



# Michigan Ohio University Transportation Center

Alternate energy and system mobility to stimulate economic development

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Summer 2010

## Supporting “Smart Move” is a smart move by MIOH UTC



By: Dan Maggio, UDM Director of Pre-College Engineering & Science Programs and a FIRST LEGO League volunteer.

The 2009 FIRST LEGO League (FLL) challenge, *Smart Move*, was released on September 3, 2009. FLL teams were tasked with learning about transportation – accessing people, places, goods and service in the safest, most efficient way possible.

There were two parts to the *Smart Move* challenge – the Robot Game and the Project. This year’s robot game took place on a field that represents a vehicle test track. Each team designed, built and programmed a sensor-equipped vehicle (their robot). This vehicle needed to gain access to places and things, while avoiding or surviving impacts. The playing field, which is 4’ x 8’, had numerous LEGO challenge elements and obstacles that the team’s robot needed to traverse and interact with. Some

challenge elements needed to be manipulated on the field, some needed to be delivered to specific locations, while other objects needed to be retrieved from their locations on the field and brought back to base.

The project for *Smart Move* asked teams to look at how transportation affects their everyday lives. Students came to understand that nearly everything we use is impacted by transportation. Teams first needed to describe their community, and then to create a list of how everything moves in, around, to and through their community. From this list, teams must learn more about these forms of transportation and identify problems with them. After selecting one particular problem, they created an innovative solution to this problem – then share what they learned with others.

A grant from the Michigan Ohio University Transportation Center provided the 91 *Smart Move* field setups necessary to run all fifteen Michigan FLL tournaments impacting over 3,100 students and adults.

The field setups represent about 20% of the annual budget for FLL in Michigan.

Additional funding was used to purchase trophies for the two Championship Tournaments.



### MIOH UTC

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## MIOH UTC Students Present Research at the ITS-Michigan annual meeting May 20, 2010



### *Students are the Future*

### *... the next Generation of Transportation Professionals*

As is true across a wide variety of engineering professions, in transportation engineering there is a “bubble of boomers” that is rapidly approaching retirement. At the same time transportation technologies are advancing at an ever increasing pace . . . and they are being applied in practice, creating great value to our region and nation. You need to look no further than the MIOH UTC’s projects in Intelli-Drive, alternative fuels, and other areas to understand the scale and value of those technologies.

If our region and our nation are to sustain this progress we need significant numbers of engineering graduates, skilled in the right technologies, intent on becoming transportation professionals. This newsletter focuses on just such people . . . the students from the five MIOH partner universities who are performing research, developing their professional competencies and rapidly becoming the transportation professionals of the future. The newsletter also presents MIOH’s efforts to reach out to K12 students to attract them to the profession of engineering in general and to the transportation field in particular.

I hope you enjoy reading about the future of transportation, and its future leaders, in this issue.

**Dr. Leo E. Hanifin, Director**  
MIOH University Transportation Center

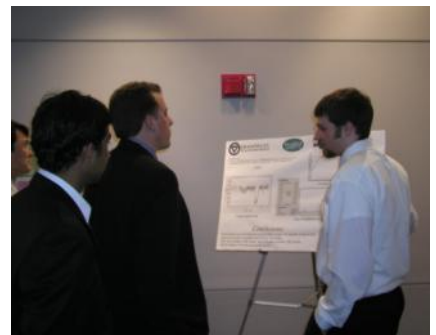
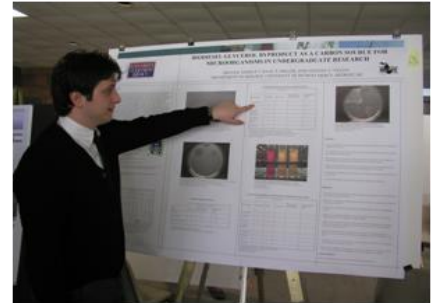


*Above: ITS Michigan “Gold Student Paper Award” winner Subrat Kumar Swain, WSU, receives his certificate from Jim Barbaresso, ITS-MI President. Subrat’s paper resulted from a MIOH UTC project directed by Dr. Snehamay Khasnabis (right). Photo credit: MDOT*

*Below: Ali Guner, WSU graduate student presents “Dynamic Routing Using Real-time ITS Information” a research project supported by the MIOH UTC.*



*UDM biology graduate student, Vince Vulja, presents during a university poster session. Vince, under the direction of biology professor Dr. James Graves, is working on creating laboratory exercises on the topic of “Biodiesel Glycerol Waste Byproduct as Potential Feedstock for Production of Biofuel”. (Below)*



*Above: Dr. Robert Bertini, Deputy Administrator, RITA, US DOT, listens to Ryan Massalink, GVSU, at ITS MI meeting.*



*Above: Efforts of Michigan student researchers were recognized at the ITS-Michigan annual meeting May 19, 2010. Posing with Dr. Robert Bertini, Deputy Administrator, Research and Innovative Technologies Administration, US DOT are: (from left to right) Dr. Jun-Seok Oh, Assoc Professor Western Michigan University; Dr. Bertini; Sujay Bodke, UDM graduate student; Zhengming Li, Michigan Tech University graduate student; Dr. Snehamay Khasnabis, WSU and ITS-Michigan Board Member; Subrat Swain, WSU graduate student; Congyi Liu, Michigan Tech University graduate student.*

Right:  
Elibe A. Elibe receives a conference certificate from Lillian Barrone, ENO Chairperson.

On May 20, 2010 conference participants gathered for a session held at the National Press Club (near the White House). Before hearing from the panelists scheduled for that day and participating in a mock Congressional hearing intended to discuss national transportation policy, the 2010 ENO Transportation Foundation Leadership Development Conference Fellows were presented with certificates of accomplishment.



Below: UDM graduate student **Eric Tenezas** (far right) prepares to present concepts of “Modeling Metropolitan Detroit Transit” at the Intelligent Transportation Society of Michigan Annual meeting on May 20, 2010. Research team members Dr. Utpal Dutta and Elibe Elibe provide input. Dean Leo Hanifin gets an update. Dr. Snehamay Khasnabis presents the ITS MI certificate.



## An Invaluable Glimpse into National Transportation Policy

My experience at the **ENO Transportation Foundation - 2010 Leadership Development Conference** by **Elibe A. Elibe, M.S.C.E '10, Wayne State University**

In March 2010 I learned that I was one of twenty graduate students from across the United States, selected to travel to Washington, D.C. and attend the ENO Transportation Foundation’s Leadership Development Conference (LDC). The group of students who are selected each year represent a broad range of disciplines related to the field of transportation: engineering, law, business administration, policy, sustainability, and planning. The agenda for the conference consisted of four full-days of interactive sessions held with elected officials, public and private sector professionals, special interest groups, and Federal officials with the intent of discussing the current issues in transportation such as legislation, mobility, safety, environmental sustainability, and leadership.

Each day of activity was filled, from the early morning hours until the late evening, with interaction with personnel whose professional expertise included all modes of transportation: ports (sea), rail

(transit, commuter, and freight), highway, and air. Some of the corporations and government agencies represented included: US Dept of Transportation, Federal Highway Administration, AECOM Corp., Cambridge Systematics, American Association of State and Highway Transportation Officials, Brookings Institution, Transportation Research Board, BNSF Railway Company, Transportation Trades Department, AFL-CIO, United Airlines, and America 2050.

Although the topics discussed in these work shops were as diverse as the variety of modes represented, each topic ultimately stemmed from one underlying theme: revenue source(s) for maintenance of the national transportation system. The inadequacy of the Highway Trust Fund was of particular interest among the participants. In short, participation in the ENO Leadership Development Conference broadened my perspective on what transportation means to our nation’s economy and how future policies may shape the road to recovery through transportation improvements.



The MIOH UTC wishes to acknowledge the extensive and invaluable contribution of **Daniel Maggio**, Director of the UDM Pre-College Programs, in conceiving, devising and operating the **K-12 Outreach** programs supported by the UTC. Of particular significance has been the **TransIT Camp**. We wish Dan well in his new position with the **FIRST LEGO League**.



**STEPS Camp (Science Technology and Engineering Preview Summer)** is an opportunity for girls to learn more about what engineers do in their careers. Program participants build and program a robot, while gaining an understanding of manufacturing techniques, robotic control systems, circuits and sensors. It is open to female high school students currently in the 9th through 11th graders. A Minimum 2.0 GPA is required. Enrollment is limited. Please inquire about scholarships.

**Camp dates: June 2011**

**TRANSIT** is a one week commuter camp for high school students, currently in 9<sup>th</sup>-11<sup>th</sup> grades, who want to learn about the world of transportation, a field of study within Civil Engineering. Activities include: impact of transportation on communities; smart cars and how they communicate with smart highways; traffic simulation software used to make intersections safer; and how transit systems can bring us together in southeast Michigan.

**Camp dates: July 2011**

For more information or to request a brochure/application, please contact Director of Pre-College Programs in care of: [precollegeprograms@udmercy.edu](mailto:precollegeprograms@udmercy.edu)

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