

YANFENG OUYANG, Ph.D., M.ASCE

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EDUCATION

Tsinghua University, China	Civil Engineering (<i>summa cum laude</i>)	B.Eng.	2000
University of Washington, Seattle	Civil Engineering	M. S.	2001
University of California at Berkeley	Industrial Eng. and Operations Research	M. S.	2005
University of California at Berkeley	Civil and Environmental Engineering	Ph.D.	2005

MAJOR EMPLOYMENT

- George Krambles Endowed Professor in Rail and Public Transit, University of Illinois at Urbana-Champaign (UIUC), 2017-present
- Director, Chinese-American Railway Transp. Joint Research Center, UIUC, 2018 – present
- Professor, Department of Civil and Environmental Engineering, UIUC, 2016 – present
- Associate Professor, Department of Civil and Environmental Engineering, UIUC, 2011 – 2016
- Visiting Professor, Hong Kong University of Science and Technology, Hong Kong, November 2014 - February 2015
- Invited Professor, École Polytechnique Fédérale de Lausanne, Switzerland, April - July 2015
- Assistant Professor, Department of Civil and Environmental Engineering, UIUC, 2005 – 2011

SELECTED AWARDS AND HONORS

- Merit Award for Outstanding Technical Plan or Study, Federal Planning Division, the American Planning Association, 2017
- Campus Distinguished Promotion Award, UIUC, 2016
- Walter L. Huber Civil Engineering Research Prize, American Society of Civil Engineers, 2015
- Donald Biggar Willett Faculty Scholar Award, UIUC, 2015
- Engineering Council Award for Excellence in Advising, UIUC, 2014
- Certificate of Excellence in Reviewing, *Transportation Research Part B*, 2014
- 2014 High Impact Project Award, Illinois Department of Transportation, 2014
- Teachers Ranked as Excellent by Their Students (14 times), UIUC, 2005-2017
- Xerox Award for Faculty Research, UIUC, 2010
- Paul F. Kent Endowed Faculty Scholar, UIUC, 2009
- Faculty Early Career Development (CAREER) Award, National Science Foundation, 2008

MEMBERSHIP AND SERVICE

- Transportation Research Board (TRB)
 - Chair, Transportation Network Modeling Committee (ADB30), 2019 – present
 - Member, Transportation Network Modeling Committee (ADB30), 2006 – 2018
 - Member, Traffic Flow Theory and Characteristics Committee (AHB45), 2013 – 2019
 - Chair, Transit, Freight and Logistics Subcommittee (ADB30(1)), 2011-2016

- American Society of Civil Engineers (ASCE)
 - Vice Chair, Freight & Logistics Committee, 2014-present
 - Secretary, Transportation Safety Committee, 2014-present
- Institute of Operations Research and Management Science (INFORMS)
 - Vice Chair (Chair-Elect), INFORMS Freight Logistics and Transportation Special Interest Group, 2010-2011
 - Chair, Freight Logistics and Transportation Special Interest Group, 2012-2013
 - Treasurer, Railway Applications Section, 2009-2010
- Illinois State Freight Advisory Council (ISFAC)
 - Co-Leader, Subcommittee on Safety, Security & Environment, 2014-present
- Editorial Service
 - Department Editor, *IIE Transactions*, Taylor & Francis, January 2013 – present
 - Area Editor, *Networks and Spatial Economics*, Springer, February 2015 - present
 - Associate Editor, *Transportation Science*, INFORMS, January 2015 - present
 - Associate Editor, *Transportation Research Part C*, Elsevier, March 2016 - present
 - Associate Editor, *Transportmetrica B: Transport Dynamics*, Taylor & Francis, January 2013 - present
 - Paper review coordinator/co-editor, *Transportation Research Record*, Transportation Network Modeling Committee (ADB30), 2011 - present
 - Guest Co-Editor, *Transportation Research Part B*, Special Issue on "Optimization of Urban Transportation Service Networks." 2014-2015
 - Guest Co-Editor, *Journal of Intelligent Transportation Systems*, Special Issue on "Celebrating 50 Years of Traffic Flow Theory." 2014-2015
 - Editorial Board Editor, *Transportation Research Part B*, 2019 – present
 - Editorial Board Member, *Transportation Research Part B*, 2008 – present
 - Editorial Board, *ASCE Journal of Infrastructure Systems*, January 2009 – 2018
 - Organizer/Chair, five national workshops and symposiums, 2009-2018
 - Reviewer, 60+ technical journals and 10+ funding agencies

PUBLICATIONS

Books

- Daganzo, C.F. and Ouyang, Y. (2019) *Public Transportation Systems: Principles of System Design, Operations Planning and Real-Time Control*. World Scientific Publishing Company, Singapore.

Ten Recent Journal Articles (out of 113 published to date)

- Liu, L., Hwang, T., Lee, S., Ouyang, Y., Lee, B., Smith, S.J., Tessum, C.W., Marshall, J.D., Yan, F., Daenzer, K., Bond, T.C. (2019) "Health and climate impacts of future U.S. land freight modeled with global-to-urban models." *Nature - Sustainability*, 2: 105–112.
- Xie, S., An, K. and Ouyang, Y. (2019) "Planning facility location under generally correlated facility disruptions: Use of supporting stations and quasi-probabilities." *Transportation Research Part B*, 122: 115–139.
- Petit, A., Ouyang, Y. and Lei, C. (2018) "Dynamic bus substitution strategy for bunching intervention." *Transportation Research Part B*, 115: 1-16.

- Lei, C. and Ouyang, Y. (2018) "Continuous approximation for demand balancing in solving large-scale one-commodity pickup and delivery problems." *Transportation Research Part B*, 109: 90–109.
- Ansari, S. Basderea, M., Li, X., Ouyang, Y., Smilowitz, K. (2017) "Advancements in continuum approximation models for logistics and transportation systems: 1996 - 2016." *Transportation Research Part B*, 107: 229-252.
- Zhang, L., Fu, L., Gu, W., Ouyang, Y., Hu, Y. (2017) "A general iterative approach for the system-level joint optimization of pavement maintenance, rehabilitation, and reconstruction planning." *Transportation Research Part B*, 105: 378-400.
- Lei, C., Zhang, Q., and Ouyang, Y. (2017) "Planning of parking enforcement patrol considering drivers' parking payment behavior." *Transportation Research Part B*, 106: 375-392.
- Wang, X., Lim M.K. and Ouyang, Y. (2017). "A continuum approximation approach to the dynamic facility location problem." *Transportation Science*, 51(1): 343 - 357.
- Xie, W., Ouyang, Y. and Wong S.C. (2016) "Reliable location-routing design under probabilistic facility disruptions." *Transportation Science*, 50(3): 1128-1138.
- M. Housh, T.L. Ng, X. Cai, G. McIsaac, Y. Ouyang, M. Khanna, S. Murugesu, I. Al-Qadi, J. Atul, S. Eckhoff, S. Gasteyer, Y. Bai, M. Yaeger, L. Li, S. Ma, Y. Song. (2015) "System of systems model for biofuel development analysis (SoS - Biofuel)." *ASCE Journal of Infrastructure Systems*, 21(3): 04014050.

Others

- 12 decision-support software tools, 20+ technical research reports, two magazine articles
- 150+ invited lectures at conferences or peer institutions, 280+ contributed presentations

SELECTED EXTERNAL FUNDING (out of over 60 projects, with the total exceeding \$18 million)

Year	Brief Title or Description	Source of Funds	Total Funds	Role
2006-2007	Crash Data Analysis Engineering Solutions for Local Agencies	Illinois Department of Transportation	\$150,000	PI
2007-2008	Developing Safety Performance Functions for Illinois	Illinois Department of Transportation	\$140,000	PI
2007-2008	Regional Data Archiving and Management for Northeast Illinois	Illinois State Toll Highway Authority	\$150,000	PI
2008-2010	Economic and Environmental Impacts of Biofuels: Implications for Land Use and Policy	Energy Biosciences Institute (EBI), BP, Inc.	\$1,938,654	Co-PI
2008-2011	Curfew Planning and Track Inspection Vehicle Scheduling for CSX	CSX Transportation	\$115,849 (gift)	PI
2009-2010	National Safety Performance Function Summit	Illinois Department of Transportation	\$120,000	PI
2008-	EFRI-RESIN: Interdependence, Resilience	National Science	\$1,983,203	Co-PI

2012	and Sustainability of Infrastructures for Biofuel Development	Foundation		
2008-2013	CAREER: Information Mechanisms and Robust Stabilization of Nonlinear, Stochastic Transportation Networks	National Science Foundation	\$400,000	PI
2009-2012	Global-to-Urban Models for Minimizing Air Quality and Climate Impacts of Freight Choice	Environmental Protection Agency	\$599,560	Co-PI
2010-2011	Wayside-Detector Data Mining for Prevention of Mechanical-Caused Derailments	CSX Transportation	\$112,000 (gift)	PI
2010-2011	National HSM Lead State Peer to Peer Exchange Workshop	Illinois Department of Transportation	\$154,000	PI
2011-2013	Optimal Locomotive Service Location Planning for CSX	CSX Transportation	\$90,000 (gift)	PI
2011-2012	Workshop on Modeling Sustainable, Resilient and Robust Infrastructure Systems	National Science Foundation	\$49,995	PI
2012-2013	A Decision Support Tool to Locate Shelters in Emergency Logistics	USDOT Region V UTC	\$120,000	Co-PI
2012-2014	Concurrent Science, Engineering, and Technology for the Prevention of Post-harvest Loss	ADM Institute, ADM Company	\$570,000 (gift)	Co-PI
2012-2015	Collaborative Research: Planning Reliable and Resilient Transportation Networks against Correlated Infrastructure Disruptions	National Science Foundation	\$349,586	PI at UIUC
2013-2015	Economic and Operational Considerations in Transitioning to a Zero or Near-Zero Emission Rail System in California	California Air Resources Board	\$400,000	Co-PI
2013-2016	Sustainability Rating System & Life Cycle Assessment Tool for Tollway Projects	Illinois State Toll Highway	\$1,083,177	Co-PI
2013-2014	Integrated Design and Planning of Locomotive Service Networks	CSX Transportation	\$93,500 (gift)	PI
2015-2017	Validation and Revision of Fees Charged for Oversize/Overweight Vehicle Permits	Illinois Department of Transportation	\$300,000	Co-PI
2014-2016	Human Infrastructure System Assessment for Military Operations (HISA)	US Army Corps of Engineers	\$223,000	Co-PI
2014-2016	Integrated Approach to Improve Railroad Grade Crossing Safety at Regional Level	USDOT Region V UTC	\$400,000	Co-PI
2016-2019	Site Analysis: Quantifying Ecological Implications Given Changes to the Utility	US Army Corps of Engineers	\$877,000	PI

	Systems			
2017-2020	Service Facilities and Guideway Planning in Open Spaces Under Congestion and Disruption Risks	National Science Foundation	\$359,023	PI
2018-2021	Service Facilities and Guideway Planning in Open Spaces Under Congestion and Disruption Risks	National Science Foundation	\$750,000	Co-PI

Note: The gift funds do not require/include indirect costs or overhead.

FORMER PH.D. STUDENTS

Name	Year	Dissertation Title	Current Position
Xiaopeng Li	2011	"Reliable facility location design and traffic sensor deployment under probabilistic disruptions."	Associate Professor, Department of Civil and Environmental Engineering, University of South Florida
Fan Peng	2011	"Scheduling of track inspection and maintenance activities in railroad networks."	Senior Manager, Uber, Inc.
Yun Bai	2012	"Integrated supply chain design for a sustainable and resilient biofuel production system."	Research Scientist, Department of Civil and Environmental Engineering, Rutgers University
Taesung Hwang	2014	"Freight transportation demand modeling and logistics planning for minimizing air quality and climate impacts of freight systems."	Assistant Professor, School of Business Administration, Inha University, Korea
Seyed Mohammad Nourbakhsh	2014	"Innovative transit network design for low and heterogeneous demand distribution."	Senior Operations Researcher, BNSF Inc.
Leila Hajibabai	2014	"Dynamic scheduling and routing of service trucks and planning of resource replenishment locations."	Assistant Professor, Department of Industrial and Systems Engineering, North Carolina State University
Xin Wang	2015	"Sustainable and reliable design of large-scale complex logistics systems under competition and uncertainties."	Assistant Professor, Department of Industrial and Systems Eng., University of Wisconsin at Madison
Zhaodong Wang	2017	"Planning service facilities and infrastructures under continuous traffic equilibrium"	Scientist, Facebook, Inc.
Siyang Xie	2018	"Reliable facility location planning for sensing and logistics systems"	Scientist, Facebook, Inc.
Liqun Lu	2019	"Analysis and Operations in Complex Networked Systems: from Urban Infrastructure to Epidemics"	Alibaba, Inc.
Antoine Petit	2020	"Bus Service Design and Schedule Control"	Macys, Inc.