

**Li Zhang, Ph.D., P.E., F. ASCE, F. ITE**

**A. CONTACT**

Associate/Tenured Professor  
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**B. EDUCATION**

<u>Degree</u>	<u>University</u>	<u>Area</u>	<u>Year</u>
Ph. D.	Virginia Polytechnic Institute and State University (Blacksburg)	Civil Engineering	2000
M.S.	Virginia Polytechnic Institute and State University	Computer Science & Applications	1998
Ph.D.	Southwest Jiaotong University, Chengdu, China	Road and Railroad Engineering	1990-
Candidate (part time)		Engineering	1994
M.S.	Shanghai Tiedao University (Merged with Tong Ji University in 2000)	Railroad Engineering	1986
B.S.	Shanghai Tiedao University	Railroad Engineering	1983

**C. PROFESSIONAL EXPERIENCE**

**C-1 Mississippi State University**

	<b>Rank</b>	<b>Dates</b>
Department of Civil and Environmental Engineering	<i>Associate and Tenured Professor</i>	July 1, 2011-Present
	<i>Level I Faculty, Ph.D. Advisor</i>	Jan. 2005-Present
	<i>Assistant Professor</i>	Jan. 2005-June 2011

Sabbatical/Medical/Family Leaves: Spring 2014, Fall 2014, one month in Fall 2017, 3 months (20% workload) in Spring 2018, 3 months (50% workload) in Spring 2019. 20% workload after October 16, 2019.

**a) Teaching**

- Teaching undergraduate and graduate courses: Introduction to Transportation Engineering, Traffic Engineering, Geometric Design of Highway and Streets, Advanced Traffic Safety Modelling, Traffic Flow Theories, Traffic Simulation and Traffic Management, Intelligent Transportation Systems, Traffic Safety Studies, Computer Applications in Civil Engineering, Advanced Topics in None-Motorized Traffic, Non-linear Programming
- Founder of the Mississippi Transportation Laboratory: Designed and configured a state-of-the-art traffic laboratory for teaching and research
- Graduated four PhDs and several MS students; taught and advised thousands of undergraduate students

**b) Examples of Research Activities**

- Supervised a research professor and mentored a new assistant professor.
- Executive Director of UTC (2016): Worked with the director to lead a team within and outside MSU to develop transportation system research program, research directions, research policies, and research initiative planning.
- Lead a team of graduate students and 4 professors in CEE to work with other MSU departments and FAA UAS program; research commercial delivery UAS network safety, mobility, policy, procedures and implications.
- Co-PI of Lead Institute (2011-2017) with five consortium universities. US DOT UTC Tier I, about 6.9 million.
- Lead and PIs of MS DOT research projects to collect real time traffic sensor data to monitor traffic signal system performance and improve the system performance in real time
- Support junior faculties to establish their researches

**C-2 New Global Systems for Intelligent (NGS)                      Principle and PI                      Oct. 2007-Present (Part Time)**

Directed and managed the research and development of an open source microscopic traffic simulation software “Enhanced Transportation Flow Open Source Microscopic Model” (ETFOMM) and “Surrogate Safety Assessment Model 3.0 project (SSAM)”. The number of downloads is more than 18% of all FHWA’s open source application downloads among 88 applications as of September 9, 2019.

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**C-3 Connected Inc.    Principle and PI    Feb. 2014-Dec. 2014 (Full time)/**

Saxton Transportation Operations Lab. (STOL), FHWA, McLean, VA                      Jan. 2015-July 2017 (Part Time)

- Sabbatical Research, directed and designed the research platform to develop, debug, test and evaluate connected vehicle applications for safety and mobility. Proposed, managed, and conducted a US DOT connected vehicle research project at STOL

**C-4 ITT Industries    Senior Systems Engineer    Jan. 1999-Jan. 2005**

- Supervised ITT staff, assigned tasks and resources, and proposed Research & Development (R&D) projects and future R&D direction to ITT and FHWA managers. (2004-2005)
- Managed, re-designed, and integrated hardware in-the-loop devices and software to facilitate an ATMS test-bed

**C-5 Federal Railroad Administration                      DDE Transportation Fellow                      July 1997-June 1998**

- As the Fellowship receipt, doing Ph.D. dissertation at FRA (not Federal Employee). Initiated and modeled the project “Traffic Network Optimization and High-Speed Railroad Safety on Grade Crossing”

**C-6 Virginia Tech    Research Assistant    Sept. 1994-June 1997, July 1998-Dec. 1998**

<b>C-7 Southwest Jiaotong University (China)</b>	<b>Rank</b>	<b>Dates</b>
Colleges of Civil/Traffic and Transportation	<i>Adjunct Professor</i>	Sept.2014-Aug. 2017
College of Civil Engineering	<i>Lecturer</i>	Sept. 1988-July 1994
College of Civil Engineering	<i>Assistant Professor</i>	July 1986-Sept. 1988

- Taught railroad alignment design and traffic engineering courses
- Conducted railroad alignment related researches from 1986-1994

**D. LICENSES, REGISTRATIONS AND CERTIFICATES**

Professional Engineer, Virginia, License Number 0402 035971, 2002

**E. ACADEMIC, PROFESSIONAL, AND SCHOLARLY SOCIETY ACTIVITIES**

**E-1 US DOT UTC**

- *Executive director* of University Transportation Center, MSU’s Response to US DOT’s solicitations under FAST Act (2016-2020) (not funded)
- *Co-PI of Lead Institute*, US DOT UTC Tier I, FY12, \$3.5 Million, FY13, \$3.4 Million 2011-2017. 20% credit. Also, responsible for 5% of administrative work load
- *Technology Transfer Coordinator*, National Center for Intermodal Transportation, US DOT UTC, 2007-2011 (Responsible for 3% of administrative workload)

**E-2 Journal Editing**

- *Editorial Board*, Journal of Traffic and Transportation engineering, 2015-present.
- *Reviewer*, Journal of Transportation Engineering, Journal of Transportation Safety and Security, Journal of Computer-Aided Civil and Infrastructure Engineering, Journal of Transportation Research Record, IEEE Transactions on Intelligent Transportation Systems

### E-3 TRB

- *Member*, Standing Committee on Emergency Evacuation, Transportation Research Board (2015-2018)
- *Friend and Reviewer*, TRB Traffic Control Devices, Transportation Safety Management, Highway Capacity & Quality of Service, Freeway Operations, and Highway/Rail Grade Crossing Committee

### E-4 Conferences

- *Co-Chair*, Technical Committee on Emergency Evacuation, Roadway Safety & Emergence Evacuation Science, World Transport Convention, China Highway and Transportation Society (2017-2018)
- *Academic Committee*, 17th COTA International Conference of Transportation Professionals (CICTP2017). Tongji University, Shanghai, China. July 7-10, 2017.
- *Committee Member/Session Co-Chair*, the First International Conference on Railroad Engineering in China, BJTU, 2010
- *TPC member* in Transportation Track of IEEE VTC 2010 Fall Meeting, Ottawa, On, Canada
- *TPC member* in Transportation Track of IEEE VTC 2009 Spring Meeting, Taipei, Taiwan
- *Committee Member*, an ASCE Transportation Conference in China, 2007
- *Session Chairman*, IEEE 6th International Conference on Intelligent Transportation Systems, IEEE, Shanghai, China Oct. 2003.
- *Session Chairman*, the International Conference on Traffic and Transportation Studies, Beijing Jiaotong University and ASCE, Guilin, Guangxi, China, August 2002.

### E-5 Society Memberships

- *Fellow*, American Society of Civil Engineers
- *Fellow*, Institute of Transportation Engineers
- *Member*, IEEE

### E-6 Services

- *Volunteer service to FHWA's* open source (itsforge.net) software: Enhanced Transportation Flow Open-source Microscopic Model (ETFOMM) and Surrogate Safety Assessment Model (SSAM)
- *College* of Engineering Computer Specification Committee
- *CEE Promotional Committee* (temporarily excused for this promotion)
- *Faculty Advisor* to Student Chapter, Institute of Transportation Engineers (2005-2016)
- *Mentor of New CEE Faculty Appointed by the Dean*, 2007-2008

## F. RESEARCH GRANTS AND AWARDS RECEIVED

### F-1 Summary

Category	PI	CO-PI	UTC & CO-PI^	Total
MSU, Current	\$249,992	\$1,801,904~		\$2,051,956~
MSU, Completed	\$2,260,836	\$1,739,018	\$6,900,000^	\$10,404,854*
MSU Matching, Completed	\$203,750			\$203,750
MSU Internal, Completed**	\$453,862			\$453,862
None MSU, Federal/State Funding	\$2,969,319			\$2,969,319
Total	\$6,037,759	\$3,640,922	\$6,900,000^	\$16,083,681

\*: \$495,000 is from UTC. In "Total", \$495,000 should be deducted from UTC funding and is deducted.

\*\* : Direct labor and equipment charge only

^ : 20% credit

~ : \$350,000 matching and \$300,000 (50% matching) approved/pending included

## F-2 Current or on-going research/creative/performance activities

Sponsor	Amount	Start	End	Project Name
FAA ASSURE, Center of Excellence	\$1,200,000	2019	2021	eCommerce, Emerging UAS Network and Implications on NAS Integration, CO-PI, 50% funding responsibilities
FAA ASSURE, Center of Excellence	\$300,000	2019	2021	UAS Safety Case Development, Process Improvement, and Data Collection, CO-PI, 30% funding responsibilities
FAA ASSURE, Center of Excellence	\$200,000	2018	2020	UAS Parameters, Exceedances, Recording Rates for ASIAs, CO-PI, 56% funding responsibilities
FHWA (Subcontract with Leidos Inc.)	IDIQ	2017	2020	Technical Support Services for the FHWA Office of Operations Research & Development and the Saxton Transportation Operations Laboratory (STOL)
FHWA (Subcontract with Leidos Inc.)	IDIQ	2016	2020	Support Services for the Federal Highway Administration's Office of Operations
Mississippi Department of Transportation	\$149,992	2018	2019	Performance Measures for Traffic Signal Systems, 70% proposal credit
Mississippi Department of Transportation	\$201,964	2018	2019	Development and Evaluation of Wi-Fi Highway Performance Evaluation System on Highways, CO-PI, 25% proposal credit
		2019	2020	PI, 100% responsibilities

[1]: STOL IDIQ contract is not any guarantee of funding until a subcontract of task is assigned.

[2]: This IDIQ contract is not any guarantee of funding until a proposal with Leidos competing with 5 other IDIQ firms is awarded.

## F-3 Funds Awarded through MSU (Completed)

(Unless otherwise indicated, PI and the lead role are played in all projects)

Sponsor	Amount	Start	End	Project Name
National Center for Intermodal Transportation (DOT CTR)	\$123,986	2016	2016	Exploring Innovational Solutions in Multimodal OD Data
FHWA/Leidos	\$84,528	2015	2016	Traffic Bottlenecks Identification and Diagnosis, Countermeasure Prioritization, and Innovative Solutions
FHWA/Leidos	\$82,566	2015	2016	Speed Harmonization Fundamental Research
MSU parking services	\$34,862	2015	2016	Campus traffic signal optimization and traffic studies
FHWA	\$62,835	2014	2015	Eisenhower Grant for Research Fellowship
Mississippi Department of Transportation	\$99,000	2014	2016	OD and Travel Time Studies
USDOT	\$3,500,000	2012	2014	Tier I UTC, Co-PI, 5% project management time, 20% credit
	\$45,264			Project Management
USDOT	\$3,400,000	2014	2017	Tier I UTC, Co-PI, 5% project management time, 20% credit
	\$122,000			Project Management (Shared with another CEE faculty)
DOT UTC at MSU	\$96,250+	May	Dec.	Intermodal Transportation Systems Risk Analysis and
	\$96,250	2012	2013	Resilience in New Madrid Seismic Zone: the Impact to
	(matching)			Mississippi
DOT UTC at MSU	\$107,500+	May	Dec.	Real-time Transit Vehicle Routing Optimization in Emergency
	\$107,500	2012	2013	Evacuations
	(matching)			
MDOT	\$77,816	2012	2012	Driver Speed Limit Compliance in School Zones: Assessing the Impact of Sign Saturation, Co-PI
Department of Homeland Security-SERRI	\$170,000	May	Aug	Real-Time Identification! Monitoring of Barge-Carried
		2011	2012	Hazardous Commodities (Phase 3). CO-PI

Sponsor	Amount	Start	End	Project Name
Mississippi Department of Transportation	\$152,810	Jan. 2010	Dec. 2011	I55 Integrated Diversion Traffic Management Benefit Study (State Study 223)
National Center for Intermodal Transportation (DOT CTR)	\$69,742	Aug. 2009	Aug. 2010	Analyzing Congestion and Capacity Impacts from Disruptions to Critical Infrastructures in the Rail Network, Co-PI
National Center for Intermodal Transportation (DOT CTR)	\$59,352	Aug. 2009	Dec. 2010	Coordination of IVI and Transit Signal Priority on Transit Evacuations
Jackson State University	\$34,192			
National Center for Intermodal Transportation (DOT CTR)	\$57,519	Aug. 2009	Aug. 2010	Modeling Economic Benefits Resilience Enhancement Strategies for Intermodal Transportation Systems
National Center for Intermodal Transportation (DOT CTR)	\$53,958	Mar. 2008	Aug. 2009	The Framework of Calculating the Measures of Resilience (MOR) for Intermodal Transportation Systems
Mississippi DOT	\$25,862			
National Center for Intermodal Transportation (DOT CTR)	\$53,232	Mar. 2008	Aug. 2009	Demonstration of Global Supply Chains with Intermodal Transportation and Decision Support for Small and Medium Business (Co-PI)
Department of Homeland Security	\$391,000	Mar. 2007	Mar. 2009	Real-Time Operations Support for Emergency Evacuations (Collaborate with ORNL)
Jackson State University (DOT CTR)	\$50,000	May 2007	May 2008	Optimum Transit Operations during the Emergency Evacuations
AASHTO	\$208,127	May 2006	Sept. 2009	National Transportation Product Evaluation: Field Evaluation of Pavement Marking Materials- Mississippi Deck
Mississippi Department of Transportation	\$150,000	Mar. 2003	Dec. 2007	Traffic Flow Operation in Freeway Work Zones
Mississippi Department of Transportation	\$15,509	Jan. 2006	Dec. 2006	Studies on Impact of Aircraft Maintenance Labor and Parts Tax in the State of Mississippi
Mississippi State University	\$20,000	Jun. 2004	Dec. 2005	Campus Traffic Studies
National Park Service Natchez Parkway		Jul. 2005	Jan. 2006	Natchez Parkway Safety Studies
AASHTO	\$255,850	Jun. 2004	Sept. 2007	National Transportation Product Evaluation: Field Evaluation of Pavement Marking Materials- Mississippi Deck
Mississippi State University	\$399,000	Feb. 2005		Startup Fund

#### F-4 Connected Inc., PI and Principle (Sabbatical Research)

FHWA/Leidos	\$371,493	2014	2017	(Not MSU research on sabbatical leave) Mobility and Safety Benefit of Connected Vehicles at Signalized Intersections
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#### F-5 New Global Systems for Intelligent Transportation Management Corp., PI and Principle

US DOT/SBIR	\$999,900	2015	2017	Microscopic Traffic Simulation Models and Software "An Open Source Approach," Phase IIB.
State of Kentucky	\$500,000	Jan. 2013	Dec. 2014	Commercialization of US DOT SBIR Product.
US DOT/SBIR	\$997,970	Jul. 2011	Mar. 2014	Microscopic Traffic Simulation Models and Software "An Open Source Approach," Phase II.
US DOT/SBIR	\$99,956	Sept. 2008	Aug. 2009	Microscopic Traffic Simulation Models and Software "An Open Source Approach," Phase I.

## F-6 In China

National Economic Development Committee	N/A	Jul. 1990	Jun. 1993	Railway Longitudinal Profile Standard Analysis on Heavy Haul Trains (Not a PI)
Sichuan Provincial Railroad Administration	N/A	1993	1993	Local Railroad Feasibility Studies (Co-PI)
National Educational Committee	N/A	Jul. 1990	Jun. 1994	Computer Aided and Optimal Railroad Alignment Design
Chengdu Railroad Administration	N/A	Jul. 1987	Jun. 1992	Optimizing Railway Vertical Alignment Design for Reforming or Repairing (PI)
Shanghai Tiedao University	N/A	Jul. 1984	Jun. 1986	Optimizing Rail Operation Strategies

## G. PUBLICATIONS

### G-1 Open Source Software Publications

(Software below generates 18% all FHWA open source downloads among 88 applications as of September 9, 2019)

- 1) Zhang, Li, etc. ETFOMM (Enhanced Transportation Flow Opensource Microscopic Model) 2.1. Open Source Application Development Portal, FHWA, US DOT. January 2019. <https://itsforge.org/index.php/community/explore-applications#/30/159>. Accessed on September 9, 2019.
- 2) Zhang, Li, etc. ETFOMM (Enhanced Transportation Flow Opensource Microscopic Model) 1.0. Open Source Application Development Portal, FHWA, US DOT. August 2017. August 2017. <https://itsforge.org/index.php/community/explore-applications#/30/142>. Accessed on September 9, 2019.
- 3) Zhang, Li, etc. SSAM (Surrogate Safety Assessment Model) 3.0. Open Source Application Development Portal, FHWA, US DOT. <https://itsforge.org/index.php/community/explore-applications/for-search-results#/35/143>. Accessed on September 9, 2019.

### G-2 Journal Papers

- 1) Pengfei (Taylor) Li, Peirong Wang, Farzana Rahman Chowdhury and Li Zhang. 2019. "A mixed integer programming formulation and scalable solution algorithms for traffic control coordination across multiple intersections based on vehicle spacetime trajectories". Transportation Research Part B. Submission no: TRB\_2019\_343. Accepted for publications
- 2) Pengfei (Taylor) Li, Peirong Wang, Farzana Rahman Chowdhury and Li Zhang., 2019. "Scalable Computing Architecture for Solving Time-Dependent Transportation Problems Based on High-Performance Computing Techniques", *Journal of the Transportation Research Board*. Vol 2673, Issue 4, 2019. P205-216.
- 3) Zhang, Li, Lei Zhang, etc. "A Cycle-Based Variable Speed Limit Methodology for Improved Freeway Merging". *IET Intelligent Transport Systems*. Volume 11, Issue 10, 2017. p. 632 –640. ((DOI: 10.1049/iet-its.201717)
- 4) Zhang, Li, Z. Huang and A. Hawkins. "Implementing Real Time Offset Tuning Algorithm for Integrated Corridor Management". *Transportation Research Record: Journal of the Transportation Research Board*, No. 2488 (2015), 97-107.
- 5) Zhang, Q. Yang Hao and Zhang, L. "Multi-objective Model on Connection Time Optimization in Sea-rail Intermodal Transport". *GSTF Journal of Engineering Technology (JET)* Vol.3 No.1, July 2014, 112-118. (DOI: 10.5176/2251-3701\_3.1.118)
- 6) Zhang, Q., Yuan Yun, Zhang, L. and Huao Yang. "Handling Equipment Allocation Optimization of Railroad-highway Combined Transportation: Bi-Objective Model and MEACO Algorithm". *GSTF Journal of Engineering Technology (JET)*, Vol. 2 No. 3, Dec 2013. (DOI: 10.7603/s40707-013-0007-6)

- 7) Yi Wen, Li Zhang. etc. "Incorporating transportation network modeling tools within transportation economic impact studies of disasters". *Journal of Traffic and Transportation Engineering*. Volume 1, Issue 4, August 2014, 247–260. (doi:10.1016/S2095-7564(15)30270-1)
- 8) Zhang, Li, J. Gou and M. Jin. "A Model of Integrated Corridor Traffic Optimization." Transportation Research Board, National Research Council, Washington D.C. *Transportation Research Record: Journal of the Transportation Research Board Record*, No. 2311 (2012). 108-116.
- 9) Li, Ling Feng, Mingzhou Jin and Li Zhang, "Sheltering network planning and management with a case in the Gulf Coast region." *Journal of Production Economics*. 131(2):431-440. June 2011. (doi:10.1016/j.jipe.2010.12.013)
- 10) Chi, Huanqing, Zhou, Xuan, McClure, Timothy E., Gilbert, Paul, Cosby, Arthur, Zhang, Li, Robertson, Angela and Levinson, David. "Prices and Their Relationship to Drunk-Driving Crasher." *Journal of Accident Analysis & Prevention*. 43 (2011) 194–203.
- 11) Franzese, Oscar, Zhang, Li, and Mahmoud, Anas. 2010. "Real-Time Traffic Information for Emergency Evacuations." *Journal of Transportation Safety & Security*. Pages 69 – 83, Volume 2, Issue 1, 2010, 69-83.
- 12) Gou, Jizhan and Zhang, Li, et al. 2009. "QuickZone Improvement for Rural Freeway and Model Validation". *Transportation Research Record: Journal of the Transportation Research Board.*, No. 2107, 34-45,
- 13) Song, Rui, He, Shiwei and Zhang, Li. 2009. "Optimum Transit Operations during the Emergency Evacuations." *Journal of Transportation Systems Engineering and Information Technology*, Vol.9, No.6, 2009. 154-160.
- 14) Zhang, Li, McHale, Gene, and Zhang, Yunlong. 2003. "Modeling and Validating CORSIM Freeway Origin Destination Volumes." *Transportation Research Record: Journal of the Transportation Research Board*, No. 1856, 135-142.
- 15) Zhang, Li, Hobeika, Antoine, and Ghaman, Raj. 2002. "Optimizing Traffic Network Signals around Railroad Crossings-Model Validations." *Transportation Research Record: Journal of the Transportation Research Board*. No. 1811, 139-147.
- 16) Zhang, Li and Deng, Yucai. 1993. "A CAD System for Railway Location." *Journal of Southwest Jiaotong University*, No. 2, 1993. Chengdu, China. (In Chinese)
- 17) Zhang, Tianxin and Zhang, Li. 1991. "Effects of Railway Profile Standard on the Longitudinal Force of Heavy Load Connected Trains." *Journal of Southwest Jiaotong University*. No. 2, 1991, Chengdu, China. (In Chinese)
- 18) Deng, Yucai and Zhang, Li. 1991. "Research of Railway Location CAD Software." *Journal of Dalian Institute of Railway Technology*, Vol.12, No.1. Dalian, China. (In Chinese)
- 19) Zhang, Li and Guo, Dafei. 1988. "The Optimization of the Effective Length of Arriving and Departing Tracks at the Station in Reforming the Existing line." *Journal of Shanghai Institute of Railway Technology*, Vol.9, No.3. Shanghai, China. (In Chinese)

### **G-3 Journal Papers Under Revision in Respond to Reviewer's Comments**

- 1) Zhang, Li, Lei Zhang, Zhitong Huang and Pengfei Li. 2018 "Modeling the Early Deployment of Connected Vehicles at Signalized Intersections". *Journal of Intelligent Transportation Systems: Technology, Planning, and Operations* - Manuscript ID GITS-2018-0137

#### **G-4 Journal Papers Submitted and Under Review**

- 1) Zhang, Li, Lei Zhang, Zhitong Huang and Pengfei Li. 2019 “Distributed Traffic Signal Timing Optimization at Connected Vehicles Corridors”. *Journal of Intelligent Transportation Systems*. IEEE

#### **G-5 Transportation Research Board (TRB) Annual Meeting Compendium of Papers-Peer Reviewed**

Citations below are papers whose content is not contained in essentially the same manner in the list of refereed journal manuscripts provided earlier. Five additional papers besides those cited below appear in the TRB Annual Meeting Compendium of Papers that are also published with essentially the same content in a journal manuscript listed earlier (e.g. Transportation Research Record).

- 1) Lei Zhang, Zhang, Li, etc. 2018. “Distributed Traffic Signal Timing Optimization at Connected Vehicles Corridors”. *Transportation Research Board 98<sup>th</sup> Annual Meeting*, Washington, D.C., Jan 12-16, 2019  
Transportation Research Record: Journal of the Transportation Research Board. Manuscript ID: 19-03960
- 2) Pengfei (Taylor) Li, Peirong(Slade) Wang, Farzana R. Chowdhury, Li Zhang, "A Scalable Computing Architecture For Solving Time-Dependent Transportation Problems Based On High-Performance Computing Techniques", Transportation Research Board 98th Annual Meeting, Washington, D.C., Jan 12-16, 2019.  
Manuscript ID: 19-05027.
- 3) Farzana R. Chowdhury, Peirong (Slade)Wang, Pengfei (Taylor) Li, Li Zhang and Xianfeng Yang, "Resilient Mixed Integer Linear Programming Formulations for Heterogeneous Traffic Signal Priority Scheduling Problem", Transportation Research Board 98th Annual Meeting, Washington, D.C., Jan 12-16, 2019. Manuscript ID: 19-06026.
- 4) Zhang, Li, Lei Zhang, Zhitong Huang, Deborah Curtis, and Pengfei Li. “Benefits of Early Deployment of Connected Vehicles at Signalized Intersections”. *Transportation Research Board 97<sup>th</sup> Annual Meeting*, Washington, D.C., Jan 7-11, 2018, Paper 18-0438.
- 5) Zhitong Huang, Zhang, Li, Deborah Curtis, G. Vadakpat, Lei Zhang, J. Ma and D. Hale. “Arterial-level Traffic Progression Optimization Model within Connected Vehicle 1 Environment”. *Transportation Research Board 97<sup>th</sup> Annual Meeting*, Washington, D.C., Jan 7-11, 2018. Paper 18-02104
- 6) Wen, Yi, Zhang, Li, etc. “A Dynamic Transit Vehicle Routing System in Emergency Evacuation”. *Transportation Research Board 95<sup>th</sup> Annual Meeting*, Washington, D.C Jan.12-17, 2016. Paper 16-5529.
- 7) Jizhan Gou, Veera Gunda and Zhang, Li, “Traffic Engineers Are Preparing for the Coming Big Data Era: Prototype Development of a Comprehensive Intersection Volume Analysis Tool.” *Transportation Research Board 94<sup>th</sup> Annual Meeting*, Washington, D.C. Jan 11-15, 2015. Paper 15-1356
- 8) Wen, Yi, Li Zhang, Li et al. 2012 “Coordination of Connected Vehicle and Transit Signal Priority in Transit Evacuations”. *Transportation Research Board 91<sup>th</sup> Annual Meeting*, Washington, D.C. Jan 22-26, 2012. Paper 12-3152.
- 9) Zhang, Li, Burke, James Patrick and Gou, Jizhan “Sensitivity Analysis on Dry and Wet Retroreflectivity of Pavement Markings.” *Transportation Research Board 89<sup>th</sup> Annual Meeting*, Washington, D.C., Jan 10-14, 2010. Paper 10-2561.
- 10) Zhang, Yunlong, Madiri, Sam, Zhang, Li and Kohli, Priya “Statistical Technique to Handle Data Irregularities in Field Evaluations of Pavement Markings.” *Transportation Research Board 89<sup>th</sup> Annual Meeting*, Washington, D.C., Jan 10-14, 2010. Paper 10- 3217.
- 11) Jin, Mingzhou Warren, Justin, Strawderman, Lesley and Zhang, Li “Decision Support System Framework for Improvement of Surface Transportation Security Training Program” *Transportation Research Board 89<sup>th</sup> Annual Meeting*, Washington, D.C., Jan 10-14, 2010. Paper 10-2885.



- 12) He, Shiwei, Zhang, Li, et al. "Optimal Transit Routing Problem for Emergency Evacuations." *Transportation Research Board 88<sup>th</sup> Annual Meeting*, Washington, D.C., Jan 11-15, 2009. 09-0931.
- 13) Xu, Wangtu, He, Shiwei, Song, Rui, Li, Juan, and Zhang, Li, "Hub Location & Service Frequency Determination for the Rail and Truck Freight Transportation Network." *Transportation Research Board 88<sup>th</sup> Annual Meeting*, Washington, D.C., Jan 11-15, 2009. 09-2454.
- 14) He, Shiwei, Song, Rui, Zhang, Li. "Efficient Methods for Evaluating Effective Carrying Capacity of Railroad Network System." *Transportation Research Board 86<sup>th</sup> Annual Meeting*, Washington, D.C., Jan 21-25, 2009. 07-3255.
- 15) Zhang, Li, McHale, Gene, and Zhang, Y. "Validation and Calibration of the CORSIM Traffic Simulation Model at Signalized Intersections." *83<sup>rd</sup> Annual Meeting Compendium of Papers*, CD-ROM. Transportation Research Board, Washington D.C. Jan. 2003.
- 16) Zhang, Yunlong and Zhang, Li. 2000. "Control Delay Modeling in CORSIM." *The 80<sup>th</sup> TRB Annual Meeting Compendium of Papers*, CD-ROM. Transportation Research Board, Washington D.C. Jan. 2000.

#### **G-6 Conference Proceedings (Refereed)**

- 1) Lei Zhang, Zhang, Li, etc. "Traffic Signal Control Systems at Connected Vehicle Corridors: Theories and Implementation". 26<sup>rd</sup> World Congress on Intelligent Transportation Systems. Singapore, Singapore. October 2019.
- 2) Zhang, Li, Lei Zhang, David Hale, Jia Hu, Zhitong Huang. "A Cycle-Based Variable Speed Limit Methodology for Improved Freeway Merging". 23<sup>rd</sup> World Congress on Intelligent Transportation Systems. Melbourne, Australia, October 2016. (Best Scientific Paper Award, Americas, significant updated contents were published as Journal).
- 3) Zhang, Li., etc. 2012. "Framework of Integrating Connected Vehicle and Positive Train Control to Highway Railroad Grade Crossing". 2nd International Conference on Railway Engineering, August 19-23, 2012, Beijing, China. (Also, a keynote speaker)
- 4) Zhang, Li, Wen, Yi, Jin, Mingzhou and Gou, Jizhan. "The Framework for Calculating the Measure of Resilience for Intermodal Transportation Systems." 1st International Conference on Railway Engineering, August 20-21, 2010, Beijing, China.
- 5) Zhang, Li, Cai, Shangshu and Zhang, Yunlong. "Comparison of Lane Changing Algorithms between NGSIM and CORSIM." 2010 IEEE 71st Vehicular Technology Conference: VTC2010-Spring. 16-19 May 2010, Taipei, Taiwan
- 6) Wu, Di and Zhang, Li. 2010. "Campus Emergency Evacuation Traffic Management Plan." Accepted for Publication in the Proceedings of the 70th IEEE Vehicular Technology Conference. 20 - 23 September 2009. Anchorage, Alaska. IEEE.
- 7) Zhang, Li, Gou, Jizhan, et al. 2009. "Simulation Modeling and Application with Emergency Vehicle Presence in CORSIM." Accepted for Proceedings of the 70th IEEE Vehicular Technology Conference. 20 - 23 September 2009. Anchorage, Alaska. IEEE.
- 8) Zhang, Li, Gou, Jizhan., et al. 2007. Mississippi State University Starkville Campus Traffic Studies, *Proceedings of 14<sup>th</sup> World Congress on ITS*. Beijing, China, 2007.
- 9) Colyar, James, Zhang, Li, et al. "Identifying and Assessing Key Weather-Related Parameters and Their Impacts on Traffic Operations Using Simulation" Institute of Transportation Engineers 2003 Annual Meeting and Exhibit. Seattle, Washington August 24-September 2, 2005.

- 10) Zhang, Li, Liu, Ke, and VanGorder, R. 2004. "Traffic Research Laboratory Configuration." *Proceedings of the IEEE 7<sup>th</sup> International Conference on Intelligent Transportation Systems*, IEEE, Los Alamitos, CA.
- 11) Ghaman, Raj S., Owen, Larry, Zhang, Li, VanGorder, Randall, and Liu, Ke. 2004. "Advanced Traffic Research Laboratory Development." *Proceedings of the IEEE 7<sup>th</sup> International Conference on Intelligent Transportation Systems*, IEEE, Los Alamitos, CA.
- 12) Ghaman, Raj, Zhang, Li, Ling, Li. and Liu, Ke. 2004. "Application of the Hardware-in-the-Loop Simulation for Updating the Traffic Signal Timing Plans." *Proceedings of the Eighth International Conference on Application of Advanced Technology in Transportation Studies*, ASCE, Reston, VA. pp. 377-382
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#### **G-7 Presentations, Seminars and Workshop**

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- 2) Zhang, Li. "Safety and Mobility Modelling of Interchanges and Roundabout". Gulf Regional Planning Commission. November 5, 2019. <https://www.deepsouthite.org/2019-fall-meeting/#!event-register/2019/10/17/dsite-2019-fall-meeting-grits-workshop>. October 17, 2019
- 3) Zhang, Li. "ETFOMM Updates". FHWA Office of Operations R & D, March 2019.
- 4) Zhang, Li. "ETFOMM: Enhanced Transportation Flow Open-source Microscopic Model-2019 Updates". TRB Highway Capacity and Quality of Service, Subcommittee on Traffic Simulation & Connected/Vehicles Task Force. January 13, 2019.

- 5) Zhang, Li. "Traffic Signal Control Systems at Connected Vehicle Corridors: Theories and Implementation". ITS Middle East, 2018 Annual Meeting September 13 and 14. [http://www.itsmidwest.org/2018-Annual-Meeting/presentations/ppdf/session-3/TrafficSignalSystems%20at%20Connected%20Corridors\\_Zhang.pdf](http://www.itsmidwest.org/2018-Annual-Meeting/presentations/ppdf/session-3/TrafficSignalSystems%20at%20Connected%20Corridors_Zhang.pdf)
- 6) Zhang, Li. "MDOT Signal Performance measure research project". Deep South ITE Summer Meeting, Biloxi, MS. June 13, 2018.
- 7) Zhang, Li. "Benefits of early deployment of Connected Vehicles at Signalized Intersections". The 2018 Spring Workshop: Connected & Autonomous Vehicles. Gulf Regional ITS, New Orleans, April 25, 2018.
- 8) Zhang, Li." ETFOMM and CAVS" Freeway Simulation Subcommittee, AHB20 (2). Transportation Research Board. January. 2018.
- 9) Zhang, Li. "SSAM and ETFOMM updates". Surrogate Measures of Safety Subcommittee, ANB20 (3). Transportation Research Board. January. 2018. <https://docs.google.com/document/d/1-e28a1N9BYjp8SaEu5SVAtiA1LTGXijVwGuVbV9NuEM/edit9>
- 10) Zhang, Li. 2017. Workshop on "Connected Vehicle research and Open Source Microscopic Traffic Simulation Software". The 17th COTA International Conference of Transportation Professionals (CICTP2017). Tongji University, Shanghai, China. July 7, 2017.
- 11) Zhang, Li. 2017. "Traffic Signal Control Strategies and Benefits at Connected Vehicle Arterials". The 17th COTA International Conference of Transportation Professionals (CICTP2017). Tongji University, Shanghai, China. July 7, 2017.
- 12) Zhang, Li. 2017. "Update on an Open Source Microscopic Traffic Simulation Software (ETFOMM)". Simulation of Traffic Signal Systems Subcommittee, AHB25 (3), Transportation Research Board. January. 2017. <https://annualmeeting.mytrb.org/interactiveprogram/Details/4844>
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- 15) Zhang, Li. 2017." Open Source Microscopic Traffic Simulation Software ETFOMM (Includes SSAM)" Freeway Simulation Subcommittee, AHB20 (2). Transportation Research Board. January. 2017. <https://annualmeeting.mytrb.org/interactiveprogram/Details/4980>
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- 17) Zhang, Li. 2017. "*USDOT Open source microscopic traffic simulation software: ETFOMM*". Traffic Simulation Models, AHB45 (1), Joint Subcommittee of AHB45, AHB40, AHB25, AHB20, ADB30, AHB55, ADC20. Transportation Research Board. January. 2017. <https://annualmeeting.mytrb.org/interactiveprogram/Details/4987>
- 18) Zhang, Li. 2016. "Traffic Signal Control Systems Transforming to Connected and Driverless Vehicles". 2016 Annual Meeting. Intelligent Transportation Society of Middle West, Louisville, KY. September 2016. [http://www.itsmidwest.org/2016AnnualMeeting/pdfs/2016%20ITS%20Midwest%20Booklet\\_Sai.pdf](http://www.itsmidwest.org/2016AnnualMeeting/pdfs/2016%20ITS%20Midwest%20Booklet_Sai.pdf)

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- 20) Zhang, Li, ASCE MINI-WEBINAR "Cloud/Distributed/Parallel Computing in Microscopic Traffic Simulation." December 10, 2015.
- 21) Zhitong Huang, Zhang, Li, Deborah Curtis and Govindarajan Vadakpat. 2015. "Dynamic and Real-Time Traffic Signal Coordination Tuning Model for Signalized Arterials within Connected Vehicle Environment". Connected and Automated Vehicles 9th University Transportation Centers Spotlight Conference. National Academy of Sciences, Transportation Research Board, Washington, D.C. November 4-5, 2015. <http://onlinepubs.trb.org/onlinepubs/Conferences/2015/ConnectedVehicles/Program.pdf>.
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- 22) Li Zhang. 2015. "Dynamic Mobility Application Development Environment in Cloud Microscopic Traffic". Southwest Jiaotong University. Chengdu, Sichuan, China. Jun 2015. [http://www.swjtu.cn/jsp/activity\\_detail.jsp?id=12545](http://www.swjtu.cn/jsp/activity_detail.jsp?id=12545).
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- 24) Zhang, Li. 2015. "Signal Phasing and Timing (SPAT) Application Development". Kentucky Institute of Transportation Engineer Spring Meeting. April 2015. Lexington, KY. 2015. <http://myemail.constantcontact.com/News-from-Kentucky-Section-of-ITE.html?soid=1103691331381&aid=bFYvvl1iAh0>
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- 26) Zhang, Li. 2011. "Integrating Network Modeling with Economic Impact Studies and Resilience Measurement." TRB 2011 Transportation Hazards and Security Summit-Looking Beyond the 10th Anniversary of 9/11. August 22 - 25, 2011. Irvine, California. <http://onlinepubs.trb.org/onlinepubs/Conferences/2011/SecuritySummit/SecuritySummitProgram.pdf>
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- 29) Zhang, Li, Yi Wen, et al. "Optimal Transit Routing Problem for Emergency Evacuations." Annual Transportation Workshop. Transportation Working Group, Mississippi State University, MS
- 30) Zhang, L. Jan. 2008. Rural Freeway Work Zone Simulation Software Evaluations. TRB Freeway Operations Committee Meeting. 87<sup>th</sup> Transportation Research Board Meeting, Washington, D.C.
- 31) Zhang, Li, 2007. The NGSIM Freeway Lane Selection algorithm in CORSIM. The TRB NGSIM Stakeholder Meeting. FHWA

- 32) Zhang, Li, Ke Liu, and James Colyar. 2007. "Effect of Preemption on Emergency Vehicle Travel Time under Evacuation Scenarios." The Subcommittee on Emergency Evacuation, *85<sup>th</sup> Transportation Research Board Annual Meeting*. Transportation Research Board, National Research Council, Washington D.C.
- 33) James Colyar and Zhang, Li. 2004. "Evaluating the Effect of Number of Lanes on Freeway Capacity Using Simulation." *83<sup>rd</sup> Transportation Research Board Annual Meeting*, Transportation Research Board, National Research Council, Washington D.C.
- 34) Zhang, Li. 1998. "Integration of Traffic Signal Optimization and High-Speed Railroad Intersection Safety." Federal Railroad Administration, US Department of Transportation, Washington D.C.

#### **G-8 Research Reports**

- 1) David Hale, Zhang, Li, etc. "Conceptual Framework for Integrated Traffic Safety and Operational Analysis". Report Number: FHWA-SA-18-xxx. Under FHWA final review and to be published soon. July 2018.
- 2) Zhang, Li, etc. A series of Reports under US DOT SBIR Research Project "*Microscopic Traffic Simulation Models and Software- an Open Source Approach*." Phase IIB. August 2017.

"ETFOMM Application Programming Interface Reference". [https://itsforge.net/data/repo/docs/ETFOMM Application Programming Interface Reference.pdf](https://itsforge.net/data/repo/docs/ETFOMM_Application_Programming_Interface_Reference.pdf)

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"ETFOMM Build Instructions". [https://itsforge.net/data/repo/docs/ETFOMM Build Instructions.pdf](https://itsforge.net/data/repo/docs/ETFOMM_Build_Instructions.pdf)

"ETFOMM Reference Manual Vol 1". [https://itsforge.net/data/repo/docs/ETFOMM Reference Manual Vol 1.pdf](https://itsforge.net/data/repo/docs/ETFOMM_Reference_Manual_Vol_1.pdf)

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"Open Source SSAM API". [https://itsforge.net/data/repo/docs/Open Source SSAM API.pdf](https://itsforge.net/data/repo/docs/Open_Source_SSAM_API.pdf)

"Open Source SSAM Data Dictionary". [https://itsforge.net/data/repo/docs/Open Source SSAM Data Dictionary.pdf](https://itsforge.net/data/repo/docs/Open_Source_SSAM_Data_Dictionary.pdf).

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"Open Source SSAM User Manual". [https://itsforge.net/data/repo/docs/Open Source SSAM User Manual.pdf](https://itsforge.net/data/repo/docs/Open_Source_SSAM_User_Manual.pdf)

- 3) Zhang, Li. "Benefits of Connected Vehicles at Signalized Intersections" Volume I and II, FHWA Report Number: FHWA-JPO-18-613. Under 508 editing and to be published soon. July 2017.
- 4) Zhang, Li. etc. "Travel Time and OD Studies". Report to Mississippi Department of Transportation, Jackson, MS. December 2016.
- 5) Zhang, Li, etc. "Intermodal Transportation Systems Risk Analysis and Resilience in New Madrid Seismic Zone: the Impact to Mississippi". A Report Submitted to NCPEC, an US DOT Tier I UTC at Mississippi State University. <http://www.ncitec.msstate.edu/wp-content/uploads/2012-17FR.pdf>. 2016.

- 6) Zhang, Li, etc. “Real-Time Transit Vehicle Routing Optimization in Intermodal Emergency Evacuations”. A Report Submitted to NCPEC, an US DOT Tier I UTC at Mississippi State University. <http://www.ncitec.msstate.edu/wp-content/uploads/2012-15FR.pdf>. 2016.
- 7) Zhang, Li. Etc. 2013. “I-55 Integrated Diversion Traffic Management Benefit Study”. FHWA/MS-DOT-RD-10-223, MS-DOT-RD-10-223. <http://mdot.ms.gov/documents/research/Reports/Interim%20and%20Final%20Reports/State%20Study%20223%20-%20%20%20I-55%20Integrated%20Diversion%20Traffic%20Management%20Benefit%20Study.pdf> Mississippi Department of Transportation. Updated in 2014 and published online in 2015.
- 8) Strawderman, Lesley, Li Zhang etc. “Driver Speed Limit Compliance in School Zones: Assessing the Impact of Sign Saturation”. MS-DOT-RD-13-253. <http://mdot.ms.gov/documents/research/Reports/Interim%20and%20Final%20Reports/State%20Study%20253%20-%20Driver%20Speed%20Limit%20Compliance%20In%20School%20Zones%20-%20Assessing%20The%20Impact%20Of%20Sign%20Saturation.pdf> .2013
- 9) Zhang, Li. “Microscopic Traffic Simulation Models and Software- An Open Source Approach.” Phase II Final Report Submitted to US DOT. 2013.
- 10) Zhang, Li, Yi, Wen, and Sandra Eksioglu and Feng Wang. “*Coordination of IVI and Transit Signal Priority on Transit Evacuations*”. A final report submitted to National Center for Intermodal Transportation, (a US DOT CTR at University of Denver and Mississippi State University).
- 11) Zhang, Li, Zhitong Huang and Mingzhou Jin. 2012 “*Modeling Economic Benefits of Resilience Enhancement Strategies for Intermodal Transportation Systems*”. A final report submitted to National Center for Intermodal Transportation, (a US DOT CTR at University of Denver and Mississippi State University). 2012.
- 12) Zhang, Li, Huang, Zhitong, Yi, Wen, and Mingzhou Jin. Aug. 2010. “*The Framework for Calculating the Measure of Resilience for Intermodal Transportation Systems.*” State Study 220. Report No. FHWA/MS-DOT-RD-10-220. A final report submitted to Mississippi Department of Transportation.
- 13) Zhang, Li, Yi Wen, and Mingzhou Jin. “*The Framework for Calculating the Measure of Resilience for Intermodal Transportation Systems.*” A final report submitted to National Center for Intermodal Transportation, A US DOT CTR at University of Denver and Mississippi State University. 2009.
- 14) Jin, Mingzhou and Zhang, Li. “*Demonstration of Global Supply Chains with Intermodal Transportation and Decision Support for Small and Medium Business.*” A final report submitted to National Center for Intermodal Transportation, A US DOT CTR at University of Denver and Mississippi State University. 2009
- 15) Zhang, Li. “*Microscopic Traffic Simulation Models and Software- An Open Source Approach.*” Phase I Final Report Submitted to US DOT. 2009
- 16) Franzese, Oscar and Zhang, Li. “*Real-Time Traffic Information for Emergency Evacuation Operations: Phase A Final Report.*” Submitted to SEERI Program Office, US DHL. 2009
- 17) Zhang, Li, Yi Wen, and Mingzhou Jin. “*Optimum Transit Operations during the Emergency Evacuations.*” A final report submitted to Institute for Multimodal Transportation National Center at Jackson State University, MS, an US DOT center for Transportation Research. 2009
- 18) Walden, C., Eksioglu, B., Puryear, S., Jin, M., Zhang, Li, and Eksioglu, S. “*Analysis of Inbound Logistics: Prospective Automotive Assembly Sites.*” Submitted to Mississippi Department of Transportation. 2008
- 19) Zhang, Li and Jizhan Gou. “*Study on Traffic Flow Operation in Freeway Work Zones.*” Mississippi Department of Transportation. Jackson, Mississippi. 2008

- 20) Zhang, Li. “*Final Report of Field Performance Evaluation of Pavement Marking Materials (2004 Mississippi Test Deck)*.” AASHTO, Washington D.C. 2007.
- 21) Zhang, Li., Albert Allen and Truax Dennis. “*Studies on Impact of Aircraft Maintenance Labor and Parts Tax in the State of Mississippi*.” Report to Mississippi Department of Transportation.2005.
- 22) Zhang, Li, James Colyar, et al. “*Identifying and Assessing Key Weather-Related Parameters and Their Impacts on Traffic Operations Using Simulation*.” FHWA Final Report. FHWA-HRT-04-131, McLean, VA. 2004
- 23) Zhang, Li. “*CORSIM Enhancement for Transit Priority Operations- Implementation of NITCP Proposal*.” Reported to ITT Systems and FHWA. 1998
- 24) Hobeika, A.G. and Li Zhang. “*Modeling the Use of Transit Bus as a Probe Vehicle*.” A Report to Research Center of Excellence, FHWA. 1996.
- 25) Trani, A. A., X. Gu, C. Zhong, L. Zhang and J. Cao. “*A Systems Approach to Enhance the Ground Simulation Capabilities of SIMMOD*.” Report to Federal Aviation Administration. 1995.
- 26) Zhang, Li and Yucai Deng. “*A Railroad Location CAD System-User’s Manual*.” A Report Submitted to China National Educational Committee. (In Chinese) 1993.
- 27) Deng, Yucai, and Li Zhang. “*A Railroad Location CAD System*.” A Report Submitted to China National Educational Committee. (In Chinese) 1993.
- 28) Deng, Yucai, and Li Zhang. “*The Selection of Programming Language for Railway Location System*.” *Scientific and Technical Reports of Railway Engineering*. Office of Construction, China Railway Ministry. (In Chinese) 1990.

#### **G-9 Invited Presentations, Lectures and Seminars**

- 1) Invited Speaker, “Traffic Operations, Traffic Control and Evacuations.” Transportation Research Group, National Taiwan University. Taipei, May 2010.
- 2) Invited Speaker “Intermodal Transportation Resilience and Transit Evacuation.” College of Transportation Engineering, Tongjin University, Shanghai, China. May 2010.
- 3) Invited Speaker “Traffic Control, Traffic Simulation and Evacuation Traffic Operations.” T. Y. Lin International Engineering Consulting (China), Chongqing, China. May 2010
- 4) Invited Speaker “Optimum Transit Operations during Evacuations.” Gulf Coast Regional Planning Commission and Coastal Transit Authorities. Gulfport, MS. Mar. 2009.
- 5) Lecture, Zhang, Li. Oct. 2008. “Optimum Transit Operations during Evacuations.” Federal Transit Administration and Office of Secretary, US DOT, Washington, D.C. Mar. 2008.
- 6) Invited Speaker, Zhang, Li. Mar 2008. “Rural Work Zone Traffic Flow and Traffic Operations.” Turner-Fairbank Highway Research Center, FHWA, McLean, VA. Mar. 2009.
- 7) Invited Speaker, “Traffic Engineering, Education and Research in USA.” College of Civil Engineering, Tibetan University, Tibetan, China, Aug. 2007.
- 8) Invited Speaker, “New Advances in Traffic Signal Control Algorithms.” College of Traffic and Transportation, Southwest Jiaotong University, Chengdu, China, Oct. 2004.
- 9) Invited Speaker, “Advanced Traffic Management and Traffic Control in US.” Shenzhen Urban Transport Planning Center, Shenzhen, China, Oct. 2004.

- 10) Invited Speaker, “*Traffic Control Current Status and Future Directions in USA.*” School of Traffic and Transportation and School of Electronics and Information Engineering, Beijing Jiaotong University, Beijing, China, September 2003.
- 11) Invited Speaker, “*Intelligent Transportation Systems Development in USA.*” Institute of Automation, China Academy of Sciences, Beijing, China, September 2003.
- 12) Lecture, “*CORSIM Run Time Extension and Interface Design.*” Traffic Research Laboratory, FHWA, McLean, VA. 2003/2000.
- 13) Invited Speaker, “*Advanced Traffic Management Systems in USA.*” College of Civil Engineering, Tongji University, Shanghai, China, July 2002.
- 14) Invited Speaker, “*Traffic Engineering, Consulting and Research in USA.*” The Second Institute of Railroad Designing and Surveying, Chengdu, Sichuan, China, August 2002.
- 15) Invited Speaker, “*Traffic Engineering, Consulting and Research in USA.*” The Fourth Institute of Railroad Designing and Surveying, Wuhan, Hubei, China, August 2002.
- 16) Lecture, “*Objective Oriented Programming and C++.*” Traffic Research Laboratory, FHWA, McLean, VA, 2002.
- 17) Panel Member, “*ITS Standards on Highway Rail Grade Crossing.*” FHWA and FRA, Crystal City, VA. 2001.

## H. GRADUATE STUDENTS

### H-1 Summary

Degrees	Graduated		In-progress	Total
	Chair	Member	Chair	
Ph.D.	4	3	2	9
M.S. (Thesis)	1	2	1	4
M.S. (Non-Thesis)	4	0	1	5

### H-2 Active Graduate Students Serving as Major Professor

<u>Titles of Thesis/Dissertation</u>	<u>Degree Sought</u>	<u>Year</u>
Innovative Strategies to alleviate congestions on Freeways With High Occupancy Toll Vehicles (Sarah Henke)	Ph.D.	In-progress
Fuel Consumption and Emission of Traffic Signal Control at Connected Vehicle Intersections (William Case Fulcher)	Ph. D.	In-progress
Jacquelyn Erinne	MS	In-progress
Chris Mellon .....	MS	In-progress
Spencer Roberts .....	MS	In-progress

### H-3 Completed Thesis/Dissertation Graduate Students

<u>Titles of Thesis/Dissertation</u>	<u>Degree Earned</u>	<u>Year</u>
Network wide signal control strategy based on connected vehicle technology (Lei Zhang)	Ph.D.	2018
Traffic Signal Control at Connected Vehicle Equipped Intersections (Zhitong Huang)	Ph.D.	2016
Dynamic Vehicle Routing in Emergency Evacuation (Yi Wen)	Ph.D.	2015
Dynamic Message Sign Diversion Control and Alternative Road	Ph.D.	2009



Signal Coordination for Capacity Decreased Freeway Corridor

(Jizhan Gou)

Mississippi State University Campus Evacuation Studies (Di Wu)	MS	2009
Non-thesis (John Green)	MS	2019
Non-thesis_(Paul Moore)	MS	2018
Non-thesis (Qisheng Hou)	MS	2018
Non-thesis (William Case Fulcher)	MS	2015
Non-thesis (Farzana Tasmin)	MS	2013

**H-4 Ph.D. /MS Graduate Students Served as Committee Member**

<i>Year</i>	<i>Degree</i>	<i>Number of Students</i>
2008-2009	MSEE	2
2008-2010	Ph.D.	1
2010-2011	Ph.D.	1
2012-2015	Ph.D.	1

**I. COURSES TAUGHT**

**I-1 Credit Hours Summaries**

Course Name	Level	Number of Times	Number of Students	Credit Hours
Transportation Engineering [6]	U	7	57,58,60,67,77,85,72	1428
Geometric Design of Highway [2]	U/G	13	36,33,30,28,31,24,19,27,11,32,16,8, 19/3,1,2.1,2,2	942/ 39
Traffic Engineering [7]	U/G	11	24,10,9,10,1,6,11,16,17,18,22/ 3,1,2,2,1,1,3,1,1,1	432/ 36
Transportation Safety Studies [3][4]	U/G	1/3	1/3	3/5
Traffic Simulation and Traffic Management [1]	G	1	5	14
Computer Applications in Civil Engineering [1]	G	3	4,3,2	36
Advanced Topics in Intelligent Transportation System [1]	G	1	5	15
Traffic Flow Theory	G	5	2,1,2,4,4	39
Graduate Direct Independent Studies [5]	G	10	1,2,1,1,1,1,1,1,1,1	33
GIS Applications in Transportation Engineering [4]	G	1	2	6
Advanced Topics in Non-motorized Traffic [4]	G	1	1	3
Non-Linear Programming [4]	G	1	1	3

[1] Solo developer of those new courses. Never been in MSU curriculum before.

[2] The solo CEE senior course that offers students comprehensive Computer Aided Design (CAD) experience.

[3] The first transportation safety study offered in the state of Mississippi.

[4] Those courses are offered as independent studies due to insufficient student.

[5] Those independent studies are offered to students as supplemental to their general transportation engineering courses.

[6] One course listed in my name and taught by graduate student is not included.

[7] Reinvented traffic control devices, traffic signals and software lab

U= Undergraduate course

G=Graduate course

U/G=Cross listed under graduate and graduate course

## I-2 Course Load Summary

Academic Year	Under	Graduate	Cross-Listed	Total	Independent Studies [1]
2006	2		1	3	3
2007	2	2	1	5	2
2008	2		1	3	1
2009	2	1	1	4	2
2010	2	1	1	4	3
2011	3			3	
2012	1	1	1	3	1
2013		1	2	3	1
2014*-2015		1	2	3	1
2016[2]		2	2	4	1
2017*		1	2	3	1
2018*		1	1	2	2
2019*[3]		1	1	2	1
Total	14	12	16	42	18

[1]: Some of them was cancelled for low enrollment and is listed as independent study (one student is listed as independent study) or independent studies for more than 4 students for the same studies.

[2]: Not counted the course under my name and was taught by graduate student.

[3]: One cross listed course with 20% load not included.

\*: with approved leaves and reduced course loads

## I-3 Other Teaching

Title	Hours	Semesters 2005-Present
FE Review	3	In most semesters
Introduction to Transportation Engineering (invited by CE 1001, Introduction to Civil Engineering, Instructors)	2	In some semesters

## I-4 Southwest Jiaotong University (China)

Traffic Engineering	30	Summer 2004 Fall 1993/Spring
Railroad Geometric Design	60	1989
Railroad Engineering Comprehensive	60	Spring 1994/3/20
English for Railroad Eng.	30	Spring 1991/3