



Our Transportation Center: *Beyond 60 Years*

Hani S. Mahmassani



Presentation to the BAC
October 28, 2015

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)

- **2** new companies (**4** new members)

Funded Research Activity

- Active: **11** projects **\$2.2 M**, **5** faculty
- Submitted (to date): **4** proposals **\$3.5 K+**, **5** faculty

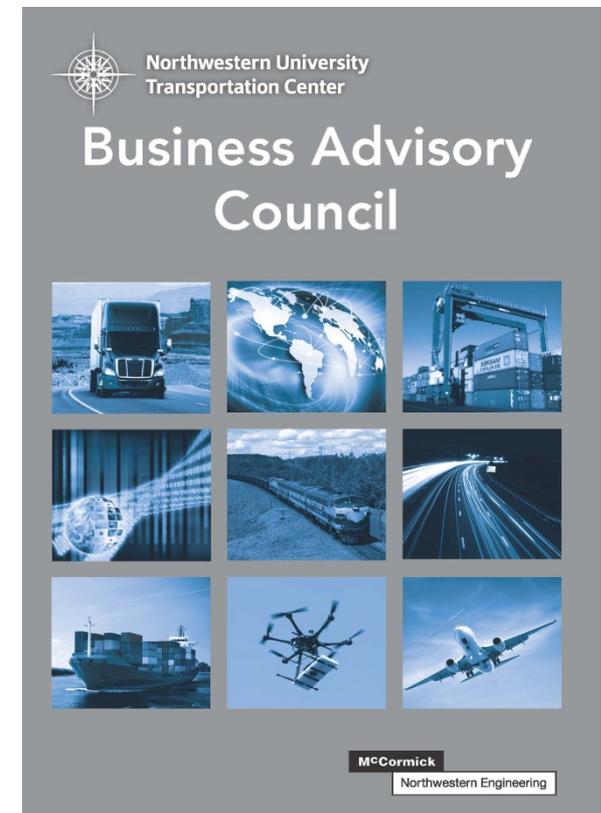
Students

- **14** incoming TR graduate students (6 PhD track)
- **15** current T&L minor students
- **17** graduate students supported via research projects
- **3** supported via dissertation year fellowships
- **\$439k** (AY15) in support (travel, tuition, stipend, DYF's)



BAC: Update on Membership

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



BAC: New Membership

Leadership

Walgreens



Sustaining

MOL (Americas)



BAC Members: Awards / Honors (I)



Ann Drake

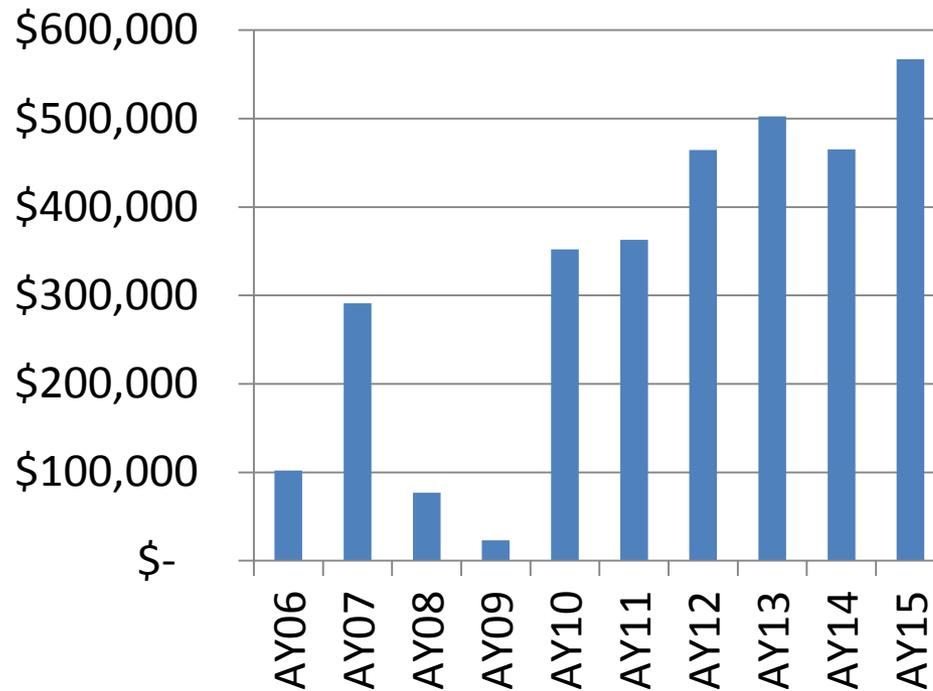
David Schulz Award
Northwestern University



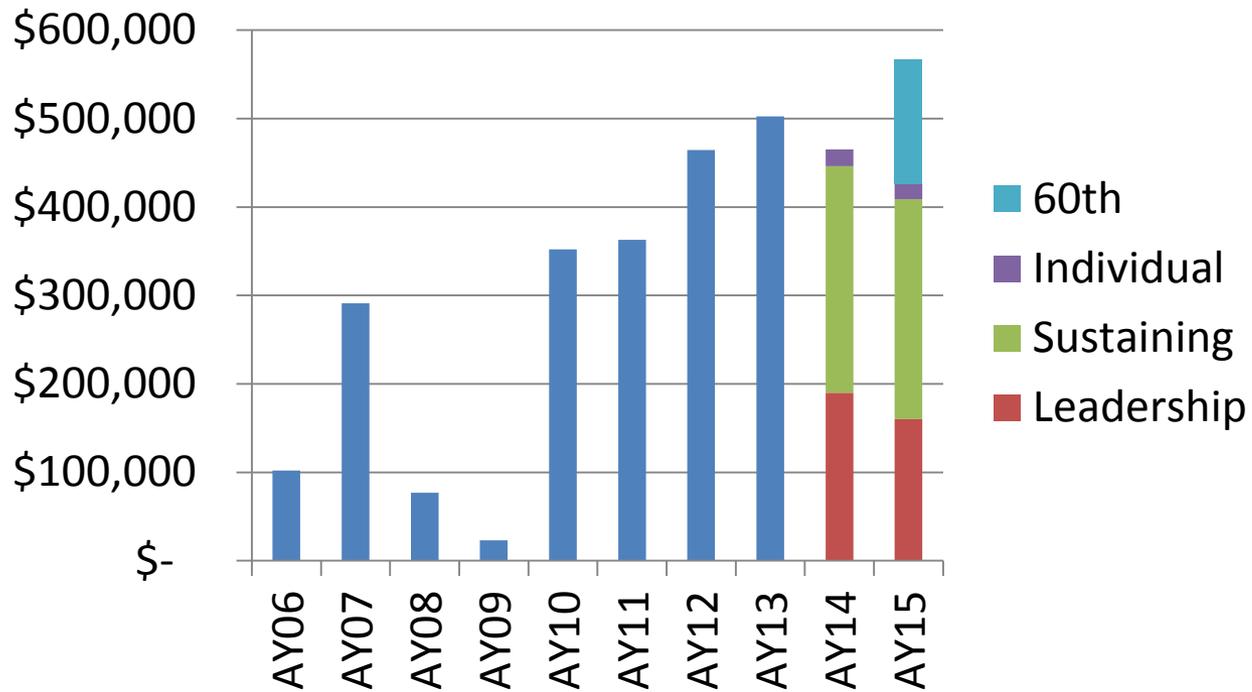
Craig Phillip

Lifetime Achievement Award
Seaman's Church Institute

BAC Contributions: AY06 – AY15



BAC Contributions: AY06 – AY15



Faculty Awards / Honors (I)



Kimberly Gray

Named Chair of Civil and Environmental Engineering



Hani Mahmassani

2016 Thomas B. Deen Distinguished Lecture Award

from the Transportation Research Board of the National Academies

Faculty Awards / Honors (I)



Kaylan Raman

**Dorothy Ann and Clarence L. Ver Steeg
Distinguished Research Fellowship**
from Medill School



Karen Smilowitz

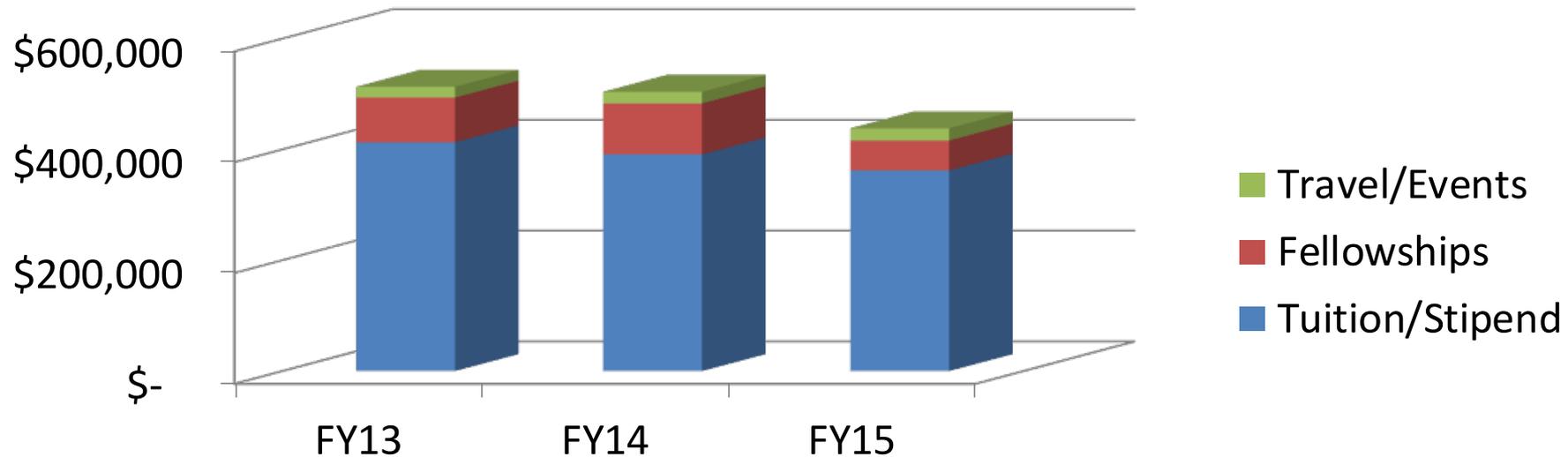
**2015 Charles Deering McCormick Professor of
Teaching Excellence award**
from the McCormick School of Engineering
and Applied Science

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



Peng "Will" Chen

Civil and Environmental Engineering

Hybrid Transit System: Optimal Routing and Design



Jie "Jeremy" Yang

Civil and Environmental Engineering

*Data-Driven Optimization and Analyses in the
Transportation Industry*

Students: Placement of 2015 Graduates

Master Degree Students

- Analyst, **Chicago South Shore Railroad**
- Management Trainee, **McMaster Carr**
- Consultant, **Ricondo & Associates**
- Transportation Planning Engineer, **HNTB, Inc.**
- Staff Analyst, **MTA-NYC Transit**
- Operations Planning, **MTA-NYC Transit**
- Sales Engineering, **Citilabs**

PhD Students

- Asst. Professor, Zachry Dept. of Civil Engineering, **Texas A&M University**
- Asst. Prof., Civil & Environmental Engineering, **Michigan State University (2)**
- Freight Analyst, **Cambridge Systematics**
- Data Science Analyst, **Wayfair**
- Transportation Planner, **Wight & Company**
- Associate, **McKinsey & Company**

Research Activities (I)

Industry Research

- **Boeing**
- **BNSF**
- **DSC Logistics**



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**
- **Chicago Department of Transportation**
- **The Chicagoland Metropolitan Agency for Planning**
- **Federal Highway Administration**
- **United States Department of Labor**



Research Activities (III)

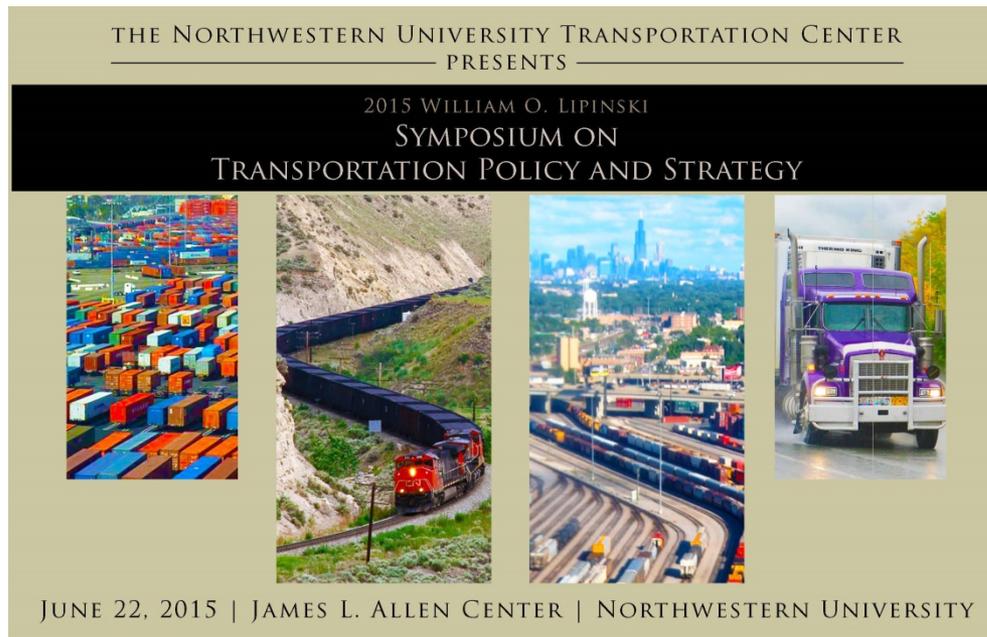
NSF Partnerships for Innovation: Building Innovation Capacity



- ***Smart CROwsourced Urban Delivery (CROUD) System***
- 3 year award, \$1million
- Prof. Marco Nie, Civil & Environmental Eng. (CEE), PI
 - With: Prof. Amanda Stathopolous (CEE) and James Schummer (Managerial Economics and Decision Science)
 - University of Illinois at Chicago: Civil and Materials Engineering, Computer Science & Center for Supply Chain and Logistics management
 - ROADIE – growing “neighbor to neighbor delivery business” company backed by UPS Strategic Venture Fund

Selected Outreach Activities (I)

WOL Symposium on Transportation Policy & Strategy



- ✓ Ray LaHood
- ✓ Dan Lipinski

- ✓ CMAP
- ✓ IDOT
- ✓ FHWA

- ✓ Coca Cola
- ✓ DSC Logistics
- ✓ RRDonnelley
- ✓ Schneider
- ✓ Norfolk Southern
- ✓ USG Corp.

***Paths to Economic Competitiveness:
Advancing Supply Chain Performance in the Chicago Hub***

Selected Outreach Activities (III)

Book Launch and Special Seminar

Forecasting Urban Travel

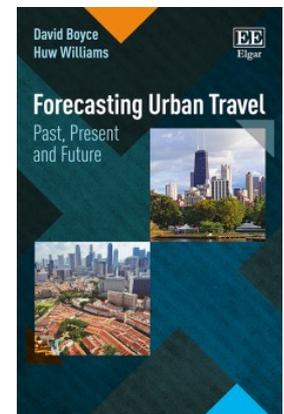
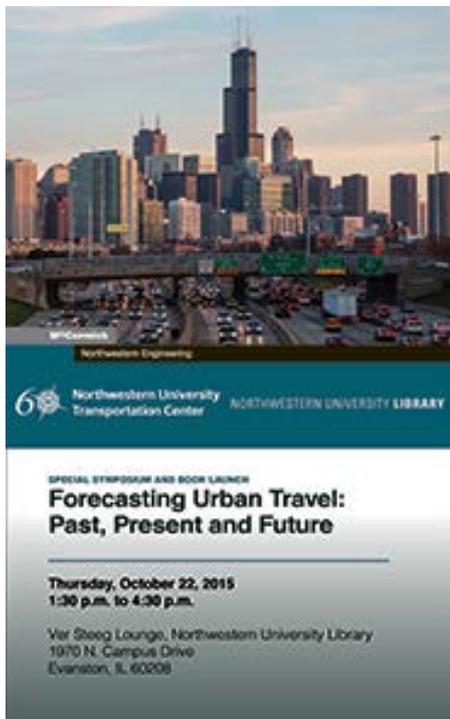
- *Honoring David E. Boyce & Huw C. W. L. Williams*

Speakers

- Anna Nagurney, University of Mass., Amherst
- Ram Pendyala, Georgia Institute of Technology
- Kermit Wies, Former Deputy Executive Director, Chicago Metropolitan Agency for Planning (CMAP)

In Partnership with the
Transportation Library

October 22, 2015



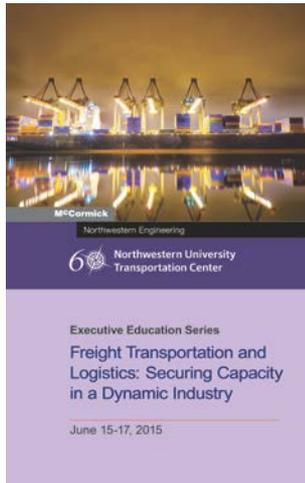
Selected Outreach Activities (III)

- **Amtrak Chicago Gateway Initiative Blue Ribbon Panel Meeting**
 - Recommendations to Prevent Rail Gridlock in Chicago
 - October, 2015
- **The 22nd International Symposium on Transportation and Traffic Theory**
 - Hosting in Chicago, 2017



Selected Outreach Activities (IV)

Executive Education



Freight Transportation and Logistics

June 15-17, 2015

- Registrants
 - 1 from UPS
 - 1 from Coca Cola
 - 1 from Toyota

Chalmers University of Technology Supply Chain Management

April 20-23, 2015

- 1 participant from UPS via NUTC

Selected Outreach Activities (V)



McCormick
Northwestern Engineering

**Northwestern University
Transportation Center**
Center for the Commercialization of
Innovative Transportation Technology

CCITT

**Unmanned Aerial Vehicles:
Applications and Emergent Technologies**

Monday, April 20, 2015 | 2:00 p.m.

Northwestern University • James L. Allen Center
2169 Campus Drive
Evanston, IL 60208

Spring 2015



McCormick
Northwestern Engineering

**Northwestern University
Transportation Center** **CCITT** Center for the Commercialization of
Innovative Transportation Technology

INDUSTRY TECHNICAL WORKSHOP
**The Internet of Things in
Transportation and Logistics**

Tuesday, October 27, 2015
2:00 p.m. to 4:30 p.m.

Hilton Orrington/Evanston Hotel
1710 Orrington Avenue
Evanston, IL 60201

Fall 2015

Selected Outreach Activities (V)

Training Program:

Leveraging, Integrating, Networking, Coordinating Supplies (LINCS) for Supply Chain Management (SCM)

Status:



- Curricula developed for 8 of the certificate tracks
 - Supply Chain Management; Demand Planning; Procurement & Supply Management; Manufacturing & Service Operations; Transportation Management; Inventory Management; Warehousing Management; Order Fulfillment & Custom
- Courses available at: Broward College (FL), Columbus State Community College (OH), Essex County College (NJ), Florida State College at Jacksonville, Harper College (IL), Long Beach City College (CA), San Jacinto College (TX), St. Petersburg College (FL), Union County College (NJ)

In Process... Program Review

- Meeting with Internal and External Reviewers
 - November 4-6, 2015
- BAC members may be contacted by a review committee comprised of internal and external reviewers
- Reviewers
 - **Internal:** *Bruce Ankenman, Prof. Ind. Engineering & Management Sciences; Prof. Robert Porter, William R. Kenan, Jr. Prof. of Economics*
 - **External:** *Chris Hendrickson, Carnegie Mellon University; Patricia Mokhtarian, Georgia Institute of Technology*
- 4 Phases:
 - Collection and analysis of unit data and survey feedback - **completed**
 - Identification of key issues and a self-study by the unit - **completed**
 - Visit to and evaluation of the unit by a review team comprised of senior faculty and staff members and external reviewers - **pending**
 - Implementation of recommendations - **pending**

Self Study– NUTC Success Factors (I)

1. A compelling underlying vision and sound principles that have guided our development over the years: transportation as an interdisciplinary domain of study; and an environment that has enabled and fostered this vision.
2. Our human capital: Diverse, multi-disciplinary, excellent faculty working with outstanding students.
3. Our BAC-- strong industry engagement throughout its existence: from its founding, the private sector has been a key stakeholder and supporter of the Center, helping set it apart from potential competitors that were primarily reliant on a single state agency.

Self Study– NUTC Success Factors (II)

4. A diverse portfolio of activities that spans basic research, industry and academic events, as well as executive education, and includes active engagement by faculty and TC-affiliated staff and companies in national policy and strategic questions.
5. Establishment of Patterson Chair as a prestigious endowment tied to the Center. Example of a transformative long-term commitment that enabled the Center and Transportation at Northwestern to “get to the next level.”
6. Strong connections to and engagement with alumni, who occupy major leadership positions in industry, academia and government.

Self Study– Threats

1. Fragmentation and loss of synergy.
2. Shifting departmental and school priorities affect renewal of faculty talent in Transportation. Examples: Economics, Supply Chain (Kellogg).
2. Complete self-reliance in terms of funding model.
3. Space constraints and renewal.

NUTC 60th Fundraising Campaign

- **STRATEGIC RESEARCH FUND**

- Freight, Logistics & Economic Competitiveness
- Data-Driven Operations & Analytics
- Sustainable Practices
- Safety
- Urban Logistics and Smart Cities

- **GIVING OPPORTUNITIES**

- Name the Transportation Center
- Dissertation Year Fellowship Program
- Naming of Space in Chambers Hall (Atrium, Seminar Room)
- Diana Marek Student Enterprise Fund
- Individual Benefactor Levels



Thank you!

BAC: New Members Here Today

Sustaining

Richard Craig

President & CEO, MOL (Americas) Inc.



David Horwitz

Vice President and Executive Director,
Fleet Portfolio Management, GATX



Guests Here Today (I)

- **Patrick Allard**, VP Sales & Business Development, Newgistics
- **Oscar E. Bazan**, EVP Planning & Business Development, Panama Canal Authority
- **Rich Byrnes**, AVP – Transportation & Logistics, Ascena Retail Group, Inc.
- **Chris Barnard**, President & CEO, Wacker Neuson Corporation
- **Frank Bush**, Lead Industry Consultant, Teradata
- **Marty Di Fliore**, Head of FCA Transport & Auto Services Logistics, Supply Chain Management, FCA

Guests Here Today (II)

- **John Grenier**, VP, GI Partners
- **Jeremy Haycock**, Chief Marketing Officer, Direct ChassisLink (DCLI)
- **Eric T. Jakubowski**, Chief Commercial Officer, Anacostia Rail Holdings, Inc.
- **Rick Lee**, Chief Operating Officer, SEKO Logistics
- **Patrick Lortie**, Partner & Montreal Office Leader, Manufacturing, Transportation & Energy Practice, Oliver Wyman

Guests Here Today (III)

- **Steve Matthews**, Partner, Industry Consulting, Teradata
- **David Myers**, VP Sales, United Delivery Services
- **Jon Panzer**, VP, Financial Planning Analysis, Union Pacific Railroad
- **Ruchir Sud**, Finished Vehicle Logistics, Logistics & Customs, FCA
- **Jay Young**, VP, Trinity Rail, Inc.



60th Fundraising Campaign Committee

- Paul Schneider, Chair
 - Andrew Boyle
 - Vicki Bretthauer
 - Ben Mclean
 - Jeff Silver
 - *Others to be announced*
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- Honing a fundraising message
 - Working with NU Development to identify donor candidates
 - Building a strategy to reach out to rail, trucking and 3PL / Logistics industry donor candidates
 - Informative visit to NYC to gain insight from BAC members

BAC Membership Committee

- Vicki Bretthauer
- Lee Clair
- Norm Carlson
- Ann Drake
- Rob Hart
- Kathleen Ross
- Justin Zubrod (*ex-officio*)

- Several promising company candidates identified, personal contacts made, invitations sent, invitations in progress
- Target Areas: Shippers, International Carriers, Trucking / Logistics companies, Transportation Equipment / Systems Manufacturers, Technology Providers



Meeting Planning Committee

- Price Blackford
 - Mike Burton
 - Peeter Kivestu
 - Jean Regan
 - Rich Thompson
-
- Meeting held over summer identified several topics for consideration for Fall and Spring meetings