

June 2015

The Midwest Transportation Center (MTC)—the U.S. DOT's Region 7 University Transportation Center (UTC) serving Iowa, Kansas, Missouri, and Nebraska—is in the third year of its **multi-million dollar** UTC award through the Office of the Assistant Secretary for Research and Technology. Housed and administered at **Iowa State University's Institute for Transportation**, the MTC is a consortium including the University of Missouri–Columbia, University of Missouri–St. Louis, Wichita State University, Creighton University (Omaha, NE), and Harris-Stowe State University (St. Louis, MO), a historically black university.

Since the UTC program was initiated in 1987, Iowa State University–led consortia have won four of six regional UTC competitions and one UTC Tier-1 competition.

The MTC's theme is **Data Driven Performance Measures for Enhanced Infrastructure Condition, Safety, and Project Delivery**. The MTC addresses regional issues related to the theme through a strategically focused program that is synergistic with U.S. DOT priorities and MAP-21 goals, with State of Good Repair as the ultimate objective.



**IOWA STATE UNIVERSITY**  
**Institute for Transportation**

## *Making a Real Difference*

# Midwest Transportation Center

*... in Iowa and Beyond*

## Transportation Institute for High School Educators

"I have told so many people about this **amazing class!** I learned so **much** and found the transportation speakers incredibly **interesting** and **pertinent**. Probably **one of the most informational workshops I have ever taken.**"

– Transportation Institute Participant

### Goal

To help participating teachers and education professionals gain a better understanding of transportation concepts associated with physics.

### Objective

To equip the participants with the necessary information to effectively implement transportation-related activities into their physics curricula and after-school programs.

### Topics

Concepts covered included yellow light timing, road surfaces, runaway truck ramps, collisions and accident safety, super elevation and highway curves, as well as red light programming and traffic signal controls.

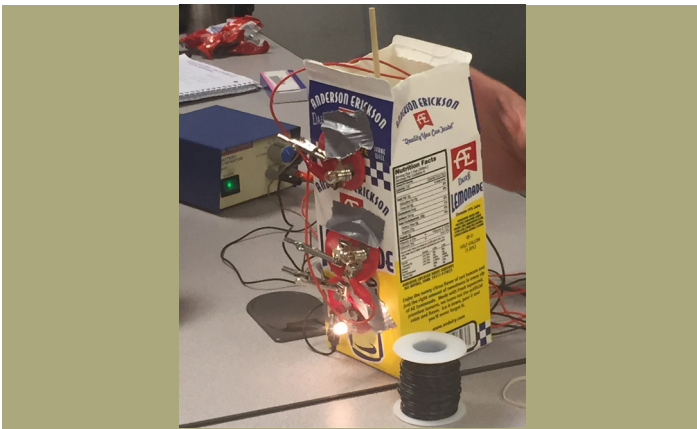
### About

The weeklong program was facilitated by Shannon McLaughlin, a physics teacher from Norwalk High School in Norwalk, Iowa. It included **presentations from Iowa State University (ISU) and Iowa Department of Transportation (Iowa DOT) engineers and educators:**

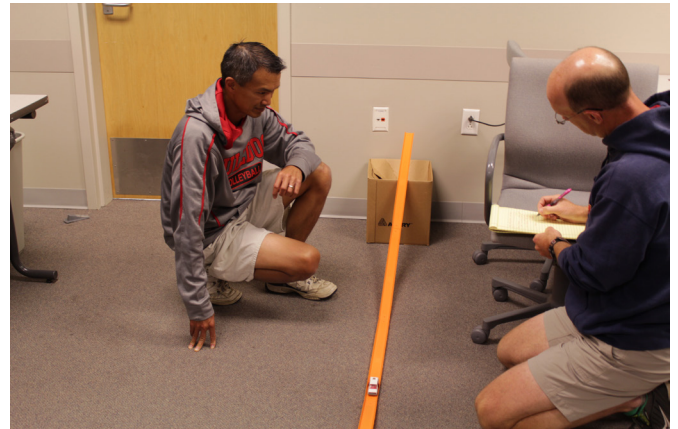
- Shauna Hallmark (Director, Institute for Transportation, ISU)
- Peter Keeling (Innovation Director, CBiRC, ISU)
- Raj Raman (Professor, Agricultural & Biosystems Engineering, ISU)
- Sandra Larson (Director, Systems Operations Bureau, Iowa DOT)
- Jan Laaser-Webb (Supervisor, Dept. Transportation Safety, Iowa DOT)
- As well as Allison Smyth, Willy Sorensen, and Kurtis Younkin from the Iowa DOT



Transportation Institute teachers receive participation certificates



Stop light circuit project completed during workshop



Two teachers testing car speeds



ISU Professor Raj Raman speaks about preparing students for college classes



Teachers work together on the runaway truck ramp experiment

## Supplies

Each participant was provided with a \$500 mini grant to assist them with bringing these transportation concepts into their classrooms. One teacher purchased a dynamics system for conducting experiments with motion, collisions, velocity, and acceleration. Another teacher purchased a radio-controlled car to help students better understand the laws of motion and engineering mechanics.

## Participation

**Twelve teachers from across the state of Iowa attended the Transportation Institute.** The class was made up of eight high school physics teachers, one Project Lead the Way teacher, one after-school program facilitator, one middle school math teacher, and one Heartland AEA educational representative.

Participating high school teachers came from nine schools:

- Hampton-Dumont High, East High School (Des Moines), Valley High, Osage High, Dallas Center-Grimes High, METRO High, Knoxville High, Roland-Story High, and Johnston High

There was also some middle school participation:

- Merrill Middle

And an educational agency:

- Heartland AEA

## Participant Quote

“I was exceptionally impressed with the speakers at the Transportation Institute and their ability to bring complex material down to a very understandable level. They were quick to answer questions, helpful in suggesting solutions to our problems, and very entertaining in their presentations.”

– Transportation Institute Participant