

*Marquette University  
Transportation Research Center*

*James A Croveti, PhD  
Director*



## MU-TRC

- Affiliated with the Department of Civil & Environmental Engineering
- Established to conduct research, perform testing, and provide training in the areas of highway maintenance and operations, traffic engineering, highway pavements, materials, & construction.

## MU-TRC

- Undergraduate/Graduate Coursework
  - Introduction to Transportation
  - Highway Planning & Design
  - Traffic Characteristics & Design
  - Airport Planning & Design
  - Pavement Design
  - Pavement Management
  - Advanced Transportation Materials

## MU-TRC

- Affiliated Coursework
  - Bridge Design, Urban Planning
  - Construction Costs Analysis & Estimating
  - Construction Equipment & Methods
- Asphalt Paving Conference
- Concrete Pavement Seminar

## MU-TRC

- Research conducted in the following areas: Traffic Engineering, Traffic Control Devices, Traffic Safety, Highway Snow and Ice Control, Highway Design, Highway Materials, Highway Pavements, Concrete and Asphalt Technology, Highway Structures, Non-Destructive Pavement Testing, and Pavement Drainage Systems.

## James A Croveti

- Research Interests
  - Analysis of material properties using nondestructive test data
  - Mechanistic pavement design incorporating nonlinear material properties and seasonal effects
  - Laboratory modeling of pavement systems
  - Measurement of load induced deformation behavior



## Alexander Drakopoulos

- Research Interests
  - Geometric design of highways
  - Accident analysis
  - Emergency response services
  - Traffic control devices
  - Left-turn control
  - Alternative (Clean) fuels
  - Older drivers
  - Human factors



## Christopher Foley

- Research Interests
  - Performance-based structural design
  - Parallel processing in structural engineering
  - Evolutionary algorithms in structural optimization



## Baolin Wan

- Research Interests
  - Repair and Retrofit Structures
  - FRP Materials
  - High Performance Concrete
  - Prestressed Concrete
  - Numerical and Experimental Modeling



## Affiliated Staff

- Kathleen Hall
  - Research Associate and Lecturer
  - Pavement design, analysis and performance
  - Expert systems
- Reid Knutson
  - Research Associate and Lecturer
  - Pavement design, analysis and performance
  - Soils and foundations

## Representative Projects

- Marquette Interchange Instrumentation Project
- In-Situ Monitoring and Testing of IBRC Bridges in Wisconsin
- Fatigue Risks in the Connection of Sign Support Structures
- Performance Evaluation of Tack Coat Materials
- Concrete Cracking in New Bridge Decks and Overlays

## MI Instrumentation Project



### Marquette Interchange Instrumentation Project

2008

Welcome to the Marquette Interchange Instrumentation Project. This project is a part of the Transportation Research Center's ongoing efforts to improve the performance of highway infrastructure. The project is focused on the Marquette Interchange, a complex interchange located in Marquette, Michigan. The project is designed to collect and analyze data on the performance of the interchange, including data on traffic volume, vehicle speed, and vehicle acceleration. The data will be used to identify areas of concern and to develop strategies to improve the performance of the interchange.

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**Last Wheel Events**

July 21 2008 CST

204335250 13:25:50 150 204335255 13:25:55 150  
204335264 13:26:04 950 204335269 13:26:09 870

Transportation Research Center Rose-Hulman Institute of Technology, Westville, Indiana

### IBRC Bridge Testing

### Truck Positioning for Bridge Deck Loading

### Construction Engineering & Management

- BSc in Construction Engineering & Management
- Accepted Freshmen for Fall 2008
- Once Accredited will be the 13<sup>th</sup> Construction Engineering program in the country
- Graduates can earn their PE in Construction Engineering

### Mark Federle, PhD, PE Professor & McShane Chair

BS: Rose-Hulman Institute of Technology  
MS & PhD: University of Michigan

9 Years with The Weitz Company  
ENR Top 40 Contractor  
Served as CIO

9 Years with Iowa State University  
Professor-in-Charge in Construction Engineering

### CEM Program Features

- Strong industry/alumni support and involvement
  - Endowment provided by *Jim and Kelly McShane*
  - CEM Industry Advisory Council
- Required Co-op Participation
- 135 credit hours
- Graduate program MS/PhD
- ASCE & EWB Chapters