



PROGRAM BOOK



The Transportation Research Forum (TRF) is an independent organization of transportation professionals. Its purpose is to provide an impartial meeting ground for carriers, shippers, government officials, consultants, university researchers, suppliers, and others seeking an exchange of information and ideas related to both passenger and freight transportation. The Forum provides pertinent and timely information to those who conduct research and those who use and benefit from research.

Founded in the late 1950s, TRF

- has organized an annual meeting since 1960
- has activities throughout the year organized by regional chapters
- publishes a peer-reviewed *Journal of the Transportation Research Forum* since 1987 (recently as part of Elsevier's "Research in Transportation Economics" series)

<https://trforum.org/>

2021 Virtual Conference Organizing Committee

Susan Binder, Cambridge Systematics, TRF Washington DC chapter

Jolie Estes, TRF Business Manager

James Nolan, University of Saskatchewan, Editor of *Journal of the Transportation Research Forum*

Ian Savage, Northwestern University (chair)

Joseph Schwieterman, DePaul University, TRF Chicago chapter

General Information

Refer to your e-mail for information on the web links to the virtual program, where you can access the sessions, and link to reading the full papers for authors who provided them.

All sessions run for 60 minutes and will start and end promptly. There are organized sessions with slightly different formats, but many sessions have one of two formats:

Virtual Podium: There are two papers. The running order is: Paper 1 presentation (15 minutes), paper1 discussant (5 minutes), audience Q&A on paper 1 (10 minutes). The process repeats for paper 2.

Virtual Poster: There are four posters. The running order is: host plays the prerecorded video of poster 1 (5 minutes) followed by audience Q&A on poster 1 (10 minutes). The process repeats for posters 2, 3 and 4.

ALL CONFERENCE TIMES ARE EXPRESSED IN EASTERN TIME

TRANSPORTATION RESEARCH FORUM - 2021 VIRTUAL ANNUAL FORUM

TRANSPORTATION RESEARCH FORUM													
2021 Virtual Annual Forum													
Session #s	Tuesday April 6					Wednesday April 7				Thursday April 8			
	10am ET	11:10am ET	3pm ET	4:10pm ET	8pm ET	10am ET	11:10am ET	3pm ET	4:10pm ET	10am ET	11:10am ET	3pm ET	4:10pm ET
Track 1	111 Managing the Curb	121 Managing the Curb	131 Agriculture	141 Member Plus Debate	151 Graduate Student Mixer	211 Agriculture	221 Value of Time	231 Congestion	241 Member Plus Backstage	311 Transit Ridesourcing	321 Agriculture	331 Incentived Ridesharing	341 Member Plus Networking with a Purpose - Training
Track 2	112 Posters Freight	122 Pandemic Aviation	132 Equity			212 Road Safety	222 Logistics	232 Freight		312 Posters Highways	322 Transit Ridesourcing	332 Pandemic Surface	
Track 3		123 Ocean Freight											

TRANSPORTATION RESEARCH FORUM - 2021 VIRTUAL ANNUAL FORUM

Paper #	Title	Authors	Presenter First Name	Presenter Last Name	Presenter Affiliation
TUESDAY APRIL 6th					
TUESDAY APRIL 6th 10am-11am ET					
Session 111: Managing the Curb (Part 1)					
156	Coding the Curb: A Roadmap for Cities to Manage Their Most Valuable Assets	Lila Singer-Berk	Lila	Singer-Berk	Cambridge Systematics
218	Curbside Management Challenges and Opportunities: Insights from the Public and Private Sectors in 14 US Cities	Caleb Diehl	Caleb	Diehl	University of Washington
Session 112: Posters: Freight					
144	Reducing Environmental, Economic, and Social Impacts of Rural Freight Transportation: A Literature Review	Mitra Salehi Esfandarani, Neda Nazemi, Mihalis Golias and Sabyasachee Mishra	Mitra	Salehi	University of Memphis
148	Airships, LTA vehicles, a New Efficient, Sustainable and Resilient Mode of Transport for the Integration of Remote Areas in the Americas	Ricardo Sánchez, Alejandra Gómez Paz and Martín Sánchez Salva	Ricardo	Sanchez	United Nations Economic Commission for Latin America and the Caribbean
151	Evaluating Cost Savings of Truck Caravanning	Vasileios Liatsos, Dimitrios Giampouranis, Mihalis Golias, Sabyasachee Mishra, Razi Nalim, Mark T. Frohlich and Clayton Nicholas	Vasileios	Liatsos	University of Memphis
155	Berth Allocation at Passenger Terminals: A Bundle Auction Approach	Dimitrios K. Giampouranis, Sotirios Theofanis, Maria Boile and Mihalis Golias	Dimitrios	Giampouranis	University of Memphis
TUESDAY APRIL 6th 11:10am-12:10pm ET					
Session 121: Managing the Curb (Part 2)					
216	Markets and Pricing for Curb Space	Adrian Moore	Adrian	Moore	Reason Foundation
217	Dynamic Curbside Management in the Age of New Mobility and e-Commerce: Case Study from Washington, DC	David Lipscomb	David	Lipscomb	District Department of Transportation, Washington DC
Session 122: Effects of the Pandemic on Aviation					
150	Aviation Clusters: Addressing the Implications of COVID-19 and the CARES Act	Daniel L. Rust, Richard D. Stewart and Thomas J. Werner	Daniel	Rust	University of Wisconsin-Superior
		Discussant	Fecri	Karanki	North Dakota State College of Science
160	The Impact of COVID19 on Airline Operations: A Comparative European and North American Analysis	Aisling Reynolds-Feighan	Aisling	Reynolds-Feighan	University College Dublin
		Discussant	Monica	Hartmann	University of St. Thomas

TRANSPORTATION RESEARCH FORUM - 2021 VIRTUAL ANNUAL FORUM

Paper #	Title	Authors	Presenter First Name	Presenter Last Name	Presenter Affiliation
Session 123: Ocean Freight					
152	The Panama Canal Expansion: Impact on Logistics Developments and the Economy of Panama	Anthony M. Pagano., Onésimo V. Sanchez, Ricardo Ungo and Ruben Lachman	Anthony	Pagano	University of Illinois at Chicago
		Discussant	Ricardo	Sanchez	United Nations Economic Commission for Latin America and the Caribbean
220	Over Land, Over Sea, Over Air: Transit State Considerations in the Transport of Nuclear and Other Radioactive Materials	Marc Fialkoff, David Duhamel and Jason Karcz	Marc	Failkoff	Oak Ridge National Laboratory
TUESDAY APRIL 6th 3pm-4pm ET					
Session 131: Agricultural Transportation					
202	Estimating the Demand for Railroad and Barge Movements of Corn in the Upper Mississippi River Valley	Tobias Sytsma and Wesley W. Wilson	Wesley	Wilson	University of Oregon
203	Canada/U.S. Rail Regulatory Comparison	James Nolan	James	Nolan	University of Saskatchewan
204	Geographic Analysis of Barriers to Efficient Rail Grain Freight Movements	Eric Jessup, Wesley W. Wilson and Jake Wagner	Jake	Wagner	Washington State University
Session 132: Equity					
158	Defining Equity Populations in Long-Range Transportation Planning	Jon Overman, Lila Singer-Berk, Kalieh Honish, Mark Yamarone and Rena Lum	Jon	Overman	Cambridge Systematics
		Discussant	Anne	Brown	University of Oregon
		Discussant	Brian	Taylor	University of California, Los Angeles
TUESDAY APRIL 6th 4:10pm-5:10pm ET					
Session 141: An Oxford Style Debate (MEMBER PLUS)					
<i>Upgrade to Member Plus for \$100 at http://annualforum.trforum.org/</i>					
	This house resolves that no more rail transit lines should be built in North America	Judge	Ian	Savage	Northwestern University
		Affirmative Team Lead Debater	Ken	Button	George Mason University
		Negative Team Lead Debater	Art	Guzzetti	American Public Transportation Association
TUESDAY APRIL 6th 8pm-8:45pm ET					
Session 151: Graduate Student Mixer					
A special virtual networking event. Converse with consultants, researchers, and fellow graduate students. E-mail trf-chicago@depaul.edu to receive the event details.					

TRANSPORTATION RESEARCH FORUM - 2021 VIRTUAL ANNUAL FORUM

Paper #	Title	Authors	Presenter First Name	Presenter Last Name	Presenter Affiliation
WEDNESDAY APRIL 7th					
WEDNESDAY APRIL 7th 10am-11am ET					
Session 211: Agricultural Transportation					
208	The Importance of Highways to U.S. Agriculture	Kranti Mulik	Kranti	Mulik	U.S. Department of Agriculture
209	U.S. Food Flows: A Cold-Chain Network Analysis of Freight Movements to Inform Local and Regional Food Issues	Michelle Miller	Michelle	Miller	University of Wisconsin
210	Modeling and Effects of Risky Shipping Costs on Spatial Competition: Mexican Wheat	William W Wilson and David Bullock	William	Wilson	North Dakota State University
Session 212: Road Safety					
138	Pedestrian Deaths and Large Vehicles	Justin Tyndall	Justin	Tyndall	University of Hawai'i at Mānoa
		Discussant	Randy	Machemehl	University of Texas at Austin
146	Evaluating 24/7 Sobriety Program Participant Reoffense Risk	Kimberly Vachal, Shantanu Awasthi, Ihsan Ullah Khan, Yun Zhou, Bong-Jin Choi and Seguy Tchakounte-Wakem	Yun	Zhou	North Dakota State University
		Discussant	James	Fell	NORC at the University of Chicago
WEDNESDAY APRIL 7th 11:10am-12:10pm ET					
Session 221: Value of Time					
201	The Value of Time in the United States: Estimates from Nationwide Natural Field Experiments	Ariel Goldszmidt, John A. List, Robert D. Metcalfe, Ian Muir, V. Kerry Smith and Jenny Wang	Robert	Metcalfe	Boston University / University of Southern California
		Discussant	Jack	Wells	U.S. Department of Transportation (retired)
		Discussant	Kenneth	Small	University of California, Irvine
Session 222: Logistics					
157	Impact of COVID-19 on the US Personal Protective Equipment (PPE) Supply Chains	Ricardo Ungo, Erika Marsillac and Anthony Pagano	Ricardo	Ungo	Old Dominion University
		Discussant	Ray	Mundy	University of Missouri – St. Louis
164	The Growth of Amazon Air	Borja Manuel González Morgado, Jacob Walls and Joseph Schwieterman	Jacob	Walls	DePaul University
		Discussant	Carl	Scheraga	Fairfield University

TRANSPORTATION RESEARCH FORUM - 2021 VIRTUAL ANNUAL FORUM

Paper #	Title	Authors	Presenter First Name	Presenter Last Name	Presenter Affiliation
WEDNESDAY APRIL 7th 3pm-4pm ET					
Session 231: Credit-based Congestion Pricing					
215	Traffic and welfare impacts of credit-based congestion pricing applications: an Austin case study	Kara Kockelman	Kara	Kockelman	University of Texas at Austin
		Discussant	Patrick	DeCorla-Souza	US Department of Transportation - Federal Highway Administration
		Discussant	Yu (Marco)	Nie	Northwestern University
Session 232: Freight					
163	Empirical Analysis of Energy Pipeline Safety	W. D. Walls and Xiaoli Zheng	W.D.	Walls	University of Calgary
		Discussant	Sarah	Stafford	College of William and Mary
219	The Carbon Footprint of Fresh Produce Aggregation and Distribution in the U.S.	Frank Ge	Frank	Ge	Cornell University
		Discussant	Matt	Chang	U.S. Department of Agriculture
WEDNESDAY APRIL 7th 4:10pm-5:10pm ET					
Session 241: Backstage with the Distinguished Transportation Researcher (MEMBER PLUS)					
<i>Upgrade to Member Plus for \$100 at http://annualforum.trforum.org/</i>					
	A conversation with the Distinguished Transportation Researcher		Kara	Kockelman	University of Texas at Austin
		Moderator	Susan	Binder	Cambridge Systematics

TRANSPORTATION RESEARCH FORUM - 2021 VIRTUAL ANNUAL FORUM

Paper #	Title	Authors	Presenter First Name	Presenter Last Name	Presenter Affiliation
THURSDAY APRIL 8th					
THURSDAY APRIL 8th 10am-11am ET					
Session 311: Transit and Ridesourcing					
154	Multimodal Public Transit Routing considering Travelers' Risk-Preference	Justice Darko and Hyoshin (John) Park	Justice	Darko	North Carolina A&T State University
		Discussant	Michael	Hyland	University of California, Irvine
141	Going Beyond the Millennials: North Dakota Ridesourcing Survey (Poster)	Kimberly Vachal, Narendra Malalgoda and Jaclyn Andersen	Narendra	Malalgoda	University of Manitoba
162	A Study on the Effectiveness of Bus Rapid Transit in the South Congress/North Lamar Corridor in Austin, Texas (Poster)	Kyle Bathgate	Kyle	Bathgate	University of Texas at Austin
Session 312: Posters: Highways					
143	Using Location-Based Services Data to Evaluate Equity of a Proposed Road Usage Fee	Christopher Porter and Mobashwir Khan	Christopher	Porter	Cambridge Systematics
145	Congestion Reduction Using Information-Theoretic Multi-agent Decision-Making	Larkin Folsom and Hyoshin Park	Larkin	Folsom	North Carolina A&T State University
147	Blockchain and Mobility: Lessons Learned from Toll Collection	Matt Milligan, Tyler Milligan, Kevin Ko, Yufan Luo, Dave DiAngelo and Heidi Corcoran	Heidi	Corcoran	Milligan Partners
149	Integrated Corridor Management Simulation: Developing a Real-Time Traffic Management Tool in Orlando, Florida	Yixin Wang and Keir Opie	Yixin	Wang	Cambridge Systematics
THURSDAY APRIL 8th 11:10am-12:10pm ET					
Session 321: Agricultural Transportation					
205	Agricultural Transportation Research Compendium Update	Will Secor	Will	Secor	University of Georgia
206	Central Plains Farm Truck Fleet Characteristics	Alan Dybing and Kimberly Vachal	Alan	Dybing	North Dakota State University
207	Agricultural Transportation Open Data Platform Update	Peter Caffarelli	Peter	Caffarelli	U.S. Department of Agriculture

TRANSPORTATION RESEARCH FORUM - 2021 VIRTUAL ANNUAL FORUM

Paper #	Title	Authors	Presenter First Name	Presenter Last Name	Presenter Affiliation
Session 322: Transit and Ridesourcing					
139	California Paratransit Agency Responses to the Adoption of Sub-contracted Services Using Privacy Preserving Technologies	Amari N. Lewis and Amelia C. Regan	Amari	Lewis	University of California, Irvine
		Discussant	Chris	Kopp	HNTB
140	Can Transportation Network Companies Replace the Bus? An Evaluation of Shared Mobility Operating Costs	Xavier Harmony	Xavier	Harmony	Virginia Polytechnic Institute and State University
		Discussant	C. Scott	Smith	DePaul University
THURSDAY APRIL 8th 3pm-4pm ET					
Session 331: Innovations in Incentivized Ridesharing and Congestion Pricing					
211	Congestion Clearing Payments to Passengers	Paul Minett, John Niles, Richard Lee and Brittany Bogue	Paul	Minett	Trip Convergence Ltd
212	Rewarding Drivers for Providing the Transportation Disadvantaged with Rides to Work Sites	Charles H. Apigian	Charles	Apigian	Middle Tennessee State University
213	Combining Freeway Network-Wide Congestion Pricing with Incentivized On-Demand Ridesharing	Patrick DeCorla-Souza and Paul Minett	Patrick	DeCorla-Souza	Federal Highway Administration
214	Cashing Out HOV Toll Exemptions on the I-66 Managed Lanes inside the Capital Beltway: An Exploratory Analysis	Patrick DeCorla-Souza, Sara Zahedian, Amir Nohekhan, Mohammad Motaleb Nejad, and Sevgi Erdogan	Sara	Zahedian	University of Maryland
Session 332: Effects of the Pandemic on Ground Transportation					
137	Public Transit and COVID-19: Global Research and Best Practices	Samuel I. Schwartz, Daniel Schack, Holly Chase, Lian Farhi, Joe Iacobucci, Kelly McGuinness and Elad Mokady	Samuel	Schwartz	Sam Schwartz Engineering
		Discussant	Ken	Button	George Mason University
165	The Degradation of Service on the National Intercity Bus Network, 2016 – 2021	Kimberly Fair, Mitchell Hirst and Crystal Bell	Mitchell	Hirst	DePaul University
		Discussant	James	Nolan	University of Saskatchewan
THURSDAY APRIL 8th 4:10pm-5:10pm ET					
Session 341: Networking with a Purpose - Training the Next Generation (MEMBER PLUS)					
<i>Upgrade to Member Plus for \$100 at http://annualforum.trforum.org/</i>					
136	Pathways to Success in Transportation and Logistics: Teaching the Teachers	Jill M. Bernard Bracy, Michael Edwards and Ray Mundy	Jill	Bracy	University of Missouri – St. Louis
		Panelist	James	Nolan	University of Saskatchewan
		Panelist	Joe	Schwieterman	DePaul University

The 2022
Annual Forum
will be
in-person in
St Louis



The poster features a blue silhouette of the St. Louis skyline at the top, with the Gateway Arch and a TRF logo. Below this, the event title is written in white on a blue background. The main text 'MEET ME IN ST. LOUIS' is in large, stylized red and yellow letters. To the right, the location and dates are listed. A list of transportation-related sites follows. The bottom half of the poster shows a green-tinted image of the Old Courthouse and the Wheel of Fortune.

63rd Annual International Meeting of the
Transportation Research Forum

University of Missouri - St. Louis
April 7-9, 2022

While you're here, explore our rich history in Transportation!

- Gateway Arch National Park
- St. Louis Riverfront
- National Museum of Transportation
- St. Louis Union Station
- John W. Barriger III National Railroad Library
- Herman T. Pott National Inland Waterways Library