

Civil & Environmental Engineering *MichiganTech*

Spring 2007 Department News



Inside This Issue

Student Memorial Awards.....	2
Student Awards.....	2
Engineers Without Borders.....	3
CEE Fulbright Scholars.....	3
New Faculty.....	4
Faculty Grants.....	4
Faculty Awards.....	5
Haltenhoff Memorial.....	5
Environmental Outreach Center.....	6
University Transportation Center.....	6
Environmental Research.....	6
Department Info.....	7
Concrete Canoe.....	8

Message From the Chair

Greetings from Michigan Tech!

Here in Houghton, the semester has come to a close and summer is upon us. The 2006-2007 school year has been a time of great change and progress for the CEE Department.

We are pleased to welcome Professor Veronica Griffis and Professor Zhanping You to the CEE Department, and look forward soon to the arrival of additional faculty members. Due to the unprecedented growth of our student body and an increase in research opportunities, we have undertaken a search for new engineering leaders to complement our world-class faculty. With this additional expertise, we will extend the scope and increase the quality of our education and research programs.

Our students continue to excel in academics and research, and demonstrate remarkable

Dr. Neil Hutzler
Department Chair
and Professor



initiative and compassion with their domestic and international outreach efforts. I am proud to support them and their instructors in each new endeavor.

I invite you to discover the latest developments in the CEE Department—and, as always, I welcome your feedback.

Neil Hutzler, PhD, P.E., D.E.E.
CEE Department Chair

Department Review



The 2006 Department Review is available online! To view the PDF, follow the link on the CEE home page: <http://www.cee.mtu.edu>

Online Alumni Community

Michigan Tech welcomes alumni to take advantage of our new Alumni Community: www.alumnicommunity.mtu.edu. This site will allow you to review and update all of your personal information. We encourage you to explore and enjoy the community—it's a great opportunity to reunite with old friends and make new ones!

Memorial Awards

The Civil and Environmental Engineering Department developed two memorial awards in 2006 – the Nicole Bloom Award for Environmental Sustainability and the Danielle Ladwig Award for Graduate Excellence. The awards are dedicated in honor of two outstanding Civil and Environmental Engineering Department graduates.

Heather Wright was the 2006 recipient of *The Nicole Bloom Award for Environmental Sustainability*. This award will be made annually to an undergraduate civil or environmental engineering student who has demonstrated leadership, passion, and activism for effecting environmental sustainability at the local, national, or global level.



Nicole Bloom, who graduated from Michigan Tech in 2003 with degrees in Environmental Engineering and Biological Sciences, passed away on June 21, 2003. At Michigan Tech, Bloom was a charter member of the Environmental Sustainability Committee (ESC), a leader of the student organization

Students Against Violating the Environment (now Students for Environmental Sustainability), was active in establishing Earth Week activities, and worked with Michigan Tech's on-campus recycling programs.

Pasi Lautala was the 2006 recipient of the *Danielle Ladwig Award for Graduate Excellence*. This award will be made annually to a graduate level civil or environmental engineering student in recognition of outstanding achievement in academics, research, and service, in memory of our friend and colleague, Danielle F. Ladwig.



Danielle Ladwig, a graduate student pursuing an MS in Civil Engineering, passed away on October 29, 2005, as a result of adverse reactions to a yellow fever vaccination. Ladwig was preparing to travel to Bolivia with Engineers Without Borders (EWB) to work with a rural school to improve its septic system design and function. In her honor, the team completed the project as planned. At Michigan Tech, Ladwig was also a member of the concrete canoe team and the Blue Key honor society.

Student Awards

Kevin Bierlein, a freshman environmental engineering student, was awarded the Safari Club International Foundation's Four Year Conservation Scholarship Award, a \$1200 annual scholarship for four years.

Lauren Crandell, a senior environmental engineering student, was awarded the \$2500 Brother B. Austin Barry National Chi Epsilon Scholarship.

James Jacobs, a civil engineering senior, was awarded a \$9500 scholarship for 2006-07 by *Dan's Excavating* of Shelby Township, Michigan.

Greg LeFevre and **Sunny Peira**, both environmental engineering students, were awarded the 2006 Nissan-WWF Environmental Leadership Program Award. The \$5000 award also included a trip to Africa.



Ryan Schweitzer, a Master's International graduate student, received the 2006 Hawkinson Foundation scholarship in recognition of his peace and justice activities with Engineers Without Borders.

Jon Wurzer, a civil engineering student, was awarded the 2006 Wisconsin Asphalt Paving Association scholarship for \$1000.

Timothy Bates was named the 2007 Graduate Teaching Assistant of the Year. He has been a leader in our concrete canoe team, PDCM Enterprise, and is now pursuing a master's degree researching aspects of materials used in the transportation infrastructure.

Dr. Pati Damoder and Soumitri Reddy Graduate Fellowships

The following four graduate students were awarded \$1000 fellowships from the Pati Damoder and Soumitri Reddy Graduate Fellowship fund:

Matthew Kucharski **Travis Ostrom**
Joshua Cowden **Mark Rowe**

The Reddy Graduate Fellowships were made available to the Department through the generosity of Dr. Pati Reddy and his

wife, Soumitri. Dr. Reddy is a 1962 graduate of our MS program. He and his wife have been strong supporters of Michigan Tech's Civil and Environmental Engineering Department.

Philip C. Youngs Fellowships

The following six outstanding graduate students were awarded \$1000 fellowships from the Philip C. Youngs Memorial Graduate Fellowship Fund:

Timothy Bates **Crystal Payment**
Kateryna Lapina **David Tobias**
Valerie Fuchs **Maria Val Martin**



Philip Youngs was a 1957 graduate of our baccalaureate program in civil engineering. He served on the departmental advisory committee, CEEPAC, and was a member of the Academy of Civil and Environmental Engineers. The Philip C. Youngs Memorial Graduate Fellowship was established in 2003 through gifts from his family and friends to honor Phil's commitment to Michigan Tech and the Civil and Environmental Engineering Department.

EWB Activities

Engineers Without Borders Serves Latin America

In its second year, the Michigan Tech chapter of Engineers Without Borders (EWB) continues to make its name known across campus and throughout the national organization. In the last month, members finished a year-long effort to bring clean water to two villages on the Rio Ixcan in Guatemala. This project, EWB's second implementation trip, was executed by sending two teams of

students to the region in early March. Recently, the group was approved to start a project in Honduras that will involve the design of a Nutrition Center and supporting infrastructure near La Ceiba, and have also begun conversations with agencies in northern Mexico for potential projects next year. The chapter also contributes to efforts closer to home; over spring break, a small group of EWB members traveled with the Michigan Tech chapter of Habitat for Humanity

to Jacksonville, Florida, to help with a building project.



Student Profiles

CEE Department Hosts Iraqi Fulbright Scholars

In 2005, the CEE Department welcomed two Iraqi graduate students pursuing advanced degrees in environmental engineering. Sinan Abood and Ziad Ahmed came to Michigan Tech as Fulbright Scholars, working under the direction of their faculty advisor, Dr. David Hand.

Two years later, Abood is nearing completion of his Master's degree in Environmental Engineering. His research focuses on programming the second version of Ad Design, a water treatment software package for utilizing fixed bed adsorption units.

Abood brings to the department a unique range of educational and professional experience. A graduate of the University of Baghdad with a degree in Chemical Engineering, Abood fled Baghdad in 1998 with his family, leaving behind lives and possessions to be smuggled into the safer region of northern Iraq to start anew.

Despite this upheaval, Abood went on to find professional success. He worked with the United Nations, Mercy Corps, as a professional engineer, and as a



Sinan Abood (left)

translator for the British Broadcasting Corporation (BBC). During his time with the BBC, Abood accompanied the first group of journalists allowed into the Hussein palace compound.

Of his studies and experiences at Michigan Tech since leaving Iraq, Abood says, "I am grateful for the opportunity to study here—the environment is unrivaled in beauty and tranquility and I have encountered only friendly, open people. The past two years have been the best of my life."

In the fall of 2007, Abood will return to Michigan Tech to pursue a PhD in Environmental Engineering. In a cross-departmental research effort, he will work with Dr. Ann MacLean in Michigan Tech's Forestry Department to assess the biomass of Michigan,

Wisconsin, and Minnesota to determine its potential as a viable source of alternate fuels. Upon completion of the project, Abood plans to work in the United States before returning to Iraq. "I would like to use my education to help rebuild my destroyed country."



Ziad Ahmed

Ziad Ahmed completed his Master of Science degree in December with his work on developing a photo-catalytic process to produce hydrogen gas for energy from water and sunlight. He has been accepted to the doctoral program at Michigan Tech and had hoped to begin this past spring semester. Ziad returned to Iraq in December for his wife and child and has had difficulty obtaining his visa to return from the Iraqi government.

New Faculty

Veronica W. Griffis



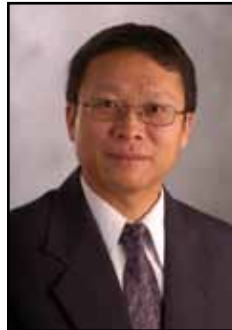
Veronica W. Griffis joined the faculty as a Donald and Rose Ann Tomasini Assistant Professor of Water Resources Engineering.

Dr. Griffis earned her Ph.D. in Civil Engineering from Cornell University in 2006. Her teaching interests include probability and statistics, stochastic hydrology, numerical methods, water resources, and risk analysis and management. Her research interests include flood frequency analysis and the analysis of other extreme events, uncertainty analysis, and impacts of climate variability, climate change, and land use changes.

Dr. Griffis is currently active in the ASCE task committee on statistical distributions. She has published in Water

Resources Research, and has a number of papers which will soon appear in the Journal of Hydrologic Engineering.

Zhanping You



Zhanping You, P.E. joined the faculty as a Donald and Rose Ann Tomasini Assistant Professor of Transportation Engineering.

Dr. You received his Ph.D. in Civil Engineering from University of Illinois at Urbana-Champaign. His teaching interests include construction materials, pavement engineering, numerical modeling, transportation engineering, and bituminous materials and mix design. His research interests focus on asphalt materials characterization and mix design, performance evaluation and

rehabilitation, with an emphasis on micromechanical modeling of asphalt mixture and numerical analysis of pavement structures.

Dr. You is active in a number of technical committees in ASCE and other organizations. His research has been published in the Journal of the Transportation Research Board of the National Academies, ASCE Journal of Materials in Civil Engineering, Journal of Association of Asphalt Paving Technologists (AAPT), ASCE International Journal of Geomechanics, and International Journal for Numerical and Analytical Methods in Geomechanics.

Dr. You was also the recipient of the Dwight David Eisenhower Faculty Fellowship and Dwight David Eisenhower Graduate Transportation Fellowships from the Federal Highway Administration.

Awards & Grants



Dr. Amlan Mukherjee

received a \$228,086 award from the National Science Foundation. The objective of the research

project is to study how variations in available time and resources impact human decision making in construction management. The research will formalize how construction managers

cognitively organize construction knowledge and adapt it to project specific constraints and unexpected conditions to manage crisis scenarios. Most importantly, the research findings will help to apprehend and mitigate risk on site. The study uses an interdisciplinary approach, integrating the human, cognitive and engineering aspects of decision-making. The project will involve undergraduate and graduate students from CEE and

Computer Science building simulations of construction projects, interacting with construction managers on site, and collecting and analyzing human subject data. Quantitative and qualitative analysis will be used to study differences between knowledge organization patterns of experts and novices. The research effort is also fostering a collaborative relationship with Kiewit Engineering and collaborators at Florida State University.

Faculty Awards



Joan Chadde, Education Program Coordinator for the Michigan Tech Center for Science and Environmental Outreach (CSEO), was awarded a \$5,000 grant from Michigan Space Grant to fund middle/high school students and community trips aboard the research vessel Agassiz and an award from the Dunn Foundation for promoting Visual Environmental Literacy. Through partnerships with schools, organizations, governments and individuals, the CSEO seeks to promote awareness and informed personal actions and public policy concerning regional environmental issues.

Dr. James R. Mihelcic was elected 2007 President of the Association of Environmental Engineering and Science Professors (AEESP). He also received the 2006 Society for Environmental Engineers Professor of the Year Award, which is a student-voted honor. Dr. Mihelcic is a Professor of Civil & Environmental



Engineering and Director of the Master's International Program in Engineering.



Dr. David W. Hand, Professor of Civil & Environmental Engineering, was recently awarded the 2006 Outstanding Teaching In Environmental Engineering and Science Award by the Association of Environmental Engineering and Science Professors. The award "honors a faculty member who has made substantive contributions directly through class-oriented teaching, as enhanced through the development of pedagogic techniques." Dr. Hand was also the recipient of the 2007 Society for Environmental Engineers Professor of the Year Award, which is a student-voted honor.

Dr. L. Bogue Sandberg, was selected as the 2007 recipient of the Howard E. Hill Faculty of the Year Award, an honor chosen by CEE departmental students. He also received the award in 2006.



Haltenhoff Memorial

Charles Edwin "Ed" Haltenhoff, retired Michigan Tech Civil Engineering professor, passed away on December 6, 2005. A native of Brooklyn, New York, Haltenhoff was a WWII veteran, and received many commendations during his service in France, Belgium, and Germany. Upon his return to the United States, Haltenhoff attended Lehigh University, graduating in 1951 with a degree in Civil Engineering. He spent many years as a construction engineer, working with Merrit-Chapman and Scott Corporation and Elzinga and Volkens, Inc. Haltenhoff was the Project Engineer for all construction engineering associated with the foundation of the Mackinac Bridge from 1954-1956, and was a member of the Mackinac Bridge Authority from 1956-1965, serving as the Chief Engineer and General Manager. In 1980, he joined the

faculty of the Civil and Environmental Engineering Department at Michigan Tech. While at Michigan Tech, Haltenhoff was honored four times with the Distinguished Teacher Award, was named a Distinguished Lecturer in 1992, and received the Alumni Outstanding Service Award in 1995. Ed is survived by his wife of 55 years, Harriet; seven children; 15 grandchildren; and five great-grandchildren. Private memorial services were held on December 9th, 2005.

The following tributes were adapted from the TechAlum newsletter.

"He will be missed for his ability to bring the real world into the classroom and his insight into life and professional experience."

Tom George, P.E.



"I was saddened to hear of the passing of Mr. Ed Haltenhoff. I look back on my college years and can honestly say that of all the faculty at MTU, Ed left an impression on me that I will forever hold dear."

Joe Noykos, P.E.
BS Civil Engineering '95

Outreach Center

Environmental Outreach

The Center for Science and Environmental Outreach (CSEO) continues to promote community and family involvement in science and mathematics education through its outreach programs. In late March, the CSEO sponsored the Western U.P. Science fair with MTU Omega Chi

Epsilon Chemical Engineering Honor Society, an event that was, according to Coordinator Joan Chadde, “a huge success.”

This spring, the CSEO’s Family Science Night program expanded to include a Family Physics Night and a Family Chemistry Night. Upcoming events include the Great Lakes Presentation

Series, the Global Change Teacher Institute in June, and the Forest Ecology and Resources Teacher Institute in July.

Through partnerships with schools, organizations, governments, and individuals, the CSEO seeks to promote awareness and informed personal actions and public policy concerning regional environmental issues.

Michigan Tech UTC

Michigan Tech Awarded UTC

In 2006, Michigan Tech was awarded a University Transportation Center



(UTC) grant. The Michigan Tech UTC, Materials in Sustainable Transportation infrastructure (MiSTI) was established in the fall of 2006 through TEA-21 (Transportation Equity Act for the 21st Century), and is under the direction of CEE Professor Dr. Thomas Van Dam. MiSTI activities are focused on the identification and use of naturally occurring, industrial byproduct, and/or recycled materials in the design and construction of a more sustainable

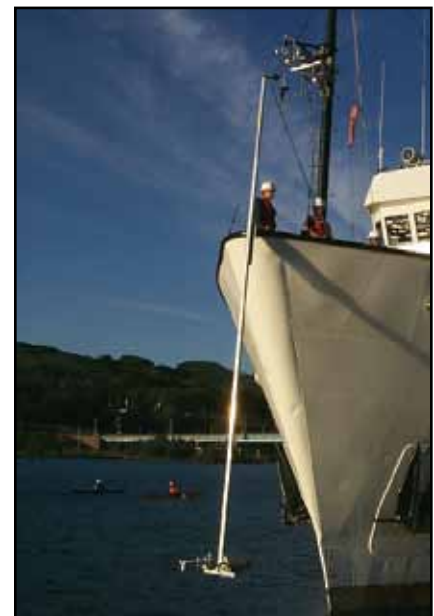
transportation infrastructure. Focus materials include soils, unbound aggregates, hot-mix asphalt and portland cement concrete. MiSTI programs and activities include: new research initiatives and collaborations; curriculum development for undergraduate and graduate programs at Michigan Tech; sustainability awareness; outreach initiatives for students and teachers in grades K through 12; and professional development for practicing engineers.

Research

Perlinger and Team Develop New Pollutant Quantification Methods

CEE Professor Dr. Judith Perlinger and her research group are making strides toward the understanding and improvement of environmental conditions in the Great Lakes region. They are creating novel methods for quantifying trace concentrations of pollutants in the atmosphere and their deposition to surfaces, including lakes. Perlinger and her team have designed, fabricated, and tested these tools and methods in Lake Superior. The innovative tools enable a more accurate and comprehensive understanding of the pollutant atmospheric transport process.

Recently, Perlinger and her group have perfected their methodology, and are now able to recognize gradients in 75% of cases for seven compounds. They are working on the identification of approximately 150 additional compounds. The group has a provisional patent in place and an application for a permanent patent for the hardware used in their revolutionary techniques. In 2006-2007, the group’s research efforts have resulted in three journal publications and two extensive research reports. Funding for the project includes an EPA grant from the Region 5 Great Lakes Protection Office.



Department Info

FACULTY

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C. Robert Baillod
Brian D. Barkdoll
William M. Bulleit
George R. Dewey
Veronica Griffis
David Hand
Ralph J. Hodek
Richard Honrath
Neil Hutzler
William Leder
Yue Li
Kris G. Mattila
Alex S. Mayer
Dennis Magolan
James Mihelcic
Amlan Mukherjee
Kurt Paterson
Judith Perlinger
Linda Philips
L. Bogue Sandberg
Sheryl A. Sorby
William J. Sproule
Noel Urban
Thomas J. Van Dam
Stanley J. Vitton
David Watkins
Zhanping You

DEPARTMENT STAFF

Greg Booth - Comp Support Specialist II
Amanda Cadwell - Secretary
Michael P. Dziobak - Asst. Rsrch Sci
Rob Fritz - Technical Lab Coordinator
Thomas Gemignani - Comp support spec II
Chris Gilbertson - Rsrch Engineer
Jeff Hillss, User Support Specialist
Robert Landsparger - Syst Admin./Man.
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Josh Olson, System Admin II
Karl W. Peterson - Rsrch Engr./Scientist I
Torsten Mayrberger - Rsrch Engineer I
Kenneth Palosaari - System Admin II
David L. Perram - Rsrch Engr./Scientist II
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Shelle Sandell - Tech. Commun./Budget Coord.
James Vivian III - Program Manager
Christopher Wojick - Senior Rsrch Engineer

Center for Science and Environmental Outreach

Kristine Bradof - Comm Prog Coord
Neil Hutzler - Director
Joan Schumaker-Chadde - Ed Prog Coord

Sustainable Futures Institute (SFI)

Denise Heikinen - Administrative Associate
Kirsten Holles - Administrative Associate
James Mihelcic - Co-director
Qiong Zhang - Senior Research Engineer

MICHIGAN TECH TRANSPORTATION INSTITUTE

Larry Sutter - Professor

Center for Structural Durability

Tess Ahlborn - Director
Chris Gilbertson - Research Eng
Yogini Deshpande - Post Doc Res.

University Transportation Center (MiSTI)

Elizabeth Hoy - Coordinator
Thomas Van Dam - Director

Local Technical Assistance Program (LTAP)

Christine Codere - Office Manager
Tim Colling, P.E. - Assistant Director
Fernando de Melo e Silva - Engineer
Nick Koszykowski - Senior Software Eng
Terrance McNinch - Director
John Ryyananen - Staff Assistant
Devin Seppala - Office Assistant
Terance McNinch - Director
John Ryyananen - Staff Assistant
John Velat - Staff Assistant
Wendy Yrjana - Office Assistant

Transportation Institute

Technology Development Group

Mary Crane - Software Engineer
Steven Kangas - Senior Software Engineer
Terrance McNinch - Director
Nancy Moore - Software Engineer
Luke Peterson - Software Engineer
Chris Pinnow - Applications Programmer
Mike Pionke - Software Engineer
Jason Poll - Software Engineer
Scott Pollins - Software Engineer
Gary Schlaff - Senior Software Engineer II

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Amanda Abramson - Secretary
Bernard Alkire - Director
Scott Bershing - Editor
Cheryl Cloud - Manager

CIVIL & ENVIRONMENTAL ENGINEERING PROFESSIONAL ADVISORY COMMITTEE

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Oakland County Road Commission

Tamera M. Fenske
3M Prairie du Chien

Thomas M. Keranen, J.D.
Thomas M. Keranen and Assoc, P.C.

Christopher Kaempfer, P.E.
Kaempfer and Associates, Inc.

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Wisconsin Energy Corporation

William H. Leder, P.E.

Max Schmiede, P.E.
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Wilcox Associates, Inc.

William Winiarski, P.E.
Rowe, Inc.

Contact CEE

Alumni Mailing List

Please help us stay in touch by completing the following form and mailing it to: Department of Civil and Environmental Engineering, Michigan Technological University, 1400 Townsend Drive, Houghton, MI 49931-1295, or fax to (906) 487-2943.

Name _____ Degree _____ Class of _____

Address _____

Alumni Update File

Current employment (title, company, beginning year) _____

Other news about you _____

Gifts to the Department

Please help us continue to provide quality instructional facilities, laboratory equipment, and scholarships for Civil and Environmental Engineering students!

I hereby enclose my gift of \$ _____ to the category selected.

- Equipment for teaching and research
 Laboratory/facilities endowment
 Student Competitions

Please make checks payable to the Michigan Tech Fund.

MichiganTech

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Michigan Technological University
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Concrete Canoe

Michigan Tech Concrete Canoe Team Wins Regional Competition

For the second time in team history, the Michigan Tech Concrete Canoe Team swept this year's regional competition by winning all eight events at the 2007 North Central Conference. The Michigan Tech Concrete Canoe team brought home first prize in Design Report, Technical Presentation, Final Product, Men's Sprint, Women's Sprint, Men's Endurance, Women's Endurance, and the Coed Sprint.



2006-2007 Concrete Canoe Team

Throughout the four days of competition Michigan Tech's dominance was threatened by other teams from University of Akron, Ohio Northern, Michigan State, and University of Michigan just to name a few.

The Michigan Tech team is now preparing to compete at the 20th annual ASCE National Concrete Canoe Competition to be held in Seattle, June 14-16. The Michigan Tech team has worked hard over the past few years, placing 3rd at Nationals in 2005 and 5th in 2006. The competition will again be fierce, but based on this year's conference performance, the team is well positioned among the 200 competing teams to strike high in the national rankings.



Concrete Canoe Team members