Transforming the Marine Transportation System through Multimodal Freight Analytics

*Fifth Biennial Marine Transportation System Research and Development Conference*

June 19–21, 2018
National Academy of Sciences
Washington, DC

**Organized by**
Transportation Research Board

**Co-Sponsored by**
Committee on the Marine Transportation System

*The National Academies of*  
*SCIENCES • ENGINEERING • MEDICINE*
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**SCHEDULE AT A GLANCE**

**Monday 6/18**
- 9:00am - 12:00pm: Joint Mid-Year Meeting of the Standing Committee on Hazardous Materials (AT045) and the Standing Committee on Marine Safety and Human Factors (AT035) in NAS Board Room, NAS 120.
- 1:00pm - 5:00pm: Joint Mid-Year Meeting of the Standing Committee on Hazardous Materials (AT045) and the Standing Committee on Marine Safety and Human Factors (AT035) in NAS Board Room, NAS 120.

**Tuesday 6/19**
- 9:00am - 12:00pm: Joint Mid-Year Meeting of the Standing Committee on Intermodal Freight, Planning and Logistics (AT040) and the Standing Committee on Maritime and Freight Industry Research (AT045) in NAS Board Room, NAS 120.
- 1:00pm - 5:00pm: Joint Mid-Year Meeting of the Standing Committee on Intermodal Freight, Planning and Logistics (AT040) and the Standing Committee on Maritime and Freight Industry Research (AT045) in NAS Board Room, NAS 120.

**Wednesday 6/20**
- 9:00am - 12:00pm: Joint Mid-Year Meeting of the Standing Committee on Hazardous Materials (AT045) and the Standing Committee on Marine Safety and Human Factors (AT035) in NAS Board Room, NAS 120.
- 1:00pm - 5:00pm: Joint Mid-Year Meeting of the Standing Committee on Hazardous Materials (AT045) and the Standing Committee on Marine Safety and Human Factors (AT035) in NAS Board Room, NAS 120.

**Thursday 6/21**
- 9:00am - 12:00pm: Joint Mid-Year Meeting of the Standing Committee on Hazardous Materials (AT045) and the Standing Committee on Marine Safety and Human Factors (AT035) in NAS Board Room, NAS 120.
- 1:00pm - 5:00pm: Joint Mid-Year Meeting of the Standing Committee on Hazardous Materials (AT045) and the Standing Committee on Marine Safety and Human Factors (AT035) in NAS Board Room, NAS 120.

**Keynotes and Plenary Sessions**
- Opening Session: Keynote Address: Anne D. Aylward at 8:30am, Auditorium.
- Keynote Address: Rebecca P. Dye at 9:00am, Auditorium.
- Keynote Address: John Kingston at 10:00am, Auditorium.

**Breaks and Exhibits**
- Breakfast & Exhibits: Great Hall from 7:30am to 8:30am.
- Lunch: Great Hall from 12:00pm to 1:00pm.

**Closing Session**
- Closing Session: Lecture Room at 10:30am.

**Additional Events**
- Student Paper Panel: Lecture Room from 2:00pm to 3:00pm.
- Keynote Address: John Kingston at 1:00pm, Auditorium.
- Keynote Address: Rebecca P. Dye at 10:00am, Auditorium.
- Keynote Address: Anne D. Aylward at 8:30am, Auditorium.

**Venue**
- Registration, Great Hall.
- Plenary Sessions: Great Hall.
- Keynote Addresses: Great Hall.
- Lecture Rooms: NAS 120, NAS 125.
- NAS Members’ Room.

**Special Events**
- Washington Nationals take on the Baltimore Orioles! Separate Tickets Required! Same Starts at 7:05PM!
It is with extraordinary pleasure that I welcome you to the Fifth Biennial Marine Transportation System Research and Development Conference, *Transforming the Marine Transportation System through Multimodal Freight Analytics*. The first CMTS Biennial R&D conference in Irvine, California in 2010 officially launched the beginnings of a coordinated R&D strategy to support the Committee for Marine Transportation System’s National Strategy. The R&D discovery and accomplishments over these years has been astounding and the growing complexity of the challenges makes the relevance of this conference even more important. The Transportation Research Board of the National Academies of Sciences, Engineering and Medicine specifically engaged an esteemed planning committee composed of top researchers, practitioners and academicians with expertise in freight transportation, marine transportation, and data analytics, resulting in a compelling conference program driven by innovative science and technology concepts.

The focus of this conference derives from the CMTS National Strategy for the Marine Transportation System, which calls for optimizing system performance through better freight flow forecasting. In support of this concept, the technical and plenary sessions have been designed to identify research needs, gaps, and potential technology gains related to harnessing robust, integrated, high fidelity multimodal freight transportation data and analytics.

On behalf of the planning committee, we welcome your engagement as policy makers, transportation agency practitioners, academia, private sector stakeholders, and consultants. We appreciate the contributions by the many prestigious panelists, speakers and participants. This conference, as in past ones, will continue to be a catalyst for innovation and collaboration in the MTS.

—Sandra Knight  
Chair, Fifth Biennial Marine Transportation System Research and Development Conference  
WaterWonks LLC

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**EXHIBITORS**

[MarTREC logo]  
Maritime Transportation Research & Education Center
Anne Aylward is the director of the U.S. Department of Transportation’s John A. Volpe National Transportation Systems Center, a unique fee-for-service federal organization that conducts nearly $300 million annually in transportation technology and innovation projects supporting all the modes of U.S. DOT.

In this role, Aylward leads Volpe’s staff of more than 600 engineers, scientists, and analysts engaged in a portfolio of projects that encompass all of Volpe’s innovation, technology, engineering, transportation program analysis, and systems development. Volpe staff support not only U.S. DOT but also the Department of Defense, other federal agencies, state and local governments, and international and other organizations facing transportation challenges. Previously, Aylward served as Volpe’s deputy director for Research and Technology.

Aylward has more than 30 years’ experience in transportation planning, operations, and program management, and is a nationally recognized expert in freight and intermodal transportation planning, policy analysis, and operations.

Prior to joining Volpe’s management team, she managed the transportation planning practice of EG&G, a division of the URS Corporation. From 1976 to 1993, she worked for the Massachusetts Port Authority, including 10 years as director of the Port of Boston. She was the first woman elected to chair the American Association of Port Authorities, and, as executive director of the National Commission on Intermodal Transportation, was primary author of the Commission’s 1994 Report to Congress.

Aylward is a skilled communicator with strong management and organizational skills. She is extremely effective in translating technical and operational issues into the public policy arena. She excels at bringing together diverse interests to build consensus and facilitate communication between public and private sector groups to manage multi-disciplinary projects.

Aylward received an AB in Asian history from Harvard/Radcliffe and a master’s in city planning from MIT. She was selected as woman of the year in 1993 by the National Women’s Transportation Seminar (WTS), and was honored by WTS-Boston with its 2016 Leadership Award. She served two terms as a member of the National Academy of Sciences Marine Board and is a member of several Transportation Research Board freight and intermodal committees.
The Honorable Rebecca F. Dye  
Commissioner, Federal Maritime Commission

Commissioner Rebecca F. Dye, of North Carolina, was nominated by President George W. Bush on June 13, 2002 and was confirmed by the United States Senate on November 14, 2002. She was nominated to her second term by President Bush on July 12, 2005 and confirmed by the Senate on July 22, 2005. She was nominated to her third term, which expires on June 30, 2015, by President Barack Obama and confirmed by the Senate on April 14, 2011. On May 26, 2016, Commissioner Dye was nominated by President Obama and confirmed by the Senate on June 29, 2016, for a term expiring June 30, 2020.

Prior to her appointment to the FMC, Commissioner Dye was Counsel to the Transportation and Infrastructure Committee of the U.S. House of Representatives. She held that position from 1995 until 2002. As Counsel, she provided advice to Members of Congress on issues pertaining to commercial shipping, international maritime agreements, oil pollution, maritime safety and law enforcement, the Federal budget process and Federal financing.

Commissioner Dye comes to the Commission with an extensive background in maritime matters. She began her Federal career as a commissioned officer and attorney in the Coast Guard’s Office of the Chief Counsel, then served as a law instructor at the Coast Guard Academy. After two years as an attorney at the U.S. Maritime Administration, she joined the staff of the former Committee on Merchant Marine and Fisheries, and served there as Minority Counsel from 1987 to 1995. Commissioner Dye graduated from the University of North Carolina at Chapel Hill in 1974, and earned a law degree from the University of North Carolina at Chapel Hill in 1977.

John Kingston  
Head of Community Engagement, Blockchain in Transport (BiTA)  
Executive Editor, Freightwaves

John Kingston is the Executive Editor of Freightwaves, and the head of community engagement for the affiliated Blockchain in Transport Alliance. As head of community engagement for BiTA, he works with interested groups learning about blockchain technology and how it will impact their markets. He joined Freightwaves after a more than 32-year career with McGraw Hill/S&P Global, most of it spent at Platts, an energy news and pricing service. In his almost 30 years at Platts, he filled many roles including Head of Oil and Head of News.

He also was a frequent commentator on oil markets on CNBC, Fox Business and other media outlets. In his final three years at the company, he held several positions, including creating the company’s blockchain task force to help S&P Global steer its way into the blockchain world. He is a graduate of Washington & Lee University.
COMMITTEE MEETINGS

Monday, June 18

All Committee Meetings Open to the Public

10:15 a.m.–Noon
Standing Committee on Transportation of Hazardous Materials (AT040), NAS 120
Richard Bornhorst, Federal Aviation Administration, presiding
Standing Committee on International Trade and Transportation (AT020), NAS Board Room
Juan Carlos Villa, Texas A&M Transportation Institute, presiding
Standing Committee on Military Transportation (AT035), NAS Members’ Room
David Metcalf, Prime AE Group, Inc., presiding
Joint Mid-Year Meeting of Standing Committee on Inland Water Transportation (AW020) and Standing Committee on Marine Environment (AW030), NAS 125
Joseph Crabtree, Kentucky Transportation Center; James Corbett, University of Delaware, presiding

Noon–1:00 p.m.
Lunch On Your Own – NAS Cafeteria is open to the public

1:00 p.m.–5:00 p.m.
Joint Mid-Year Meeting of Standing Committee on Intermodal Freight Terminal Design and Operations (AT050) and Standing Committee on Ports and Channels (AW010), NAS 120
Nathan Huynh, University of South Carolina; Mihalis Gkolias, University of Memphis, presiding

1:00 p.m.–2:45 p.m.
Standing Committee on Freight Transportation Planning and Logistics (AT015), NAS 125
Matthew Roorda, University of Toronto, presiding
Standing Committee on Trucking Industry Research (AT060), NAS Board Room
Kristen Monaco, Bureau of Labor Statistics, presiding
Standing Committee on Freight Transportation Data (ABJ90), NAS Members’ Room
Alison Conway, City College of New York, presiding

3:15 p.m.–5:00 p.m.
Joint Mid-Year Meeting of Standing Committee on Ferry Transportation (AP085) and Standing Committee on Marine Safety and Human Factors (AW040), NAS 125
Noel Comeaux, Healthy Communities 2016, LLC; Todd Ripley, Maritime Administration, presiding
Standing Committee on Intermodal Freight Transport (AT045), NAS Board Room
Jolene Hayes, Fehr & Peers, presiding
Standing Committee on Urban Freight Transportation (AT025), NAS Members’ Room
William Eisele, Texas A&M Transportation Institute, presiding
Tuesday, June 19

7:30 a.m.–4:30 p.m., Great Hall
Registration

7:30 a.m.–8:30 a.m., Great Hall
Breakfast and Exhibits

8:30 a.m.–10:00 a.m., Kavli Auditorium
Opening Session

Welcome and Introductions
Sandra Knight, Chair, Fifth Biennial Marine Transportation System Research & Development Conference Planning Committee, presiding

CMTS Perspective
Jeff Lillycrop, Technical Director for Navigation, Coastal and Hydraulics Laboratory (CHL), Engineer Research and Development Center (ERDC), U.S. Army Corps of Engineers

Keynote Address
Anne Aylward, Director, U.S. Department of Transportation - Volpe Center, will set the stage by illuminating how transformational technologies, new data sources, and advanced analytics will influence the future of multimodal transportation.

10:00 a.m.–10:30 a.m., Great Hall
Break and Exhibits

10:30 a.m.–Noon, Kavli Auditorium
Plenary 1: Perspectives Driving MTS Freight Analytics
Helen Brohl, Executive Director, U.S. Committee on the Marine Transportation System, presiding

This “living-room style” session will seek to frame the trends, needs, and issues facing the freight system related to operations, planning, and policy from the perspectives of infrastructure and innovation thought leaders. Panelists will engage in a moderated conversation and offer their unique perspectives on how better data and analytics integrated from many sources and transportation modes could enhance and inform public and private sector decision making.

• Caitlin Hughes, Director, Federal Highway Administration, Office of Freight Management and Operations
• Bethann Rooney, Assistant Director, Strategy & Innovation, Port Authority of New York and New Jersey
• Jonathan Rosenthal, President and CEO, Harbor Performance Enhancement Center, LLC
• Thomas Smith, Chief, Operations and Regulatory, U.S. Army Corps of Engineers
• Louis-Paul Tardif, Director, Economic Analysis and Research, Transport Canada
• Ted Trepanier, Senior Director, Public Sector Services, INRIX

Noon–1:00 p.m., Great Hall
Lunch

1:00 p.m.–2:00 p.m., Kavli Auditorium
Keynote Address
Rebecca F. Dye, Commissioner, Federal Maritime Commission (FMC), discusses perspectives on the potential value of more integrated multimodal freight data and analytics capabilities for the marine transportation system in light of recent FMC focus on supply chain innovation.
2:00 p.m.–2:30 p.m., Great Hall
Break and Exhibits

2:30 p.m.–4:00 p.m., Kavli Auditorium
Plenary 2: Reaching the Vision: Advancing Multimodal Freight Network Analytics - The Challenges and Opportunities
Jim Kruse, Director, Center for Ports & Waterways, Texas Transportation Institute, presiding
This panel will address real-world challenges faced in advancing multimodal freight network analytics. Panelists will introduce barriers to advancing analytics associated with data sourcing/sharing, policy barriers, technology transfer, and multimodal transparency. The panelists will share their visions for progress and discuss opportunities to collaborate among federal agency partners, multimodal stakeholders, and the research community.

- Stuart Anderson, Director, Planning, Programming and Modal Division, Iowa Department of Transportation
- Bill Eisele, Mobility Division Head and Senior Research Engineer, Texas Transportation Institute
- Sarah Hernandez, Assistant Professor, College of Engineering, University of Arkansas
- Kenneth (Ned) Mitchell, Research Civil Engineer, Coastal and Hydraulics Lab, U.S. Army Corps of Engineers
- Birat Pandey, Freight Analysis and Data Manager, FHWA, Office of Freight Management and Operations

4:00 p.m.–6:00 p.m., Great Hall
Reception and Interactive Poster Session
Alison Conway, Department of Civil Engineering, City College of New York, presiding

Presenters will have their interactive research on display with large-screen monitors. Attendees are encouraged to interact with the presenters, explore their research, software, and systems, and engage in discussions with other symposium attendees.

- Deriving Value from Waybill Data, Traffic Volumes and the Integration of Both
  Charles Edwards, North Carolina Department of Transportation
- Freight Production Modeling Using Census Micro-Data
  Shama Campbell, Rensselaer Polytechnic Institute
- Ports of the Future - Deploying Emulation and Real Time Simulation for Identifying Technologies for Improved Port Supply Chain Performance
  Lawrence Henesey, Blekinge Institute of Technology
- Validating AIS Data Using Machine Learning Algorithms
  Edward Carr, Energy and Environmental Research Associates
Wednesday, June 20

7:30 a.m.–4:30 p.m., Great Hall
Registration

7:30 a.m.–8:30 a.m., Great Hall
Breakfast and Exhibits

8:30 p.m.–10:00 a.m., Kavli Auditorium
Plenary 3: The Value of Multimodal Freight Network Analytics – Making the Case through Scenarios
Catherine Lawson, Associate Professor, University at Albany (State University of New York–SUNY), presiding

Panelists will discuss scenarios that illustrate the possible value of national multimodal freight analytics in both the tactical (event-driven) and strategic (long-term planning) contexts. Network disruptions could range from natural disasters to economic factors to military deployment. Long range planning scenarios could account for demographic changes, supply chain dynamics, technological advances, and climate change. The panel will explore how improved analytics could be beneficial and build resilience into multimodal systems.

- Alex Appel, Emergency Coordinator, Federal Highway Administration, Office of Transportation Emergency Preparedness
- Bruce Busler, Director of the Joint Distribution Process Analysis Center (TCAC/JDPAC), U.S. Transportation Command
- Michael Cashner, Vice President, Government Services, Landstar Transportation Logistics, Inc.
- Nicole Katsikides, Associate Research Scientist, Texas Transportation Institute

10:00 a.m.–10:30 a.m., Great Hall
Break and Exhibits

10:30 a.m.–Noon
Breakout Sessions

Session 1A: Data Analytics: Maritime and Freight I, NAS Lecture Room
Donald Ludlow, CPCS Transcom, presiding

- Deriving Value from Waybill Data, Traffic Volumes and the Integration of Both
  Charles Edwards, North Carolina Department of Transportation
- Freight Production Modeling Using Census Micro-Data
  Shama Campbell, Rensselaer Polytechnic Institute
- Ohio Maritime Study Information Visualization Techniques
  Donald Ludlow, CPCS Transcom

Session 1B: Data Analytics: Inland Waterways, NAS 125
Joe Crabtree, Kentucky Transportation Center, presiding

- Inland Marine Transportation Data Integration: Extracting Additional Value from Publicly Available Data
  James Dobbins, FACTOR, Inc.
- Measuring the Network Impacts of Local Disruptions: An Inland Waterways Case Study
  Craig Philip, Vanderbilt University
- Modeling Dynamic Behavior of Navigable Inland Waterways
  Heather Nachtmann, University of Arkansas
- Quantifying the Impacts of Disruptions to the Inland Marine Transportation System
  Patricia DiJoseph, U.S. Army Corps of Engineers
Session 1C: Decision Support: Resilience, NAS 120
Josh Murphy, National Oceanic and Atmospheric Administration, presiding

2017 Hurricanes: A Resilient Path Forward for Marine Transportation System Federal Agencies
Katherine Touzinsky, U.S. Army Corps of Engineers, ERDC

A GIS Inventory and Exposure Assessment for Critical Coastal Transport Infrastructure Land Use in the Caribbean Small Island Developing States
Gerald Bove, University of Rhode Island

Barriers to Climate and Extreme Weather Adaptations for Seaports: A Cultural Consensus Model for North Atlantic Medium and High-Use Port Decision Makers
Elizabeth Mclean, University of Rhode Island

Using Geographic Information Science to Evaluate Legal Restrictions on Freight Transportation Routing in Disruptive Scenarios
Steven Peterson, Geographic Information Science and Technology Group, Oak Ridge National Laboratory

Noon–1:00 p.m., Great Hall
Lunch

1:00 p.m.–2:00 p.m., Kavli Auditorium
Keynote Address: Blockchain and Freight Transportation

John Kingston, Head of Community Engagement, Blockchain in Transport Alliance (BiTA) & Executive Editor, Freightwaves discusses how this technology will influence supply chain efficiency and the multimodal freight system.

2:00 p.m.–3:00 p.m., Kavli Auditorium
Student Honor Panel
Helen Brohl, Executive Director, U.S. Committee on the Marine Transportation System, presiding

This special session features the work of four student researchers on germane topics related to the conference call for presentations. This opportunity was made available to full-time students age 35 or younger. Abstracts were reviewed and chosen based on their quality and relevance to the conference topics. Awarded presenters received a $500 travel stipend to attend the conference and received complimentary registration.

Assessing the Impact of Collaboration among Truck Carriers in Intermodal Freight Transportation
Majbah Uddin, University of South Carolina

Determining the Accuracy of Vessels’ Estimated Time of Arrival (ETA) with Different Output Parameters
Akintola Aremu, Texas Southern University

Freight Mode Choice Modeling using the Commodity Flow Survey (CFS) and Longitudinal Business Data (LBD)-2012
Lokesh Kalahasthi, Rensselaer Polytechnic Institute

3:00 p.m.–3:30 p.m., Great Hall
Break and Exhibits
3:30 p.m.–5:00 p.m.
Breakout Sessions

Session 2A: Data Analytics: Maritime and Freight II, NAS Lecture Room
Heather Nachtmann, College of Engineering, University of Arkansas, presiding

- Containership Routing and Scheduling with Multiple Time Windows
  Anastasios Charisis, Florida Atlantic University
- Modeling Agricultural Commodity Flows on the U.S. Railroads and Inland Waterways System Using Waybill and Waterborne Commerce Statistics Data
  Steven Peterson, Geographic Information Science and Technology Group, Oak Ridge National Laboratory
- Short Sea Shipping vs. Trucking a Cost-Benefit Analysis Using Mathematical Modeling
  Evangelos Kaisar, Florida Atlantic University

Session 2B: Decision Support: Managing Flows, NAS 125
Patricia DiJoseph, U.S. Army Corps of Engineers, presiding

- Applying Multimodal Freight Network Optimization to Public Sector Investment Decisions
  Mark Berndt, Quetica
- Data Science Approach to Bottleneck Identification: Freight Network Analytics
  Catherine Lawson, University at Albany (State University of New York – SUNY)
- Multi-Agency Data Fusion Informs Waterway Management
  Brandon Scully, U.S. Army Corps of Engineers
- The Voyage Plan - The Missing Link
  Brian Tetreault, U.S. Army Corps of Engineers

Session 2C: Data Analytics: Port Performance, NAS 120
Scott Drumm, Port of Portland, Oregon, presiding

- Containership Bay Time and Crane Productivity: Are They On the Path of Convergence?
  Shmuel Yahalom, SUNY Maritime College
- Containership Dwell Times through the AIS Lens
  Daniel Smith, Tiago Group and Daniel Hackett, Hackett Associates
- The Application of Freight Fluidity Metrics to the Port Environment
  Kenneth (Ned) Mitchell, U.S. Army Corps of Engineers
- Ports of the Future - Deploying Emulation and Real Time Simulation for Identifying Technologies for Improved Port Supply Chain Performance
  Lawrence Henesey, Blekinge Institute of Technology

Session 2D: Decision Support: Safety, NAS Members’ Room
Todd Ripley, MARAD, presiding

- An Exploratory Study of Near-Miss Events in Maritime Freight Systems Using the Marine Information for Safety and Law Enforcement (MISLE) Database
  Robin Dillon-Merrill, National Science Foundation
- Examining Maritime Casualties from Vessel Groundings Using Ordered Probit Modeling
  Fatima Zouhair, U.S. Coast Guard
- From Text to Data: How the U.S. Coast Guard Used Accident Reports for Benefits Analysis
  Douglas Scheffler, U.S. Coast Guard
Washington Nationals take on the Baltimore Orioles!

Seats are available in Section 101/102 above the Visitor’s Bullpen for $31.00 per person. Family and Friends are also invited.

For more information, please contact Brittney Gick (bgick@nas.edu).

Transportation to the park will not be provided; you must find your own transportation to the stadium. Numerous taxi stands are located near the NAS Building. Nats Park is also accessible by metro by going to the Navy Yard Metro Station (Green Line).

Tickets will be available until Sunday, June 17, 2018 and are subject to availability.
Thursday, June 21

7:30 a.m.–10:30 a.m., Great Hall
Registration

7:30 a.m.–8:30 a.m., Great Hall
Breakfast and Exhibits

8:30 a.m.–10:00 a.m.
Breakout Sessions

Session 3A: Data Analytics: Maritime and Freight III, NAS Lecture Room
Alison Conway, City College of New York, presiding

- Cyber-physical Applications for Maritime Freight Transportation Systems
  Amirhassan Kermanshah, Vanderbilt University

- How Information Systems and Data is Used to Control Operations and Influence Management
  Decisions at the Panama Canal
  Parsa Safa, Lamar University

- KAPSARC Transport Analysis Framework: Building a Global Freight Network Model with Satellite and AIS Data
  Hector Guillermo Lopez Ruiz, KAPSARC

Session 3B: Big Data and Machine Learning: Maritime Applications, NAS 125
Michael Pack, Center for Advanced Transportation Technology Laboratory, University of Maryland, presiding

- Enhancing Database User Experience with Natural Language Processing
  Dan Seedah, Texas Transportation Institute

- Man vs. Machine: Comparing Traditional Data Collection and Statistical Models with Machine Learning Big Data Analytics
  Jolene Hayes, Fehr & Peers

- The Practical and Unified Use of Blockchain, Cybersecurity, IoT, Machine Learning, AI, and Big Data for the Marine Transportation Industry: Details on Building a Multimodal Freight Analytics Platform
  Dean Schoultz, MarineCFO

- Validating AIS Data Using Machine Learning Algorithms
  Edward Carr, Energy and Environmental Research Associates

Session 3C: Decision Support: Environmental, NAS 120
Jim Corbett, University of Delaware, presiding

- Automatic Identification System Data Improvements to the 2014 Gulfwide Emissions Inventor Study
  Heather Perez, ERG

- Merging AIS and USCG Data for Modeling Maritime Air Emissions
  Diane Rusanowsky, U.S. Coast Guard

- Multi-Attribute Performance Analysis for Intermodal Maritime Cargoes
  Jim Corbett, University of Delaware

10:00 a.m.–10:30 a.m., Great Hall
Break and Exhibits

10:30 a.m.–Noon, Lecture Room
Closing Session
Sandra Knight, Chair, Fifth Biennial Marine Transportation System Research & Development Conference Planning Committee, presiding

This session will bring forward the main concepts, research needs and gaps, and lessons learned for MTS Research and Development future activity within the context of multimodal freight analytics.
Hotel Information
State Plaza Hotel
2117 E Street, NW
Washington, DC 20037

Contacts
Scott Brotemarkle, Senior Program Officer, SBrotemarkle@nas.edu
Brittney Gick, Associate Program Officer, BGick@nas.edu
SAVE THE DATE
Freight Fluidity Workshop
September 5-6, 2018
Keck Center, Washington DC

Innovations in Freight Data Workshop
April 8-10, 2019
Beckman Center, Irvine CA

SAVE THE DATE
17th Biennial National Harbor Safety Committee Conference
June 25-27, 2019
Houston, TX