Overview of the Nebraska Transportation Center And Mid-America Transportation Center

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Nebraska Transportation Center

• Motivation
  ▪ Umbrella organization for transportation research at the University of Nebraska
    ▪ UNL, UNMC, UNO, and UNK
  ▪ Encourage multi-disciplinary research
  ▪ More funding, students
  ▪ Safer, more efficient transportation system
NTC Research Funding

• By the Numbers
  – 91 faculty affiliates
    • 64 research projects
  – 5 Year Total Funding
    • $42.2 million
  – Current: Total Funding
    • $18.8 million
    • 30 projects
  – Expenditures FY 2016
    • ~ $6 million

• Students:
  – 47 Graduate students (funded)
  – 59 Undergraduate
Research Sponsors: Public

- Nebraska State Agencies
  - Nebraska Department of Roads
  - Nebraska Emergency Management Agency
  - Nebraska Department of Motor Vehicles
  - Nebraska Department of Education
  - Coordinating Commission for Post Secondary Education
Research Sponsors: Public

• US Department of Transportation
  – Federal Highway Administration
  – Strategic Highway Research Program
  – Federal Railway Administration
• US Department of Defense
  – ACE
  – TRANSCOM
• US Environmental Protection Agency
• US National Science Foundation
Research Sponsors: Private

- Motorsports Safety Technology
  - NASCAR, IndyCar
- Valmont Industries
- Owens Corning
- Union Pacific
- Wavetronix
Industry Partnerships

- Nebraska Trucking Association
- Nebraska Logistics Council
- Crete Carrier
- Werner Enterprises
- Union Pacific
- Iteris
- Trinity Industries
- Ingram Barge Lines
Space:
Whittier
Space:

Whittier

ITS Lab (2000 ft²)
- 3 test beds: railway, arterial, highway
- Focus: Safety and Operations
• Breadth and Depth of Transportation Research at NTC
  – Transportation Systems and Logistics
  – Structures
  – Roadside Safety
    • Midwest Roadside Safety Facility
  – Geotechnical and Pavement
  – Environmental and Water
USDOT

University Transportation Center Program
Mid-America Transportation Center (MATC)

- U.S.D.O.T. Region VII University Transportation Center
  - Awarded August 2006
  - ~ $2 million per year for FY 2007-2010
  - ~ $3.5 million per year for FY 2011-12
  - Research, Education and Technology Transfer

- THEME
  - Improving safety and minimizing risk associated with increasing multi-modal freight movements on the U.S. surface transportation system
Fixing America's Surface Transportation (FAST) Act
Region 7 University Transportation Center
## MATC Research Portfolio

### EXTERNAL STRESSORS

<table>
<thead>
<tr>
<th>Natural</th>
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<th>Hazardous Materials Transport</th>
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REGION 7 SURFACE TRANSPORTATION SYSTEM

MATC RESEARCH PORTFOLIO
- Prevention
  - Medical diagnostics of hazardous material vehicle operators
  - Flood inundation forecasting
  - Integrated health care/hazardous goods information
- Mitigation
  - Real-time health monitoring of workers
  - Roadside barrier for tanker trucks
  - Additives to reduce volatility of crude oil
  - Post disaster inspection systems

SAFETY IMPROVEMENT
1. Workers
   - DOTs
   - Private sector
     - Railway
     - Roadway
     - Waterway
   - EMS
2. Traveling public
3. General public

MATC RESEARCH PRODUCTS
MATC Intern Program

- Founded in 1996
- > 300 participants
- Technical Tours
- Student Presentations
- Scholarships
- Funded by MATC, Public and Private Sponsors
MATC After School Program
Science Inquiry Based Lessons
Students & Mentors
Hands on Activities
MATC Scholars Program
MATC Scholars Program

• Day 1: Why graduate school?
• Day 2: How to succeed in graduate school
MATC Scholars Program

- 2010: 16 students
- 2012: 32 students
- 2015: 45 students
- 2016: Native American
- 2017 / 2018: Distance based / Native American
• Any Questions?