2014

2014 Civil and Environmental Engineering Department News

Department of Civil and Environmental Engineering, Michigan Technological University

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Recommended Citation

Department of Civil and Environmental Engineering, Michigan Technological University, "2014 Civil and Environmental Engineering Department News" (2014). Department of Civil and Environmental Engineering Newsletters. 5.

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Dear CEE Alumni and Friends,

At Michigan Technological University, the Civil and Environmental Engineering (CEE) Department is looking forward to another good year! Last year we encountered a lot of winter, and winter, and more winter. In fact, the ice fishermen were still on Keweenaw Bay on Memorial Weekend. Well it did finally warm up a bit in July and August. Huh! What happened to global warming? We were hoping to see a little bit of it in the North Country but it just passed us by this past year with six months of winter. Yup, just a typical year at Michigan Tech. Huskies know how to stay warm in winter! Besides the 340 inches of snow that fell this past winter, what kept us warm were all the ongoing activities and accomplishments from the faculty, student body, alumni, and affiliated department centers and outreach programs. The ongoing activities and accomplishments are highlighted in this issue.

Faculty developed a new curriculum for the undergraduate programs. The new civil engineering (CE) curriculum was designed to provide students with a more a flexible pathway to earn a degree in a specialized area of CE while the environmental engineering (ENVE) curriculum was modified to redistribute the coursework load more evenly in the third and fourth years of study. These new curriculum changes are coming at a good time as the overall quality of our incoming students continues to improve. At the graduate level, the accelerated master’s programs in CE and ENVE were implemented and several of our students showed interest in the program. You can learn more about the new curriculum changes and the accelerated program by visiting our CEE website. We are presently working on improving and modernizing the graduate course class offerings to provide graduate students a more efficient pathway towards a master’s coursework degree in both civil and environmental engineering. This fall our graduate student program enrollment increased by twenty-one percent over last and we are at an all time high in graduate enrollment numbers.

CEE faculty and staff were very productive in research and outreach programs with expenditures totaling over $5.5 million. This year we are on track to have an even more productive year. Scholarship in CEE has also been at an all time high in the past few years. Our CEE outreach programs have been very productive. The CEE Educational Outreach Program under director Joan Chaddde reaches out to more than 10,000 K-12 students, teachers, and community members on an annual basis. The CEE Center for Technology Transfer under the direction of Tim Colling provides educational training for over 5,000 participants including over 1,000 CE Alumni. Our Tribal Technical Assistant Program under director John Velat reaches out to over sixty-two tribes in the Eastern and Midwestern U.S. with the latest in technology related to transportation in tribal communities.

As you see in the newsletter, our alumni are making a difference by improving our nation’s infrastructure, Ali Catik (‘76) tunneling under Manhattan, Annette Gardiner (‘82) bringing sustainable energy to the people of New Mexico, Gary Holcombe’s (‘72) company improving the infrastructure in the Traverse City area, Flies & Vandenbrink (‘78) Inc. wastewater infrastructure upgrade award, and Amy Trahey’s (‘94) Great Lakes Research Group recognized for their structural engineering work as a small company.

It was really nice to see the Husky spirit shown by many of our alumni at a number of organizational meetings I attended this past year. In the spring we held an alumni reception at the one of the CTT seminars in Bay City, Mich. and it nice hear from over fifty alumni that attended. It is always a pleasure to attend the U.P. Road Builders Association annual summer meeting, share stories with the alumni, and attend the annual dinner and auction they have for CE undergraduate scholarships. At the Michigan American Water Works Association Conference in Manistee I heard the words “GO HUSKIES!” by the moderator (John Willemin, ‘92) between some of the presentations. To my surprise there were many alumni at the event and it was refreshing talking to several of them. Here at Michigan Tech we are always interested in hearing all of the great things alumni are doing from day to day. If you have any notable projects you would like to share with us, just send me an email. I look forward to hearing from you. On behalf of the faculty and staff I would like to thank all the CEE alumni for their support over the past year. It truly makes a difference for our students.

GO HUSKIES!

David Hand • Class of 1980 • Professor & CEE Department Chair
dwhand@mtu.edu • mtu.edu/cee
Michigan Tech is one of the universities partnering with MDOT to promote interest in civil engineering as a career path starting at the middle and high school level. The participating schools use education modules that demonstrate the field of civil engineering while meeting National Education Standards in science, technology, engineering and math. Students who have experienced TRAC in school are eligible to apply for a paid summer TRAC Internship with MDOT. Upon acceptance and completion of the internship, the student is eligible for a $2500 scholarship from Michigan Tech or other participating university offering a four-year degree in civil engineering. Several Michigan Tech alumni are pictured above from MDOT’s regional offices with Cody Wetton—Michigan Tech’s 2014 TRAC Intern.

_Pictured above, L-R: _Cody Wetton – Ishpeming TSC TRAC Intern, Rob Tervo – Ishpeming TSC Development Engineer, Lee Taavola – Survey Supervisor, Trevor Sholten – Utility Engineer, Cory Gardner – Transportation Engineer, Mark Maloney – Escanaba Transportation and Service Center Manager, Mark Kleikamp – Region Design Engineer._
Student Awards

Student 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.

THE NICOLE BLOOM AWARD FOR ENVIRONMENTAL SUSTAINABILITY

This award is made annually to an undergraduate civil or environmental engineering student who has demonstrated leadership, passion, and activism for impacting environmental sustainability at the local, national, or global level. This award is accompanied by the Pati Damoder and Soumitri Reddy $1,500 undergraduate scholarship.

The 2014 Nicole Bloom Award was presented to Tia Scarpelli. She is a senior environmental engineering student who has actively pursued environmental engineering research since her first year. Scarpelli has worked for the past three years with Dr. Paul Doskey doing atmospheric chemistry laboratory work. She was recently awarded a highly competitive EPA Greater Research Opportunities (GRO) Undergraduate Fellowship for bachelor-level students in environmentally-related fields of study.

THE DANIELLE LADWIG AWARD FOR GRADUATE EXCELLENCE

This award is 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. This award is accompanied by the Pati Damoder and Soumitri Reddy $1,500 Graduate Fellowship.

Adriano Rothschild has received the 2014 Danielle Ladwig Award for graduate excellence. Rothschild, originally from Italy, completed his bachelor’s degree in civil engineering in 2012. He was active in the Transportation Enterprise and stayed at Michigan Tech to pursue a master’s degree and expand his knowledge in transportation planning.

Paddling to Pennsylvania

The Concrete Canoe Team presented their advisor and mentor, Bill Baxandall ’59, with an award to express appreciation for his many years of service, helping the team compete successfully. Baxandall has been a pillar of support for the team over the past ten years, traveling far and wide to many national competitions and providing guidance and support. This past year, the Concrete Canoe Team placed first in the regional competition and went on to compete at the national competition in Johnstown, PA. Bill is an adjunct faculty member in the Department and has also provided his expertise through the instruction of many senior design projects.
Research Awards

GRADUATE RESEARCH AWARD

Xu Yang, a civil engineering doctoral candidate, was recognized for his research in the area of transportation materials. His research focused on asphaltic pavement studies. Yang has published several refereed journal articles and conference proceedings since beginning his doctoral studies in 2011. He is advised by Dr. Zhanping You.

NSF GRADUATE FELLOWSHIP

Benjamin Winter, a Michigan Tech civil engineering doctoral student, was recently awarded a highly competitive NSF Fellowship to study “Aerodynamic Stability Enhancement for Structures using a Novel Wind Isolation System.” With the fellowship, Winters will receive a $30,000 per year stipend and tuition expenses for three years. He is advised by Dr. Andrew Swartz. Any of his time not devoted to his research is quickly spoken for by his two young sons.

NSF GRADUATE FELLOWSHIP

Another highly competitive NSF Fellowship was awarded to Christa Meingast, a Michigan Tech environmental engineering doctoral student. She will use the fellowship to study “A Fundamental Evaluation of Pathogen Inactivation in Biosolids and its Application in the Development of Sustainable Biosolids Treatment Methods.” She will also receive a $30,000 per year stipend and tuition expenses for three years. Meingast is co-advised by Dr. Jennifer Becker and Dr. Eric Seagren.

Faculty News

PRESIDENTIAL PROFESSOR

Michigan Tech has appointed Dr. Alex Mayer as the Charles and Patricia Nelson Presidential Professor. Mayer, who holds a joint appointment in the Departments of Civil and Environmental Engineering and Geological and Mining Engineering and Sciences, is recognized for his outstanding efforts to bring water-related research, education, and outreach to the forefront at Michigan Tech.

Mayer holds a Bachelor of Science in Civil and Environmental Engineering from Brown University and master’s and PhD degrees in Environmental Engineering from the University of North Carolina at Chapel Hill. He joined the Michigan Tech faculty in 1992 and has been a full professor since 2001. Between 2005 and 2011, he also served as the Director of the Center for Water and Society. “Alex is one of the most active researchers on campus, an accomplished scholar, an outstanding teacher, caring adviser, and a highly valued University and Department citizen. He is truly one of Michigan Tech’s best,” said Dave Hand, chair of the Department of Civil and Environmental Engineering.

As principal investigator, Mayer has secured $8.5 million in federal funding and $1.3 million from other sources during his time at Michigan Tech. His teaching interests include groundwater flow and transport and subsurface remediation. His current research projects include “A Research Coordination Network on Pan-American Biofuels and Bioenergy Sustainability;” “Environmental CyberCitizens: Engaging Citizen Scientists in Global Environmental Change through Crowdsensing and Visualization;” and “Virtual Water Accounting: A New Paradigm for the Adaptive Management of Great Lakes Water.”

In 2009, Mayer was recognized with the Rudolf Hering Medal from the American Society of Civil Engineers. In the same year, he also received Michigan Tech’s Distinguished Faculty Service Award. The Huron Mountain Wildlife Foundation recognized him in 2010 with the Manierre Award.
Distinguished Teaching Award

Dr. Tess Ahlborn, Professor of Civil Engineering, was awarded Michigan Tech’s 2014 Distinguished Teaching Award in the Associate Professor/Professor category. Ahlborn, who joined the faculty in 1995, primarily teaches structural engineering courses, focusing on concrete and the design of concrete buildings and bridges. Additionally, she was awarded the student-voted Departmental Howard E. Hill Award for Outstanding Faculty of the Year in the Department of Civil and Environmental Engineering. The award, which recognizes excellence and passion for teaching, was established in 1994 and is determined annually by the CEE students.

JENNIFER BECKER
Jennifer Becker was presented the 2014 Distinguished Service Award by the Association of Environmental Engineering and Science Professors for outstanding service as AEESP President and Board Member.

NEIL HUTZLER
Neil Hutzler was recently elected to the position of Chair Elect to the Applied Science Accreditation Commission of ABET for the 2014-15 term.
Introducing Our New Faculty

DR. DAISUKE MINAKATA
Dr. Daisuke Minakata earned his PhD in Environmental Engineering from Georgia Tech in 2010. He worked as a research engineer at the Brook Byers Institute for Sustainable Systems at Georgia Tech for over three years before joining the Department of Civil and Environmental Engineering at Michigan Tech in 2013. Dr. Minakata’s research interests include development of computational tools for various water and wastewater treatment technologies, innovative water treatment technologies, and sustainable energy harvesting technologies. His teaching interests include principles of physical chemical water and wastewater treatment processes, environmental process and design, computational environmental engineering. Dr. Minakata has published numerous peer-reviewed papers in Environmental Science and Technology, Water Research, International Journal of Hydrogen Energy, and Applied Catalysis.

DR. KUILIN ZHANG
Dr. Kuilin Zhang joined the Department of Civil and Environmental Engineering at Michigan Tech in 2013. He earned his PhD in Transportation Systems Analysis and Planning from the Department of Civil and Environmental Engineering at Northwestern University in 2009. After working as a Postdoctoral Fellow in the Transportation Center at Northwestern, he joined the Energy Systems Division at Argonne National Laboratory as a Postdoctoral Appointee in November 2010. His teaching interests include: Transportation Network Analysis, Operations Research Models for Transportation and Logistics Systems, Traffic Flow Theory, Travel Demand Analysis, and Transportation Systems Operations and Control. His research focuses on topics including; modeling and simulation of large-scale complex systems, multimodal transportation systems analysis, freight transportation and logistics systems, and railway systems.

DR. ZHEN LIU
Dr. Zhen Liu earned his PhD in Civil Engineering, with an emphasis in Geotechnical Engineering, from Case Western Reserve University in Cleveland, Ohio, in 2012. He continued working at Case as a research associate before joining Michigan Tech in 2013. His teaching interests include soil mechanics, foundation engineering, numerical simulations, and other topics in classical mechanics. His research interests are integrated as the multiphysics simulation and innovative characterization in porous materials. The scope covers the numerical simulation and experimental measurement of multiphysical phenomena such as freezing, hydration, and dissociation and covers porous materials such soils, cement-base materials, gas hydrates, and biomaterials. His research has many direct applications in infrastructure sustainability, energy resources, environment protection, and advanced materials.

DR. PENGFEI XUE
Dr. Pengfei Xue joined the Department of Civil and Environmental Engineering at Michigan Tech in 2013. He completed his PhD in Physical Oceanography at the University of Massachusetts. His research focuses on the development and application of numerical models to problems in the coastal ocean and the Great Lakes. His modeling-based research interests include estuarine and coastal ocean dynamics, observing system simulation experiments for optimal data sampling strategies, water quality and NPZD modeling, and ocean-atmosphere interaction and its impact on the climate change. Research projects he is currently involved in include ocean-atmosphere coupling dynamics over Maritime Continent and Persian Gulf, and the development of an integrated Water-Ice-Atmosphere-Biological modeling system for the Great Lakes.
Alumni Engineers Recognized

On February 22, 2014, the American Council of Engineering Companies of Michigan (ACEC/M) honored firms for engineering and surveying excellence during the association’s 49th annual Engineering and Surveying Excellence Awards ceremony. Outstanding Michigan engineering and surveying projects from the past year, as well as engineering professionals who have significantly contributed to the profession, were honored.

GREAT LAKES ENGINEERING GROUP - ACEC SMALL FIRM OF THE YEAR

Great Lakes Engineering Group (GLEG) is the 2014 Small Firm of the Year. They specialize in bridge inspection—one of only three firms in the state to obtain MDOT prequalification for underwater bridge inspection. The firm’s founder and principal, Amy Trahey PE, a 1994 civil engineering graduate of Michigan Tech, was instrumental in obtaining this prequalification. Trahey has served on the ACEC of Michigan’s Board of Directors since 2009. She was Treasurer for two years and will become ACEC of Michigan’s first female President in 2015.

GLEG employees hold memberships with ASCE, MSPE, and MCA and actively participate in local schools and zoning boards, along with youth baseball teams. GLEG encourages students to pursue careers in engineering through mentoring, internship programs, and job shadowing. The company was founded upon the need for structural engineering services that specialize in the field of bridges.

FLEIS & VANDENBRINK ENGINEERING - EMINENT CONCEPTOR WINNER

This year’s engineering Eminent Conceptor Award winner was Fleis & VandenBrink Engineering, Inc. of Grand Rapids for their West Bay County Wastewater Treatment Facility upgrades. A number of Michigan Tech civil engineering alumni worked on the project including: Rich Grant ’84, Bruce Sabin ’79, ’81, Eric Griffith ’07, Gary Bartow ’76, Steve VandenBrink ’78, Bob Wilcox ’99, Carey Bond ’92.
Distinguished Alumni Award

Tom Irwin ’63 (pictured above), a CEE Academy member and civil engineering graduate, was presented with the 2014 Michigan Tech Alumni Association Distinguished Alumni award during the alumni reunion. Irwin served as President of Hodgkiss and Douma (H&D) Construction Company of Petoskey. H&D’s emphasis was on highway construction, major recreation projects, developments, and aggregate production. His twenty-seven year career at H&D began after working with Sivier Construction in Detroit, D&L Contracting in Traverse City, and Dow Chemical in Midland.

His dedication to Michigan Tech runs deep, as evidenced by his receipt of the Outstanding Service Award from Michigan Tech in 1999. He served on the Executive Council of the Civil and Environmental Engineering Partnering with the Future Campaign, the Executive Committee for their Educating Graduates of Choice Campaign, Civil & Environmental Departments Professional Advisory Committee, and the Transportation Enterprise Program.

He was a key contact between the Department of Civil and Environmental Engineering and the pavement industry for many years and was past President of the Michigan Road Builders Association and the Michigan Asphalt Paving Association. He has also been active in many other organizations, including the Bank of Northern Michigan as Director, Charlevoix County Community Foundation trustee, and McLaren Northern Michigan Hospital trustee. Most recently, Irwin served on the steering committee for the very successful Generations of Discovery campaign for Michigan Tech.

Presidential Alumna

Leanne Panduren, a 1993 civil engineering graduate and licensed civil engineer, was recently named President of Rowe Professional Services. Panduren has been with the company for twenty years and became a principal with the firm in 2010. She was also named to the Board of Directors in 2012. The Flint-based firm handles engineering, surveying, planning, aerial mapping, and landscape architecture projects. The company opened its seventh office in 2013 in Farmington Hills with six Michigan-based locations and an additional office in Myrtle Beach, South Carolina.

Panduren recently joined the advisory committee for the Civil and Environmental Engineering Department.
The Rail Transportation Program (RTP) in the Department of Civil & Environmental Engineering (CEE) at Michigan Tech and the Michigan Tech Transportation Institute (MTTI) continue to grow through nationally recognized research and educational projects.

The university is a member of a seven-university consortium for the National University Rail Center (NURail) funded by the United States Department of Transportation Research and Innovative Technology Administration. The goal of the NURail Center is to advance US rail-related transportation expertise through research, education, workforce development, and technology transfer.

The seven-university consortium includes Michigan Tech, University of Illinois at Urbana-Champaign, University of Illinois at Chicago, University of Kentucky, Rose Hulman Institute of Technology, University of Tennessee-Knoxville, and Massachusetts Institute of Technology. The team of NURail Center investigators at Michigan Tech is lead by RTP Director Dr. Pasi Lautala (pictured above, far left). In addition to Lautala, the researchers include four faculty members from across campus, including Material Science and Engineering, Electrical and Computer Engineering, Cognitive and Learning Sciences, Geological Engineering, and Mechanical Engineering-Engineering Mechanics.

Faculty research projects for the NURail Center focus on rural freight rail and intermodal transportation improvements, simulator-based research of driver behavior at grade crossings, use of Austempered Ductile Iron (ADI) on railroad wheels, track improvements on permafrost, and wheel defect identification from thermal images. Because of NURail and industry sponsors, undergraduate students from various departments are also able to gain first-hand industry experience. This spring, six mechanical engineering students completed a project to find a use for centerbeam rail cars. Through the senior design project, the students developed a plan to convert the high abundance, low demand centerbeam rail cars to flat car capable of hauling frac-sand in pods based on conceptual sketches, calculations, and simulations with finite element analysis (FEA) software. Once the FEA indicated the design was sound, a quarter-scale prototype of the main support structure was built for physical testing. Through this project, industry may convert and bring these unused cars into action over the oil fields of today.

Dave Nelson joined the Civil and Environmental Engineering Department and Rail Transportation Program in 2013. He brings over thirty years of experience in engineering and education, including a career in the US Air Force that culminated in his position as an Assistant Professor in the Air Force Academy’s Civil Engineering Department and head of the construction practices track. He also brings experience with the Maine Department of Transportation as the Office Engineer in the Office of Passenger Transportation, where he was involved in the Downeaster project to re-introduce passenger rail service from Portland, Maine to Boston.

In his current position, he conducts and supports research and educational activities for the Michigan Tech Transportation Institute’s Rail Transportation Program and multi-disciplinary rail education through the Civil and Environmental Engineering Department.
Another NURail and industry sponsored undergraduate research project involved students from the Electrical and Computer Engineering Department, who were tasked with the development of an ultrasonic sensor-based remote determination of sand levels in locomotives. Sand is carried by locomotives to drop onto the rail in front of the wheels if they encounter ice or other materials that inhibit traction.

In total, over 30 undergraduate students across departments on the Michigan Tech campus have been involved in NURail projects, while also supporting six graduate students in five departments.

The research activities aren’t limited to projects under the NURail grant. Lautala, with the Mineta Transportation Institute, has developed a High Speed Rail Learning System (HSRLS) for the Federal Railroad Administration (FRA) to provide university, government, and industry representatives with a portal to share information on university topics or workforce based training and technology transfer.

The goal of the system is to meet workforce development needs in education and to enhance industry and academic materials for a resilient learning system. In another project, mechanical engineering faculty and students, led by Dr. Jeff Naber, provided the FRA with validation analysis of a new technology developed to improve the efficiency of locomotive engines.

Through the efforts and leadership of Lautala, Dr. Bill Sproule, and numerous other collaborators on campus, what was once an exchange program has grown into a nationally-recognized source for expertise and students ready for employment in the expanding rail industry.
Transportation safety has been at the forefront of national transportation policymaking during the last decade. In fact, in 2005, federal legislation instituted the “Safe, Accountable, Flexible, Efficient Transportation Equity Act,” which represented the largest surface transportation investment in our Nation’s history at that time. Recently, a nationwide search for best practices on improving transportation safety earned a locally-developed software program on Michigan Technological University’s campus national recognition. The program, called Roadsoft, is also being used daily by Michigan road agencies and their employees, (many who are Michigan Tech Alumni) and are working hard to improve the safety of our roads throughout Michigan.

Roadsoft is a roadway management system that is developed and supported by the Center for Technology & Training (CTT), which is part of the Department of Civil & Environmental Engineering (CEE) at Michigan Tech and the Michigan Tech Transportation Institute (MTTI). It was recently the subject of a National Cooperative Highway Research Program (NCHRP) Synthesis (a program administered by the National Academy of Science), that summarized the top four best practices in the nation for traffic safety data access and analysis. The Synthesis report titled Roadway Safety Data Interoperability between Local and State Agencies, identified Michigan as a national leader in its access and availability of crash data and cited Roadsoft as a key component for this success. Tim Colling, Director of the CTT also participated in a national webinar hosted by the Federal Highway Administration (FHWA) highlighting the four national best practices identified by the study to discuss Roadsoft and its capabilities.

Roadsoft was developed in 1991, when the Intermodal Surface Transportation Efficiency Act (ISTEA) legislation was introduced. This Act mandated that states have an asset management system for all transportation agencies. Roadsoft was developed as a tool to meet that requirement for local agencies (cities, counties, and villages). Roadsoft evolved from its humble beginnings and has grown to assist over 400 agencies in Michigan who use Roadsoft to manage their roadway assets. Roadsoft provides many benefits to the state and local road agencies that use it. The results generated by the models and tools in Roadsoft are the basis for hundreds of millions of dollars of infrastructure decisions made each year. These decision-support tools give users the ability to collect and analyze roadway data associated with pavements, bridges, culverts, driveways, signs, guardrails, traffic and crash data. Throughout its development, Roadsoft has been recognized in other national reports, including the 2011 Safety Domestic Scan Report (20-68A Scan 9-03) - Best Practices In Lane-Departure Avoidance And Traffic Calming, which highlighted Roadsoft’s Safety Module as a critical tool for reducing crashes.

While Roadsoft was primarily developed as a tool for cities and counties, some larger transportation agencies are taking note of the software. The Michigan Department of Transportation (MDOT) uses Roadsoft’s safety tools for crash data analysis. Tracie Leix, Michigan Tech Alumnus and Safety Programs Manager at MDOT, heads their Local Safety Initiative (LSI) program. This program helps local agencies analyze safety concerns and uses the data and tools in Roadsoft to suggest countermeasures to local agencies. Using Roadsoft not only helps MDOT engineers and the LSI program offer suggestions for safety improvements, but enables Roadsoft users from local agencies to replicate the analysis provided by the LSI and use the same dataset to produce similar assessments in their own agency.

\[1\] Federal Highway Administration website [https://www.fhwa.dot.gov/safetyslu/summary.htm](https://www.fhwa.dot.gov/safetyslu/summary.htm)
MDOT does not just use Roadsoft in support of cities and counties; it is being considered for the future of MDOT’s safety management system. “The (current) safety management system at MDOT is antiquated and needs updating,” Leix said. “MDOT is looking at Roadsoft and its safety analysis tools to be the replacement tool to our safety management system in the future.”

Heidi Spangler, Michigan Tech Alumna and Traffic & Safety Engineer at MDOT also uses Roadsoft in her daily work to map and analyze crash patterns to uncover factors that may be causing the crashes. Roadsoft provides engineers with the tools that make finding locations where safety improvements are needed in a quick and easy manner. This allows the engineers to focus on limiting fatal and incapacitating injury crashes based on the Toward Zero Deaths strategy. Spangler is proud of both her work at MDOT and being a graduate of Michigan Tech. “Since taking my first Traffic and Safety class at Michigan Tech in 2003, I always knew that is ultimately where I wanted my career to end up,” said Spangler. “I feel great about coming to work every morning because I know that in the future, at least one of the suggested safety improvement locations will bring one more person home to their families at the end of the day.”

The Roadsoft software is entirely developed and supported by a team of staff researchers at Michigan Tech who work with MDOT to deliver the program to Michigan’s state and local agencies. Behind the scenes, programs like Roadsoft also support Michigan Tech students by giving them valuable work experience solving real world problems. Currently, there are nine student interns employed at the CTT whose majors range from Software Engineering to Civil Engineering and Scientific & Technical Communication. Historically these interns have gone on to do great things in the field of transportation. Some of the first student interns that worked on Roadsoft in its infancy include Jim Harmon, P.E. who is now the Director of Operations at the Washtenaw County Road Commission, and Dr. Pasi Lautala, P.E. who is now an Assistant Professor in the Civil and Environmental Engineering Department at Michigan Tech and the Director of the Rail Education Program.
The fifteenth Civil and Environmental Engineering Academy Induction was held on September 27, 2013. The Academy was established in 1993 to recognize excellence and leadership in engineering and civic affairs of outstanding graduates and friends of the Civil and Environmental Engineering Department. Three alumni were honored bringing the Academy membership to 110. For a complete list of members and biographies please visit www.mtu.edu/cee/department/alumni/academy.

Ali Catik '76

Ali Catik received his baccalaureate degree in civil engineering in 1976. After graduation, he began a career in building heavy civil infrastructure projects. He pursued graduate work at Wharton Business School and Columbia School of Business in executive education and management to complement his technical engineering knowledge and advance his career in the construction industry. Currently, he is President of Civil Operations East for Tutor Perini Corp., a public company that does work nationally. Tutor Perini is associated with large projects including the San Francisco subway, Seattle SR99 tunnel, Hudson Yards development in Manhattan, and many other mega projects. Catik’s professional career began as a superintendent overseeing infrastructure construction projects in the eastern US. He quickly excelled to project manager before transitioning to his current role in executive management at several of the top heavy civil infrastructure construction companies. He is known in the New York Metropolitan area as one of the top construction professionals and has a reputation for delivering projects ahead of schedule and on budget.
GARY G. HOLCOMBE, P.E. '72
Gary Holcombe completed his baccalaureate degree in civil engineering in 1972. He started his career as an assistant engineer with Richards, Findorff & Richards and in 1973 joined Gourdie-Fraser & Associates of Traverse City. During the eight years he was with the company, he moved up from assistant project engineer to be director of engineering. In 1981 he became a partner with Elmer's Inc., a heavy equipment contractor and full-service engineering and surveying company whose main office is in Traverse City. He has served in various roles for the company, including director of engineering from 1983-2007 and currently is the director of cranes & rigging services. Elmer's has grown to over 420 employees in thirteen locations throughout Michigan. They currently provide earth moving, pipe installation, crane and rigging, asphalt paving, concrete production, aggregate production, and trucking services.

ANNETTE GARDINER, P.E. '82
Annette Gardiner completed her baccalaureate degree in civil engineering at Michigan Tech in 1982 and an Executive Master of Business Administration from Michigan State in 2003. She is currently the President of New Mexico Gas Company, a newly formed natural gas utility. Taking over this role in 2008, she has been responsible for 750 employees serving 510,000 customers in twenty-three counties in New Mexico. Her career in the energy industry began in 1992 with Michigan Consolidated Gas Company in Detroit, Michigan. In 1995, she moved to Semco Energy Gas Company in Port Huron, Michigan where her career progressed to the director of engineering services. Gardiner went on to serve as vice president of technical services in 2004. In 2006 she transitioned to the position of vice president of operations and was responsible for the Michigan operating systems for 280,000 customers, leading 200 employees.

Academy Member Awards

RICHARD ANDERSON, P.E. '71
Richard Anderson, P.E. '71 Michigan Tech civil engineering alumnus and Academy member received the American Council of Engineering Companies of Michigan Felix A. Anderson Image Award for his actions and contributions to enhance the image of the profession. Anderson is a Principal Engineer and former President of Somat Engineering, Inc. in Detroit, Michigan. As a Distinguished Member of the American Society of Civil Engineers (ASCE), he is a nationally known expert for his innovative and cost effective solutions for infrastructure projects and engineering education. During a distinguished career spanning forty-two years, he has worked on over 6,500 projects including airports, high-rise office structures, health care facilities, transportation facilities, and many others.

MELVIN “ERNIE” ORCHARD, P.E. ’49
Melvin “Ernie” Orchard, P.E. '49 Michigan Tech civil engineering alumnus and Academy member received the 2014 American Council of Engineering Companies (ACEC) of Michigan Vernon B. Spalding Leadership Award for his outstanding leadership roles in ACEC and several community organizations. Orchard is founder and past president of OHM Advisors.
ALUMNI
Robert, Sr. ’67 & Barbara Abar
Reino E. Alanen ’56
Roger ’64 & Geneva Anderson
John ’78 & Sara Anderson
Keith ’93 & Anita Anderson
Mary ’81 & Robert Anderson
Robert ’59 & Catherine Arendsen
Arthur ’81 & Denise Asgian
Bert ’65 & Karen Babcock
Robert ’75 & Debra Bartosh
James ’80 & Michele ’79 Bates
Richard Baumgartner ’78 & Ann Pierce
F. William ’56 & Sheila Baxandall
James ’61 & Barbara Beattie
Brett ’94 & Jennifer Beaumier
Donald ’58 & Marita Beck
Jennifer Becker ’89 & Eric Seagren
Nicholas J. Beil ’05
Carol ’78 & Garie Bemis
Michael J. Bennett ’00
Bill ’91 & Rochelle Bargstrom
Tracy ’79 & Susan Bertram
William ’50 & Ruth Ann Bier
Bryan ’02 & Jane Block
Richard Blood ’70
William ’90 & Amy Boettcher
Matthew P. Boudreau ’02
Travis ’98 & Kelly Brabec
C. Andrew ’81 & Victoria Brandt
Pippin ’94 & Janice Breher
Larry ’98 & Linda Brenner
Dale ’71 & Susan Briscoe
R. Christian ’78 & Cindy ’80 Brockway
James ’65 & Ann Brosio
Kimberly ’07 & Taylor Broten
David Freeman ’78 & Catherine Brougman ’79
Glenn ’58 & Elizabeth Brown
Thomas ’62 & Margaret Brown
Larry ’76 & Jennifer Brown
Brian ’01 & Laura ’01 Bub
Brian ’81 & Mary Jo ’79 Bueche
Ray ’55 & Betty Burgess
Jennifer S. Byle ’05
Thomas ’72 & Janet Byle
Edwin ’64 & Virginia (dec) Campbell
John ’86 & Patricia Carlson
David ’63 & Florence Carter
Victor ’53 & Kathleen Castro
Robert ’58 & Athelda Chase
Peter ’58 & Sallie Chenard
David ’93 & Beth Chislea
Rudolph ’62 & Patricia Chmelar
Derek M. Christianson ’91
John ’95 & Holly Cima
Michael ’78 & Mary Clarady
Brian ’96 & Michelle Coburn
Kurt ’93 & Wendy Coduti
David J. Cook ’81
Kyle ’99 & Janine ’00 Cooper
David ’68 & Kathe Corson
Jeremy ’98 & Kimberly ’98 Cottrell
Harland ’75 & Lynn Couillard
Jacob ’97 & Cynthia Creisher
David ’62 & Marion Crockett
Christopher ’84 & Kimberly Cruickshank
Nicholas D. Czerwinski ’06
Edward ’78 & Sharon Davids
Thomas ’84 & Gail ’84 Deans
Robert ’58 & Ana Deatrick
Steven ’92 & Christin Defour
Peter ’68 & Ann DeGabrielle
Thomas ’82 & Anne-Marie Deja
Robert ’67 & Sandra DeLong
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