The Transportation Center: Bridging the Future

Hani S. Mahmassani

Presentation to the BAC
May 4, 2017
Strategic Vision: A Refresher

• Pre-eminent think-tank and laboratory in the world for cutting-edge research that matters on a global scale.
• Provide the premier educational program in transportation systems.
• Essential academic partner for novel, high-impact collaborative research.
• Advance state of practice industry applications through a mix of engaged application-driven research and fundamental advances.
Progress Highlights:

**BAC Membership** (since last meeting)
- 7 new companies (14 new members)

**Funded Research Activity**
- Active: 8 projects $1.7 M, 7 faculty
- Submitted (9/1–5/1): 11 proposals $1.9 M+, 14+ faculty

**Students**
- 20 PhD students in Transportation Systems (T.S) program
  - 5 supported via dissertation year fellowships
- 14 MS students in T.S. program (10 new ‘16-‘17)
- 13 current T&L minor students (2 graduating in June)
- Strong recruiting year for 2017-2018
BAC: Update on Membership

- A strong year in terms of recruitment, retention of companies, events, and engagement
- Active research investigations with several BAC companies
- Actively seeking more opportunities to engage individual companies and/or consortia in research support and collaboration
- Active membership committee, several new prospects
BAC: New Membership

Leadership

Stifel

Sustaining

AAR Corporation
Columbia Helicopters
Atlas Air Worldwide Holdings
Uber Freight
Wells Fargo Rail
Association

UITP
BAC Contributions: FY07 – FY17

FY17 Goal: $600,000+
BAC Contributions: FY07 – FY17

![Graph showing contributions from FY07 to FY17 with categories: Goal, 60th, Individual, Sustaining, and Leadership.](image-url)
Faculty Awards / Honors (I)

Zdenek Bazant
Elected to the Academy of Athens

Charles Dowding
Named Distinguished Member of the American Society of Civil Engineers
Faculty Awards / Honors (II)

Joseph Schofer  
S.S. Steinberg Award  
from The American Road and Transportation Builders Association

Karen Smilowitz  
2016 recipient of the Award for the Advancement of Women in Operations Research and the Management Sciences by INFORMS
Students: Our Core Mission (I)

- TC adds *value to student experience* through industry exposure, seminars by authorities in the field, travel funds for conferences, fellowship stipends—essential differentiator for recruiting top talent.

- Many opportunities for *undergraduates* interested in transportation; increasing engagement in research, *internship* placement with *BAC companies*.

- *Industry support is critical* to our mission and to making a Northwestern Education in Transportation the unique experience it is.
Students: Our Core Mission (II)
Direct Student Funding Through NUTC

![Bar chart showing funding for FY14 to FY17 for Travel/Events, Fellowships, and Tuition/Stipend]
Students: NUVention Transportation

- Interdisciplinary, experiential course created in collaboration with and led by the Farley Center for Entrepreneurship and Innovation, designed to teach students about creating businesses in the transportation sector.
- Made possible by a gift from Boeing.
- **BAC members served as guest speakers in fall 2016 course:** Allen Adler (Boeing), Chris Pickett (Coyote); and serve as Advisory Board members (and student mentors): Tony Belkin (HERE) and Chris Pickett.
- Contact Bret if interested in participating in Fall 2017 course
Research Activities (I)

Industry Research
▪ HERE
▪ Hub Group
▪ UILabs
  ▪ Microsoft
  ▪ Mastercard

Industry Teaming
▪ Booz Allen Hamilton
▪ Leidos, Inc.
▪ SETS, Inc. (Middle East)
▪ Various small businesses
Research Activities (II)

Public Agencies / Federal Research

- Chicago Department of Transportation
- Chicagoland Metropolitan Agency for Planning
- Federal Highway Administration
- METRA
- United States Department of Labor
Research Activities (III)

**Chicago Red Light Camera Report**

- Assessment of Chicago’s RLC program impact on safety
- Overall decrease in injury-producing crashes attributed to RLC enforcement
- Significant safety “spillover effect” to non-RLC intersections
- Recommended grace period extension
- Methodology for continuing performance assessment and scoring intersections.
Selected Outreach Activities (I)

- Discounted Rates available for BAC member companies
- Superb speaker list: Coyote, CSCMP, DSC Logistics, Echo Global, Nippon Cargo, Schneider, Teradata, Uptake, Wells Fargo Rail, and more… and Northwestern faculty

Freight Transportation and Logistics
Navigating the Growing Challenges from the First Mile to the Last Mile in Transportation
May 22 -24, 2017
Selected Outreach Activities (II)

Patterson Lecture in Transportation

MAY 3, 2017 @ 7:30PM

36th ANNUAL PATTERSON LECTURE

LANCE FRITZ UNION PACIFIC

Lance Fritz
Chairman, President & CEO
Union Pacific Railroad

"Connecting People, Creating A Better Future—Why International Trade Benefits America"
Selected Outreach Activities (III)

• The 22\textsuperscript{nd} International Symposium on Transportation and Traffic Theory
  • Hosting in Evanston, Illinois
  • July 24-26, 2017
Selected Outreach Activities (IV)

Fall 2016

Industry Technical Workshop
MACHINE LEARNING IN TRANSPORTATION
WEDNESDAY, OCT. 26, 2016 | 2:00 PM
NORTHWESTERN UNIVERSITY CENTER | 1900 CAMPUS DRIVE, EVANSTON

Spring 2017

Industry Technical Workshop
BRIDGING THE FUTURE INNOVATION IN LARGE-SCALE INFRASTRUCTURE DEVELOPMENT
WEDNESDAY, MAY 3, 2017 | 1:00 PM
JAMES ALLEN CENTER | MCCORMICK AUDITORIUM | 2169 CAMPUS DRIVE
NUTC Fundraising Campaign

• **STRATEGIC RESEARCH FUND**
  – Freight, Logistics & Economic Competitiveness
  – Data-Driven Operations & Analytics
  – Sustainable Practices
  – Safety
  – Urban Logistics and Smart Cities

• **ACCOMPLISHMENTS**
  – October 2015 outreach mission to New York City with Paul Schneider (Greenbriar, Morgan Stanley, Scott-Macon)
  – Fundraising Strategic Messaging Sessions facilitated by Coyote Logistics (Paul to share later)
  – Targeted Outreach Lists Developed (dynamic)
Closing Thoughts

• **NUTC remains focused on the future**
  – Autonomous and connected vehicles, trucks
  – Innovation in logistics and supply chain operations
  – Last mile supply chain logistics
  – Internet of Things and smart cities

• **NEXT BAC MEETING**
  – *October 18-19, 2017*
Thank you!
Leadership

Roger Norber
Executive Vice President, Law & Corporate Affairs, & CEO, BNSF Railway

John Larkin
Managing Director and Head of Transportation Capital Markets Research, Stifel Financial Corp
BAC: New Members Here Today

Leadership

Peeter Kivestu

Transportation and Logistics Industry Consultant, Teradata
BAC: New Members Here Today

Leadership

Jason Birnbaum
Vice President, Operations Technology, United

Tracy Lee
Vice President, Network Operations, United
BAC: New Members Here Today

**Sustaining**

Andrew Schmidt  
*Senior Vice President, Intelligent Solutions, AAR Corp.*

Alexander Setness  
*Managing Director, Bank of America Merrill Lynch*
BAC: New Members Here Today

**Sustaining**
Charmin Tillman
Chief Marketing Officer, GE Transportation

Bill Driegert
Director, Uber Freight
BAC: New Members Here Today

Sustaining
Isra el Alguindigue
Senior Vice President, Industrial Analytics, Uptake Technologies

Brad Keywell
Co-Founder & CEO, Uptake Technologies
BAC: New Members Here Today

Association
Andrew Bata
Regional Manager – North America, UITP (Union Internationale des Transports Publics)
Guests Here Today (I)

- **Noam Alon**, Managing Director, Innovation and Engagement, United
- **Sebastian de Meel**, Partner, PricewaterhouseCoopers Advisory
- **Jeffrey Elliott**, Partner, PricewaterhouseCoopers Advisory
- **Ricardo Giesen**, Director & Associate Professor, Dept. of Transportation Engineering & Logistics, Pontificia Universidad Catolica de Chile
- **Kevin Glynn**, Vice President & CIO, DSC Logistics
- **Mary Gros**, Director of Business, Teradata
Guests Here Today (II)

- **Chris Kettering**, Enterprise Technology Leader, Platform Performance & Structures, Boeing
- **Jamie McCurry**, Senior Director, Administration & Government Affairs, Georgia Ports Authority
- **Grainne McNamara**, Principal, PricewaterhouseCoopers Advisory
- **Andrew Neff**, Senior Market Intelligence Leader, GE Transportation
- **Monali Shah**, Director, Intelligent Transportation, HERE
- **Srinivasan Sriram**, Founder & CEO, Skuchain
- **Michael Wang**, Principal, Greenbriar Equity Group