TRB FINAL PROGRAM

Innovations in Freight Data Workshop

May 17-18, 2017

Arnold and Mabel Beckman Conference Center
100 Academy Way
Irvine, California 92617

Organized by
Transportation Research Board

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www.trb.org/conferences/freightdata2017.aspx

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WELCOME

Alison Conway

The 2017 Innovations in Freight Data Workshop will bring together freight data users and decision makers to learn and share the latest applications of emerging "big" freight data sources to improve freight planning, freight operations and mobility, and freight visualization. The event will convene traditional freight planning stakeholders, as well as data and technology innovators from related areas whose expertise can be leveraged to advance the state-of-the-practice. We invite you to join the dialogue with practitioners sharing their state-of-the-art applications and researchers working at the cutting edge to develop next generation data applications and analysis tools.

— Alison Conway, *Planning Committee Chair*
City College of New York

Planning Commitee

Alison Conway, City College of New York, Chair
Donald Ludlow, CPCS Transcom, Vice Chair
Chandra Bondzie, Federal Highway Administration
Scott Drumm, Port of Portland
Kathleen Hancock, Virginia Tech
Sherif Ishak, Louisiana State University
Nikola Ivanov, CATT Laboratory
Vince Mantero, Federal Highway Administration
Dan Morgan, U.S. Department of Transportation
Michael Sprung, Bureau of Transportation Statistics
Rahul Srivastava, California Department of Transportation

TRB Staff

Thomas M. Palmerlee, Assistant Division Director
Michael Miller, Associate Program Officer

COMMITTEE MEETINGS

Tuesday, May 16, 2017

Committee meetings open to all workshop registrants unless noted.

7:00 a.m.–5:00 p.m., *Outside Auditorium*
Registration

7:00 a.m.–8:00 a.m., *Dining Room*
Breakfast

8:00 a.m.–9:45 a.m., *Crystal Cove*
Agricultural Transportation Committee (AT030)
Caroline Mays, Texas Department of Transportation, *presiding*

8:00 a.m.–9:45 a.m., *Balboa Room*
Freight Transportation Planning and Logistics Committee (AT015)
Matthew Roorda, University of Toronto, *presiding*

8:00 a.m.–9:45 a.m., *Newport Room*
Task Force on Understanding Big Data in Freight Transportation (ABJ92T)
Donald Ludlow, CPCS Transcom, *presiding*

9:45 a.m.–10:15 a.m., *Atrium*
Break

10:00 a.m.–Noon, *Hungtington Room*
Intermodal Freight Transport Committee (AT045)
Richard Easley, E-Squared Engineering, *presiding*

Noon–1:00 p.m., *Dining Room*
Lunch

1:00 p.m.–2:45 p.m., *Hungtington Room*
Freight Transportation Data Committee (ABJ90)
Donald Ludlow, CPCS Transcom, *presiding*

2:45 p.m.–3:15 p.m., *Atrium*
Break

3:15 p.m.–5:00 p.m., *Balboa Room*
Urban Freight Transportation Committee (AT025)
Bill Eisele, Texas A&M Transportation Institute, *presiding*

3:15 p.m.–5:00 p.m., *Hungtington Room*
International Trade and Transport Committee (AT020), Ports & Channels Committee (AW010), and Intermodal Freight Terminal Design and Operations Committee (AT050)
Juan Carlos Villa, Texas A&M Transportation Institute; Mihalis Gkolias, University of Memphis; Nathan Huynh, University of South Carolina, *presiding*

3:15 p.m.–5:00 p.m., *Laguna Room*
Transportation and Economic Development Committee (ADD10)
Sharada Vadali, Texas A&M Transportation Institute, *presiding*

3:15 p.m.–5:00 p.m., *Board Room*
Trucking Industry Research Committee (AT060)
Kristen Monaco, Bureau of Labor Statistics, *presiding*

CONFERENCE SESSIONS

Wednesday, May 17, 2017

7:00 a.m.–5:00 p.m., *Outside Auditorium*
Registration

7:30 a.m.–8:30 a.m., *Dining Room*
Breakfast

8:30 a.m.–9:00 a.m., *Auditorium*
Opening Session
Workshop Objectives Structure and Report Plans
Alison Conway, Assistant Professor, City College of New York, *presiding*

Kome Ajise

The Importance of Innovations in Freight Data for California
Kome Ajise, Chief Deputy Director at the California Department of Transportation (Caltrans)

Governor Browns directed relevant State departments to develop an integrated action plan that establishes clear targets to improve freight efficiency, transition to zero-emission technologies, and increase competitiveness of California's freight system. California's complex freight transportation system is responsible for one-third of the State's economy and jobs, with freight-dependent industries accounting for over $700 billion in revenue and millions of jobs. Innovation in freight data analytics will provide much needed support for many years to come. The participating departments were ordered to initiate work on corridor-level freight pilot projects that integrate advanced technologies, alternative fuels, freight and fuel infrastructure, and local economic development opportunities. Ajise will overview data challenges in meeting these broad initiatives, describe data initiatives undertaken by CalTrans in meeting and further challenge the workshop to improve the freight data practice.

9:00 a.m.–10:20 a.m., *Auditorium*
Panel 1: Freight Data Applications and Needs
Sarah Hernandez, University of Arkansas, *presiding*
Vivek Sakhrani, CPCS Transcom, *recording*

Agencies are capturing value from existing and emerging data sources by developing applications to collect, combine, and visualize freight data in new ways.

Crowdsourcing to Obtain Crude-oil-on-rail Route Information
Shih-Miao Chin, ORNL

California Vehicle Inventory and Use Survey
James Brogan, Cambridge Systematics

Analysis and Display of Maritime Freight Data in Full Context
Douglas W. Scheffler, U.S. Coast Guard

10:20 a.m.–10:40 a.m., *Atrium*
Break

10:40 a.m.–Noon, *Auditorium*
Panel 2: Technologies for Monitoring, Tracking, and Data Collection
Donald Ludlow, CPCS Transcom, *presiding*
Yatman Kwan, Caltrans, *recording*

Practitioners are capturing and applying data from sensors, telematics devices, and imagery to close data gaps. This panel will present emerging technologies for data collection and application.

Integrated Freight Survey, Shipment Tracking, and Vehicle Tracking
Fang Zhao, MIT

Using Satellite Radiometry to Develop Data for Models
Hector Guillermo Lopez Ruiz, KASPARC

Classifying California Truck Activity Using Loop Sensors
Andre Tok, UC Irvine

Noon–1:00 p.m., *Dining Terrace*
Lunch

1:15 p.m.–2:30 p.m., *Auditorium*
Advances in GPS Applications Speed Round
Nikola Ivanov, CATT Laboratory, *presiding*

Truck GPS data has become state of the practice for many transportation agencies in providing information on truck routing and reliability. Through speed presentations, this session reveals some of the next-generation applications of truck GPS data.

Validating Florida Freight Model with Truck GPS
Kaveh Shabani, RSG

Identifying and Ranking Texas' Most Congested Truck Segments
Bill Eisele, TTI

Path-Based Freight Reliability Using GPS
Mike Golias, University of Memphis

Development and Applications of Vehicle Trajectories
Sarah Hernandez, Veitch Lister

ATRI Freight Performance Measures Database
Dan Murray, ATRI

Questions and Answers

2:30 p.m.–2:45 p.m., *Atrium*
Break

2:45 p.m.–4:00 p.m., *Auditorium*
Presentation of Awards and Demonstration of Applications

Awards are given submissions to the workshop "Call for Applications" focusing on new data sources and data fusion applications. Winners will be announced on site.

Award Announcement for Best New Data Source Application
Michael Sprung, BTS

Award Announcement for Best Data Fusion Application
Rahul Srivastava, CalTrans

Best New Data Source Application Presentation

Best New Data Fusion Application Presentation

4:00 p.m.–5:30 p.m., *Atrium*
Interactive Poster Session and Reception
Fatemeh Ranaiefar, Fehr and Peers, *presiding*

Presenters will utilize large flat-screens to interactively demonstrate innovative freight data applications, many of which combine multiple data sources, technologies (e.g. GPS, Bluetooth).

Port Drayage Mobile Applications
Taso Zografos, ZDEVCO; Dan Smith, Tioga

Philly Freight Finder
Michael Ruane, DVRPC

Emerging Truck Data Collection Technologies from NCFRP 49
D. Ludlow and V. Sakhrani, CPCS

Estimating Logistics Activity Potential
Seckin Ozkul, University of South Florida, CUTR

State-Level WIM Data Tool
Zubair F. Ghafoor, CDM Smith

ITTS Regional Freight Data Platform
Bruce Lambert, ITTS

SRF Mapper and SRF Simulator
Justin Bishop, University of Cambridge, UK

Thursday, May 18, 2017

7:00 a.m.–10:00 a.m., *OutsideAuditorium*
Registration

7:30 a.m.–8:30 a.m., *Dining Room*
Breakfast

8:30 a.m.–8:40 a.m., *Auditorium*
Welcome and Overview of Day Two
Alison Conway, Assistant Professor, City College of New York

8:40 a.m.–9:45 a.m., *Auditorium*
Panel 3: Data Collection and Use Challenges–Observations from the Field
Bill Eisele, Texas A&M Transportation Institute, *presiding*
Rahul Srivastava, Caltrans, *recording*

Transportation asset owners will present their approaches to advanced freight data collection and in the challenges of instrumenting and automating to capture and utilize freight data streams.

Approaches to Monitor Truck Loading Activity in New York City
Nicola Mammes, New York City Department of Transportation

Real Based Data in Real Time: the Key Enabler of a Paradigm Shift in Transportation and Traff c
Magnus Swahn, Conlogic

Facilitated Discussion of Freight Data Collection and Use Challenges (focused on new data sources and technologies)

9:45 a.m.–10:15 a.m., *Atrium*
Break

10:15 a.m.–11:15 a.m., *Auditorium*
Panel 4: Big Data Analytics, Supply Chains, and Artificial Intelligence
Scott Drumm, Port of Portland, *presiding*
Donald Ludlow, CPCS Transcom, *recording*

Supply chain practitioners, technology firms, and cities are developing innovative ways of applying big data to improve operations, safety, and strategic objectives. This panel introduces innovations with potential application to freight data development.

Application of Analytics on the Edge by Running SAS Event Stream Processing on Connected Trucks
Katy Salamati, SAS

Video Analytics to Classify Movements and Vehicles
Yinhai Wang, PacTrans

Trusted Data Collaboratives to Benefit Cities
Bill Mitchel and Connie Fan, Microsoft

11:15 a.m.–Noon, *Beckman Parking Lot*
Instrumented Truck Data Sources: Outdoor Session

Noon–1:15 p.m., *Dining Terrace*
Lunch

1:15 p.m.–3:00 p.m., *Newport Room, Balboa Room, Board Room, and Hungtington Room*
Breakout Sessions (Concurrent)
Donald Ludlow, CPCS Transcom; Taso Zografos, ZDEVCO; Tom O'Brien, California State University, Long Beach, *presiding*

In breakout groups, participants will discuss and synthesize workshop findings and identify most promising findings, gaps, and next steps. Each breakout group will address the following questions and report findings back to the group.

- Question 1 – What new data sources have we learned about?
- Question 2 – Which areas of freight data analysis seem most promising?
- Question 3 – Which gaps have we addressed; what gaps remain?

3:00 p.m.–4:00 p.m., *Auditorium*
Closing Session
Alison Conway, Assistant Professor, City College of New York, *presiding*

Breakout session leaders will present findings to summarize lessons learned on new data sources, promising new applications, remaining data gaps, and next steps to address these remaining gaps.

4:00 p.m.–5:00 p.m., *Board Room*
Planning Committee Debriefing (Members Only

Hotel Information

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SAVE THE DATE

Freight Fluidity Workshop

March 29–30, 2018

Keck Center, Washington DC

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