

Inside this issue:

OTC Student of the Year 1

Message from the Director 1

Research Updates -Kent State -Central State 2

Research Updates -University of Cincinnati 3

Research Updates - Ohio State 4

OTC/ASCE Luncheon 5

Annual TRB Meeting 7

Student Paper Competition 8

OTC Board of Directors 8

Scholarship Information 9

Calendar of Events 9

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NEWS

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OTC Awards 2007 Student of the Year

For the past 16 years, the U.S. Department of Transportation (USDOT) has honored an outstanding student from each UTC at a special ceremony held during the Transportation Research Board's (TRB) Annual Meeting. Awardees are nominated based upon a demonstrated dedication to innovation in transportation research through course work, research and outreach.



The Ohio Transportation Consortium is proud to announce that Darren N. Moore has been chosen as the 2007 Student of the Year (SOY). Darren is a graduate student in the

Department of Civil Engineering at The University of Akron with a focus in Transportation Safety and Analysis. He holds an Associate of Science in Environmental Control Systems and a Bachelor of Science in Civil Engineering with a Business Management focus.

Darren has a strong background in the management and transportation fields.

SOY Continued on page 6



Dr. Ping Yi, OTC Director

Collaboration with other UTCs, especially those in Ohio helps information exchange on regional issues. Besides all other activities introduced in this edition of the newsletter,

A Message from the Director

OTC has twice hosted the UTC Directors meeting in Ohio to share our operation experience of the centers in various areas, and explore ways to combine our resources for the advancement in research, teaching, and technology outreach. One particular topic is a possible joint seminar or conference session for students to exchange results in applied

research from projects undertaken locally and basic research that has a national significance. OTC is very well positioned to contribute to such an event because of its active involvement in ODOT projects by its member universities and diverse expertise in several forefront transportation research areas in the country. We look forward to such an exciting event.

Research Project Updates

Kent State University's Sustainable Transportation Initiative



Dr. Dave Kaplan

By: Dr. Dave Kaplan

The Kent State University Sustainable Transportation Initiative is proceeding as scheduled. We have completed the first phase, which includes an inventory of the entire infrastructure and facilities that may either encour-

age or hinder non-automotive traffic. These include pathways, including widths and quality, all street crossings, various bike facilities, sidewalk and bikeway interruptions, and other important items. This information has been transferred to a map of the campus and the surrounding community. We are working on the second phase, which measures both pedestrian and bicycle traffic at key points around campus. In the next month, we will

initiate a questionnaire survey to be sent to members of the campus community.

As part of this initiative, we have invited Dr. Spenser Havlick, an expert on sustainable transportation planning, to visit Kent and Kent State in early February. Dr. Havlick will tour the city and campus, speak with local and university officials, speak at an open forum, and provide us with a set of suggestions at the conclusion of his visit. Please consider attend-

ing the open session at 6:30 pm on Thursday, February 7th, at Kent State University, Franklin Hall Collaborative Classroom. Dr. Havlick will be speaking on "Foundations of a Joint Transportation Master Plan".



Central State's Enhancements for the STI

The Central State University project focuses on enhancing the content of its Summer Transportation Institute (STI), a program attended by students in grades nine through eleven interested in careers related to transportation. This enhancement will be made through the use of educational technology tools such as SMART BOARD and by adding a GPS component to the

curriculum.

Through OTC funding, the STI has purchased two SMART BOARDS and two projectors for the SMART BOARD. A training program, led by Ms. Angel Miller of SMART ED Services, was held for faculty members on the use of SMART BOARD in the classroom. The SMART BOARD technology is currently in use by the

faculty members and they will be ready to use this technology for the STI in the summer of 2008.

The STI also purchased twenty-four GPS units and held a training program on their use conducted by Paul Nieberding of Fondriest Environmental, Inc. Faculty members as well as water resources management students participated in the training. The objec-

tive of the training was to learn the features of the GARMIN units so as to fully implement them in the classroom.

The purchase of laptop computers has been finalized and the STI is awaiting delivery.

Soon, all of the equipment will be in place and all faculty fully trained so as to educate the STI students utilizing the latest classroom technologies.

Good Taste of Sample Data with Updated VEVID

Featuring Dynamic Dilemma Zones



By: Dr. Heng Wei and Zhixia Li, University of Cincinnati

Dr. Heng Wei

Accurate vehicle trajectory data plays a significant role in measuring dynamics of signal dilemma zones and their relationships with travel behaviors (e.g., speed and reaction to yellow signal) and potential of signal-related-crashes at high-speed signalized intersections.

The research project titled “Characterize Dynamic Dilemma Zone and Minimize its Effect at Signalized Intersections” that is being conducted by Dr. Heng Wei and his graduate students at University of Cincinnati has resulted in the capability of extracting accurate vehicle trajectory data. Meanwhile, they successfully obtained initial data samples featuring travel behaviors at dilemma zones.

Vehicle Video-Capture Data Collector (VEVID) that was originally developed by Dr. Wei for extracting vehicle trajectory data through digital videos has been updated by Mr. Zhixia Li (Ph.D. student) and Dr. Wei to fit the need of the dilemma zone research. Vehicle’s speed and distance from the stop line, as well as acceleration/deceleration rate at the onset of the yellow interval can be extracted using the upgraded VEVID (Figure 1). It now becomes a useful tool to extract data for modeling the dynamics of dilemma zone from real traffic observations.



Fig. 1 Extract yellow onset speed & distance from stop line

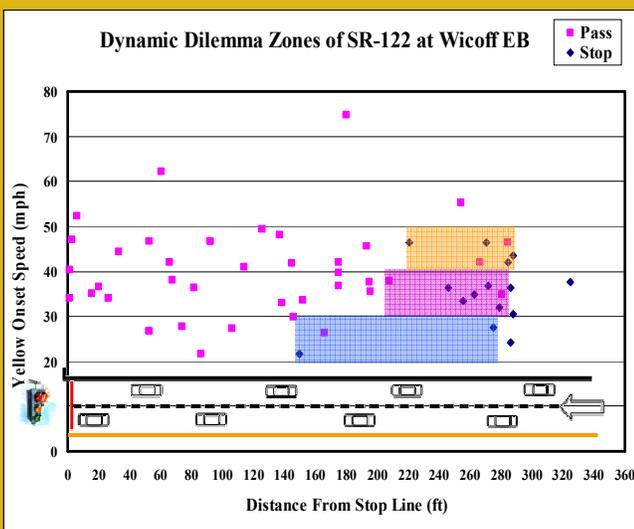


Fig. 2 Visualize dynamics of dilemma zones

Field data collections were conducted at the intersection of Ohio State Route 122 and Wicoff Street in Middletown, Ohio. Westbound and eastbound traffic were videotaped in August and November of 2007, respectively. Sample vehicle trajectory data that were obtained from two-hour videos of eastbound traffic are presented to visualize the distribution of the dilemma zones at this approach, as illustrated by Figure 2.

From the initial result, it is revealed that the physical ranges of the dilemma zones are distributed at varied dimensions with diversity of the observed speeds. More observations will be conducted and more vehicle trajectory data will be extracted using VEVID. Detailed statistical analyses will be then performed to further disclose dynamic features of dilemma zones with different speed distributions. Traffic simulation test bed has been built within VISSIM for detection layout analysis and the validation work will be completed in the next stage. Within the simulation test bed, the loop detection and adaptive signal control mechanism for minimizing the effect of dilemma zone will be analyzed and tested in the near future.

OSU Campus Smart Transit System



Dr. Mark McCord

By: Dr. Mark McCord

For approximately a decade, the project investigators have been monitoring Ohio State University (OSU) campus buses with a “homemade” GPS-based automatic vehicle location (AVL), communications, and information system. They processed the data to produce system-wide performance reports for OSU’s Transportation and Parking (T&P) Campus Area Bus Service (CABS), responded to special requests from CABS regarding service characteristics, and conducted research studies that exploit the data they archived. Through a joint effort from T&P, the OSU College of Engineering, and Clever Devices, Inc., the old location, com-

munication, and information system is being replaced with an advanced, commercial-grade system. Clever Devices has successfully equipped many large public bus agencies with “smart” systems but this will be its first effort to work with a campus bus system.

Through other funding sources, the investigators will use the smart transit system to continue to assist CABS in operations and planning and to exploit the unique data sets produced for research and educational activities. The OTC funded project will build upon these activities by planning for educational activities among the OTC partner universities that can result from the OSU smart transit system. Coursework will be discussed with relevant faculty members at OTC universities to assess the potential for integrating data collected from the smart bus system into existing classes and for designing other future educational activities, such as

short courses, site visits, or web-based projects.

The OSU smart bus system has been approved, and plans for implementation are being developed. The project investigators have been involved with specifying aspects of the system that can be used for educational and research components. In addition, they have been targeting two classes at OSU for future educational activities and have been soliciting names of relevant faculty members at OTC universities to discuss transportation courses at the universities that might be able to take advantage of the data that will be collected. They are presently awaiting responses to a request for potential contacts.



OTC Co-Sponsors ASCE Luncheon

Over 60 area engineering professionals, professors, and students gathered at the December meeting of the Akron-Canton chapter of the ASCE. The local chapter's annual December luncheon was sponsored by the OTC and held on the campus of The University of Akron. Ohio Senator Kevin Coughlin, who serves on the

Senate Highways and Transportation Committee, was the guest speaker for this event.

In his speech, Senator Coughlin addressed several critical issues facing Ohio and the local engineering profession. One item discussed was the election of the Summit County Engineer. He addressed the fact that it is be-

coming increasingly difficult to find candidates that possess licenses as both a Professional Engineer and a Professional Land Surveyor. These requirements are limiting the number of eligible applicants and as a result will need to be reviewed.

The Ohio Turnpike, which continues to be a topic of interest among Ohio politicians, was discussed in some detail. Senator Coughlin said that there are currently as many as three different proposals regarding the privatization of the Ohio Turnpike and the potential use of the estimated four to six billion dollars in proceeds. He presented his ideas for privatization which involves the allocation of the proceeds for a scholarship fund for Ohio students. The Senator believes that privatization of the Ohio Turnpike will continue to be an important issue among politicians over the next few years.

Lastly, Senator Coughlin addressed the budgeting challenges facing ODOT and the steps they are taking to get back on track.

The OTC sponsored ASCE luncheon was a great opportunity for the OTC to collaborate with area engineering professionals. This event was the first in hopefully many joint adventures in which the OTC will partake.



State Senator Kevin Coughlin speaks to the attendees (above). Below, OTC Director, Dr. Ping Yi, State Senator Kevin Coughlin, OTC Administrative Assistant Angela Brodie.



SOY Continued from page 1

Currently, he works as a Graduate Assistant to the Department of Finance and Administration at The University of Akron. He is responsible for managing state-mandated EDGE vendor verification and tracking systems and is involved in contract bidding, submittal and financial negotiations. Previously, Darren worked as a co-op student with GPD Group's Transportation Design department and as a Production Department Intern with the Ohio Department of Transportation.

As a member of the 179th Civil Engineering Squadron, Darren serves as an Infrastructure Utilities Specialist in the Ohio Air National Guard. He is involved in utilities systems construction, operations, and maintenance-management for base infrastructure and wartime contingency operations. Darren has been recognized by superiors for his personal initiative and leadership.

Darren has shown enthusiasm in transportation-research fields, a forward-thinking

approach to design, and a continued effort to facilitate engineering focused growth between academia and business. Starting off strong, Darren co-authored two research proposals within his first few months as a master's student. The first involves multiple universities and countries with the aim of fostering international engineering relations. The other aims to increase the safety and efficiency of law enforcement in the field.

In addition to his work as a researcher, Darren displays his leadership on campus through many roles. He has served as graduate student liaison to the president of The University of Akron and as Director of Public Relations for student government.

He has also participated as a student representative on the Transportation and Parking Committee for The University of Akron and the city of Akron.

As the OTC's selection for SOY, Darren travelled to Washington, D.C. on January 12th to attend the 87th Annual TRB Meeting as part of the Council of University Transportation Centers (CUTC) annual banquet. Each student was recognized during the ceremony by a Departmental official. This was a great opportunity for Darren and we congratulate him on his accomplishments and look forward to hearing about his future successes.



Student of the year Darren Moore pictured with OTC Director Dr. Ping Yi (above) and with former Secretary of Transportation Norman Mineta (left) at the CUTC banquet.



TRB Conference: *From a Student's Perspective*

By: Darren Moore

The Transportation Research Board's Annual Meeting was a multifaceted event, educational and highly-motivating. Both the awards ceremony and the convention offered insight to the wide breadth of transportation fields as well as the competition throughout the world and stateside. The first key to a satisfying TRB experience was strategically approaching my schedule: committee meetings, poster presentations, colloquiums, or simply seeing Washington DC were all options. Which events would serve me the best professionally, personally, and academically? The initial goal was to participate as much as possible in TRB rather than enjoy the city. TRB's

scheduling tool online made the process painless.

Participating in TRB for the first time was an eye-opening experience. I chose to attend as many committee meetings and sessions as possible, all focused on safety developments, strategic management, and international relations/activities. Most always I was the youngest (and "greenest") participant in the room! When meeting the "subject-authorities" at the beginning of each event, I'd explain my intentions and goals, and many times they invited me to sit at the committee table or up front, making it a very comfortable encounter. Throughout each event I'd take notes, read the literature, and actively participate if

possible. Being young in my career made it difficult to offer insight or suggestions on topics, but it was a great avenue to ask intelligent questions or inquire for elaboration on a subject of interest.

Humility is the biggest key in a satisfying TRB experience for students. Most all attendees are extremely accomplished, educated, and diverse in respective areas of transportation. Thus it is important to open up and ask questions of other's work, rather than yammer on about personal accomplishments or research. Student-egos should be left at the door and a genuine interest brought in. Case in point: humility sparked conversations with chief-engineers from South Korea presenting their new "smart-roadway system", the Chair of Yale's School for Globalization about infrastructure development in third-world countries, and extremely high-up US government officials, just to name a few. With hard work, one day we students will be at TRB concluding a session to loud applause!



Student Paper Competition

The Ohio Transportation Consortium (OTC) invites students from their partnering universities (Case Western Reserve University, Central State University, Kent State University, Ohio State University, Ohio University, The University of Akron, University of Cincinnati, and the University of Dayton) to join a student paper competition. The competition is to recognize scholarly activities and award distinguished research in transportation engineering in support of the OTC theme of *Transportation Mobility and Infrastructure Management*.

There will be two different competitions: one for undergraduate students and one for graduate students. There will be a \$200 award for each winner. There is no limit as to how many students from any one school can participate, however, the selected students must be U.S. Citizens or have permanent U.S. residency status.

The undergraduate student competition will be based on an essay that can involve either primary or secondary research. It can be a paper reporting on some research conducted by the student or a critical analysis of some transportation issue. The essay should be between 2,000 and 4,000 words (not including references, tables, and graphics) and must be related to some aspect of transportation: planning, measurement, modeling, infrastructure, policy, etc. Essays will be judged on strength of argument, scholarship, and quality of writing. The work can be from a project done with others, including a faculty member or as part of a funded research opportunity, and the ideas can be discussed and even generated by others. However, the writing should be that of the student.

The graduate student competition will be a research article.

Our preference is for a study that used primary data, although a synthesis of existing literature will be considered. The article should be between 5,000 and 7,000 words (not including references, tables, and graphics) and must be related to some aspect of transportation: planning, measurement, modeling, infrastructure, policy, etc. Articles will be judged on strength of argument, analysis of empirical evidence, scholarship, and quality of writing. The work can be from a project done with others, including a faculty member or as part of a funded research opportunity, and the ideas can be discussed and even generated by others. However, writing should be that of the student.

All submitted papers will be reviewed by the OTC research committee and the final selection will be made by the OTC Board of Directors.

Please send your papers to:

Ohio Transportation Consortium
The University of Akron
302 Buchtel Common
Akron, Ohio 44325-6106

Or send your papers electronically to: otc@uakron.edu

Clearly indicate **Student Paper Competition** on your submission. All papers must be submitted by March 1, 2008 and the selection will be made by April 1, 2008.

OTC Board of Directors

Dr. Deogratias Eustace

The University of Dayton

Dr. Robert Mullen

Case Western Reserve University

Dr. Dave Kaplan

Kent State University

Dr. O.M. Salem

University of Cincinnati

Dr. Mark McCord

The Ohio State University

Dr. Subramania Sritharan

Central State University

Dr. Gayle Mitchell

Ohio University

Dr. Ping Yi

The University of Akron

Calendar of Events

March 3-5, 2008
Earth & Space Conference 2008
11th International Conference on Engineering, Science, Construction, and Operations in Challenging Environments

Sponsored by the ASCE Technical Activities Committee, Aerospace Division

Renaissance Long Beach Hotel
Long Beach, California

March 30 – April 2, 2008
ITE 2008 Technical Conference and Exhibit

Held in cooperation with the Federal Highway Administration

Hyatt Regency Miami
Miami, Florida

June 2-4, 2008
25th Annual International Bridge Conference

Pittsburgh, Pennsylvania

June 16-17, 2008
4th National Conference on Surface Transportation Weather

Indianapolis, Indiana

June 16-18, 2008
Sixth RILEM International Conference on Cracking in Pavements

Chicago, Illinois

June 17-19, 2008
7th International Symposium on Snow Removal and Ice Control Technology

Indianapolis, Indiana

August 17-20, 2008
ITE 2008 Annual Meeting and Exhibit

in conjunction with the Western District ITE

Anaheim Convention Center
Anaheim, California, USA



Scholarships

The Institute of Transportation Engineers (ITE) has \$1,000, \$3,000 and \$4,000 scholarships available to graduate students in Transportation Engineering. For details or to apply, visit: <http://www.ite.org/education/scholarships.asp>

The American Society of Civil Engineers (ASCE) has several scholarships and fellowships available to both graduate and undergraduate engineering students. Visit their website for more information

or to apply: http://www.asce.org/inside/stud_scholar.cfm

The National Society of Professional Engineers (NSPE) has scholarships available to graduate and undergraduate students. Applications are available at: <http://www.nspe.org/scholarships/sci-peg.asp>