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# 2017 CONFERENCE

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*PROGRAM*  
&  
*AGENDA*

# WELCOME

## **DEAR FORUM ATTENDEES,**

Welcome to the 58<sup>th</sup> Transportation Research Forum on behalf of the association's Chicago Chapter. This year's Forum has a shortened and more intensive format, developed as part of the new TRF strategic plan. Each presentation is supported by a written paper that has been carefully read by several reviewers with extensive experience in the transportation field. We expect more than 160 people in attendance, demonstrating clearly the momentum behind the strategic plan.

Our Forum kicks off with a **Graduate Student Session** featuring 14 presenters from universities across the country and the world. Up-and-coming researchers are given a prominent venue to share results and receive expert feedback. Thursday's program also features a **Poster Session** held concurrently with our **Welcome Reception**. We hope you'll join us for remarks at 6:30 p.m.

Friday's full-day of sessions features a wide-ranging body of cutting-edge research on topics from shared mobility to air travel, rail freight, roadway congestion and rural transportation. Our **Awards Luncheon** offers an opportunity to highlight excellence in the field of transportation.

If you plan to stay in town through Saturday morning, you and a companion can attend a downtown tour free of charge! More information is included on page 12.

Of course, this conference would not be possible without the generous financial and in-kind support of our sponsors and partners. We also extend sincere thanks to the TRF Foundation for providing scholarships to students to take part in the conference.

**Ian Savage, Northwestern University**  
**Joe Schwieterman, DePaul University**  
*Conference Co-Chairs, TRF Chicago Chapter*

## **TRANSPORTATION RESEARCH FORUM**

Founded in 1958, TRF is a forum for discussion and debate on transportation topics of current interest, and serves as a grassroots organization in which TRF local chapters play an important role. Our goal is to provide quality discussion and research in the field of transportation, with a strong focus on economics, business, and policy.

## **MISSION STATEMENT**

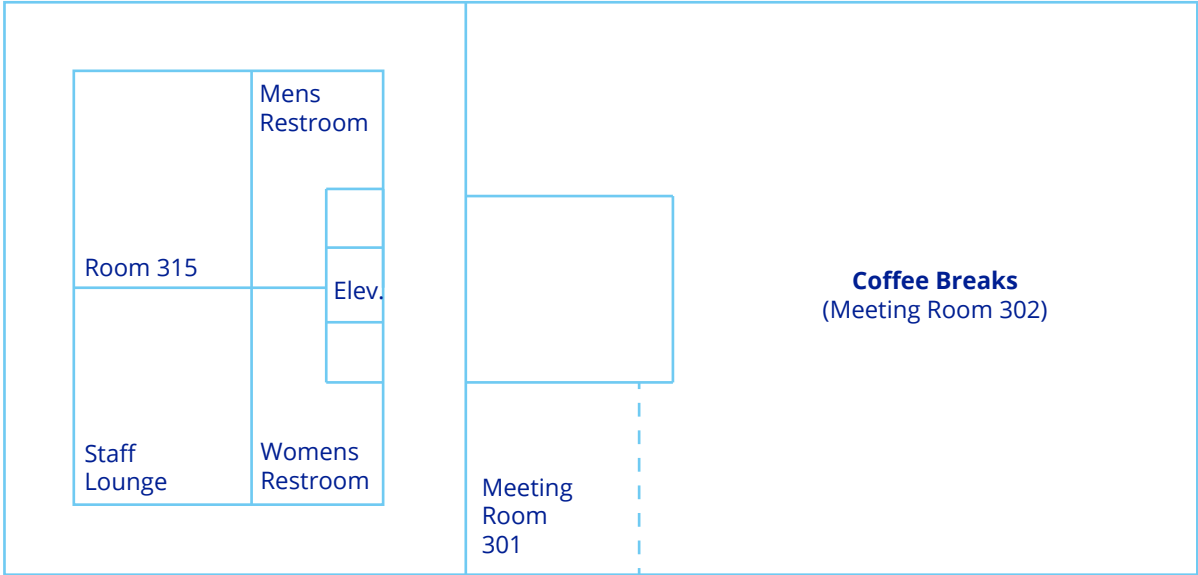
The Transportation Research Forum (TRF) is an independent organization of transportation professionals. Its purpose is to provide an impartial meeting ground for carriers, shippers, government officials, consultants, university researchers, suppliers, and others seeking an exchange of information and 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. This exchange of information and ideas is accomplished through international, national, and local TRF meetings and by publication of professional papers related to numerous transportation topics.

**VIEW THE PROGRAM AND READ  
CONFERENCE PAPERS VIA THE  
ANNUAL FORUM WEBSITE:**

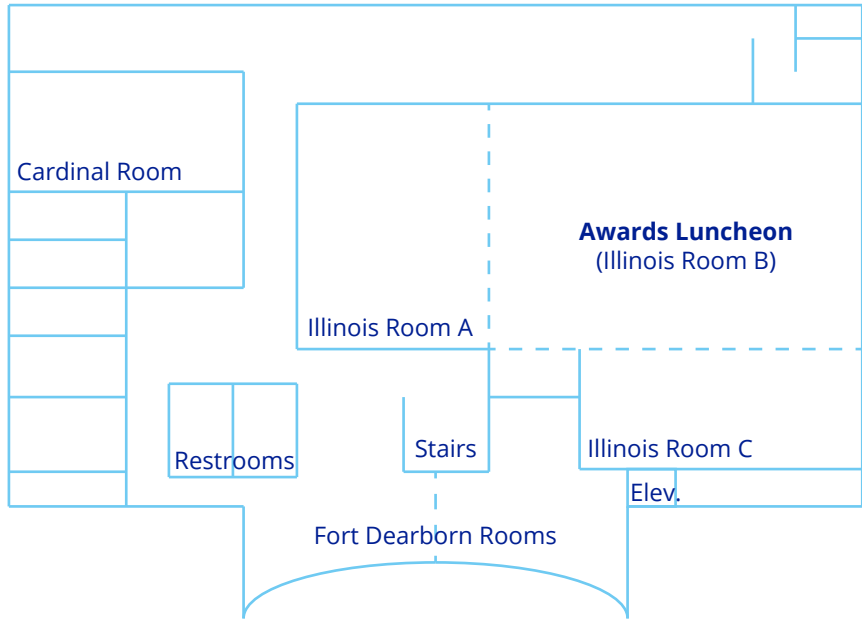
**[SITES.NORTHWESTERN.EDU/TRF2017](http://SITES.NORTHWESTERN.EDU/TRF2017)**

# UIC ROOM MAP

## STUDENT CENTER EAST | Tower 3rd Floor

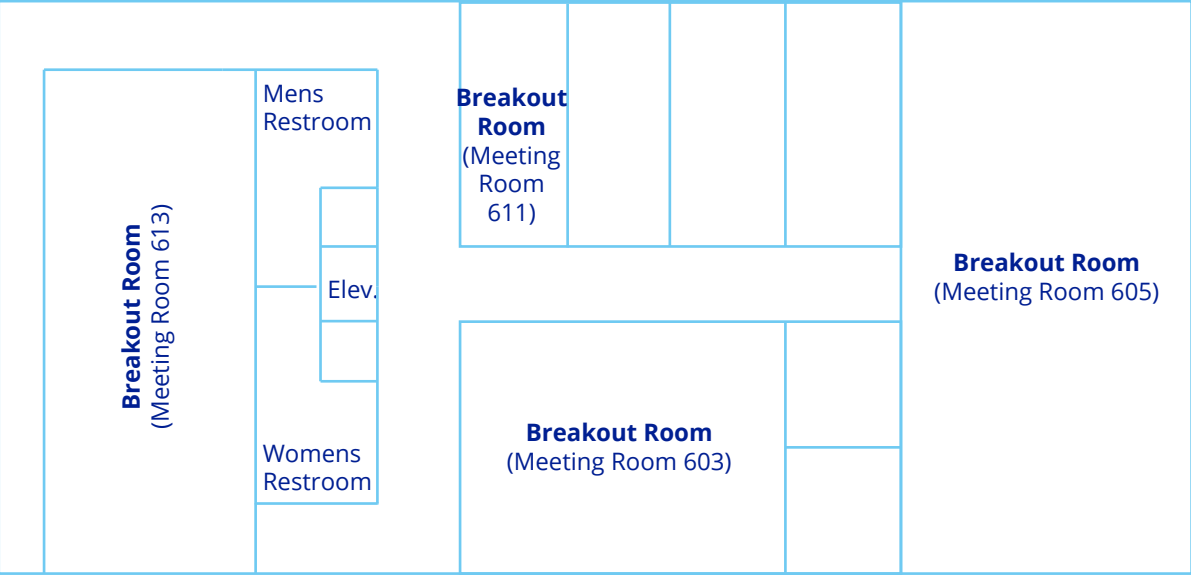


## STUDENT CENTER EAST | Main Building 3rd Floor North



# UIC ROOM MAP

## STUDENT CENTER EAST | Tower 6th Floor



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# SPONSORS

## GOLD

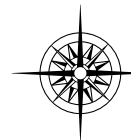


## SILVER



*Reason*

CHADDICK INSTITUTE FOR  
METROPOLITAN DEVELOPMENT



Northwestern University  
Transportation Center

## BRONZE



## IN KIND



MIDWEST HIGH SPEED RAIL  
ASSOCIATION



# CONFERENCE AGENDA

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## THURSDAY, APRIL 20

### 1:00-4:45 PM • Graduate Student Presentations

*UIC Student Center East | Tower, 6th Floor | Thursday's program is sponsored by TRF Foundation*

**1:00-2:00 PM**

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#### **ENCOURAGING URBAN CYCLING**

*Room SCE 603 | Session Chair: David Ripplinger, North Dakota State University*

##### **A Hybrid Cluster-Regression Approach to Forecast Ridership at Bikeshare Stations: Case Study of Chicago's Divvy System**

Presented by: Michael Hyland, Northwestern University

##### **Should Chicago Implement the Idaho Stop Law? A Study of Cyclist Stop Behavior and Policy**

Presented by: Jenna Caldwell, DePaul University

#### **IMPROVING THE FLOW OF TRANSPORT: TECHNICAL INNOVATIONS**

*Room SCE 613 | Session Chair: Samuel Labi, Purdue University*

##### **Implementation of Real-Time Data into a Transport Simulation**

Presented by: Armin Krain, German Aerospace Center

##### **Cycle Length Prediction in Actuated Traffic Signal Control Using Time Series Models**

Presented by: Bahman Moghimi, City College of New York

**2:00-2:30 PM**

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#### **COFFEE BREAK**

*Room SCE 302 | Tower, 3rd Floor | Sponsored by the Reason Foundation*

**2:30-3:30 PM**

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#### **RIDESOURCING AND CARSHARING: THE WAY OF THE FUTURE?**

*Room SCE 603 | Session Chair: C. Gregory Bereskin, St Ambrose University*

##### **On-Demand, App-Based Ride Services:**

##### **An Emerging Ground Transportation Mode at Los Angeles International Airport (LAX)**

Presented by: Karina Hermawan, University of California, Irvine

##### **Does Free-floating Carsharing Ease Public Transit Disruptions?**

Presented by: Justin Tyndall, University of British Columbia

#### **TRAVEL AND BUSINESS LOCATION DECISIONS: A SPATIAL ANALYSIS**

*Room SCE 613 | Session Chair: Michael Babcock, Kansas State University*

##### **Exploring the Role of Accessibility on Employment Locations in Indiana: A Bottom-Up Approach**

Presented by: Davis Chacon-Hurtado, Purdue University

##### **Environmental Spatial Ability and the Transtheoretical Model of Behavior Change**

Presented by: Alec Biehl, Northwestern University

# CONFERENCE AGENDA

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## THURSDAY, APRIL 20

3:45-4:45 PM

### ***UNDERSTANDING THE ROLE AND DELIVERY OF "CROWDSHIPPING"***

*Room SCE 611 | Session Chair: P.S. Sriraj, University of Illinois at Chicago*

#### **Modeling People's Behavior and Acceptance of Crowdsourcing**

Presented by: Aymeric Punel, Northwestern University

#### **Case Study of a Crowdsourced Package Delivery System**

Presented by: Sudheer Ballare, University of Illinois at Chicago

### ***EXPLORING AIRLINE COMPETITION...AND BANKRUPTCY!***

*Room SCE 603 | Session Chair: James Nolan, University of Saskatchewan*

#### **Does Airline's Chapter 11 Bankruptcy Filing have an Effect on Airfares?**

Presented by: Narendra Malalgoda, North Dakota State University

#### **New Methodology for Airline Competition Analysis and Air Travel Demand Estimate in Emerging but Regulated Airline Market: A Discrete Choice and Weighted Profit Estimation Approach Applied to China**

Presented by: Kun Wang, University of British Columbia

### ***USING SURVEYS TO UNDERSTAND TRANSPORTATION CHOICES***

*Room SCE 613 | Session Chair: Patrick McCarthy, Georgia Institute of Technology*

#### **A Literature Review on Surveys for Autonomous Vehicles**

Presented by: Christos Gkartzonikas, Purdue University

#### **Challenges of Conducting Surveys for Activity-Based Travel Demand Models:**

#### **Establishment Survey of the New York Metropolitan Transportation Council**

Presented by: Sabiheh Sadat Faghieh, City College of New York

## **5:00-7:00 PM • Welcome Reception & Poster Session**

*UIC Student Center East | Tower Room SCE 302 | Light hors d'oeuvres and hosted beverages*

***A full list of poster presenters and discussants can be found on page 15***

## **7:15-8:30 PM • Graduate Student Outing**

*Jaks Tap, 901 W Jackson Blvd | Join a delegation of graduate students for a drink*

**VIEW THE PROGRAM ONLINE & READ CONFERENCE PAPERS VIA THE ANNUAL FORUM WEBSITE**

**[SITES.NORTHWESTERN.EDU/TRF2017](https://sites.northwestern.edu/trf2017)**



# CONFERENCE AGENDA

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## FRIDAY, APRIL 21

**8:00-8:45 AM**

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**REGISTRATION AND CONTINENTAL BREAKFAST**

Room SCE 302 | Tower, 3rd Floor

**8:45-9:45 AM**

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**AUTOMOBILES AND THE FUTURE OF TRAVEL IN CHINA**

Room SCE 603 | Session Chair: Wayne Talley, Old Dominion University

**Modeling Supply and Demand in the Chinese Automobile Industry**

Presented by: Yuan Chen, University of California, Davis

Discussant: Ashish Sen, University of Illinois at Chicago

**Private Vehicle Ownership in Provincial China**

Presented by: Patrick McCarthy, Georgia Institute of Technology

Discussant: Wayne Talley, Old Dominion University

**ENHANCING TRAFFIC SAFETY FROM THE DAKOTAS TO DENMARK**

Room SCE 613 | Session Chair: Ian Savage, Northwestern University

**The Impact of the Graduated Driver Licensing Program in Preventing Motor Vehicle Crashes in North Dakota**

Presented by: Poyraz Kayabas, North Dakota State University

Discussant: Ann Warner, Ann Warner LLC

**Long-term Effects of Alternative Deterrence Policies:**

**Panel Data Evidence from Traffic Punishments in Denmark**

Presented by: Kibrom Abay, University of Copenhagen

Discussant: Ian Savage, Northwestern University

**URBAN MODE CHOICE IN THE SHARING ECONOMY**

Room 605 | Session Chair: Camille Kamga, City College of New York

**Understanding Travel Behavior and Mode Choice of Urban University Campus Employees**

Presented by: Virginia Sisiopiku, University of Alabama at Birmingham

Discussant: Camille Kamga, City College of New York

**Shared-Use Mobility Center Presentation**

Presented by: Colin Murphy, Shared Use Mobility Center

**9:45-10:10 AM**

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**COFFEE BREAK**

Room SCE 302 | Tower, 3rd Floor | Sponsored by the Reason Foundation

**10:15-11:15 AM**

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**BEATING THE BACKUP: WAYS TO LESSEN ROADWAY CONGESTION**

Room SCE 603 | Session Chair: Kenneth Small, University of California - Irvine

**The Income and Spatial Distributional Effects of a Congestion Tax**

Presented by: Yue Ke, Purdue University

Discussant: Baruch Feigenbaum, Reason Foundation

**Tradable Permit Schemes for Controlling Traffic Congestion with Variable Capacity and Demand**

Presented by: Robin Lindsey, University of British Columbia

Discussant: Kenneth Small, University of California-Irvine



# CONFERENCE AGENDA

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## FRIDAY, APRIL 21

### ***CAN WE SHARE? MIXED USE OF URBAN STREETS AND URBAN RAIL***

*Room SCE 613 | Session Chair: Danny Block, Chicago State University*

#### **Passenger Rail and Freight Rail Partnerships in Shared Use Corridors: Case Studies in Boston, Chicago and Denver**

Presented by: Andrew Goetz, University of Denver

Discussant: Andrew Jennings, Transportation Consultant

#### **From Meatpackers to Megabytes**

Presented by: Mark Rinnan, Jacobs

Discussant: Danny Block, Chicago State University

### ***THE MOBILITY-AS-A-SERVICE EFFECT ON THE BUSINESS OF TRANSPORT***

*Room SCE 605 | Session Chair: Adriana Hemzacek, Cubic Transportation Systems, Inc.*

You've heard the term "MaaS", but do you really know what it means in the transportation industry? Go ahead, admit it, mobility is on your mind. The excitement in Mobility-as-a-Service (MaaS) is beyond the norm. MaaS isn't just a nice concept anymore – it's an international reality that changes the way people think about mobility within the urban environment. It is not about how we transfer people from their cars to public transport, but instead provides a user-centric view that allows better planning and management of all modes of transport. In this session, we'll define the sharing economy, access economy, and on-demand economy – terms used interchangeably, though not always fully understood. We'll dive into the recent socio-economic shifts that reinvented how and what we consume. And if that doesn't hook you, let's face reality and hone in on the elephant in the room – we live in a world where usage trumps possession. Access, rather than ownership, is king and consumers' immediate needs can be satisfied with the tap of an app. You in? Good. See you there.

Panelists:

**Steve Fifita, City Labs - UI Labs | David Katcher, Lyft, Inc. | Andy Taylor, Cubic Transportation Systems, Inc. | Adam Hecktman, Microsoft, Inc.**

## ***11:20-12:20 AM***

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### ***DEALING WITH DELAYS: USING PRICING AND INFORMATION TO IMPROVE FLOW***

*Room SCE 603 | Session Chair: Robin Lindsey, University of British Columbia*

#### **Anticipatory Pricing to Manage "Flow Breakdown"**

Presented by: Ian Savage, Northwestern University

Discussant: Alejandro Molnar, Vanderbilt University

#### **Estimating Subjective Beliefs in Naturalistic Tasks with Limited Information Under Variable Delay Penalty**

Presented by: Ming Tsang, Hamilton College

Discussant: Robin Lindsey, University of British Columbia

### ***EXPLORING HIGHWAY FREIGHT***

*Room SCE 613 | Session Chair: Michael Babcock, Kansas State University*

#### **Uncovering Confounding Factors of Large Trucks Crashes and Safety Critical Events: An Exploratory Analysis of a Northwest Truck Driver Survey**

Presented by: Salvador Hernandez, Oregon State University

Discussant: Laurence Audenaerd, Transportation Consultant

#### **The Impact of Recent Federal Regulations on Motor Carrier Profitability**

Presented by: Ahren Johnston, North Carolina A & T State University

Discussant: Michael Babcock, Kansas State University

# CONFERENCE AGENDA

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## FRIDAY, APRIL 21

### ***CURRENT TRENDS IN GLOBAL TRANSPORTATION***

*Room SCE 605 | Session Chair: Anthony Pagano, University of Illinois at Chicago*

*Sponsored by the Center for Supply Chain Management and Logistics at the University of Illinois at Chicago*

Panelists:

**Jeanne Heilman, Port of Virginia | Vandana Bahl, Supply Chain Solutions, Inc.**

**12:30-1:45 AM**

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### ***AWARDS LUNCHEON & KEYNOTE ADDRESS***

*Student Center East Main Building, 3rd Floor North, Illinois Room | Luncheon sponsored by CN Railway*

**TRF President's Award:** Winner and Keynote Speaker Samuel K. Skinner

**Distinguished Transportation Researcher:** Kenneth D. Boyer

**Awarding of:** Herbert O. Whitten TRF Service Award, Best Student Paper, and Best Paper

**2:00-3:00 PM**

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### ***REGULATORY & POLICY APPROACHES TO RAIL TRANSPORT***

*Room SCE 605 | Session Chair: Frank Mulvey, ITER Associates*

**What's Driving the Trains:**

**Examining Temporal Changes in Rail Transport Rate Supply-side Determinants Across Commodities**

Presented by: Lama Bou Mjihad, Northwestern University

Discussant: Kenneth Boyer, Michigan State University

**Future Merger Policy in Rail: Learning from the Past**

Presented by: James Nolan, University of Saskatchewan

Discussant: Frank Mulvey, ITER Associates

### ***STUDYING TRANSPORTATION ISSUES USING ECONOMICS***

*Room SCE 613 | Session Chair: Jack Wells, US Dept. of Transportation (ret.)*

**The Marginal Congestion of a Taxi in New York City**

Presented by: Alejandro Molnar, Vanderbilt University

Discussant: Alan Bender, Embry Riddle Aeronautical University

**The Value and Challenges of Using Meta-Analysis**

Presented by: Kenneth Button, George Mason University

Discussant: Jack Wells, US Dept. of Transportation (ret.)

### ***LOOKING TO THE LONG TERM: EFFECTIVE TRANSPORTATION PLANNING TECHNIQUES***

*Room SCE 603 | Session Chair: Pablo Durango-Cohen, Northwestern University*

**Phased Third-Party Plan Review and Inspection Processes to Expedite Permitting of Major Commercial Design-Build Projects**

Presented by: Daniel Dornan, Prince George's County, MD

Discussant: Chris Kopp, HNTB Corporation

**A GIS-based Tool for Forecasting Unusually Heavy Truck Loadings Resulting from Rapid Land Use Changes**

Presented by: Ahmad Alrashidan, University of Texas at Austin

Discussant: Pablo Durango-Cohen, Northwestern University

# CONFERENCE AGENDA

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## FRIDAY, APRIL 21

**3:00-3:25 PM**

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### **COFFEE BREAK**

*Room SCE 302 | Tower, 3rd Floor | Sponsored by the Reason Foundation*

**3:30-4:30 PM**

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### **RAILROADS IN THE GLOBAL SUPPLY CHAIN**

*Room SCE 605 | Session Chair: C. Gregory Bereskin, St. Ambrose University*

#### **Analytical Models of the Grain Supply Chain: Quantifying the Advantages of Shuttle Rail Service**

Presented by: Michael Hyland, Northwestern University

Discussant: James Nolan, University of Saskatchewan

#### **Corn, Crude, and Cold: US Railroad Performance in 2014**

Presented by: David Ripplinger, North Dakota State University

Discussant: C. Gregory Bereskin, St Ambrose University

### **URBAN TRANSIT RIDERSHIP & SERVICE ANALYSES**

*Room SCE 613 | Session Chair: Kenneth Dallmeyer, Transportation Consultant*

#### **Attitudinal Market Segmentation Applied to Transit Service Area: An Updated Approach**

Presented by: Kordel Braley, RSG & Christopher Chesnut, Utah Transit Authority

Discussant: David Boate, Gannett Fleming

#### **New Ridership for Chicago's Old Elevated Urban Rail System, 1990-2008**

Presented by: Marcelo Lascano-Kezič, Universidad de San Martin

Discussant: Kenneth Dallmeyer, Transportation Consultant

### **JOINT SESSION WITH NeLT, KOREA - FORUM FOR NEXT LOGISTICS TECHNOLOGY**

*Room SCE 603 | Session Chair: Sangyoung Moon, Hankyong National University*

Discussant: Anthony Pagano, University of Illinois at Chicago

#### **Future of the Port Logistics Technology in Korea**

Presented by: Ju Dong Park, Korea Maritime Institute

#### **New Opportunity for Urban Freight System Based on Subway Infrastructure**

Presented by: Hag-Seoung Kim, Korea Railroad Research Institute

#### **Measuring Distribution Environment for Transport Packaging Development and Standardization**

Presented by: Jongkyong Kim, Korea Conformity Laboratories

## **5:00-6:15 PM • TRF Council Meeting**

*UIC Student Center East | Tower Room SCE 603 | By invitation only*

## **7:05-8:30 PM • Conference Dinner**

*Cliff Dwellers Club | 200 S. Michigan Avenue, 22nd floor | RSVP and prepaid ticket required*

***Sponsored by the TRF Foundation and Gannett Fleming***

# OPTIONAL TOURS

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SATURDAY, APRIL 22 10:00AM-11:30AM

*Various Locations*

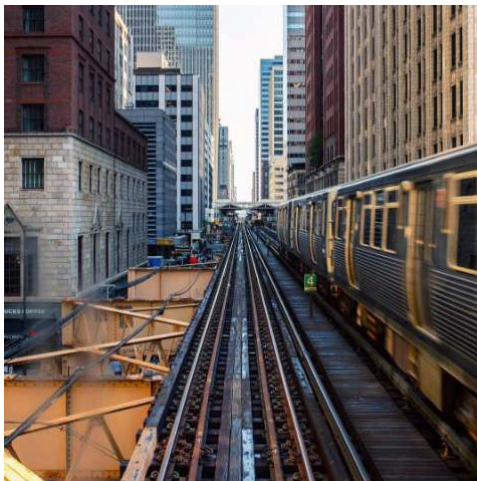


We are pleased to offer three optional tours to view transportation highlights in downtown Chicago. If you're interested in joining a tour and haven't yet registered, please visit the Registration Desk for details on tour availability. All tours are included in the price of conference registration. If you are joining a tour and cannot find the group or are running late, please call or text (312) 869-0131.

## **HUBS OF MID AMERICA: CHICAGO UNION STATION & OGILVIE TRANSPORTATION CENTER**

This walking tour, led by Joe Schwieterman of DePaul University, will visit both of Chicago's renowned rail transportation hubs.

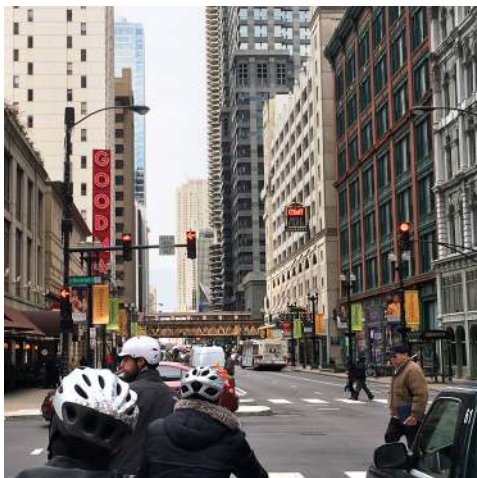
**MEET-UP POINT:** 225 S Canal St., Union Station (meet inside entrance)



## **IN THE LOOP: HIGHLIGHTS OF THE CHICAGO TRANSIT AUTHORITY RAPID TRANSIT SYSTEM**

Led by transit author and expert, Graham Garfield, this tour will include riding on the CTA "L", which provides a unique look at design, function, and mobility in the city.

**MEET-UP POINT:** 225 S Canal St., Union Station (meet inside entrance)



## **CYCLING CHICAGO: A DIVVY RIDE TO CITY LANDMARKS**

This cycling tour, which utilizes Chicago's successful Divvy bikeshare, will highlight different types of cycling infrastructure as well as downtown sights. The tour will be led by Riley O'Neil, DePaul graduate student and Chicago bike expert.

**MEET-UP POINT:** 805 W Madison St., Divvy Station at Green St & Madison St.

# AWARD RECIPIENTS

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## SAMUEL K. SKINNER

### *TRF President's Award*

Mr. Skinner is the retired Chairman, President and Chief Executive Officer of USF Corporation, one of the nation's leading transportation and logistics companies. During each year that he served as CEO, the company was recognized by Fortune magazine as one of America's most admired companies. From 1993-1998 he served as President of Commonwealth Edison Company, one of the country's largest utilities.

Prior to joining Commonwealth Edison, Mr. Skinner served as Chief of Staff to President George H. W. Bush. As Chief of Staff, he coordinated the activities of numerous cabinet departments and administrative agencies reporting to the President. Prior to his White House Service, he served in the President's Cabinet for nearly three years as Secretary of Transportation. In that capacity, he served as Chief Executive Officer of a Department with a budget of more than \$30 billion and a workforce of 105,000 people. As Secretary, Mr. Skinner was credited with numerous successes, including the development of the President's National Transportation Policy and the development and passage of landmark aviation and surface transportation legislation. He also developed our country's "Open Skies" policy which liberalized U.S. international aviation policy.

While practicing law, Mr. Skinner also served as Chairman of the Regional Transportation Authority of northeastern Illinois, the nation's second largest mass transportation district. In this capacity, he developed the RTA's first strategic plan that was used as a blueprint for service expansion.



## KENNETH D. BOYER

### *Distinguished Transportation Researcher Award*

Dr. Boyer is Professor of Economics at Michigan State University. His primary research interests are in the economics of transportation and the economics of regulation. He is a winner of the Michigan State University teacher-scholar award and has taught at the Sino-American Training Center in Shanghai, China and the University of Michigan. He has been a member of many committees of the National Academy of Sciences' Transportation Research Board, including those on truck sizes and weights, calculating the external costs of transportation, navigation on the Upper Mississippi River, the collection of freight statistics, and most recently on the modernization of railroad regulation. He is the author of *Principles of Transportation Economics* and has published scholarly papers in some of the most important journals in the field, including *The American Economic Review*, *The Journal of Political Economy*, and *The Rand Journal*. Dr. Boyer is past Chair of the Transportation and Public Utilities Group of the American Economic Association and served for many years as the Secretary/Treasurer of the Industrial Organization Society, the trade group of researchers in the economics of antitrust and regulation; he also served as the program chair of the annual meeting for nine years. He is on the editorial boards of the *Journal of Regulatory Economics* and *Transportation Research E: Logistics and Transportation Review*. His most recent work has been on the determinants of investment in facilities that use rail based logistics and the effects of world oil prices on the rates charged for shipping crude oil by rail.







# Researching Automated Vehicles?

Consider submitting to one of our journals.

Visit Elsevier's Automated Vehicle Research Hub for more information, including the latest research, [bit.ly/AVResHub](http://bit.ly/AVResHub)

## Articles include:

### Help or hindrance? The travel, energy and carbon impacts of highly automated vehicles

Zia Wadud, Don MacKenzie, Paul Leiby  
*Transportation Research Part A: Policy and Practice*

### Estimating potential increases in travel with autonomous vehicles for the non-driving, elderly and people with travel-restrictive medical conditions

Corey D. Harper, Chris T. Hendrickson, Sonia Mangones, Constantine Samaras  
*Transportation Research Part C: Emerging Technologies*

Elsevier Atlas  
Award Winning  
Article

### Public opinion on automated driving: Results of an international questionnaire among 5000 respondents

M. Kyriakidis, R. Happee, J.C.F. de Winter  
*Transportation Research Part F: Traffic Psychology and Behaviour*



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# POSTER PRESENTATIONS

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- 1. Regional Food Freight Innovations for the Chicago City-Region**  
Michelle Miller, University of Wisconsin, Madison
- 2. Contributions and Crossroads: Our National Road System's Impact on the US Economy and Way of Life**  
Erica Interrante, U.S. Department of Transportation
- 3. A Comparison of Methodological Techniques used in Motor Vehicle Crash Severity Research**  
Jill Bernard, Fontbonne University
- 4. Effect of Pedestrian Movement on the Spread of Infectious Diseases During Air Travel: A Modeling Study**  
Sirish Namilae, Embry Riddle Aeronautical University
- 5. Examining Model Accuracy: How Well Did We Do in the 1990's Predicting 2015**  
Mehrnaz Doustmohammadi & Michael Anderson, University of Alabama in Huntsville
- 6. Examining Crashes for Out-of-State and Out-of-Town Drivers: A Study of Two Locations in Alabama**  
Mehrnaz Doustmohammadi & Michael Anderson, University of Alabama in Huntsville
- 7. Passenger Mortality and Fatal Accidents Risks: Measuring Recent Air Travel Safety Across Countries**  
Karina Hermawan, University of California, Irvine
- 8. Investigating Nighttime Crash Contributing Factors to Driver Injury Levels at Freeways**  
Hongyun Chen, Embry-Riddle Aeronautical University
- 9. Are our Cities Making our Roads Unsafe? The Impact of Land Use Configurations on Child Pedestrian Crashes**  
Nick Ferenchak, University of Colorado Denver
- 10. Multiple-Time Period Model for Hydrogen Refueling Station Locations Considering Budget Constraints**  
Seyedali Ghahari, Purdue University
- 11. Factor Analysis of Seaborne Trade Volume Affecting on the World Economy**  
Ju Dong Park, Korea Maritime Institute
- 12. An Improved Methodology to Evaluate the Benefits of Highway Preservation**  
You Zhou, Washington State University
- 13. Carbon Sensitive Optimization of Biogas Supply Chains Produced from Animal Waste**  
Yong Shin Park, North Dakota State University
- 14. Economic, Social, and Environmental Cost Optimization of Biomass Transportation: A Regional Model for Transportation Analysis in Plant Location Process**  
Sangpil Ko, Michigan Technological University
- 15. Managing Parking on a Medical Campus**  
Jane Wilberding, Sam Schwartz Transportation Consultants
- 16. Age-Based Policy for Blood Transshipment in a Two-Echelon Inventory System**  
Yuan Xu, North Dakota State University
- 17. Bus Route Design for Homeless Shelters in Fargo-Moorhead Metropolitan Area**  
Fangzheng Yuan, North Dakota State University
- 18. A Review of Recent Technologies for Applications of Connected and Autonomous Vehicles**  
Bahman Moghimi, City College of New York
- 19. Potential Biogas Production from Animal Manure: A Supply Chain Perspective**  
N. Muhammad Aslaam, North Dakota State University

## DISCUSSANTS

*Erik Cempel, Cambridge Systematics*  
*Kenneth Dallmeyer, Transit Consultant*  
*Baruch Feigenbaum, Reason Foundation*  
*Seyedali Ghahari, Purdue University*  
*Andy Goetz, University of Denver*  
*Arnold Kasemsarn, Urban Planner*  
*Chris Kopp, HNTB*  
*Samuel Labi, Purdue University*  
*Ian Savage, Northwestern University*  
*Joe Schwieterman, DePaul University*  
*C. Scott Smith, DePaul University*





## CONTACT TRF

### *NATIONAL TRF*

#### **TRF National**

info@trforum.org | www.trforum.org

**Annual Membership** (by calendar year):

\$50 Regular, \$20 Students

### *LOCAL CHAPTERS*

#### **TRF New York Chapter**

Paul Gessner - pkgessner3@verizon.net

#### **TRF Chicago Chapter**

trf-chicago@depaul.edu

#### **TRF Washington, DC Chapter**

Jack Ventura - jack.ventura@verizon.net

Local chapters hold regular luncheon meetings throughout the year. TRF wishes to expand to additional metropolitan areas.

## ATTEND UPCOMING ANNUAL FORUMS

Spring 2018, 59<sup>th</sup> Annual Forum: Minneapolis, MN

Spring 2019, 60<sup>th</sup> Annual Forum: Washington, DC

## TRF SCHOLARSHIPS

Several graduate students were provided the opportunity to attend this year's conference thanks to generous scholarships offered by the TRF Foundation. These students participated as informal discussants during the Thursday evening Poster Session.

## SUBMIT YOUR WORK TO OUR JOURNAL

The Journal of the Transportation Research Forum seeks original manuscripts that are timely and relevant to transportation. Three issues of the journal are published each year. Papers may be (a) empirical or theoretical analytical research papers, (b) industry issue papers describing current business or public policy debates, or (c) book reviews. Contact co-editors Michael W. Babcock (mwb@ksu.edu) or James Nolan (james.nolan@usask.ca) for more information. Learn from leaders and your colleagues in transportation by reading the journal, which is published and archived online at [www.trforum.org/journal-of-the-trf](http://www.trforum.org/journal-of-the-trf).