Our Transportation Center: Reaching Out, Making an Impact

Hani S. Mahmassani

Presentation to the BAC April 19, 2012
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: 2011- 2012 (I)

BAC Membership
- 15 new companies, 15 new members

Funded Research Activity
- Active: 22 projects $3.11 M, 14 faculty
- Submitted: 19 proposals $5.71 M, 10 faculty

Graduate Students
- 27 supported via research projects
- 3 supported via dissertation year fellowships
- $522k in support (travel, tuition, stipend, fellows)
### BAC Contributions: FY12

<table>
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<tr>
<th>Year</th>
<th>Goal</th>
<th>By April</th>
<th>Actual</th>
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<tr>
<td>FY 11</td>
<td>$350,000</td>
<td>$257,000</td>
<td>$440,000</td>
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<tr>
<td>FY 12</td>
<td>$400,000</td>
<td>$286,000</td>
<td>?</td>
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Faculty: Selected Awards (I)

David Dunand
2012 Class of Fellows by The Minerals, Metals & Materials Society

Hani Mahmassani
First Greenshields Award for Best Paper in Traffic Flow Theory and Characteristics, Transportation Research Board of the National Academies (with Jiwon Kim)

Mark Ratner
2012 Willard Gibbs Medalist by the American Chemical Society
Faculty: Selected Awards (II)

Roberto Sarmiento
Fellow of the Special Libraries Association

Joseph Schofer
- Transportation Research Board’s 2011 Roy W. Crum Distinguished Service Award
- National Associate by the National Research Council of the National Academies

Karen Smilowitz
McCormick Advisor of the Year
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)

• **10** *New graduate students* in 2011-12
• **3** *Dissertation Year Fellows* (2011-12)
• **3** *Transportation & Logistics* graduating seniors
Students: 2011 – 2012 Direct Student Funding Through NUTC
Students: Dissertation Year Fellows

Laurence Audenaerd (Civil & Env. Eng.)
Bringing Short-Haul Air Down to Earth: Exploring the Trade-Space of Mode Substitution for Regional Air Passenger Transport Markets

Guy Arie (Kellogg)
Multi-Market Contacts in the Airline Industry: Theory and Evidence

Yang Liu (Civil & Environmental Engineering)
Welfare Effects of Congestion Pricing on Travelers with Different Value of Time: Strategies to Enable Transportation
Students: External Awards

- **Yikai Chen**, Civil Engineering PhD candidate
  - International Road Foundation Road Scholar

- **Jiwon Kim**, Civil Engineering PhD candidate
  - First Greenshields Award for Best Paper in Traffic Flow Theory and Characteristics, Transportation Research Board of the National Academies (with Hani Mahmassani)

- **Madison Fitzpatrick**, Civil Engineering PhD candidate
  - The Eno Leadership Development Development Scholarship
  - Eisenhower Fellowship

- **Luis de la Torre**, Civil Engineering PhD candidate
  - CCITT Student of the Year Award
Outreach Activities (I)

Events & Public Policy

- Hosting 2nd International Conference on Evacuation Modeling & Management (ICEM’12) – August 2012
- Workshop: *The Electrification of Transportation: A Look at the Road Ahead* (Co-sponsor: Initiative for Sustainability & Energy at Northwestern (ISEN))
- Hosted White House Round Table featuring The Honorable David L. Strickland, Administrator of the National Highway Traffic Safety Administration (NHTSA)
- Transportation Deregulation and Safety: A Retrospective and Reflection after 25 Years (May 3, 2012)
Outreach Activities (II)

Research Activities – Public Sector

- **Chicago Transit Authority**
  - Area of network design and service planning, focusing on the development and application of advanced analytics in connection with extensive system data to improve operations and the user experience. (CTA funded)
  - Software application for optimizing urban transit and transportation systems (CCITT funded)

Research Activities – Industry

- **Echo Global Logistics**
  - Use of archived transactional data in conjunction with real time predictive analytics for truckload pricing and carrier load matching (first phase completed)

- **Boeing Corporation**
  - Investigate transportation and logistics sector applications for high accuracy, high integrity, and high availability satellite positioning and navigation technologies.
Outreach Activities (III)

Executive Education

Freight Transportation and Logistics: Delivering Results in a Volatile Environment
May 14-16, 2012

Pricing Highway Infrastructure
May 21-23, 2012
Outreach Activities (IV)

International Outreach

- **Ongoing**
  - New National Transportation Center for Ministry of Transport, KSA
  - Crowd dynamics and mobility studies, Umm-Al-Qura University, Saudi Arabia
  - Eco-routing, collaboration with TNO, NL on European Commission project

- **In Development**
  - Rajawali Corporation – Jakarta, Indonesia
    - Investigation of new 300 mile freight transportation rail line in Sumatra: infrastructure, economics, development, policy
Outreach Activities (V)

International Visiting Scholars in Residence

- Prof. Seungjae Lee – University of Seoul, Korea
- Dr. Shinhae Lee – Seoul Development Institute, Korea
- Prof. Ibtesam Abu-Sleiman – Umm-Al-Qura University, Makkah, KSA
- Andreas Frei, Pre-doctoral Fellow, ETH-Zurich, Switzerland
- Yinyi Ma, Visiting PhD Scholar, Erasmus University, NL
- Fiorella Mete, Visiting MS Scholar, University of Torino, Italy
MORE HERE
Closing Thoughts

• Challenging yet exciting times in the transportation sector—industry, public sector

• AT NORTHWESTERN
  – Uniquely successful industry-engaged approach to transportation research and education

• What we do at the NUTC matters
  • BAC engagement and support critical to what we do, and how well we do it
Thank you!
BAC: New Leadership Companies

Booz Allen Hamilton

Coyote Logistics
BAC: New Sustaining Companies

Korn / Ferry International
Patriot Rail Corp.
Scudder Law Firm
TTX Company
Watco Companies, LLC
BAC: Target Sectors for New Members

- Shippers with significant logistics operations
- International Carriers
- Trucking / Logistics companies
- Transportation Equipment / Systems Manufacturers
- Technology Providers
BAC: New Leadership Members Here Today

Fred Messina
Vice President

Jeff Silver
CEO

Booz | Allen | Hamilton
delivering results that endure
BAC: New Sustaining Members Here Today

Marc Scudder
Vice President
BAC: Members with New Companies Here Today

Neil Collins
Senior Client Partner, Global Section Leader

Adam Inselbuch
EVP & Chief Financial Officer

David Rohal
Vice President