



Michigan Ohio University Transportation Center

Alternate energy and system mobility to stimulate economic development

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"Team MIOH" Engages the Transportation Community



Above:

Five student researchers and three faculty from University of Detroit Mercy and Wayne State University accepted the invitation of fellow researcher, Dr. Gregory Ulferts, UDM, (left) to hear U.S. Secretary of Transportation Raymond LaHood (center) speak at the Detroit Economic Club.

Right

Six partner university students met with Peter Appel, Administrator, Research and Innovative Technology Administration, US DOT, during his visit to the MIOH UTC. Left to right are: Ali Guner, WSU; Jason Gallivan, GVSU; Administrator Appel; Sujay Bodke, UDM; Elibe Elibe, WSU; Walter Anderson, UT; Eric Tanazas, UDM.

Partner university student and faculty researchers were hosted by the MIOH UTC to attend the SMART summit: "Moving Minds: The Next Transportation Infrastructure" in Ann Arbor, Michigan, November 11 and 12, 2009. Researchers from four of the five partners took advantage of this opportunity.

Dr. Gregory Ulferts, UDM business faculty and member of the Detroit Economic Club, invited student and faculty researchers to hear U.S. Secretary of Transportation Raymond LaHood speak at the October 13, 2009 luncheon. To the delight of all participants, Dr. Ulferts also arranged the photo session.

Peter Appel, Administrator of Research and Innovative Technology Administration, US DOT visited the MIOH UTC during a trip to Michigan November 9, 2009.

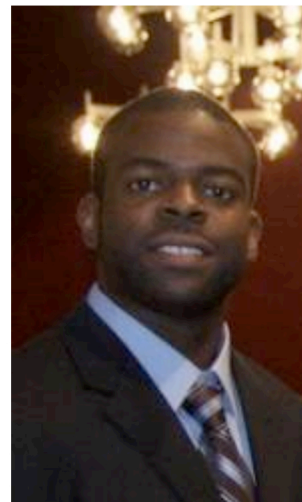


MIOH UTC

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Engineering Bldg.126
University of Detroit Mercy
4001 W. McNichols Road
Detroit, MI 48221
Office: (313) 993-1510
Fax: (313) 993-1187
martinpa@udmercy.edu
<http://mioh-utc.udmercy.edu>

Director: Dr. Leo E. Hanifin
Asst. Director: Patricia A. Martinico



WSU Master of Engineering graduate student, Elibe A. Elibe, has been selected by the Board of Regents of the Eno Transportation Foundation to participate in the 18th annual Eno Leadership Development Conference in Washington, DC, May 17-20, 2010. Elibe is one of nineteen participants selected nationally. He has received a full Fellowship.

Elibe is the second colleague of the MIOH UTC to be selected as an Eno Fellow. Former MIOH UTC assistant director, Kelley Kavanaugh was previously selected when she was a civil engineering student at the University of Detroit Mercy.



In Full Stride

... Join the Team

The MIOH UTC is now in its fourth year and we have "hit full stride" in all areas of our activities. As reflected in this newsletter, we are fulfilling all objectives

of our original strategic plan.

- ∞ Research: we currently have seven projects underway with balanced coverage of our three focal areas:
 - Alternative fuels: biodiesel oxidation, biodiesel particulates in buses, enhanced hydraulic hybrids.
 - Transportation systems efficiency: congestion avoidance through ITS, transit oriented development, automated pavement inspection, efficiency of paratransit, impact of SCATS on safety.
 - Supply chains: modeling and dynamic routing of supply chains through ITS.
- ∞ Education: development of curriculum and education of graduate and undergraduate students.
- ∞ K12 Outreach: summer camps,

Saturday programs and curriculum disseminated nationally, all to increase the size and diversity of students becoming transportation professionals.

∞ Technology transfer: full engagement of the transportation community.

As we move toward year five and beyond, we are deliberating on ways that we can improve our processes and foci for all of these areas. We are seeking additional transportation leaders to join those deliberations so that the MIOH UTC can have an even greater impact on our region and the nation. If you would like to join one of MIOH's interest groups please contact me directly at 313-993-1216 or HANIFINL@UDMERCY.EDU.

I look forward to hearing from you.

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

"Management and Analysis of Michigan Intelligent Transportation Systems Center Data with Application to the Detroit Area I-75 Corridor" PI, Dr. Charles Standridge, GVSU, and Dr. Snehamay Khasnabis, WSU, collaborate to describe, explain, and predict the flow of traffic in a corridor with respect to time and space.

"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. A goal is to develop/evaluate commercial antioxidants to improve the oxidative stability of biodiesel and make it a viable alternative fuel.

Six Continuing Research Projects for 2009-10

See Annual Report Year 3 on the MIOH UTC website for project result updates. <http://mioh-utc.udmercy.edu>.

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

"Crash Benefits of the SCATS Control System" UDM researchers led by Dr. Utpal Dutta work to assess the effectiveness of the Sydney Coordinated Adaptive Traffic System (SCATS) in reducing traffic hazard by examining crash rate as a Measure of Effectiveness.

"Transit Oriented Development at Selected LRT Stations in the Detroit Metropolitan Area" Dr. Snehamay Khasnabis, WSU, and Dr. Utpal Dutta, UDM, with the assistance of their student team, continue a study to analyze potential Transit Oriented Development (TOD) at two station sites along the Woodward Avenue planned LRT route.

"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 are developing efficient dynamic freight routing algorithms under both recurring congestion and non-recurring incidents.

"Biodiesel Glycerol Waste Byproduct as Potential Feedstock for Production of Biofuel"

University of Detroit Mercy biology professor, Dr. James Graves will develop laboratory teaching exercises exploring the productive use of glycerol which is a byproduct in making biodiesel from plant and animal oils. Biodiesel is burned in engines; however the supply of the by-product, glycerol, which is not a

New Education Project 2009-10

biofuel, exceeds demand. It may be possible for some microbes that utilize the biodiesel glycerol byproduct to make biofuel. It will be determined which microbes would be worth investigation in the making of biofuel. Undergraduate students assisting with the project will receive a valuable educational experience in laboratory investigations. Topics for laboratory exercises dealing with biofuel technology are expected to be identified for use in laboratory courses.



L to R: UDM student Vince Vuljaj and Dr. Graves



2009 MIOH UTC Outstanding Student of the Year, Elibe Ama Elibe, receives the MIOH UTC award at a meeting of the Institute of Transportation Engineers, Michigan Section. Left to right: Snehmay Khasnabis, WSU; Elibe A. Elibe; Kirk Steudle, Director, Michigan Department of Transportation; Colleen Hill, ITE President; and Utpal Dutta, UDM.

2009 Outstanding Student of the Year

Elibe Ama Elibe was selected as the 2009 Outstanding Student of the Year in recognition of his contributions on Michigan Ohio University Transportation Center (MIOH UTC) projects, his academic performance, and community service.

Elibe is a master's degree student in civil and environmental engineering at Wayne State University (WSU) majoring in transportation engineering and anticipating graduation in summer 2010. Additionally, Elibe has been selected by the Board of Regents of the Eno Transportation Foundation to participate in the 18th annual Eno Leadership Development Conference in Washington, DC in May 2010.

As a graduate research assistant at WSU, Elibe's recent work has been focused on a MIOH UTC funded study involving transit

oriented development (TOD) along a proposed light-rail transit system on Woodward Avenue in the Metro-Detroit area. Elibe has made valuable contributions to the research and has demonstrated his ability to offer creative approaches to the central problem. This study is directed by Dr. Snehmay Khasnabis, WSU, and Dr. Utpal Dutta, University of Detroit Mercy.

Earlier in 2009, Elibe worked as a research assistant on the MIOH UTC project, "Modeling Metro Detroit Transit", providing excellent support in data collection, data analysis, and preparation of reports. In the summer of 2009, Elibe assisted in mentoring an undergraduate student of civil engineering as part of the Louis Stokes Alliances for Minority Participation (LSAMP) program at WSU. In this role, Elibe demonstrated his ability to guide a young student through the process of engineering research.

New 2009-10

"Developing a Model-based Decision Support System for Call-A-Ride Paratransit Service Problems"

A Bowling Green State University faculty researcher, Dr. Hokey Min, is undertaking to help Toledo Area Regional Paratransit Service (TARPS) officials better cope with ever-demanding paratransit service requirements. To comply with the Americans with Disabilities Act (ADA) of 1990, TARPS, which is a subdivision of Toledo Area Regional Transit Authority, has begun to reassess the way that it serves riders with special needs such as senior citizens with limited mobility and physically or mentally-handicapped individuals requiring door-to-door services with a fare scheme comparable to regular transit.

A previous study by Dr. Min reveals that there still exist significant service gaps between the riders' expectations and the actual rendering of paratransit services by TARPS. Despite efforts, reduction of service gaps are often restrained by budget shortfalls and limited technological assistances.

This project proposes a model-based decision support system (DSS) that aids TARPS officials in automating the time-dependent TARPS vehicle routing and scheduling decisions in such a way that riders can be picked up and dropped off on-time and TARPS can be utilized in a fuel-efficient manner.



Alternate energy and system mobility to stimulate economic development.

MIOH UTC to issue RFP in April 2010 for research year 2010-2011

Submission deadline June 1, 2010.

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>.



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 26-30, 2010

Register NOW for STEPS Camp

Camp Dates: June 20-25, 2010

For: 9th-11th grades in 2009-2010

Registration deadline: May 28, 2010

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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MIOH UTC

Engineering Bldg. 126
University of Detroit Mercy
4001 W. McNichols Road
Detroit, MI 48221-3038