ADVANCING RURAL TRANSPORTATION: BUILDING A SOLID FOUNDATION

Steve Albert, Director
Western Transportation Institute
Western Transportation Institute
“Center of Centers”

- Montana State University College of Engineering
  - WTI Director
  - LABORATORIES
    - TRANSCEND
    - Systems Engineering
    - Driving Simulator
    - Murdock Naturalistic Driving Fleet
    - Corrosion and Sustainable Infrastructure
    - Alternative Materials
    - Geosynthetics
  - RESEARCH PROGRAMS
    - Safety and Operations
    - Intelligent Transportation Systems
    - Winter Maintenance and Effects
    - Road Ecology
    - Infrastructure Maintenance Materials
    - Mobility and Public Transportation
    - Planning and Economics
    - Logistics and Freight Management
  - CENTERS
    - Center for Health and Safety Culture
      - FHWA
    - Safety Center for Excellence: Rural Surface Transportation
      - FHWA
    - Regional Surface Transportation Workforce Center (West Region)
      - FHWA
    - Montana LTAP
      - FHWA
    - Small Urban and Rural Livability Center
      - RITA
    - Federal Lands Transportation Institute
      - FTA
    - Road Dust Institute
  - Education
  - Admin & Finance
  - Communications and Tech Transfer

Western Transportation Institute
Montana State University College of Engineering
Building the Foundation

- Platooned Truck Research Alliance
- Autonomous & Connected Vehicle Research
- National Transportation Career Pathways Initiative
- West Region Transportation Workforce Center
- Local Technical Assistance Program (LTAP)
- National Center for Rural Road Safety
- Traffic Safety Culture
Center for Health & Safety Culture: Purpose

We are an interdisciplinary center serving communities and organizations through research, training and guidance to cultivate healthy and safe cultures.
Core Questions
1. How to measure culture?
2. How to define the “ideal” culture?
3. How to grow a positive culture?

Core Questions
1. How to build knowledge\(^1\) among a variety of leaders?
2. How to build skills\(^2\) to apply this knowledge?

Topics
1. Traffic Safety
2. Substance Abuse
3. Violence
4. Child Wellbeing

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1. Knowledge is the theoretical or practical understanding of a subject.
2. Skills are the ability to do something well.
Tier 1 UTC: Livability Center

Partnership between WTI & Upper Great Plains Transportation Institute (North Dakota State University)

Focuses on the six livability principles:

- Provide more transportation choices
- Expand location- and energy-efficient housing choices
- Improve the economic competitiveness of neighborhoods
- Target Federal funding toward existing communities
- Align Federal policies and funding
- Enhance the unique characteristics of all communities
FHWA National Center for Rural Road Safety

- 2016 Safety Summit
- Organizational Safety Culture Research
- Intro to Safety Culture Video
- Overview of RSA’s on Tribal Lands Video
- Monthly Webinars
- 15 Archived Webinars
- 3 In-person Trainings
- 200+ Resources Available
WTI Safety Research
Sample Projects

• Assessing Crash Risk Factors on Low-Volume Roads
• Assessing Safety Benefits of Active Traffic Management System Along OR-217 Near Portland Oregon
• Developing Weather-Responsive Variable Speed Limit System at an Urban Freeway Interchange
Transportation Safety
Lead: Western Transportation Institute, Montana State University
West Region Transportation Workforce Center
(Sponsor: FHWA)

FOCUS:
Engineering & technical occupations related to human factors, road safety, operations & maintenance, and highway construction.

OPPORTUNITIES:
Safety is a natural fit with industry self-interest.

CHALLENGES:
Safety training typically offered on-the-job, not pre-career. Academic institutions struggle with interdisciplinary content.
FHWA supported National Network for the Transportation Workforce (NNTW)

- NNTW formed to provide a more strategic and efficient approach to transportation workforce development.
- The Centers act together to facilitate national partnerships with key public and private organizations
- Bring together the transportation, education, labor, and workforce investment communities
- Identify and promote effective transportation workforce activities, programs, and resources
Inspire and prepare greater numbers of students to pursue transportation career pathways
Collaborative Human-Automated Platooned Truck Alliance: CHAPTA

**Economic Savings**

<table>
<thead>
<tr>
<th>Cooperative Human - Truck Platooning: 5 Vehicle Platoon</th>
<th>Assumed Aerodynamic Savings</th>
<th>Number of Human Driven/Supervised Trucks in the Platoon</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lead Truck</td>
<td>Followers</td>
</tr>
<tr>
<td>Percentage of total operating costs saved: aerodynamics + driverless trucks</td>
<td>5%</td>
<td>10% - 20%</td>
</tr>
</tbody>
</table>

**CHAPTA Goals**

**Promote:** U.S. Competitiveness.  
**Ensure:** Compatibility with existing highway traffic.  
**Focus:** Human factors, safety and operations, and workforce development.  
**Address:** Institutional issues affecting deployment.
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