Our Transportation Center: Taking Stock, Charting Options

Hani S. Mahmassani

Presentation to the BAC
October 30, 2013
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: 2013

BAC Membership (since last meeting)
- 3 new companies (4 new members)

Funded Research Activity (Current)
- Active: 19 projects $2.67 M, 5 faculty
- Submitted: 6 proposals $9.55 M, 20 faculty
- Dissertation Year Fellowships 4

Graduate Students (2012-2013)
- 22 supported via research projects
- 4 supported via dissertation year fellowships
- $627k in support (travel, tuition, stipend, fellows, etc.)
Selected Outreach Activities (I)

Chair: Prof. Ian Savage

Keynote Speaker: Charles Manski, Board of Trustees Professor of Economics at NU

Summer School: Monday-Wednesday, July 8-10, 2013

Conference: Wednesday-Friday, July 10-12, 2013
Selected Outreach Activities (II)

Spring 2013

Smarter Cities/Smarter Mobility

Wednesday, April 24, 2013
2:00 to 4:45 p.m.
James L. Allen Center - Tribune Foundation Auditorium
Northwestern University
2169 Campus Drive, Evanston, IL

Fall 2013

The Fight for the Last Mile

Thursday, October 23, 2013
2:00-4:45pm
James L. Allen Center - Tribune Foundation Auditorium
Northwestern University
2169 Campus Drive, Evanston, IL
Selected Outreach Activities (III)

Industry Research

- Echo Global Logistics
- US Bank
- Sears
- Nokia
International Outreach

- New National Transportation Center for Ministry of Transport, KSA: Strategic plan and design completed
- Crowd dynamics and mobility studies, Umm-Al-Qura University, KSA
- New Energy R&D City in KSA: Strategic planning exercise
- Active collaboration with TU-Delft (NL), EPFL (Lausanne, CH) and KTH-Stockholm (SW) in various areas.

- Rajawali Corporation – Jakarta, Indonesia
  - Executive Education Program successfully completed in August 2013
  - Additional opportunities to be determined
Executive Education (I)

Freight Transportation and Logistics: Delivering Results in a Volatile Environment

September 9-11, 2013

• Well attended by a diverse group of carriers and shippers involving multiple modes of transportation—23 students, most high level;
• A real winner for the Center!
Executive Education (II)

Transportation Policy Development, Planning and Management

For: Indonesia Ministry of Home Affairs

Funded by: Rajawali Foundation

August 25-31, 2013

Jakarta, Indonesia
Executive Education (III)

- Partner with Chalmers University, Supply Chain & Management program
  - Open to 5 BAC members
  - November 11-14, 2013
Good News: Faculty Recognition

Irina Dolinskaya
Northwestern Associated Student Government
Faculty Honor Roll (undergraduate teaching award, nominated by students), 2012

Ian Savage
Victor Olivera Educator Award for outstanding effort to help promote railroad safety,
DuPage Railroad Safety Council, October 2012
Good News: Faculty Recognition

Aaron Gellman
Recipient of the 2014 Francis X. McKelvey Award by the Transportation Research Board’s Aviation Group Executive Board

Joseph Schofer
BAC: Update on Membership

- A really good year in terms of recruitment, retention of companies, events, and engagement
- Active membership committee, several new prospects
- Success Indication: more instances of NUTC being approached by companies/individuals asking to join
- Actively seeking opportunities to engage individual companies and/or consortia in research support and collaboration
BAC: New Leadership Companies

- Ford
- GE Transportation
- Navistar
BAC Contributions: FY11, FY12, FY13

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<th>Goal</th>
<th>By April</th>
<th>Actual</th>
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Research Update: Strategic Focus Areas

1. Re-inventing the user experience in transportation
   - Freight and passenger
   - Business Intelligence in support marketing / operations
   - New focus on design: urban design, facility design

2. Smart Cities, Driverless Vehicles, Connected Systems

3. Freight Logistics and Economic Competitiveness

4. Leveraging Big Data for Transportation

5. Transportation energy and sustainability

6. Mixed Traffic Flow

7. Humanitarian logistics and disaster relief
Research Award
Leveraging, Integrating, Networking, Coordinating Supplies (LINCS) for Supply Chain Management (SCM)

• Consortium Members: Broward College (Lead), Columbus State Community College, Essex County College, Florida State College at Jacksonville, Georgia Institute of Technology, Harper College, Long Beach City College, Rutgers University, San Jacinto Community College, St. Petersburg College, Union County College, NUTC

• Partner: Council for Supply Chain Management Professionals

• Goal: Develop eight standardized supply chain management training programs for entry and middle-level employment: Supply Chain Management; Demand Planning; Procurement & Supply Management; Manufacturing & Service Operations; Transportation Management; Inventory Management; Warehousing Management; Order Fulfillment & Customer Service
Program Transition: CCITT

Center for the Commercialization of Innovative Transportation Technology

- Projects Funded: 18
- Faculty PIs: 17
- Students Supported: 31
- Private / public sector engagement
- Strategic Vision
  - Innovation, Implementation Best-Practices Speaker Series
  - Enable / support industry research
  - Part of entrepreneurship ecosystem at NU
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)

4 *Dissertation Year Fellows* (2013-14)

13 *New graduate students* in Fall 2013

4 *Transportation & Logistics* graduating seniors

17 T&L students in all classes
Students: Dissertation Year Fellows

**Luis de la Torre** (Industrial Eng. & Mgt Science)  
*Models and algorithms for Coordination of Humanitarian Logistics*

**Charlotte Frei** (Civil & Environmental Eng.)  
*Travel, Communication and Activity Behavior: Improving the Customer Experience and Serve Allocation*

**Joseph Warfel** (Industrial Eng. & Mgt Science)  
*Operations Management of Retail Donation Programs*

**Weizeng Zhang** (Civil & Environmental Eng.)  
*Segmentation Modeling: Applications for Finite Mixture Regression Models to Management of Transportation Infrastructure*
Visiting Scholars in Residence

Dr. Conrado Borraz-Sanchez — Post-Doctoral Research Fellow, Center for Sustainable Energy Analytics

Dr. Hongcheng Gan — Visiting Scholar, Transportation Center (Center for Supernetworks Research at University of Shanghai for Science and Technology)

Dr. Jonathan Hall — Don Searle Post-Doctoral Research Fellow in Economics
NUTC 60th Anniversary Celebration:
1954-2014.
NUTC 60th Anniversary Celebration: 1954-2014.

- ON-CAMPUS SYMPOSIUM: ALUMNI, FACULTY and BAC:
  - ½ day transportation issues
  - ½ day alumni and faculty reminiscences
  - Gala dinner/festive event
- Alumni events in different cities around the country: DC, NYC, SFO, LA
- FACULTY steering committee
- ALUMNI/BAC 60th Committee
- Fundraising Opportunity for Long-Term Excellence Fund/Endowment
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 Members Here Today

Regis Luther
Vice President

Pam Stec
Director, Materials Planning
& Logistics, North America

Russell Stokes
President & CEO
BAC: New Members with Continuing Companies Here Today

Dan Avramovich
Chairman and CEO

Paul Fisher
President and CEO

David Hoppes
Senior Vice President
BAC: Target Sectors for New Members

- Shippers with significant logistics operations
- International Carriers
- Trucking / Logistics companies
- Transportation Equipment / Systems Manufacturers
- Technology Providers