

Northwestern | TRANSPORTATION CENTER

Transportation Research Board Annual Meeting
January 12 - 16, 2020 / Washington, DC
[Northwestern University Participation Program](#)

SUNDAY, JANUARY 12, 2020



NORTHWESTERN UNIVERSITY TRANSPORTATION CENTER

TRB RECEPTION & NUTC ALUMNI REUNION

MARRIOTT MARQUIS WASHINGTON, DC
901 Massachusetts Ave NW, Salon 1 & 2 (M2)

SUNDAY
JAN. 12
2020
8:00 to 10:00 pm

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Northwestern
TRANSPORTATION CENTER

MONDAY, JANUARY 13, 2020

7:00 AM - 8:00 AM

MONDAY

Marriott Marquis, Capitol Hill (M3)

Policy and Organization Group Executive Board

[Joseph Schofer, Northwestern University, presiding](#)

Data and Information Technology, Policy

10:15 AM - 12:00 PM

MONDAY

Convention Center, 101

[Lectern Session 1183](#)

Recent Developments in Network-Level Modeling and Control

[Hani Mahmassani, Northwestern University, presiding](#)

Operations and Traffic Management

1:30 PM - 3:15 PM

MONDAY

Marriott Marquis, Monument (M4)

Emerging Methods in Demand Forecasting Subcommittee, ADB40(1)

[Amanda Stathopoulos, Northwestern University, presiding](#)

1:30 PM - 3:15 PM

MONDAY

Convention Center, 146B

Lectern Session 1237

Automated Transportation and Shared Mobility

Planning and Forecasting

20-05562

Simulation Framework for Autonomous On-Demand Urban Air Mobility

[Haleh Ale Ahmad, Northwestern University](#)

[Hani Mahmassani, Northwestern University](#)

Michael Hyland, University of California, Irvine

20-05757

Dual-Horizon Forecasts and Repositioning Strategies for Operating Shared Autonomous Mobility Fleets

Florian Dandl, Universitat der Bundeswehr, Munchen

Michael Hyland, University of California, Irvine

Klaus Bogenberger, Bundeswehr University, Munich

[Hani Mahmassani, Northwestern University](#)

1:30 PM - 5:30 PM

MONDAY

Marriott Marquis, Liberty Salon J (M4)

Data for Decisions and Performance Measures Task Force

[Joseph Schofer, Northwestern University, presiding](#)

Data and Information Technology, Operations and Traffic Management, Policy

3:45 PM - 5:30 PM

MONDAY

Convention Center, 203

Lectern Session 1307

Impact of Weather on Traffic Speed and Volume

Maintenance and Preservation, Operations and Traffic Management

20-03092

Incorporating Weather Impacts on Traffic Demand for Real-time Traffic State Prediction

[Eunhye Kim, Northwestern University](#)

[Hani Mahmassani, Northwestern University](#)

3:45 PM - 5:30 PM

MONDAY

Convention Center, Hall A

Poster Session 1332

Information and Communications Technologies, Smartphones, Activity Patterns, and Travel Choices

20-01821 / A120

Social Media Effects on Sustainable Mobility Opinion Diffusion: Implications for Behavior Change

[Elisa Borowski, Northwestern University](#)

[Ying Chen, Northwestern University](#)

[Hani Mahmassani, Northwestern University](#)

20-04989 / A135

Experiments on Reputation Rating Systems for Online Mobility Services

Roger Chen, University of Hawai'i at Manoa

[Ying Chen, Northwestern University](#)

[Guocheng Jiang, Northwestern University](#)

3:45 PM - 5:30 PM

MONDAY

Convention Center, Hall A

Poster Session 1345

Young Professional Research in Aviation

P20-20835 / A223

Travel Time Saving and Value of Time for Future Users of Urban Air Mobility through the Experience of Mobility Companies in Chicago

[Haleh Ale Ahmad, Northwestern University](#)

TUESDAY, JANUARY 14, 2020

8:00 AM - 9:45 AM

TUESDAY

Convention Center, Salon C

Lectern Session 1386

Preparing for Connected and Automated Vehicles: Results from EU - U.S. Research Collaboration

P20-21107

CAV Model Framework to Incorporate Transportation Supply and Demand Effects

[Hani Mahmassani, Northwestern University](#)

10:15 AM - 12:00 PM

TUESDAY

Convention Center, 102A

Lectern Session 1458

Macroscopic Traffic Flow Modeling and Control

Operations and Traffic Management

20-03736

Traffic Flow Breakdown Prediction Using Machine Learning Approaches

[Monika Filipovska, Northwestern University](#)

[Hani Mahmassani, Northwestern University](#)

10:15 AM - 12:00 PM

TUESDAY

Convention Center, Hall A

Poster Session 1494

Recent Applications of Connected and Automated Vehicles

Operations and Traffic Management

20-03920 / B320

Trajectory Planning for Connected and Automated Vehicles: Cruising and Platooning in Mixed Traffic

[Xiangguo Liu, Northwestern University](#)

[Guangchen Zhao, University of Maryland](#)

[Neda Masoud, University of Michigan, Ann Arbor](#)

[Qi Zhu, Northwestern University](#)

1:30 PM – 3:15 PM

TUESDAY

Convention Center, 140B

Lectern Session 1522

Big City, Turn on My Phone and Set Me Free: Exploring the Influences on and Influence of Ridesharing in Major Cities

Planning and Forecasting, Society, Transportation, General

20-04990

Ridesourcing Behavior Profiles: Application of K-Prototype Analysis on Large-scale data from Chicago, Illinois

Jason Soria, Northwestern University

Ying Chen, Northwestern University

Amanda Stathopoulos, Northwestern University

3:45 PM - 5:30 PM

TUESDAY

Convention Center, Salon A

Lectern Session 1600

Performance Evaluation of Traffic Signal Systems Using Trajectory Data

Operations and Traffic Management

20-05438

Quantitative Performance Assessment of Signal Control Effectiveness: Comprehensive Framework Using Vehicle Trajectories

Marija Ostojic, Northwestern University

Archak Mittal, Ford Motor Company

Hani Mahmassani, Northwestern University

3:45 PM - 5:30 PM

TUESDAY

Convention Center, Hall A

Poster Session 1643

Analyzing and Planning the Pedestrian Environment

Pedestrians and Bicyclists, Planning and Forecasting

20-03393

A Natural Experiment to Assess the Impacts of Street-Level Urban Design Interventions on Walkability and Business Activity

Maier Said, Northwestern University

Georges Geha, Massachusetts Institute of Technology (MIT)

Maya Abou-Zeid, American University of Beirut

6:00 PM - 7:30 PM

TUESDAY

Convention Center, 146A

Lectern Session 1644

Traffic Equilibrium and Dynamics

Planning and Forecasting

20-00385

Market Equilibrium and Pricing of E-Hail Services with Pooling

Kenan Zhang, Northwestern University

Marco Nie, Northwestern University

20-03106

Hyperpath-Based Algorithms for the Transit Equilibrium Assignment Problem

Zhandong Xu, Southwest Jiaotong University

Jun Xie, Southwest Jiaotong University

Marco Nie, Northwestern University

Xiaobo Liu, Southwest Jiaotong University

6:00 PM - 7:30 PM

TUESDAY

Convention Center, Hall A

Poster Session 1654

Traffic Flow Theory and Characteristics, Part 1 (Part 2, Session 1655; Part 3, Session 1656; Part 4, Session 1760; Part 5, Session 1761)

Operations and Traffic Management

20-00823 / B317

Predictive Speed Harmonization in Traffic Flow with Connected and Automated Vehicles: Machine Learning Application

[Amr Elfar](#), Northwestern University

Alireza Talebpour, University of Illinois, Urbana Champaign

[Hani Mahmassani](#), Northwestern University

6:00 PM - 7:30 PM

TUESDAY

Convention Center, Hall A

Poster Session 1655

Traffic Flow Theory and Characteristics, Part 2 (Part 1, Session 1654; Part 3, Session 1656; Part 4, Session 1760; Part 5, Session 1761)

Operations and Traffic Management

20-04568 / B331

Travel Time Variability and Congestion Assessment Through the Experience of Mobility Companies: Network Relations and Origin-Destination Clusters

[Haleh Ale Ahmad](#), Northwestern University

[Ying Chen](#), Northwestern University

[Hani Mahmassani](#), Northwestern University

WEDNESDAY, JANUARY 15, 2020

10:15 AM - 12:00 PM

WEDNESDAY

Convention Center, Salon B

Lectern Session 1717

Novel Methods in Simulation

Operations and Traffic Management

20-02471

A Calibration Framework for Simulation Tools to Manage Uncertain Future Conditions

[Moein Hosseini](#), Northwestern University

[Hani Mahmassani](#), Northwestern University

David Hale, Leidos, Inc.

10:15 AM - 12:00 PM

WEDNESDAY

Convention Center, Hall A

Poster Session 1728

Transportation Modeling Network Mega and Joint Poster Session with Traveler Behavior and Values

Planning and Forecasting

20-04455 / A117

An Efficient Algorithm for The Traffic Assignment Problem with Side Constraints

Liyang Feng, Southwest Jiaotong University

Jun Xie, Southwest Jiaotong University

[Marco Nie, Northwestern University](#)

Xiaobo Liu, Southwest Jiaotong University

20-04763 / A138

Reliable Least-Time Path Estimation and Computation in Stochastic Time-Varying Networks with Spatio-Temporal Dependencies

[Monika Filipovska, Northwestern University](#)

[Hani Mahmassani, Northwestern University](#)

2:30 PM - 4:00 PM

WEDNESDAY

Section Leaders Discussion

[Joseph Schofer, Northwestern University, presiding](#)

Policy, Data and Information Technology

2:30 PM - 4:00 PM

WEDNESDAY

Convention Center, 151B

Lectern Session 1742

Improving Traffic State Analysis and Prediction with Machine Learning

Data and Information Technology

20-04202

Situation-Aware Multi-step Traffic Speed Prediction: No-Regret Learning Approach

[Eunhye Kim, Northwestern University](#)

[Hani Mahmassani, Northwestern University](#)

2:30 PM - 4:00 PM

WEDNESDAY

Convention Center, 143B

Lectern Session 1755

Measuring Performance Across Transportation Modes: Similarities, Differences, and Synergies

Administration and Management, Operations and Traffic Management, Spotlight Theme: A Century of Progress: Foundation for the Future

P20-20122

Stretching performance measures beyond big data – some lessons from the Special Task Force on Data for Decisions and Performance Measures

[Joseph Schofer, Northwestern University](#)