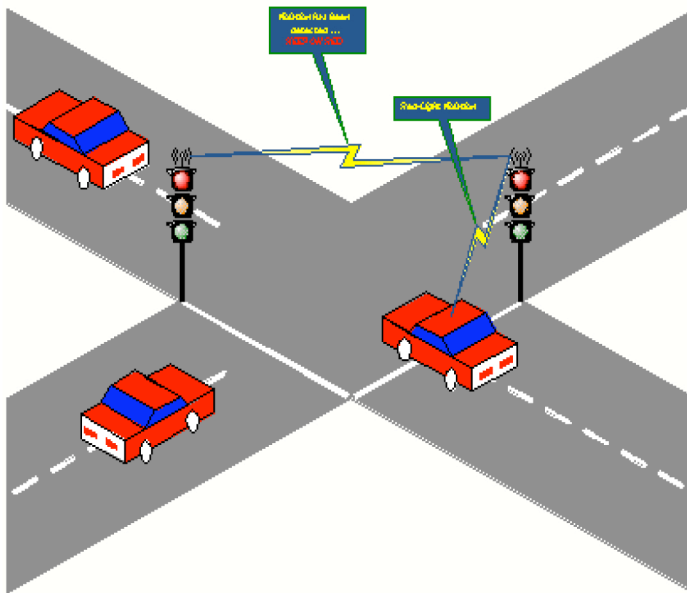




Interest Group Evaluators and the MIOH UTC Operating Committee Select 4 New and 5 Current Topics for Project Funding in 2008-2009.



UDM researchers and Graduate Assistants are working to evaluate new scenarios for the Next Generation Traffic Light System (NG-TLS). Graphic by UDM Electrical Engineering graduate student, Khaldoun Albarazi.

Among the current topics to propose further funding, UDM professor, Dr. Nizar Al-Holou, and his research team will pursue a second project under the title: **"New Approach to Enhance and Evaluate the Performance of VII & ITS Communication Systems"**. With the collaboration of the Center for Automotive Research / Connected Vehicle Proving Center (CAR/CVPC), researchers are exploring VIILAB as a simulation environment in order to study and validate different traffic light scenarios such as collision avoidance. VIILAB is a new simulation environment for the rapid development of Car-to-X communication applications. It provides multiple modes: Full Simulation and Integration.

In the Next Generation Traffic Light System (NG-TLS), vehicles share their position and velocity with the traffic light controller, which in turn broadcasts the intersection traffic schedule to all vehicles in its vicinity. If the traffic light controller detects that the speed of a vehicle is high suggesting the driver may not be able to stop at the red light of the intersection, the traffic light controller may consider other safety options such as delaying the other traffic lights at the intersection from switching to green in order to prevent potential collisions.

continued pg 2 "Current Topics"

MIOH UTC

a University Transportation Center funded by: the U.S. Dept. of Transportation, the Michigan Dept. of Transportation and partner Universities and Corporations

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UDM Master of Engineering graduate, Laurel P. VandePutte (center) received the MIOH UTC Student of the Year Award from Dr. Leo E. Hanifin (left) at a gathering of Walbridge colleagues at her employer's offices. Joining them at right is Rick Haller, President of Walbridge.



YOU'RE INVITED to learn about Intelligent Transportation Systems and how they can improve transportation efficiencies, reduce congestions, avoid unnecessary expense and, in general, make the world a better place.

*Moving Toward Deployment:
New Knowledge for ITS Practitioners*

ITS MI Summer Meeting

**Hosted by the Michigan Ohio
University Transportation Center
at the University of Detroit Mercy**

request info: martinpa@udmercy.edu

July 29, 2009

Research results will be presented *so that transportation professionals can apply the results:*

- ∞ What SCATS means to safety and travel time?
- ∞ How ITS/VII can improve supply chain efficiencies.
- ∞ Practical Ideas for Congestions Mitigation through ITS.

And we will discuss the ways that we can ***move forward to deploy*** these and other results by discussing

- ∞ How can our researchers and traffic engineers collaborate to deploy new knowledge, methods, tools . . . ?
- ∞ How can we capitalize on existing monitoring and communication systems to pilot deployment of research concepts?

You'll also get a chance to meet tomorrow's transportation professionals and see what they have learned at ***TransIT (Transportation IT) Summer Camp for High School Students***.

At the end of the day you will be a better partner in improving our communities and their transportation systems.

I hope to see you at this important meeting.

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

Current Topics continued as Projects Funded for 2008-09

cont'd from pg 1

"Improved Oxidative Stability of Biodiesel Fuels: Antioxidant Research and Development" Led by Drs. Steve Salley and Simon Ng, continuing as a Wayne State University project, located in laboratories at NextEnergy researchers are determining that binary mixtures of antioxidants are more effective in improving oxidative stability of biodiesel than individual ones, suggesting a synergistic interaction which may be important in the development of suitable

blends for long term storage. The effect of metal chelator and oxygen quencher on the antioxidant activity will be further investigated. The selected binary antioxidants on biodiesel oxidative stability under long-term storage conditions are also being studied as a function of time.

"Enabling Congestion Avoidance and Reduction in the Michigan-Ohio Transportation Network to Improve Supply Chain Efficiency: Freight ATIS" under the direction of Drs. Ratna Chinnam and Alper Murat at WSU and Dr. Gregory Ulferts at UDM, researchers have submitted both an article for publication and a presentation for an international conference. Currently they are working on building the business case for their collaborator Ford to use their models. Also, they are developing multi-stop (milk-run) delivery models/algorithms using real-time ITS information.

"Improving the Energy Density of Hydraulic Hybrid Vehicles (HHVs) and Evaluating Plug-In HHVs": This UT research directed by Dr. Mohammad Elahinia, in collaboration with UDM's Dr. Mark Schumack, is funded for a second project. In this project a new concept is being evaluated through analysis, simulation, and experimentation to address the energy density limitation of the hydraulic hybrid vehicles. A compressed air reservoir will be integrated into the hydraulic hybrid system. In addition to improving the energy density and providing longer operation for the vehicle, this new system will provide the electric plug-in capability for HHVs.

"Transportation Informatics: Advanced Image Processing Techniques for Automated Pavement Distress Evaluation" UDM faculty join UT researchers led by Dr. Ezzatollah Salari in the development of an automated pavement inspection system.

"Transit Oriented Development at Selected LRT Stations in the Detroit Metropolitan Area"

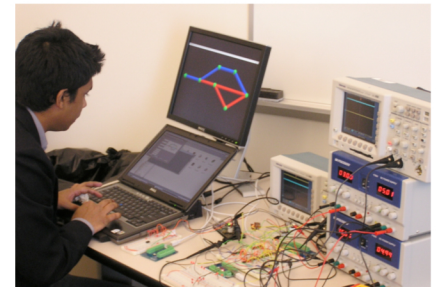
WSU researchers with partners at UDM will conduct a study to develop programs for Transit Oriented Development (TOD) at two potential station sites along the Woodward Avenue planned LRT route in the Detroit metropolitan region. This study proposes to develop different TOD packages for these sites and to identify planning, economic and institutional mechanisms for their effective implementation.

New 2008-09 Congestion Topics

"Management and Analysis of Michigan Intelligent Transportation Systems Center Data with Application to the Detroit Area I-75 Corridor"

GVSU and WSU researchers will develop methods to describe, explain, and predict the flow of traffic with respect to time and space. The utility of this knowledge will be demonstrated in routing voluminous traffic.

Traffic data is being obtained from the Michigan Intelligent Transportation System Center. Descriptive statistical models have been developed and are being interpreted.



Explanatory and predictive models are planned. Traffic routing models with software and hardware based solvers have been developed at GVSU. Traffic simulation capabilities are being developed and tested at WSU.



2008 MIOH UTC Outstanding Student of the Year, Laurel VandePutte, receives a US DOT award. Left to right: Paul R. Brubaker, Administrator of RITA; Former Secretary of Transportation Norman Y. Mineta; and Randy Machemehl, 2009 President of the Council of University Transportation Centers.

2008 Outstanding Student of the Year

While pursuing a Master of Engineering degree at the University of Detroit Mercy, Laurel VandePutte worked as a research assistant on the "Evaluation of the SCATS Control System" project led by Dr. Utpal Dutta. Laurel was responsible for coordinating and leading a team of fifteen student traffic data collectors. Laurel and her team performed a comparative analysis of SCATS versus a pre-timed system to evaluate improvement in traffic and fuel economy as a result of implementing a SCATS system. Additionally, Laurel prepared and presented project findings to professionals, including representatives of US DOT.

Laurel was selected for this honor by the MIOH UTC based on her contribution to the SCATS project, her academic performance, as well as, her leadership

and community service. She received a certificate from the US DOT at the Council of University Transportation Centers banquet in Washington, DC in January, 2009. The MIOH UTC certificate was presented at a gathering at Laurel's employer, Walbridge, in Detroit, also in January.

After earning a Bachelor's degree in Civil Engineering in 2007 from the University of Detroit Mercy, Laurel continued at UDM and received her Master of Engineering in 2008. Upon graduation Laurel accepted employment with the Michigan based construction firm of Walbridge as a project coordinator. While on Co-op, Laurel worked for the Metropolitan Water Reclamation District in Chicago, IL and for Charles Pankow Builders in Honolulu, HI. Laurel is a member of the American Society of Civil Engineers and the US Green Building Council's Detroit Regional Chapter, and recently became a LEED Accredited Professional.

New 2008-09

"Crash Benefits of the SCATS Control System"

UDM researchers will assess the effectiveness of the Sydney Coordinated Adaptive Traffic System (SCATS) in reducing traffic hazard by examining crash rate as a Measure of Effectiveness. Discussions with local road commissions have resulted in the selection of a test corridor as the Pre-timed Signal Corridor to be studied: Dixie Hwy from US 24 to I-75. A control corridor not yet converted to SCATS will be compared for various measures of effectiveness. A cost-benefit analysis of the SCATS system will be performed by considering congestion and crash benefits, installation and maintenance costs, and life span.

"Characterization and Speciation of Fine Particulate Matter Inside the Public Transport Busses Running on Bio-Diesel"

Researchers at UT will collect and analyze particulate matter in different size fractions inside biodiesel fueled buses in urban areas of Toledo, Ohio. The samples will be analyzed physically and chemically. The purpose of this study is to quantify the biodiesel exhaust emissions in the indoor environment of public transit buses, where the aerosol consists of possibly biodiesel fumes, ambient air particles from pollutant sources around the route, and indoor sources.

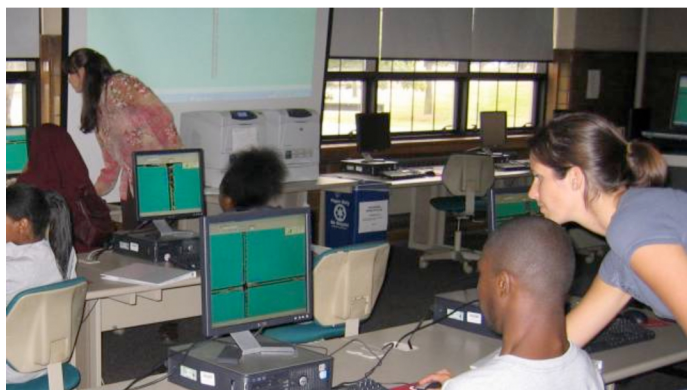


Alternate energy and system mobility to stimulate economic development.

MIOH UTC issues RFP for research year 2009-2010

Submission deadline June 10, 2009.

For an electronic copy contact Pat Martinico at martinpa@udmercy.edu or 313-993-1510 or visit the MIOH UTC web site at <http://mioh-utc.udmercy.edu>.



Students working in the 2008 TRANSIT Camp

TRANSIT is a one week commuter camp for high school students, currently in 9th-11th 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.

TRANSIT Camp dates: July 27-31, 2009

Register NOW for STEPS Camp

Camp Dates: June 21-26, 2009

For: 9th-11th grades in 2008-2009

Registration deadline: May 22, 2009.

STEPS Camp

(Science Technology and Engineering Preview Summer)

is an opportunity for girls to learn more about what engineers do. 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.

For more information or to request a brochure/application, please contact

Director of Pre-College Programs

Dan Maggio at maggiodd@udmercy.edu.

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