Northwestern | TRANSPORTATION CENTER

Transportation Research Board Annual Meeting
Northwestern University Participation Program

FRIDAY, JANUARY 8, 2021

10:00 AM - 11:30 AM ET
FRIDAY / Online
Emerging Methods Subcommittee, AEP50(1)
Amanda Stathopoulos, Northwestern University, presiding
Planning and Forecasting

WEDNESDAY, JANUARY 13, 2021

2:00 PM - 5:00 PM ET
WEDNESDAY / Online
Data for Decision Making Committee, AJE70
Joseph Schofer, Northwestern University, presiding
Data and Information Technology

THURSDAY, JANUARY 21, 2021

2:00 PM - 5:00 PM ET
THURSDAY / Online
1018 - The Future of Travel in a Post-COVID-19 Pandemic World
P21-20845 / Panel Discussion
Hani Mahmassani, Northwestern University

MONDAY, JANUARY 25, 2021

10:00 AM - 11:30 AM ET
MONDAY / Online
1054 - Invited Discussions of Transportation Network Modeling
Michael Hyland (Northwestern Alumn), University of California, Irvine, presiding
P21-20888 / Capacitated Location-Allocation-Routing Problem with Time Window for On-demand Urban Air Mobility
Hani Mahmassani, Northwestern University

1:00 PM - 2:30 PM ET
MONDAY / Online
1087 - Travel Behavior Research: We've come a long way, and have a long way to go! – a Panel Discussion
P21-20492 / Panel Discussion
Hani Mahmassani, Northwestern University

1:00 PM - 2:30 PM ET
MONDAY / Online
1100 - Traffic Flow Theory and Characteristics, Part 2: Recent Advances for Network Modeling and Control for Multimodal Systems (Part 1, Session 1061; Part 3, Session 1352)
TRBAM-21-04027 / Emergence of 4-D System Fundamental Diagram in Urban Air Mobility Traffic Flow
Christopher Cummings, Northwestern University
Hani Mahmassani, Northwestern University

2:30 PM - 4:00 PM ET
MONDAY / Online
1110 - Intelligent Transportation Systems 2021, Part 1 (Part 2, Session 1135)
TRBAM-21-01750 / A Markov Decision Process Framework to Incorporate Network-Level Data in Motion Planning for Connected and Automated Vehicles
Xiangguo Liu, Northwestern University
Qi Zhu, Northwestern University

2:30 PM - 4:00 PM ET
MONDAY / Online
1112 - Advances in Network Equilibrium Models
Yu (Marco) Nie, Northwestern University, presiding
Planning and Forecasting

2:30 PM - 4:00 PM ET
MONDAY / Online
1117 - Winter Maintenance Technology Showcase
TRBAM-21-04250 / Integrating Connected Vehicle Data in Road Network Weather Management Systems: Snowplow Routing Application
Eunhye Kim, Northwestern University
Hani Mahmassani, Northwestern University

4:00 PM - 5:30 PM ET
MONDAY / Online
1125 - Do Revealed Preferences Tell us Much about our Travel Needs?
P21-20536 / Design Proposal B
Amanda Stathopoulos, Northwestern University

TUESDAY, JANUARY 26, 2021

11:30 AM - 1:00 PM ET
TUESDAY / Online
1174 – Workforce Development Life Cycle: Meeting the Needs of the Tranportation Workforce Poster Session
TRBAM-21-00779 / Connected and Automated Vehicle education (CAVe)-in-a-box
Anjan Rayamajhi, Leidos, Inc.
Mafruhatul Jannat, Leidos, Inc.
Animesh Balse, Leidos, Inc.
Thomas Bayhi, Leidos, Inc.
Sharika Hegde, Northwestern University
Deborah Curtis, Federal Highway Administration (FHWA)

11:30 AM - 1:00 PM ET
TUESDAY / Online
1181 - Neighborhood Level Impact Analysis
Alec Biehl (Northwestern Alum), Oak Ridge National Laboratory, presiding
TRBAM-21-03716 / Ridesourcing Demand During Rail Transit Disruptions: A Multilevel Analysis of Neighborhood Effects in Chicago, Illinois
Elisa Borowski, Northwestern University
Jason Soria, Northwestern University
Joseph Schofer, Northwestern University
Amanda Stathopoulos, Northwestern University

1:00 PM - 2:30 PM ET
TUESDAY / Online
1203 - Advances in Travel Behavior Research
TRBAM-21-02879 / Understanding Attendee Satisfaction at Planned Special Events: Role of Quality of Transportation Services and Prior Expectations
Christopher Cummings, Northwestern University
Divyakant Tahlyan, Northwestern University
Hoseb Abkarian, Northwestern University
Hani Mahmassani, Northwestern University
TRBAM-21-03349 / Disentangling Social Capital – Understanding the Effect of Social Support and Social Network Resources on Social Activity Participation
Divyakant Tahlyan, Northwestern University
Amanda Stathopoulos, Northwestern University
Michael Maness, University of South Florida
TRBAM-21-04110 / Characterizing zero-vehicle households: A double-hurdle problem perspective
Divyakant Tahlyan, Northwestern University
Hani Mahmassani, Northwestern University

2:30 PM - 4:00 PM ET
TUESDAY / Online
1210 - Signal Timing Performance
TRBAM-21-03932 / Traffic Signal Systems Effectiveness in Connected Vehicle Environments: Application of Trajectory Analytics
Marija Ostojic (Northwestern Alum), Cubic | Trafficware
Hani Mahmassani, Northwestern University

2:30 PM - 4:00 PM ET
TUESDAY / Online
1214 - Changes in Activity Patterns, Use of ICT and Advanced Mobility during the COVID-19 Pandemic
TRBAM-21-03130 / Shifting Behaviors in Unprecedented Times: How Are Intentions to Use Shared Modes Changing During the COVID-19 Pandemic
Maher Said, Northwestern University
Jason Soria, Northwestern University
Amanda Stathopoulos, Northwestern University

WEDNESDAY, JANUARY 27, 2021

10:00 AM - 11:30 AM ET
WEDNESDAY / Online
1270 - Route Choice Behavior and Resilient Networks
TRBAM-21-02173 / Simulating Large-Scale Events as a Network of Heterogeneous Queues: Framework and Application
Christopher Cummings, Northwestern University
Hoseb Abkarian, Northwestern University
Yuhan Zhou, Northwestern University
Divyakant Tahlyan, Northwestern University
Karen Smilowitz, Northwestern University
Hani Mahmassani, Northwestern University

TRBAM-21-03828 / Estimation of Path Travel Time Distributions in Stochastic Time-Varying Networks with Correlations
Monika Filipovska, Northwestern University
Hani Mahmassani, Northwestern University
Archak Mittal (Northwestern Alum), Ford Motor Company

1:00 PM - 2:30 PM ET
WEDNESDAY / Online
1281 - Advances in Traffic Flow Theory 2021
P21-20995 / Emergence of 4-D System Fundamental Diagram in Urban Air Mobility Traffic Flow
Hani Mahmassani, Northwestern University
Christopher Cummings, Northwestern University

1:00 PM - 2:30 PM ET
WEDNESDAY / Online
1296 - Machine Learning Models and Tools for Real-Time Transportation Applications
TRBAM-21-02198 / Emergence of 4-D System Fundamental Diagram in Urban Air Mobility Traffic Flow
Divyakant Tahlyan, Northwestern University
Eunhye Kim, Northwestern University
Hani Mahmassani, Northwestern University

4:00 PM - 5:30 PM ET
WEDNESDAY / Online
1331 - Putting Transit Data to Work: Advancements in Making, Mixing & Matching, and Employing Machine Learning (ML) Techniques
TRBAM-21-02248 / Understanding Ridesplitting Behavior with Interpretable Machine Learning Models: Comparing Trip-level and Community-level Characteristics using Chicago's Ridesourcing Trips
Hoseb Abkarian, Northwestern University
Ying Chen, Northwestern University
Hani Mahmassani, Northwestern University

4:00 PM - 5:30 PM ET
WEDNESDAY / Online
1339 - Emerging Issues in Trucking Industry Research
TRBAM-21-02254 / Examining the Potential of Autonomous Trucks in a Less-than-Truckload Context
Lama Al Hajj Hassan, Northwestern University
Hani Mahmassani, Northwestern University
Mike Hewitt, Loyola University / NUTC Faculty

THURSDAY, JANUARY 28, 2021

10:00 AM - 11:30 AM ET
THURSDAY / Online
1354 - Automated Transportation Networks
TRBAM-21-02264 / Daily Load Planning Under Different Autonomous Truck Deployment Scenarios
Lama Al Hajj Hassan, Northwestern University
Hani Mahmassani, Northwestern University
Mike Hewitt, Loyola University / NUTC Faculty
TRBAM-21-04072 / Network Design Under Different Autonomous Truck Deployment Scenarios
Lama Al Hajj Hassan, Northwestern University
Mike Hewitt, Loyola University / NUTC Faculty
Hani Mahmassani, Northwestern University
TRBAM-21-02109 / Capacitated Location-Allocation-Routing Problem with Time Window for On-demand Urban Air Mobility
Haleh Ale-Ahmad, Northwestern University
Hani Mahmassani, Northwestern University

10:00 AM - 11:30 AM ET
THURSDAY / Online
1358 - COVID & Transit Operations and Management
TRBAM-21-04098 / Operational strategies for mass transit systems in the aftermath of a global pandemic
Hongyuan Yang, Northwestern University
Yu (Marco) Nie, Northwestern University

11:30 AM - 1:30 PM ET
THURSDAY / Online
1368 - Emergency Evacuations
TRBAM-21-03040 / Willingness to Share During Multi-Hazard Events: An Exploratory Study of Flood Evacuations During the COVID-19 Pandemic in the United States
Elisa Borowski, Northwestern University
Victor Limontitla Cedillo, Northwestern University
Amanda Stathopoulos, Northwestern University

4:00 PM - 5:30 PM ET
THURSDAY / Online
1415 - New research on travel demand management
TRBAM-21-03213 / Spatial Variation of Ridesourcing Demand: Comparing Community Determinants for Solo Versus Pooled Rides
Jason Soria, Northwestern University
Amanda Stathopoulos, Northwestern University

FRIDAY, JANUARY 29, 2021

10:00 AM - 11:30 AM ET
FRIDAY / Online
1426 - Modeling of Emerging Mobility Systems and Services: Pooling, Hailing, and Micro-mobility
Amanda Stathopoulos, Northwestern University, presiding
Planning and Forecasting

1:00 PM - 2:30 PM ET
FRIDAY / Online
1452 - Current Research in Passenger Rail Transportation
TRBAM-21-04273 / Impact of Accessibility and Intermodal Connectivity on Intercity Rail Station Ridership
Christopher Cummings, Northwestern University
Hani Mahmassani, Northwestern University

2:30 PM - 4:00 PM ET
FRIDAY / Online
1460 - COVID-19: Modeling Travel, and Social and Economic Impact and Diffusion
TRBAM-21-03711 / Capturing the Effects of Social Networks and Mobility on Viral Spread: Agent-based Model and Scenario Application
Hoseb Abkarian, Northwestern University
Ying Chen, Northwestern University
Hani Mahmassani, Northwestern University