The Greenshields Fundamental Diagram: 75 Years Later, Woods Hole, MA, July 8-10, 2008
- Chao Wang, Benjamin Coifman. "Estimating the Number of Lane Change Maneuvers on Congested Freeway Segments", presented at The 11th World Conference on Transportation Research, Berkeley, CA, June 24-28, 2007
- Benjamin Coifman, Rabi Mishalani, Chao Wang, Sivaraman Krishnamurthy. "Impacts of Lane-Change Maneuvers on Congested Freeway Segment Delays: Pilot Study", Transportation Research Record, No.1965, pp. 152-159, 2006
- Chao Wang, Benjamin Coifman. "The Study on the Effect of Lane Change Maneuvers on a Simplified Car-following Theory", Proceedings of the 8th International IEEE Conference on Intelligent Transportation Systems, Vienna, Austria, pp. 478-483, September 13-16, 2005
- Chao Wang, Benjamin Coifman. "Verification of a Simplified Car-following Theory using Vehicle Trajectory data", presented at 33rd CSCE Annual Conference, Toronto, Canada, June 2-4, 2005
- Co-author of the book "Theoretical Analysis and Design of Transportation Terminals", People's Transportation Press in China, 2001, ISBN: 7-114-03892-5
- Huapu Lu, Chao Wang. "A Bi-level Logistics Terminal Planning Model based on Genetic Algorithm", China Civil Engineering Journal: Transportation, Vol. 1, No.1, pp. 1-5, 2001
- Chao Wang, Huapu Lu. "A study on the Planning Theory and Model of Integrated Transportation Network", presented at The 9th World Conference on Transportation Research, Korea, July 22-27, 2001

PROFESSIONAL TRAININGS

- Traffic Simulation with TransModeler Training presented by Caliper Corporation, Raleigh, NC, Jun. 2010
- ITS Deployment Analysis System (IDAS) Training by Kimley-Horn and Associates, Raleigh, NC, Nov. 2009
- Individual Choice Behavior: Theory and Application of Discrete Choice Analysis by MIT Professional Institute, Boston, MA, Jun. 2008
- DYNASMART-P Training sponsored by Federal Highway Administration (FHWA), Raleigh, NC, Nov. 2007
- Introduction to Transportation Conformity presented by National Transit Institute (NTI), Raleigh, NC, Mar. 2007
- Multimodal Freight Forecasting in Transportation Planning presented by National Highway Institute (NHI), Raleigh, NC, Nov. 2005