

CLEVELAND STATE UNIVERSITY WORK ZONE SAFETY & EFFICIENCY TRANSPORTATION CENTER

"Working to Save Lives"

JANUARY 2008



Welcome

2007-8 proved a banner year for the Cleveland State University Work Zone Safety & Efficiency Transportation Center.

Educational outreach efforts continue to produce success, including the Shaker Heights Engineering Applications Course, Constructor for a Day, and the ATSSA Student Poster Contest.

New staff (*Diane Burrowbridge: UTC Education Coordinator*) arrive to help spread transportation awareness.

Tom McGlynn, Sr. (3M) and Bonnie Teeuwen (ODOT 12th District) join Advisory Board.

Faculty Researcher Nancy Grugle accepts new post.

Inside, the first half of 2007-8 is detailed: another year of improving knowledge and saving lives on Ohio's roadways.

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New Education Coordinator



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TRANSPORTATION CENTER ORGANIZATION 2007-2008

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UNDER CONSTRUCTION:

On The Events of 2007-2008.

Director's Column

Welcome to another edition of the Cleveland State University Work Zone Safety Transportation Center newsletter. January 2008 finds the University Transportation Center moving into its second full year of operation and initial federal funding. Demonstrating continued growth, the UTC has added new staff members, and helped a local school system (Shaker Heights) garner a \$100,000 grant from the US Department of Transportation.

As with all organizations personnel changes are a fact of life. Recently two individuals have joined the Center's advisory board, one has rotated off the Board, we have added a new staff member and a talented faculty member has left the University.

Bonnie Teeuven, PE the Deputy District Director from ODOT District 12, and Tom McGlynn Sr., a Business Unit Director at 3M have joined the Advisory Board. Bonnie represents ODOT's regional interests at the Center and replaces Dennis O'Niell who rotates off the Board. I wish to recognize Dennis's efforts. Early on he contributed when the idea of a University Transportation Center at CSU was being formulated. Dennis is a graduate of the Civil Engineering program at CSU. Since Dennis reports to Bonnie at ODOT District 12 we really do not lose his input on work zone

safety issues.

Tom McGlynn joins the Advisory Board based on the recommendations of another board member, Bruce Owens at Plastic Safety Systems. Tom's business unit at 3M manufactures reflective sheathing used for signage and construction barrels. His unit also produces reflective taping supplies used extensively in work zones. His voice along with his colleague Dr. Fuat Aktan, who is a human factors engineering expert, are welcomed to the Advisory Board.

It is with great regret that I announce that one of our most promising research faculty attached to the Transportation Center, Professor Nancy Grugle, has resigned her position at CSU. Nancy's husband who works for Progressive Insurance was transferred last fall to the Denver, Colorado metropolitan area. Nancy's area of expertise is human factors engineering. She first conceptualized and then made the Driving Simulation Laboratory a reality. I want to take this opportunity to wish Dr. Grugle well in her new position at Lockheed Martin.

Finally I wish to welcome Diane Burrowbridge as the Center's new Education Coordinator.

Stephen F Duffy PhD, PE, F.ASCE

EDUCATIONAL OUTREACH

CSU-UTC/Shaker Heights City School District awarded \$100,000 in Transportation Education Grant Funding

As of the previous issue, the UTC and Shaker Heights City School District were pursuing a Garrett A. Morgan Technology and Transportation Education Program (GAMTTEP) grant. The United States Department of Transportation (US DoT), following acceptance of the proposal, awarded a one-year grant of \$100,000 to the two institutions for the express purpose of improving the preparation of students, particularly women and minorities, in science, technology, engineering, and mathematics (STEM) through curriculum development and other activities related to transportation.

With funding achieved, UTC and Shaker Heights faculty members developed the Engineering Applications Program. This pre-engineering program, spanning grades 3-12, intends to help the UTC establish a regional and national model for building a pipeline of diverse students pursuing science and engineering degrees from

the lower elementary grades through university study.

Regional companies associated with the UTC, the Ohio Department of Transportation, the Science and Mathematics Achievement Required for Tomorrow (SMART) Consortium of more than 50 Northeast Ohio School Districts, and the Ohio Contractor's Association, are working with Shaker Heights in this venture.

These efforts are producing a transportation focused, comprehensive pre-engineering program including both academic and career awareness components within a public school district. Employing 21st Century educational models, the Engineering Applications Course intends to produce a Roadmap to Careers in Engineering; an electronic, student-authored journal of technical reporting; and an annual conference for regional educators interested in bringing engineering to their K-12 classrooms.

Ambitious in scope, this project began with a simple conversation between UTC Director Dr. Stephen Duffy, Shaker Heights Curriculum Director Dr. Jim Paces, and High School Principal Mike Griffith, regarding the need for more STEM collaboration between K-12 and university faculty. Where the project leads, however, is of great interest to all STEM stakeholders in Northeast Ohio.

Constructor For A Day

Constructor For A Day enjoyed a record year in 2007, in which contractor members of the OCA (Ohio Contractors Association) and CEA (Construction Employers Association) hosted 87 student and teachers for the annual Northeast Ohio construction and engineering open house on October 18th.

Students and educators were escorted to various construction sites and spent a day with 21 host contractors including Cook Paving & Construction; Donley's Inc.; The Great Lakes Construction Co.; Independence Excavating, Inc.; Kokosing Construction Co., Inc.; Ozanne Construction Co.; Schirmer Construction; and The Shelly Co.

The day included a welcome breakfast, networking reception, and dinner where students had the opportunity to meet and speak with contractors. Attendees also enjoyed a motivational speech by former OSU assistant coach, Bill Conley.

Thursday, October 23rd 2008 establishes the date for the next installment of the OCA's "Constructor for a Day." This year's event will be held at the Embassy Suites in Independence, Ohio.

Multiple spots are open for area educators to immerse themselves in engineering application and field practice.

Ann Nerone
President, Ballast Fence

-- CSU-UTC --

Work Zone Safety Goes to School

By: John C. Durkos, Road Systems, Inc., Stow, Ohio



"Don't Make our Construction Workers Extinct, Keep them Safe!"
Lane Hedler, Grade 4, Fishcreek Elementary, Stow, OH.

Has a child ever warned you to slow down because there was a work zone ahead? Not likely. However, if some in the highway safety community are successful, these warnings could become common in the future.

The American Traffic Safety Services Association (ATSSA) Work Zone Safety Poster Contest asks children in grades K-12 to design artwork focused on work zone safety. Submissions are judged against entries from around the country and, from the thousands who enter, twelve winners are selected. Together, they provide the artwork for the institution's annual calendar.

Before introducing this contest to my home district, I met with the City of Stow to tell them what we at Road Systems, Inc. were doing. Having lost an employee to a work zone accident just two years ago, the City offered to help.

Using Stow City cones, barrels, and signs, I spoke to three groups of students: kindergarten, 1st/2nd, and 3rd/4th. During these presentations,

students and I covered work zone safety, the poster contest, and their chances to get involved.

One Stow student, Fishcreek Elementary fourth grader **Lane Hedler**, was chosen as a national winner. Lane's entry, "**Don't Make Our Construction Workers Extinct, Keep Them Safe!**", joins eleven others to comprise the 2008 ATSSA calendar.

Congratulations go not only to Lane, but all the children involved in the Stow presentations and submissions. In all, seeing the enthusiasm exhibited for the safety of roadway workers and family alike makes Road Systems, Inc. believe safer work zones are possible—if only the right voices do the talking.

John C. Durkos

Nancy Grugle Accepts New Post

Former Faculty Researcher and founding member of the Center Nancy Grugle (PhD) has accepted a human factors engineering position with Lockheed Martin. Dr. Grugle focused on cognitive function, situation awareness, and human factors engineering while acting as Assistant Professor of Industrial and Manufacturing Engineering at Cleveland State University. Aiding the Center as an initial startup, Dr. Grugle earned grants from the Ohio Department of Transportation to investigate the causes of work zone crashes and near-crashes as well the National Science Foundation's Major Research Instrumentation (MRI) award, which brought a DriveSafety DS-600c simulator to CSU, eventually resulting in the creation of the Center's Diving Simulator Lab.

Advisory Board Adds Members

Tom McGlynn, Sr. (3M) and **Bonnie Teeuwen** (ODOT 12th District) recently accepted positions on the **CSU-UTC's Advisory Board**, contributing professional experience and guidance from outside academia. Board members ensure Center directives align with appropriate state and national initiatives as well as delineate current possibilities and constrictions of the heavy highway industry.

Tom McGlynn, Sr., Business Unit Director for 3M's Highway Safety Product/Traffic Safety Systems Division, was born and raised in Chicago, Illinois. A graduate of Lewis University (BA & MBA) Tom began his career with 3M in 1974 as part of the sales department. Progressing through various sales and marketing management positions within the Business Products Group, Tom transferred to Brussels, Belgium in 1988 to manage the 3M Printing & Publishing Division. In 1995, he moved to 3M Traffic Safety Systems Division, where he managed the reflective sheeting portfolio and, in 2005, was appointed Director of the Highway Safety Business Unit, responsible for all durable and workzone sheeting and pavement markings.

Bonnie Teeuwen, Deputy Director of District 12 of the Ohio Department of Transportation, oversees maintenance of Interstate and State Routes running through the Northeast Ohio counties of Cuyahoga, Lake, and Geauga. Deputy Director Teeuwen also assists in strategic planning, short and long-term goal setting, performance measurement and policy development and deployment on both the statewide and district-wide level. Deputy Director Teeuwen also holds a Professional Engineers license in Ohio.

Center Introduces New Staff



While some founding members of the Center have moved on, new members have joined, most notably the Education Coordinator. This individual is responsible for the CSU-UTC's federally mandated education

Diane Burrowbridge PE: UTC Education Coordinator

Diane Burrowbridge joined the Cleveland State University Transportation Center in fall 2007, charged with both directing outreach to regional school districts and aiding the incorporation of pre-engineering topics into K-12 curriculum. Currently, Diane develops and maintains contacts with various school systems, including those systems belonging to the Fenn Academy (Fenn College's pre-engineering outreach program) and also consistently introduces new paths for educational

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UTC ADVISORY BOARD

George Palko PE, President/CEO: The Great Lakes Construction Co.

Mark Potnick: Ohio Contractors Association

Anthony Liberatore: Laborer's 860

Bonnie Teeuwen PE, Deputy Director: ODOT District 12

William Fink, President/CEO: Areawide Protective

Bruce Owens, Vice President: Plastic Safety Systems

Tracy Scriba, Federal Highway Association

Tom McGlynn, Sr., Director: Highway Safety Business Unit, 3M

improvement to K-12 educators.

Diane brings a broad range of academic and professional engineering experience to her new post. She holds a Masters Degree in Civil Engineering from the University of Akron and earned practical experience with design, analysis, and various other aspects of the discipline while working for local companies, both large and small, as well in conjunction with governmental projects.

Licensed as a Professional Engineer (PE), Diane has performed finite element analysis on nuclear reactors as well as consulted in the design and analysis of transportation, bikeway, water, and wastewater projects in the region. Additionally, Diane built a knowledge base of middle school education as a substitute teacher and is a member of both the American Society of Civil Engineers (ASCE) and the National Association of Women in Construction (NAWIC).

At the UTC, other responsibilities of Diane's position include increasing the availability of scholarships for all students interested in engineering. In the last year, this effort helped raise the amount of undergraduate scholarships awarded to a total of \$51,000.

Immediately impacting the outreach mandates of the UTC, Diane is organizing the 2008 Engineering Education Summer Conference—a joint effort with the Shaker Heights City Schools—in which twenty-three educators from nine districts and two states will learn how they too can bring engineering into pre-college classrooms.

Building upon her early successes, Diane continues correspondence with numerous regional teachers, administrators, professionals, and leaders; presents regularly her unique understanding of the meshing of engineering and education; and devises new programs designed around the promotion of engineering to the general public, including further professional development for teachers and dissemination of best practices through the UTC website.