



RESEARCH *THAT MOVES YOU*

Northwestern University Transportation Center

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**Northwestern University
Transportation Center**

Northwestern |  TRANSPORTATION CENTER

BAC
2019
SPRING

**Business Advisory Council
SPRING MEETING**

THURSDAY, MAY 16, 2019 [8:00 AM]

**NORTHWESTERN UNIVERSITY TRANSPORTATION CENTER
600 FOSTER STREET, EVANSTON, ILLINOIS 60208**

The Transportation
Center:
Sustaining our Impact

Hani S. Mahmassani

Presentation to the BAC
May 16, 2019

WHAT IS NUTC?

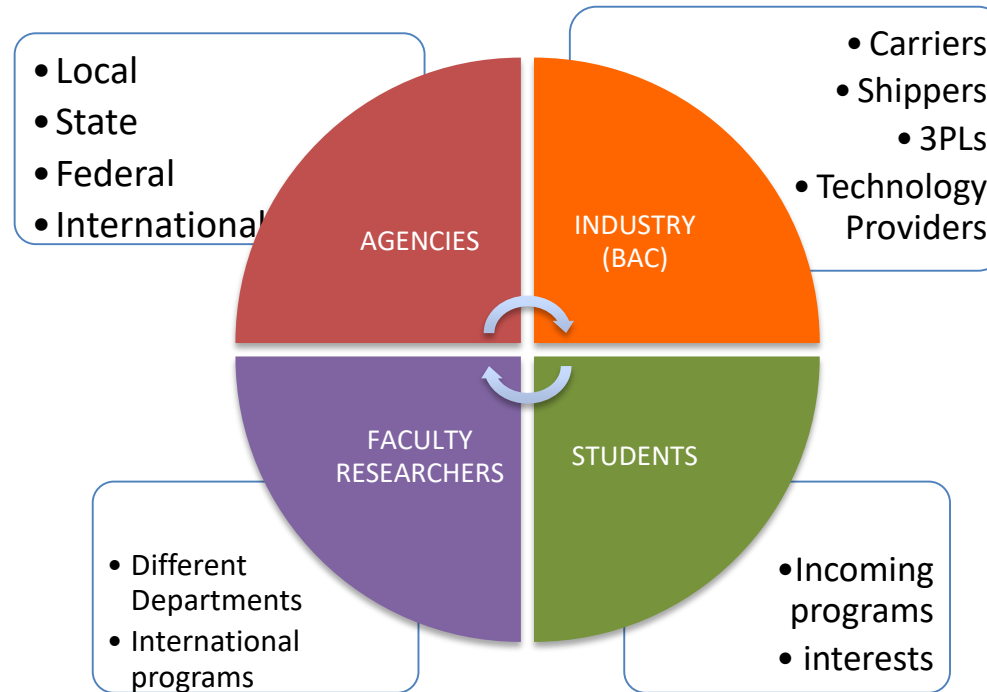
PLATFORM

COLLABORATION

KNOWLEDGE CREATION

TRANSFORMATION

NUTC AS COLLABORATION PLATFORM



New NUTC STAFF



Goldie McCarty

Assistant Director of Research
& Operations



Andrea Cehaic

Program Administrator

NUTC IMPACT?

Selected Faculty Recognition



Wei Chen

Elected to National Academy of Engineering (NAE)



Hani Mahmassani

Inaugural recipient of the *Martin Beckmann Award for Transformative Research in Transportation*
(Transportation Research Board's Network Modeling Committee)

Selected Faculty Recognition



Marco Nie

Stella Dafermos Best Paper Award
(TRB Network Modeling Committee)



Joseph Schofer

Lifetime Achievement Award
Council of University Transportation Centers



Amanda Stathopoulos

Faculty Early Career Development Program (CAREER)
National Science Foundation (NSF)

New Faculty Affiliates



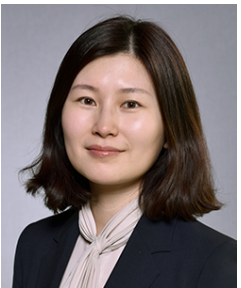
Ágnes Horvát

Assistant Professor of Communication Studies
School of Communication



Thomas O'Toole

Executive Director, Program for Data Analytics
Clinical Professor of Marketing
Kellogg School of Management

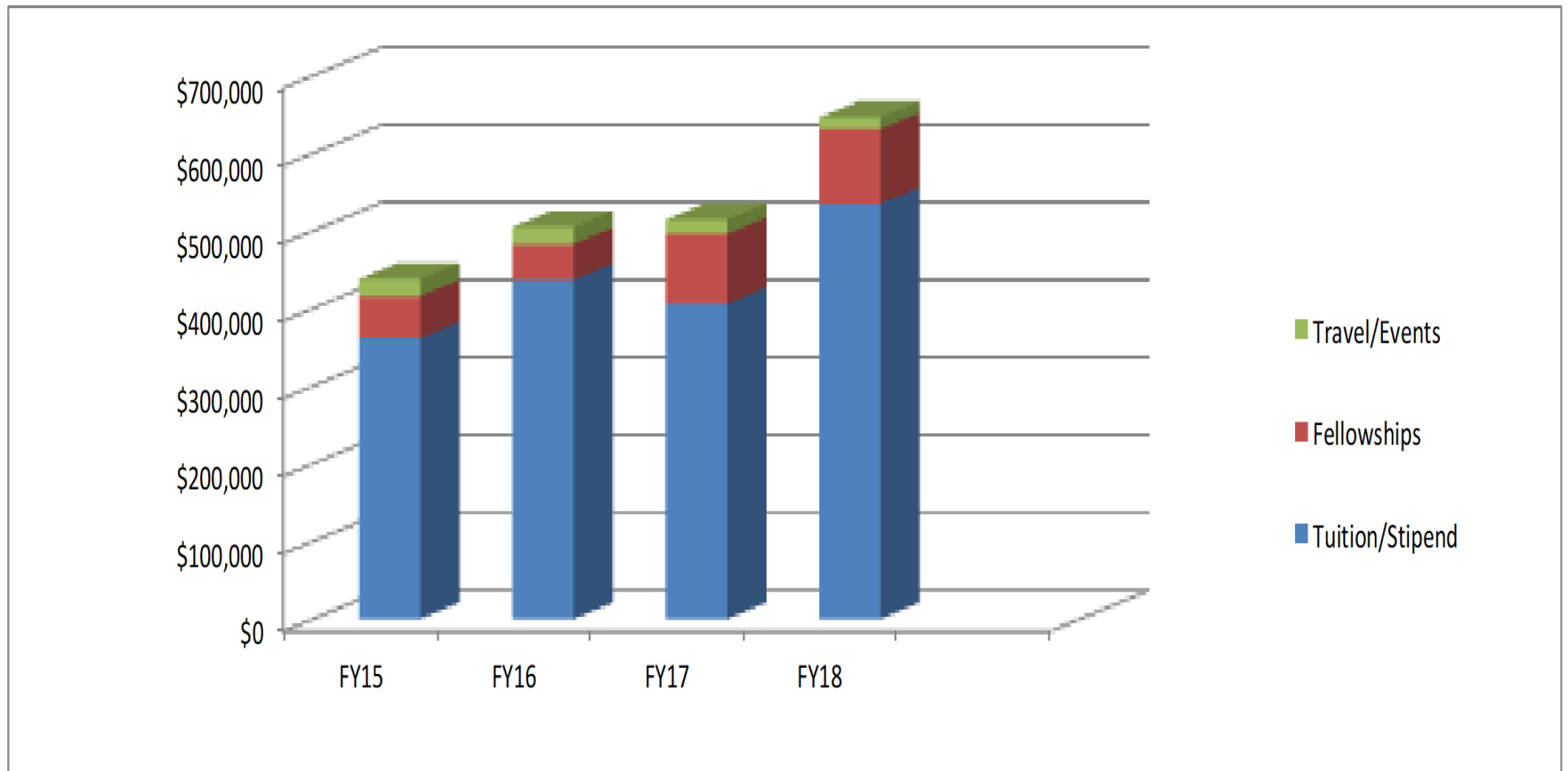


Hyejin Youn

Assistant Professor of Management & Organizations
Kellogg School of Management

NUTC IMPACT?

Direct Student Funding Through NUTC



WE PRODUCE LEADERS



Lama Al Hajj Hassan

Helene M. Overly Scholarship from
Women in Transportation (WTS)
Greater Chicago Area Chapter



Jason Soria

US DOT Dwight David Eisenhower
Fellowship

"Exploring how users differentiate micro-
transit from traditional modes"

NUTC IMPACT?

Selected Research Award

PhD candidate **Lama Al Hajj Hassan**, **Hani Mahmassani**, and Research Assistant Professor **Ying Chen** received the TRB Freight Planning & Logistics committee's Best Paper Award for:

A Reinforcement Learning Framework for Freight Demand Forecasting to Support Operational Planning Decisions

Initiated as part of a research collaboration with BAC Leadership member company
Hub Group



NUTC IMPACT?

New Education Initiative

Professional Master of Science in Transportation, Supply Chain and Logistics

Curriculum: focus on

- Core principles, processes and industry knowledge
- Data, analytics and technology that is rapidly driving operational strategies in the transportation, supply chain and logistics industry
- Transportation Engineering and Management skills.

Target student groups:

- Recent bachelor degree graduates seeking entry into this field
- Experienced employees seeking advancement
- Career changers looking to transition into the industry.

Steering Committee: Reaching out to industry to join us to help define the elements and structure of this program to position it for long standing impact and success.

Executive Education Program

Freight Transportation and Logistics 3-Day Short Course

May 20-22, 2019

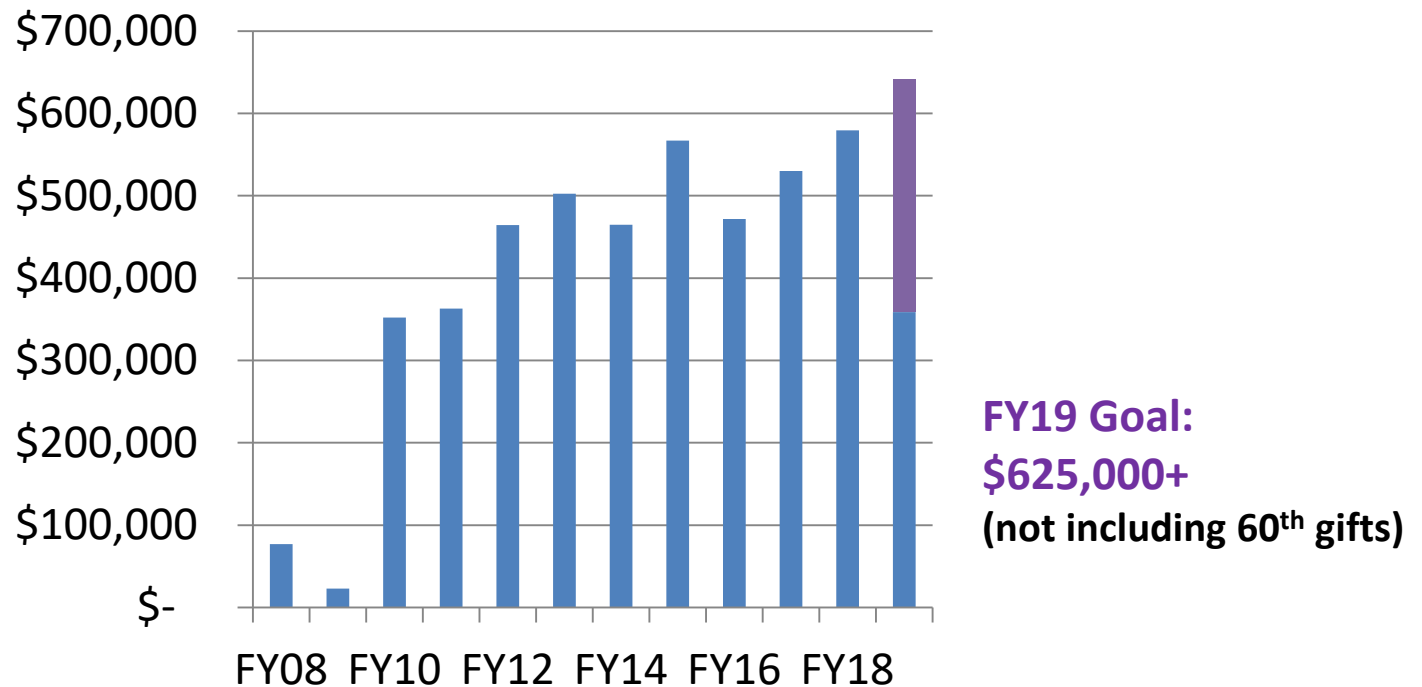
- Attendees from CSX, Rand McNally, State agencies, Uber and more
- Still room to add a few more



NUTC IMPACT?

You Make it Possible

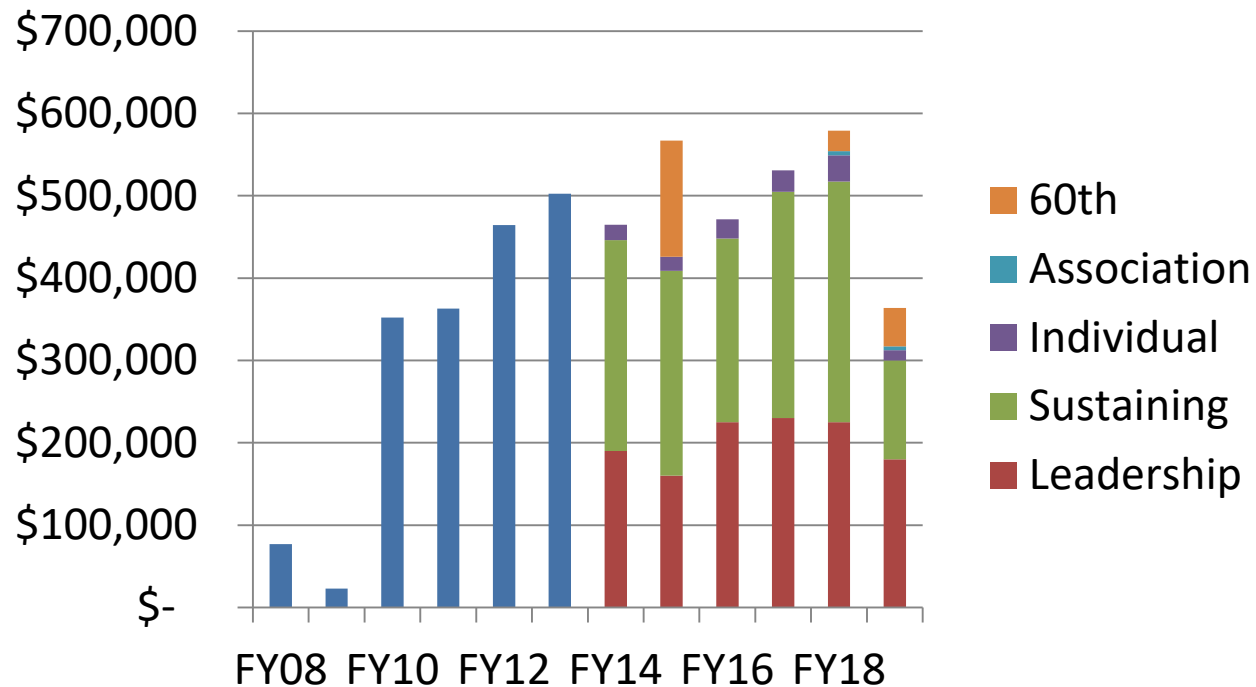
BAC Contributions: FY08 – FY19



NUTC IMPACT?

You Make it Possible

BAC Contributions: FY08 – FY19



NUTC IMPACT?

You Make it Possible

Undergraduate Transportation Research Fellowship

GREENBRIAR
EQUITY GROUP LLC

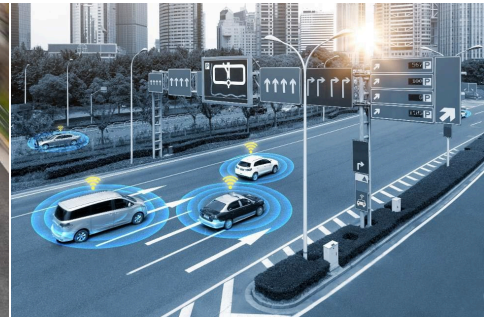
- Funded through \$100,000 gift from Greenbriar
- Funds Undergraduate Fellowships during summer
- **Summer 2019 projects**
 - Applications currently under review.

MAJOR STRATEGIC RESEARCH FOCUS: ACES— THE 4 DISRUPTORS

AUTONOMOUS



CONNECTED



ELECTRIC



SHARED



*Shared Mobility—
Multimodal platform*

MaaS

NUTC IMPACT?

Selected Collaboration Activity

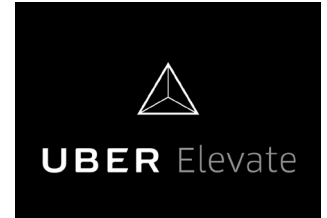
City Tech Collaborative Advanced Mobility Initiative

- **Goal:** create an innovation roadmap that will serve as a flexible, multi-year plan integrating policy and technology for advanced urban mobility
- **Lead partners:** Bosch, HERE Technologies and Microsoft
- **NUTC** is the lead academic partner



Selected Collaboration Activity

Uber Elevate, division of Uber Technologies Inc.



- **Vision:** deployment of an urban aerial ridesharing service in metropolitan regions using a new generation of small vertical take-off and landing aircraft.
- **Scope of engagement:** modeling and prediction of the demand for short-distance intra-metropolitan air travel, as well as overall impact of such services on metropolitan mobility.
- **Focus:** develop approaches using readily available data to assess potential latent demand for an aerial ridesharing service.

Selected Collaboration Activity

Experimental Aircraft Association (EAA)

- **Situation:** EAA's annual, week-long AirVenture air show in Oshkosh, Wisconsin attracts over 600,000 attendees, along with thousands of aircraft, and a wide array of suppliers and delivery vehicles.
- **Scope of engagement:** conduct research into the management of large-scale events.
- **Focus:** focus on event access logistics operations and onsite crowd movement, and develop methods to improve and optimize operational efficiency, resulting in an enhanced *user experience* for attendees and exhibitors.

BAC: New Membership

2 new members

Sustaining

U.S. Bank



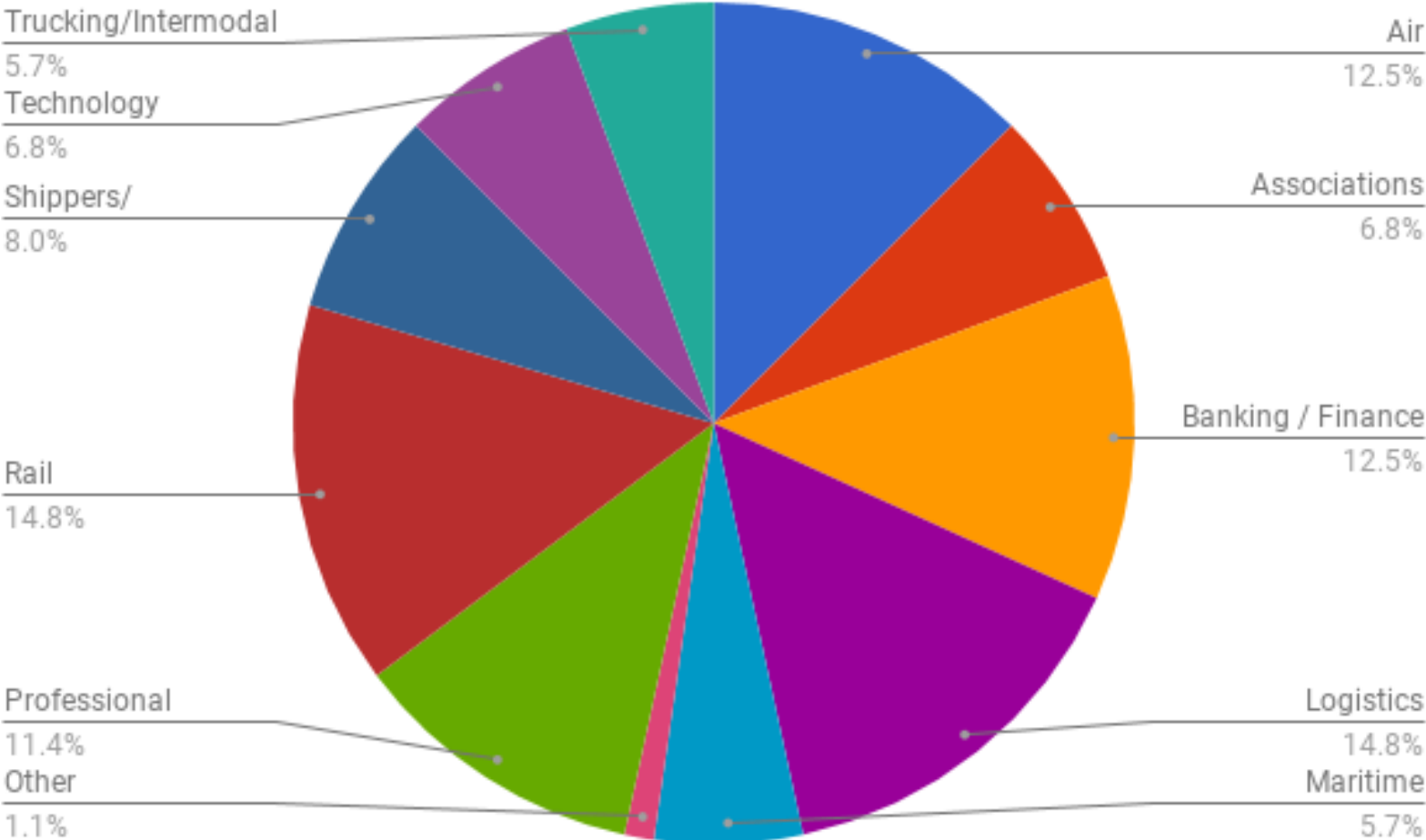
Individual

Mark Fornasiero
(Clarendon Group)



CLARENDON
GROUP

BAC: Membership by Category



Selected Research Initiatives

US DOT Competition: Two National Centers

1. CONGESTION RESEARCH

Congestion Relief

2. INFRASTRUCTURE RESEARCH

*Improving Durability and Extending Life of
Transportation Infrastructure*

Still Waiting! Anticipated decision, early June



Selected Research Initiatives

US DOT Automated Driving System (ADS) Demonstration Grants

Partners:

- University of Illinois at Urbana-Champaign (lead)
- Northwestern University
- University of Illinois at Chicago
- University of Wisconsin-Madison
- Georgia Tech University

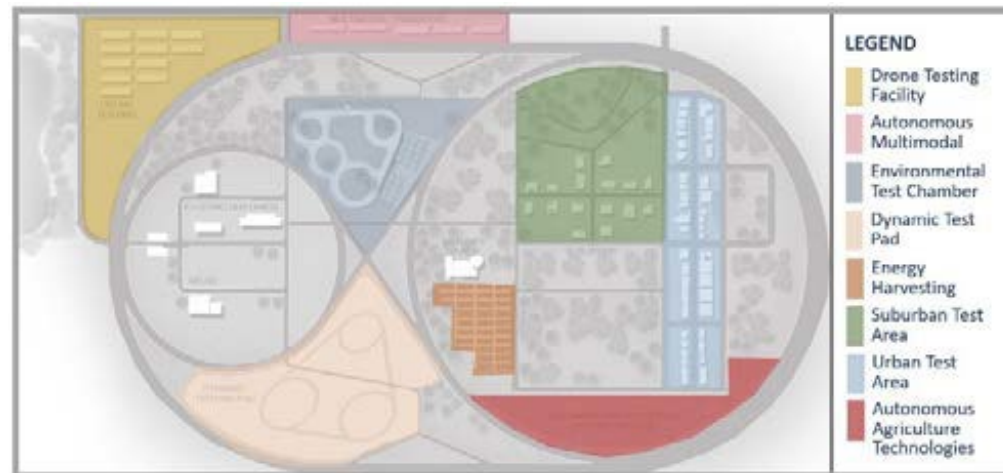
Team Focus areas:

- Enhanced autonomy of retrofitted commercial vehicles as a single vehicle and part of platooning operations
- Interoperable fleets of first and last mile delivery vehicles to develop hybrid public transportation operations
- Automated shuttle technology serving for mobility needs of transportation-challenged populations



Joint Research Initiative on Autonomous Vehicles Smart Transportation Infrastructure Initiative (STII)

- Partners: NUTC, University of Illinois-Urbana Champaign (UIUC) and University of Illinois-Chicago (UIC)
- City of Rantoul donated land + UIUC contribution
- Industry partnerships underway; major focus on truck automation and logistics operations
- Illinois DOT major partner; incoming IDOT secretary major supporter
- Business plan developed
- Planning and preliminary design documents under preparation



BAC: New Members, Current Companies

Lori Heissler

Chief Operating Officer, Wells Fargo Rail



Eric Marchetto

*Executive VP & Chief Commercial Officer,
Trinity Industries Inc.*



James R. Zubik

*Vice President, Finance & Administration,
Anacostia Rail Holdings*



Did we miss anyone visiting for the first time?

BAC: New Members, New Companies

Satish Chandra

*Director – Growth Office, Corporate
Strategy, Cummins Inc.*



Mark Fornasiero

Managing Partner, Clarendon Group



Michael Reymann

*Senior VP & Manager, National
Transportation Banking, US Bank*



Did we miss anyone visiting for the first time?

Guests Here Today

BAC Companies:

- **Ken Louise**, TranzAct Technologies
- **Marcus Martinez**, FedEx Express
- **Brian Meents**, Hub Group
- **Archak Mittal**, Ford Motor Company

Other Guests:

- **Krishna Jha**, Optym
- **Jim Monkmeyer**, DHL Supply Chain
- **Peter Vanderzee**, Lifespan Technologies
- **Prof. Dirk Mattfield**, TU Braunschweig

Did we miss anyone?



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