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Department of Civil and Environmental Engineering

2020

# 2020 Civil and Environmental Engineering Department News

Department of Civil and Environmental Engineering, Michigan Technological University

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# CEE

CIVIL AND ENVIRONMENTAL ENGINEERING


## page 7

The Civil & Environmental Engineering Department welcomes surveying engineering!

Michigan Technological University
1885

SPRING 2020 DEPARTMENT NEWS

# Howdy from the Great Snowy UP!

This year's newsletter is filled with student, alumni, faculty, and staff examples of excellence. There are stories about people making contributions to the world around them, whether that is through their technical and engineering contributions or generosity to others.

These are stories that began with a Michigan Tech education–a student centered education. Let's look at what Adeline Hummel, an undergraduate civil engineering student, said was her motivation for participating in last year's Gold and Black Day of Giving event.

She notes "...there have been many faculty and staff members that have helped me... to ensure my success within classes as well as within my extracurricular activities..."

Thank for sharing your successes with us as evidence we are doing it right. Congratulations to our students, faculty, staff, and alumni for being crazy passionate in making a difference and positively representing Michigan Tech.

Go Tech!

Audra Morse

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### MISSION

The Department of Civil and Environmental Engineering provides an educational, professional, and intellectual experience that enables a diverse body of students, alumni, faculty, and staff to contribute to society through teaching, research, practice, and service.

### VISION

The Department of Civil and Environmental Engineering will develop internationally prominent educational and research programs that will benefit all of its constituencies and, in doing so, will become an international Department of Choice.

### DIVERSITY

To further the Department's mission of teaching, research, and service, the Department strives to be diverse, inclusive, and respectful of all staff, faculty, and students in support of the University's Diversity Statement. The goal of this statement is to ensure everyone will be given equitable support, opportunity, and access to resources necessary to realize individual potential while contributing to the success of the Department.

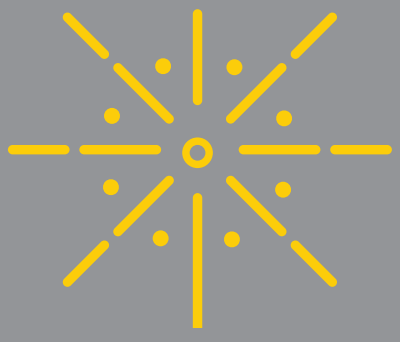
## Department Statistics

**40%**
Women Undergrads


College Factual lists **Environmental** as the #1 school in Michigan and #7 in the US.


College Factual lists **Civil Engineering** as the #1 school in Michigan and #18 in the US.

**$6.2M**
External Sponsored Funding



**#20**
Our online Civil Engineering **master's program** is ranked 20th in the nation by Intelligent.


### GUIDING PRINCIPLES

We will continually work to engage our students, faculty, and staff in the integration, creation, and dissemination of knowledge through teamwork, personalized instruction, research, and outreach. We will value diversity. We will measure our success by the success of our graduates and by the growth in the department's prestige.

MARK YOUR CALENDARS FOR

# ALUMNI WEEKEND

**JOIN US FOR REFRESHMENTS & REMINISCING**
**FRIDAY, AUGUST 7**
**1:30 - 3PM • DOW COURTYARD**

**QUESTIONS?** CEE@MTU.EDU
**DETAILS:** MTU.EDU/ALUMNI/CONNECT/REUNION

# What's in my Wastewater?

## REMOVING TRACE ORGANIC CHEMICALS IN MUNICIPAL WATER SUPPLIES

Most water treatment infrastructures were not designed to remove synthetic organic chemicals like those found in opioids, dioxins, pesticides, flame retardants, plastics, and other pharmaceutical and personal care products. Consequently, trace concentrations of those chemicals are present in effluent–the water discharged from treatment plants into lakes, rivers, and streams.

**Daisuke Minakata,** CEE associate professor, studies the fate of trace organic chemicals in advanced water and wastewater treatment processes. He's also developing a tool that municipalities can use to remove them.

"Many synthetic organic chemicals are not biodegradable," says Minakata. "The impacts of synthetic organic chemicals and their degradation products on human health and the environment will increase as direct and indirect reuse of treated wastewater expands, and new synthetic organic chemicals are developed and introduced to natural water."

Minakata investigates the effectiveness of two of the most widely used methods: reverse osmosis (RO) and advanced oxidation processes (AOPs).

"RO is a membrane-based technology that separates dissolved species from water. AOPs are oxidation technologies that effectively destroy trace organic chemicals," Minakata explains. "These advanced physical chemical water and wastewater treatment processes are promising but not yet practical. Given hundreds of thousands of synthetic organic chemicals are in commercial use and production, the idea of using RO and AOPs for incremental investigation on the removal efficiencies of each trace organic chemical would be time-consuming and expensive."

To solve this problem, Minakata's team at Michigan Tech, along with collaborator Kerry Howe at the University of New Mexico, developed a model for predicting the rejections of hundreds of organic chemicals through different membrane products at different operational conditions. Their project was funded by the WateReuse Research Foundation.

"The rejection mechanisms of organic chemicals by RO are extremely complicated but the use of computational chemistry tools helped us understand the mechanisms," Minakata says. "Our ultimate goal is to develop a tool that can predict the fate of chemicals through RO at full-scale, so that water utilities can design and operate the RO systems whenever newly-identified chemicals become regulated."

Minakata and a second collaborator, Michigan Tech social scientist Mark Rouleau, combine computational chemistry, experiments, and sophisticated modeling to understand and predict the fate of degradation of trace organic chemicals in AOPs.

"Chemical reactions involving radicals are extremely complex," notes Minakata. "Understanding their fundamental reaction mechanisms will help us predict what kinds of degradation products are produced. This will help engineers design and operate AOPs in the future."

Next up, the team plans to couple chemistry with toxicology, so that researchers can screen many organic chemicals, prioritize chemicals that may produce toxic degradation products, and study chemicals in depth for future regulation.

# Highway-Rail Connectivity

As a civil engineer, **Kuilin Zhang** knows that to understand traffic uncertainty, researchers can't stop at examining a single vehicle. As a computer scientist, he knows that the key is shared data. Now, by bringing trains into the mix, Zhang hopes to save lives, reduce energy consumption, lower emissions, and reduce driver frustration.

A vehicle may be autonomous, but it is also connected—communicating with the driver, other vehicles, traffic signals, signs, bridges, and soon—trains and train crossings.

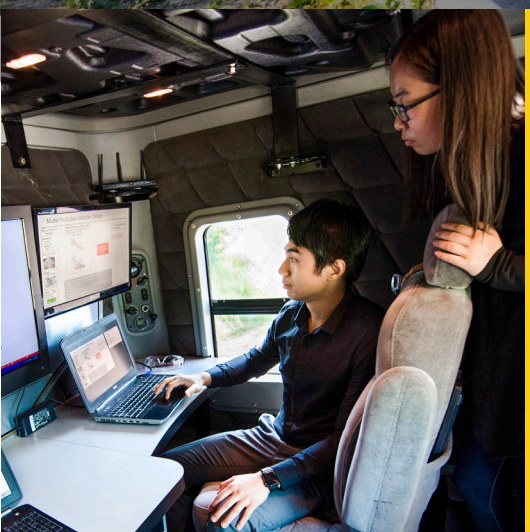
Kuilin Zhang recently won a $567,230 research grant with the Federal Railroad Administration (FRA) to develop safe and efficient driving and routing strategies at railroad grade crossings based on highway-railway connectivity.

CEE associate professor **Pasi Lautala** is Co-PI on the project.

The US rail network is comprised of nearly 140,000 miles of track and more than 200,000 highway-rail grade crossings. In 2019, there were close to 2,000 highway-rail incidents on grade crossings, and among those, 280 fatalities, according to the FRA Office of Safety Analysis. Every three hours in the US a person or vehicle is hit by a train.

For the last five years, FRA has funded the development and testing of a proof of concept prototype, the Rail Crossing Violation Warning (RCVW) system. The FRA is now focused on improving upon that initial prototype. Zhang and Lautala will use connected and automated vehicle (CAV) technologies to leverage and improve RCVW, as well as some other, new highway-railway crossing safety software applications.

In addition to safety, the team wants to improve energy consumption, emissions, and potential time delays as vehicles approach grade crossings. "The current system, RCVW, can conceptually reduce the frequency and severity of safety-related incidents at grade crossings, but it can't yet deal with problems of excessive idling time," notes Zhang.



## NSF CAREER AWARD

Changing lanes, upcoming merges, blind spots... wouldn't it be great to broadcast to other vehicles what your own car is doing and where? The technology does exist, but it needs more development before it's ready for rush hour.

Enter **Kuilin Zhang**, recipient of an NSF CAREER Award to improve automated driving decisions using predictive, real-time feedback within and between vehicles. The project "Tackling Congestion in Smart Cities via Data-Driven, Optimization-Based Control of Connected and Automated Vehicles" totals $500,000 over a five-year span and puts Michigan Tech's prime mobility testing facilities to use.

**BACK (L-R):** Kim Zimmer, Randall Gardner, James Keighley, Dean Roberts, Ronald Cavallaro **FRONT (L-R):** Teresa Schissler-Boichot, Ingrid Sandberg, Leslie Nelson, Dennis Decator

## Civil and Environmental Engineering Professional Advisory Committee (CEEPAC)

CEEPAC meets semiannually on campus to consult on ideas and visions that continue to keep our programs in tune with long-term needs of the civil and environmental engineering employment sectors. CEEPAC members represent the different specialty areas as well as the various employment sectors including consulting firms, corporations, and local and state government.

**CEEPAC** Civil & Environmental Engineering Professional Advisory Committee

| | |
|---|---|
| **Michelle Banonis, Esq.** | California Department of Water Resources |
| **Ronald Cavallaro, PE** | OHM Advisors |
| **Dennis Decator, PE, PMP** | DTE Energy |
| **Randall Gardner, PE** | Westwood Professional Services |
| **James Keighley** | VP of Engineering, Kraft Foods (retired) |
| **Sean Kelley, PE, MBA** | The Mannik & Smith Group, Inc. |
| **Leslie Nelson, PE** | GZA GeoEnvironmental Inc. |
| **Leanne Panduren, PE** | Rowe Professional Services |
| **Dean Roberts** | General Motors |
| **Ingrid Sandberg, PE** | Shannon & Wilson |
| **Teresa Schissler-Boichot, PE** | Boichot Consulting |
| **Kim Zimmer, PE** | Michigan Department of Transportation |

## Dave Thomson

Dave Thomson, PE '83 was awarded the CEE Alumni Service Award in recognition for his endless support of the Department, particularly the Rail Transportation Program. In addition to serving on the Civil and Environmental Engineering Professional Advisory Committee (CEEPAC), he served on the Rail Transportation Advisory Committee since its establishment in 2014. He has also provided support to rail-centric senior design projects.

## Jim Morrison

Jim Morrison, PE '81 was recognized with the CEE Alumni Service Award for his assistance as an external project manager for students enrolled in the Department Senior Design project course for over 10 years. He was instrumental in developing innovative projects that gained the attention of Governor Snyder and the State Legislature. In addition, Morrison served for six years on the Civil and Environmental Professional Advisory Committee (CEEPAC).

# Surveying Engineering Joins CEE Department

Civil engineering and surveying engineering go together like Huskies and snow, peanut butter and jelly, green eggs and ham… you get the idea. The surveying engineering program has now officially joined the Department of Civil and Environmental Engineering, and it feels like this is the way it should have been all along.

With the incorporation of surveying engineering with CEE it has become easier to find ways to integrate aspects of the two programs' curricula for the better of both. The efficiencies gained by including surveying engineering in the common first year will allow civil engineering majors to also complete a surveying engineering degree in only one additional year. The surveying engineering program also includes a completely online graduate program, Integrated Geospatial Technology. Michigan Tech remains one of only two universities in Michigan to offer a surveying engineering degree.

Our goal is to make this critically important part of the construction industry a prominent part of the Department and help provide qualified engineers for the growing demand in the state.

**Joseph Foster, PS, PLS,** is a Professor of Practice in the Department of Civil and Environmental Engineering at Michigan Tech, focusing on teaching courses in the elements of land surveying. His extensive background in the profession includes serving as Principal for successful land surveying companies in both Minnesota and Michigan, where he has directed and overseen a wide range of projects, including boundary, county re-monumentation, and cadastral (USDA-FS) retracement surveys; topographic, site planning, and flood plain surveys; mine surveys (surface and underground); plats and subdivisions; conventional and GPS control surveys.

**Jeffery Pereira Hollingsworth, PS, GISP** is a Professor of Practice in the Department of Civil and Environmental Engineering with over 30 years of industry experience in the field of Geomatics. He was owner and Resident Surveyor of a Surveying and Mapping firm for over 26 years. His experience includes boundary, topographic, single beam and multibeam hydrographic, as-built, construction, design, route, ALTA, global position system, 3D laser scanning, digital photogrammetry, remote sensing, and control surveys.

**Eugene Levin, PhD, CP** is an Associate Professor in the Department of Civil and Environmental Engineering, as well as the director of the integrated geospatial technology graduate program. His areas of expertise are photogrammetry (the design, development, customization, integration, and delivery of off-the-shelf commercial and research software products); cognitive GIS; and human-computer symbiosis in integrated geospatial environments. Levin advised Michigan Tech's Aerospace Enterprise Engineering Team on developing photogrammetric UAV.

## Service Award

This new award was created to recognize a CEE undergraduate that has shown exemplary service through student organizations or groups affiliated with the Department. The award is accompanied by a $500 scholarship.

The 2019 award goes **Alex Christmas**, a senior level civil engineering student who is from Grand Rapids. He is currently the president of the Railroad Engineering and Activities Club and has been very active with the organization for all four years at Michigan Tech. His leadership has kept an outstanding club on-track and moving forward!


## Graduate Teaching Assistant of the Year

The CEE Department has a number of dedicated graduate students that assist faculty with classes as Graduate Teaching Assistants. The hard work that they put in to the classes and labs is noticed and appreciated.

**Lauren Mancewicz** was voted the 2019 Graduate Teaching Assistant of the Year by CEE students. Mancewicz is a doctoral student and was the GTA for the Environmental Process and Simulation Lab where she greatly enjoyed working with the students throughout this hands-on course. She completed her bachelor's in environmental engineering at Michigan Tech in 2014. During that time, she spent her summers working as a tour guide at a local abandoned mine. Through this experience, she developed a passion for presenting technical information.

After graduating she worked for a consulting company, but decided to return to school to pursue a graduate degree and left to complete a master's degree in hydrogeology at University of Nevada, Reno. She is happy to be back in Houghton and is currently pursuing a PhD in environmental engineering, focusing on groundwater modeling and the effects of sea level rise on groundwater resources.

## Danielle Ladwig Award for Graduate Excellence

This award is made annually to a graduate level student in civil or environmental engineering in recognition of outstanding achievement in academics, research, and service, in memory of our friend and colleague, Danielle Ladwig. This award is accompanied by the Pat Damoder and Soumitri Reddy $1000 endowed fellowship.

**Christa Meingast** was selected for the 2019 award; she was nominated by her advisor Veronica Webster. In the years that Meingast has been pursuing her graduate studies in the Department she has excelled in both research and teaching. She took first place at the 2017 World Water Day poster presentation of her research, and was recognized in 2018 by the Graduate School with the Outstanding Graduate Student Teaching Award. Additionally, she has shared her time in a variety of different ways including: being a department representative in Graduate Student Government, as well as participating in Department outreach events and Summer Youth Programs.

## Nicole Bloom Award for Environmental Sustainability

This award was developed in 2006 and is 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.


The award is dedicated in honor of Nicole Bloom, an outstanding Civil and Environmental Engineering Department graduate. This award is accompanied by the Pat Damoder and Soumitri Reddy $1000 undergraduate scholarship.

The 2019 Nicole Bloom Award went to **Gwen Nitz,** an environmental engineering senior. Nitz was nominated by David Watkins and her advisor for the Sustainability House, Jay Meldrum.

She has a passion for improving the environment and one of her campus projects has been at the University Sustainability Demonstration House. She focused on projects that made the house or the habits of the tenants more sustainable. For example: building an outdoor cold frame for their garden, tracking water usage, and writing a sustainability guide for students in the dorm.

## Department Scholar

Each year CEE selects one of our highest achieving students to be considered for the University Scholar Award.


**Jon Marino** was selected as the 2019 Civil and Environmental Engineering Department Scholar. He was nominated for this honor by three faculty: Eric Seagren, Qingli Dai, and Andrew Swartz.

Marino was selected because he has exemplified the qualities of a scholar (intellectual curiosity and creativity, and communication skills) in his participation with their research activities and classroom interactions. Marino has worked with Dr. Dai on the development of research methods for the fabrication and property measurement of alternative and low-CO2 cementitious materials.

Marino also worked over the past year for Drs. Jennifer Becker and Eric Seagren on their multi-year project investigating low-cost, low-tech treatment technologies for achieving pathogen inactivation in the solid residuals from wastewater treatment (i.e., biosolids).

## Outstanding Future Alumni Award

Each year the Alumni Board of Directors chooses a recipient for the Outstanding Future Alumni Award. The award was created to honor students who are living the Alumni Board of Directors' mottos of "Celebrating Traditions or Creating Connections."

The 2019 Outstanding Future Alumni was presented to **Magann Dykema.** Dykema graduated in Spring 2019 with a Bachelor of Science in Civil Engineering with a focus on water resources and a certificate of global technological leadership through the Pavlis Honors College. She was an extremely dedicated student serving as a strong and positive voice for the many initiatives she was engaged including the Memorial Union Board Annual Spring Fling, Stuff-A-Husky, and Karaoke Night for All Nighter.

## Wilbur Haas Graduate Research Excellence Award

The Wilbur Haas Graduate Research Excellence Award is made annually to a graduate level student in civil or environmental engineering to recognize outstanding student scholarship and research contributions. This award is accompanied by a $1000 departmental fellowship. This year two doctoral students were selected to receive the 2019 Wilbur Haas Graduate Research Excellence Award.

**Sangpil Ko,** who has just completed the requirements for his civil engineering doctoral degree, was nominated by his advisor Pasi Lautala. Lautala highlighted Ko's extremely high quality of work. In addition to being self-motivated and very productive, his work has earned praise from project sponsors showing the respect that he has achieved among industry experts.

**Ruizhe Si,** working towards his civil engineering doctoral degree, was nominated by his advisor Barbara Dai. In her nomination, Dai mentioned Si's enthusiasm for his research, which will allow him to become a true leader in the field of eco-friendly sustainable construction materials. He has also worked collaboratively with the scientists in the Argonne National Lab and research groups at the University of Massachusetts Amherst and Princeton University.


## Howard E. Hill Award

The 2019 Howard E. Hill Outstanding Faculty of the Year Award recognized a faculty from each of our Department degree programs. **Dr. Kris Mattila** was voted the top civil engineering faculty and **Dr. Eric Seagren** was voted the top environmental engineering faculty. The Howard E. Hill Award, which recognizes excellence and passion for teaching, was established in 1994, and is determined annually by the CEE students.

**L-R:** Christine Wood, Dr. Kris Mattila, Dr. Eric Seagren

## Research Awards for Zhanping You

**Professor Zhanping You** joined the Department of Civil and Environmental Engineering in 2005 and brought with him endless amounts of energy and enthusiasm for materials research and teaching. In 2019 a long-deserved recognition for his accomplishments both within the University and internationally came to fruition with the University Research Award, the Michigan Tech Distinguished Professor Award, and the Outstanding Member Award at the World Transport Convention.

In his capacity as a professor, he has completed research projects on a wide range of subjects including pavement mechanistic design, warm mix asphalt, rubber asphalt, nano modified asphalt materials, micromechanics based models for pavement materials, electronic waste plastics application, self-healing materials for pavements, and bio asphalt derived from biomass. Sponsors of his research program include: National Science Foundation, US Environmental Protection Agency, Michigan Department of Environmental Quality, Federal Highway Administration, Michigan Department of Transportation (MDOT), Minnesota Department of Transportation, Minnesota Local Road Research Board, and Texas Department of Transportation.

His contribution to pavement and materials research has been featured in newspapers, magazines, and other media. Dr. You has published over 300 papers in peer reviewed journals and conference proceedings. These publications include prestigious journals such as the Journal of the Transportation Research Board published by the National Academy of Sciences, the ASCE Journal of Materials in Civil Engineering, ASCE Journal of Engineering Mechanics, ASCE Journal of Computing in Civil Engineering, Road Materials and Pavement Design, and Construction and Building Materials. In addition, he has also delivered over 180 presentations worldwide. He also serves his professional community as an associate editor for American Society of Civil Engineers' (ASCE) Journal of Materials in Civil Engineering and on the Board of Directors for several professional journals.

Dr. You's teaching interests include transportation materials, pavement design, asphalt pavement engineering, and transportation engineering. In 2009, he received the ASCE fellowship of Excellence in Engineering Education (ExCEEd), and he attended the Teaching Workshop at the United States Military Academy at West Point.

## IAGLR Lifetime Achievement Award

The International Association for Great Lakes Research has honored Civil and Environmental Engineering Professor Emeritus **Martin (Marty) Auer** with its 2019 Lifetime Achievement Award. Presented at IAGLR's 62nd Annual Conference on Great Lakes Research, the award recognizes important and continued contributions to the field of Great Lakes research over a period of 20 years or more.

Auer is best known for his groundbreaking work on Cladophora, a green alga occurring naturally along most Great Lakes shorelines, where it grows submerged in long strands. It becomes a nuisance when it breaks free, clogging water intake pipes and fouling beaches with its decay.

In his more than 36 years as a faculty member in CEE, Auer has been the mentor and advisor to 48 environmental engineering graduate students.

The depth of Auer's commitment to the next generation runs even deeper, according to Guy Meadows, director of Michigan Tech's Great Lakes Research Center. "Through Marty's never narrowing view of broader impacts, he has remained a tireless champion of K-12 education and outreach. Through his many outreach activities, which have earned him several awards, Auer has been instrumental in educating thousands of K-12 students about the importance of Great Lake stewardship."

# Steel Bridge #8 in Nation

Congratulations to the Michigan Tech Steel Bridge Team for their overall eighth place (out of 41) finish at the national competition! In addition to their overall finish, they ranked fifth in efficiency, sixth in stiffness, and eighth in construction speed. Great job team!

The team finished first at the regional competition, qualifying them for the national competition. In addition to their overall first place finish at regionals, they also finished first in the subcategories of stiffness, economy, construction speed, structural efficiency, and aesthetics.

**LEARN MORE:** CEE.MTU.EDU/ASCE/STEEL_BRIDGE

# Concrete Canoe #10 in Nation

Congratulations to the Michigan Tech Concrete Canoe Team for finishing 10th place overall at the 2019 national competition! They placed seventh in the oral presentation, 13th in design paper, 11th in display, and eighth overall in racing. The team left with great ideas and are already excited for next year! The team competed at the 2019 North Central Student Conference Regional Competition April 12 - 14 and finished first, qualifying them to compete at the national competition.


**LEARN MORE:** CEE.MTU.EDU/ASCE/CANOE


## STRUCTURAL ENGINEERING INSTITUTE (SEI)

Beginning this year, the Structural Engineering Institute (SEI) of the American Society of Civil Engineers (ASCE) is now in Michigan! Graduate students in the Civil and Environmental Engineering Department at Michigan Tech have founded the first SEI group in the state of Michigan. SEI consists of local groups and graduate student chapters, and is now located in 33 out of the 50 states, as well as in Washington DC, Puerto Rico, Mexico, and Israel.

The mission of the new Michigan Tech chapter is to help educate young professionals in the field of structural engineering by providing a collaborative environment for technical innovation, while encouraging lifelong professional growth and development. They have planned a campus wide spaghetti bridge competition to get students at Michigan Tech engaged in structures.

# Academy of Civil & Environmental Engineers

**THE 2019 INDUCTION WAS HELD ON OCTOBER 3. SEVEN ALUMNI WERE HONORED, BRINGING THE ACADEMY MEMBERSHIP TOTAL TO 131.**

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.

The complete list of members and biographies:
**MTU.EDU/CEE/PEOPLE/ALUMNI/ACADEMY**

## M. KEITH KAUFMAN, PHD, PE, FPCI '84

Dr. Keith Kaufman graduated from Michigan Tech in 1984 with a baccalaureate degree in civil engineering. He continued his studies at Purdue University, obtaining a master's in civil engineering in 1986 and a PhD in structural engineering in 1989. He was a registered Professional Engineer in Alaska, Oregon, and California and an adjunct professor at Oregon State University.

## WILLIAM SPROULE, PHD, PE '70

Bill Sproule completed his baccalaureate degree at Michigan Tech in 1970, Master of Engineering at the University of Toronto, and PhD at Michigan State in 1985. He has had a career in government service, consulting engineering, teaching and research at Mohawk College in Ontario, the University of Alberta, and Michigan State, prior to returning to Michigan Tech in 1996. He is now a professor emeritus in Civil and Environmental Engineering and continues his passion for public transit, sports stadiums, and hockey history research.

## CRAIG HOLMES, PE '80

Craig Holmes graduated from Michigan Tech with a baccalaureate degree in civil engineering in 1980. In 2003, Holmes became President and Managing Director of Green Oak Solutions, LLC. Over his career, he has worked within risk management , finance, and manufacturing operations structures to provide consulting in the areas of property risk control, man made/ technological risk-hazard analysis, natural hazards risk assessment, risk and business impact analysis, business continuity management planning, and enterprise risk management.

## KRISTEN MARIUZZA, PE '98

Kristen Mariuzza graduated from Michigan Tech in 1998 with her baccalaureate degree in environmental engineering. She is currently the Vice President of Environmental & Social Performance for Lundin Mining and is responsible for leading environment and social performance functions for the company. Prior to this position, she was the managing director for Eagle Mine and was responsible for daily oversight of Eagle's 24/7 mining operation. She served on the committees of the Mining Association of Canada and the Nickel Institute and has presented at national and international conferences.

## THEODORE PINTCKE, PE '76

Ted Pintcke graduated from Michigan Tech in 1976 with his baccalaureate degree in civil engineering and began his career with Black & Veatch Engineer Architects, a firm specializing in deployment of electric power, water, and critical infrastructure globally. In his 42 years at Black & Veatch, his major roles included executive sponsor for strategic initiatives and clients, project director, project manager, chief engineer, and office manager.

## MICHAEL KIDD, PE '69

Michael Kidd graduated from Michigan Tech in 1969 with a baccalaureate degree in civil engineering. Kidd worked for 45 years in the natural gas industry, working on projects such as pipeline construction, pipeline engineering, pipeline operations, state regulation of natural gas utilities and gas pipeline operators, and transmission pipeline integrity assessments. He was an active member of the National Association of Regulatory Utility Commissioners Subcommittee on Pipeline Safety.

## TIMOTHY HOEFFNER, PE '80

Tim Hoeffner graduated from Michigan Tech with a baccalaureate degree in civil engineering in 1980 and began his career with the Michigan Department of Transportation. His current position, the Director of the Office of Rail at MDOT, is the highest office dealing with rail issues in the State of Michigan. His work includes bringing rail innovations to the State of Michigan.

# Academy Members

Bernard D. Alkire, PhD, PE '61
Donald R. Anderson, PE '67
Richard O. Anderson, PE '71
Terry L. Anderson, PE '69
F. William Baxandall, PE '59 (Dec)
Ned W. Bechthold, Honorary Member (Dec)
Philip R. Belisle, PE '60
Lee E. Bernson, PE '65 (Dec)
William J. Bier, PE '50 (Dec)
James R. Buck, PhD '52 (Dec)
Debra A. Campbell, PE '76
Gerald J. Caspary '43 (Dec)
Ali Catik '76
Thomas Coleman, PE '57
Harland Couillard '75
Cletus L. Courchaine, PE '52 (Dec)
Richard H. Crannell, PE '65
Roger Crimmins '71
Dale K. Deibel '73
Paul J. DeKeyser '78
George R. Ehlert. PE '77
James T. Emerson '60 (Dec)
Charles Farrar, PhD, PE '79
John A. Fortier, PE '78
Herbert L. Fluharty '65
Paul B. Frair '50 (Dec)
Phillip V. Frederickson, PE '60
Annette Gardiner, PE '82
Peter J. Grant '68
William J. Grenney, PhD '59
Russell A. Gronevelt, PE '68
Herman Gundlach, Honorary Member (Dec)
David P. Gustafson, PhD, PE '61
Gary Hagstrom, PE '72
John Haro, FAIA, Honorary Member
Thomas M. Healy, PE '65
George H. Hermanson '73
Burd Hikes '49, Deceased
Robert D. Hitch, PE '54 (Dec)
Timothy Hoeffner, PE, '80
Gary Holcombe, PE '72
Craig Holmes, PE '80
Donald L. Holley, PE '53
Thomas R. Irwin, PE '63
James M. Jabara '50
Harold S. Jensen, DE '52 (Dec)
Thomas Kaderabek, PE '73 (Dec)
Christopher Kaempfer, PE '71
M. Keith Kaufman, PhD, PE, FPCI '84 (Dec)
James Keighley '76
Charles G. Kellogg '66
Raymond C. Kestner '55
Michael Kidd, PE '69
John P. Klus, PE, PhD '57 (Dec)
James L. Krause '51 (Dec)
Kristine M. Krause '76
Ronald M. Krump '57
Debra Larson, PhD, PE '78
William H. Leder, PE '68
Catherine Leslie, PE, CAE '83
Paul R. Liimatta, PE '61
Roger W. Liska, EdD, PE '65
Kim M. Lobdell, PE '79
Bruce Lowing '80
Robert J. Luther '61
Richard H. Lyon '76
C. Thomas Maki, PE '71
Michael W. Malloy, PE '70
Roland A. Mariucci '58
Kristen Mariuzza, PE '98
John F. Marshall '68
William F. Marshall '69
Richard L. Masica, PE '58 (Dec)
David I. Matson '69
Gerald J. McCarthy, PE '48 (Dec)
Franklin D. Meyers, PE '57 (Dec)
William Murchie, PE '76
Edward S. Neumann, PhD, PE '64
Kenneth E. Noll, PhD, PE '59
Kimberly Nowack, PE '85
Brenda O'Brien, PE '84
Melvin E. Orchard, PE '49
John E. Paas, Jr., PE '41 (Dec)
Ronald J. Pasquinelli, PE '59 (Dec)
Howard Perko, PhD, PE '93
Peter G. Perla, PE, RLS '38 (Dec)
Eric Peterson, PE '70
Warren B. Peterson '52 (Dec)
Rob L. Petroelje, PE '74
Linda D. Phillips, PE, PMP '77
Theodore Pintcke, PE '76
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Kenneth D. Seaton '51
Robert F. Seaton '52
Marvin L. Sorvala, PE '72
William Sproule, PhD, PE, 70
Todd I. Stewart, PhD '68
Mark R. Stumpf, EdD, PE '65
Darryll L. Sundberg, PE '74
Robert M. Thompson, Honorary Member
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Robert C. Wylie, PE, RLS '47
Philip C. Youngs, PE '57 (Dec)

## GOLDEN TRANSIT SOCIETY MEMBERS

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- Lee Bernsen
- Herb Fluharty
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- Jim Krause
- Ronald Krump
- Bruce Lowing
- Roland Mariucci
- Tom Rentenbach
- Robert Thompson
- Donald Tomasini
- Louis Verrette
- William Verrette

# Golden Transit Society

The transit is a precision instrument that enables engineers to put projects in place. Without the transit, roadways would be misaligned and buildings would be skewed. The transit symbolizes foresight, order, and achievement. Accordingly, the Golden Transit Society recognizes highly successful alumni and friends of Michigan Tech who have made major gifts to the Department of Civil and Environmental Engineering. An exquisite, polished brass, antique "Golden" Transit or Level is awarded to express our gratitude.

**Bruce and Julie Lowing** were recognized with this honor for their generous donations to the Department.

*"Whatever level of success I have had I contribute to three things: First–I have been blessed by God. Second–I married a wonderful woman. Third–I attended Michigan Tech.*

*Michigan Tech grads have been my coworkers, business partners, and mentors. I cannot imagine where I would be if I had taken a different educational path.*

*My wife Julie and I hope that our outright gift to the CEE Department now and making them a beneficiary of our trust can help others to be as blessed as we have been."*

BRUCE LOWING '80

## Young Professional of the Year – AWWA

**Rachael Barlock** (BS EEN '11 and MS CE '13) has received the 2019 Young Professional of the Year Award from the Michigan Section of the American Water Works Association. Barlock has demonstrated her facilitation and leadership skills working with water providers along the Huron-to-Erie Corridor in the update of the drinking water monitoring network.

She has also worked on the launch of the Southeast Michigan Infrastructure Asset Management Program, which will bolster this region's voice in the pursuit of needed investment. Her blog series during Great Lakes and Fresh Water Week highlighted the importance of holistically managing our water resources.

## Promotions at Mackinac Bridge

**Kim Nowack** (BSCE '85) was promoted in June to the position of Executive Secretary by the Mackinac Bridge Authority. Nowack previously held the position of Chief Bridge Engineer since 2002.

**Julie Neph** (BSCE '01) was recently promoted to Chief Bridge Engineer by the Mackinac Bridge Authority. Previously Neph held the position of Assistant Bridge Engineer. Neph has been responsible for the management of a variety of both in-house and contracted projects for the maintenance of the Mackinac Bridge and facilities. "I am excited, in this new position, to continue to work alongside the wonderful people who share my commitment to caring for the bridge and maintaining the flow of traffic for our customers," Neph said. "It's an honor to be selected."

## ASCE Michigan Section–Outstanding Civil Engineer of the Year Award

**Amy Trahey, PE** (BSCE '94) was named the Franklin D. Meyers Outstanding Civil Engineer of the Year at the Michigan Infrastructure Conference in May. Trahey is the CEO/Owner of Great Lakes Engineering Group LLC. She is a member of the Presidential Council of Alumnae at Michigan Tech and was also recognized with the Outstanding Young Alumni Award in 2006.

## 2019 40 Under 40

**Brandon Maurisak** (BSCE '10) was recognized by Mass Transit for his achievements with the rail industry. Mass Transit's 40 Under 40 is their annual opportunity to recognize outstanding young individuals making a name in the public transit industry. Maurisak is at AECOM's Portland, Oregon office and is now involved in key business development decisions and management. He credits the public transit and rail electives offered at Michigan Tech for exposing him to transit modes, route planning, and system operations.

## Built for Construction

I was introduced to construction at a very young age because my father owned a residential construction company. Being one of three girls without any brothers, my father had no choice but to take his daughters to work. As a young girl, I was amazed that he could take a stack of 2x4s and turn them into a house. This is where my interest for construction started. I worked for my father during my high school summers building everything from decks to houses with his crew. Between my junior and senior years of high school I attended the WIE Camp at Michigan Tech. I knew, on the long bus ride back downstate, that I was going to get my civil engineering degree from Michigan Tech. Looking back now I am so happy I made that decision–Michigan Tech gave me a great foundation for my career.

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LAUREN KRUEGER, BSCE '16

After graduation, I started with Harmon in Charlotte, NC as a PMT (Project Manager in Training). My project team helped build a 26 story office and a 17 story hotel. I then jumped on an opportunity with Harmon and moved to Chicago as my projects in North Carolina came to a close. In Chicago I have been primarily working on a 60 story apartment building–Wolf Point East–located on the Chicago River. Wolf Point East is designed by the esteemed architect firm Pelli Clarke Pelli for the principal investment entity of the Kennedy family.

While with Harmon, I have climbed multiple high rise buildings from DC to Chicago, including a 10 story building in DC, the 26 story 300 S Tryon building in Charlotte, the 49 story FMC Tower in Philly, and the 60 story Wolf Point East Tower in Chicago. I have had hands on training at all of the Harmon Manufacturing Plants in Baltimore, Orlando, Dallas, and Cincinnati. I traveled to Dana Point, California for the Women in Construction conference and have been to two mock up testing facilities in York, Pennsylvania and Wausau, Wisconsin. In three short years I cannot believe all I have done, learned, and seen.

Not only have I traveled across the nation, but I have also spent a lot of time at my local office. Harmon's motto is to be a "National Company with Local Presence." As I am based out of the Chicago office, I have been able to build my professional and social networks in this area. I am currently a Director for the Chicago Metro National Association of Women in Construction (NAWIC). As for my social life, I play on a weekly women's soccer league year round. I live only three hours from "home" where I grew up, and get to take many weekend trips home to my parent's lake house in Michigan. Between the football games, MLB games, axe throwing tournaments, and happy hours I have built great connections with my coworkers.

Construction is where I am meant to be. A jobsite is where I feel the most confident–my steel toes, hard hat, vest, safety glasses, jeans, and polo are what I feel most comfortable in. I am proud to be a civil engineer from Michigan Technological University.

# Lifetime Donation Recognition to the CEE Department

Alumni and friends with lifetime donations of $2,500 or more through June 30, 2019. Please see our CEE website for a complete donation listing of all of our alumni, friends, and corporate donors.

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*"With my sight set on graduating this fall, there have been many faculty and staff members that have helped me along the way to ensure my success within classes as well as within my extra-curricular activities and work opportunities. I am glad to support a Department which has given to me in so many ways and plan to continue to give back to it after graduation."*

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## 24-Hour Giving Challenge

Michigan Tech hosted the first ever Day of Giving to the University on April 11. The response was phenomenal with the Department donations totaling over $125,000, including gifts from close to 100 first time donors–some still enrolled students.

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Pictured above: Ray Brice, civil engineering senior and forward for the Michigan Tech Huskies.

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