The Transportation Center: Beyond 60 Years

Hani Mahmassani

Presentation to the BAC
October 27, 2016
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)
- 3 new companies (7 new members)

Funded Research Activity
- Active: 8 projects $2.4 M, 7 faculty
- Submitted: 12 proposals $61.0 M, 25+ faculty

Students
- 13 incoming TR (CEE) graduate students (4 PhD track)
- 5 supported via dissertation year fellowships
- 10 Transportation & Logistics Minors
- $480k (FY16) in support (travel, tuition, stipend, DYF’s)
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 Member Companies

CIMC Group

Republic Partners, LLC

Uptake
BAC Contributions: FY07 – FY16

AY07  AY08  AY09  AY10  AY11  AY12  AY13  AY14  AY15  AY16

$- $100,000 $200,000 $300,000 $400,000 $500,000 $600,000

FY16
BAC Contributions: FY07 – FY16

AY07  AY08  AY09  AY10  AY11  AY12  AY13  AY14  AY15  AY16

- $100,000
- $200,000
- $300,000
- $400,000
- $500,000
- $600,000

60th  Individual  Sustaining  Leadership
BAC Members: Awards/Honors (I)

Norm Carlson
Appointed Board Chair METRA

Jeff Silver
Named Illinois Technology Association's ITA CityLIGHTS 2016 CEO of the Year
New Faculty Affiliates

Kermit Wies
Senior Research Fellow and Adjunct Professor
The Transportation Center
Faculty Awards / Honors (I)

Hani Mahmassani

Named to 2016 Class of National Associates by National Research Council of the National Academies.

Ian Savage

Awarded Best Paper at 2017 Transportation Research Forum with undergraduate student, Caroline Miller (WCAS, 2015).

Roberto Sarmiento

Elected 2018 president of the Special Libraries Association (SLA)
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
Students: Dissertation Year Fellows

**Mehmet Basdere**
Industrial Engineering and Management Science
*Models & Approaches to Multiobjective Arc Tour Problems with an Application to Marathon course Design*

**Hongyu Chen**
Civil and Environmental Engineering
*On-Demand Personal Mobility Services in the Era of Mobile Computing: Physics, Economics & Regulatory Policies*

**Zihan Hong**
Civil and Environmental Engineering
*Traffic Systems under External Interventions: Characterization, Modeling and Active*
Students: Dissertation Year Fellows

Lama Bou Mjahed
Civil and Environmental Engineering
*Cohort Effects and Technology Engagement in Connected User’s Sustainable Activity and Travel Behavior*

Yagci Sokat
Industrial Engineering and Management Science
*Transportation & Logistics in Resource Limited Settings*
Students: Transportation & Logistics Minor

New brochure

Campus marketing Effort

Remains unique offering
And opportunity for UG

Under leadership and
Mentorship of
Prof. Ian Savage
Proposed Center (I)

National University Transportation on Freight Mobility and Sustainability (for Resilient Communities)

Partners: NUTC (lead), Vanderbilt, UIUC, UC-Irvine, NYU, U Washington, TX Southern, Cal Poly Pomona

Mission

1) conduct cross-disciplinary on the mobility and fluidity of goods and related information in global and domestic supply and demand chains;

2) provide a networked forum where industry, academia and public agencies work together to advance knowledge;

3) provide and promote a unique educational experience aimed at developing the human resources necessary for a modern transportation and logistics industry.
Proposed Centers (II)

More University Transportation Center proposals

1) Tier 1, lead – Preserving the Environment
2) Tier 1, lead – Reducing Congestion (Smart Cities, IoT)
3) Tier 1, partner (Florida, lead) – Improving mobility for people and freight
4) Tier 1, partner (UIC, lead) – Preserving the environment
5) Tier 1, partner (U Akron, lead) – Preserving the existing transportation system
6) Regional Center, partner (UIC, lead) – Improving mobility
Research Activities (I)

Industry Research
- AEM
- BMW Technology
- BNSF
- Hub Group
- Jacobus Energy

Industry Teaming
- Booz Allen Hamilton
- Leidos, Inc.
- Sejel Technologies (KSA)
- Various small businesses

Booz | Allen | Hamilton
delivering results that endure
Research Activities (II)

Public Agencies / Federal Research
- Argonne National Laboratory (DOE)
- Chicago Department of Transportation
- Chicagoland Metropolitan Agency for Planning
- Federal Highway Administration
- United States Department of Labor
Selected Outreach Activities (I)

Executive Education

Freight Transportation and Logistics

Managing in a World of Rapidly Advancing Technology

May 9 -11, 2016

– Superb speaker list included: CSCMP, CN, eBay, Echo Global, Ruan, Schneider, and Nippon Cargo.

Freight Transportation and Logistics

Navigating the Growing Challenges from the First Mile to the Last Mile in Transportation

May 22-24, 2017

E-Fulfillment Course

in development for 2017
Selected Outreach Activities (II)

• **Have We Achieved Peak Driving?**  
  Planning for future travel in the Chicago region  
  Chicagoland Metropolitan Planning Agency  
  • *September, 2016*

• **The Road Ahead: Developing Technology and Policy to Accelerate the Safe Deployment of Connected and Driverless Cars**  
  Roundtable led by Congressman Dan Lipinski, Member of the Transportation & Infrastructure Committee and the Science, Space, & Technology Committee of the US House of Representatives  
  • *September, 2016*
Selected Outreach Activities (III)

• Mobility 2050: A Vision for Transportation Infrastructure Workshop
  Association for Equipment Manufacturers
  • June, 2016

• The 22\textsuperscript{nd} International Symposium on Transportation and Traffic Theory
  • Hosting in Chicago, 2017
Selected Outreach Activities (IV)

Spring 2016

Industry Technical Workshop
BIOLOGISTICS IN A CHANGING HEALTHCARE WORLD
April 20, 2016 | 2:00 - 4:45 PM
NORTHWESTERN UNIVERSITY • JAMES L. ALLEN CENTER
2100 CAMPUS DRIVE, EVANSTON, ILLINOIS 60208

Fall 2016

Industry Technical Workshop
MACHINE LEARNING IN TRANSPORTATION
WEDNESDAY, OCT. 26, 2016 | 2:00 PM
NORTH UNIVERSITY CENTER | 1999 CAMPUS DRIVE, EVANSTON
2017 William A. Patterson Lecture

Mr. Lance M. Fritz
Chairman, President & CEO
Union Pacific
Closing Thoughts

• NUTC brings value: to students, to faculty, to NU, and to our industry partners.

• *NUTC focused on the future*
  – Pushing the limits on logistics and supply chain operations
  – Automated and connected vehicles, trucks
  – Last mile supply chain logistics
  – Internet of Things and smart cities
  – Technology-enabled service delivery models

• *BAC engagement and support critical to what we do, and how well we do it*
Thank you!

More here ➔
BAC: New Members, New Companies

Sustaining
Brad Keywell
Co-Founder and CEO, Uptake Technologies

Jeffrey Walker
North American CEO, CIMC Capital
BAC: New Members, Legacy Companies

**Leadership**

Kenji Hashimoto  
*Senior Vice President, American Eagle, American Airlines*

Joseph Picone  
*President, UPS Corporate Transportation, UPS*
BAC: New Members from Legacy Companies

Sustaining
Tony Belkin
Head of Traffic and Dynamic Content, HERE
BAC Member Guests Here Today

- **Douglas Downing**, CFO, Canal Barge Co.
- **Matthew Mullarkey**, SVP Strategic Projects and Planning, Centerpoint Properties
- **Geoff Murray**, Partner, Oliver Wyman
- **Amitava Sarker**, Executive Director, J.P. Morgan
- **Julie Spencer**, VP Operations, Vosges Haut-Chocolat

**also a speaker today**
Guests & Speakers Here Today

- **Tony Cook**, Chief Engineer, Product Planning, Navistar
- **Daniel Murray**, VP Research, American Transportation Research Institute
- **Geoff Murray**, Partner, Oliver Wyman
- **Amitava Sarker**, Executive Director, J.P. Morgan
- **Steven Sheffey**, Corporate Counsel, Public Policy Development, Allstate Insurance
- **David Vernon**, VP & Senior Analyst, Sanford C. Bernstein
- **Barbara Wilson**, President, Wells Fargo Rail
Membership Committee

- Vicki Bretthauer
- Lee Clair
- Norm Carlson
- Rob Hart
- Kathleen Ross
- Justin Zubrod

- Meeting held in September 2016, several candidates identified: AAR Corp., AtlasAir, DiCom, Newgistics, Republic Partners, Stifel Financial, Daimler/Freightliner, PLG Consulting, Wells Fargo Rail
- Target Areas: Shippers, International Carriers, Trucking / Logistics companies, Transportation Equipment / Systems Manufacturers, Technology Providers
- Next meeting: January 2017
Meeting Planning Committee

- Price Blackford
- Mike Burton
- Peeter Kivestu
- Jean Regan
- Rich Thompson

- Meeting held in August 2016 helped identify meeting topics
- Next meeting: November 2016
60th Fundraising Committee

- Paul Schneider, Chair
- Andrew Boyle
- Vicki Bretthauer
- Ben Mclean
- Jeff Silver

- Report from Paul Schneider at the end of our meeting this morning
- Next meeting: November 2017