2021 ASCE WISCONSIN SECTION
VIRTUAL ANNUAL MEETING

Presented by the Wisconsin Section Northwest Branch

ASCE
WISCONSIN SECTION

Meeting Schedule and Program

Friday, September 24, 2021

8:00 am - 4:00 pm

ASCE WISCONSIN SECTION

2021 Annual Meeting Schedule and Program

Friday, September 24, 2021
8:00 am - 4:00 pm

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ASCE WISCONSIN SECTION Northwest Branch

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ASCE WISCONSIN SECTION

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ATTENDEE TECHNICAL GUIDE

Virtual Meeting Format

While we would prefer to be meeting in person to take full advantage of networking and learning opportunities, the planning committee determined that the best opportunity for a successful meeting was in a virtual format. The committee appreciates your patience with any technical difficulties that may arise during the conference.

All sessions will be hosted via Zoom Webinar. To maximize the benefit to all participants, speakers and moderators will have audio, video, and screen-sharing capabilities, while attendees' audio and video will be muted throughout the conference. You will have the ability to share comments and questions through the "Q&A" feature (see below). Specific sessions may include additional methods of interaction, which will be explained in the session.

For best results, it is recommended to download and run the Zoom application. If you wish to download and install Zoom ahead of time, download the Zoom Client for Meetings here: https://zoom.us/download

We want to hear from you!!

The best question or comment in each session will be rewarded with a gift card! Speakers will determine the winners, who will be notified after the conference. Limit one gift card per person.

Joining a session

You will find a link to each session on the "Schedule" page of the program. When you are ready to join a session:

- Click the respective "Join" link in the program.
- Enter your first and last name, the email you used to register for the conference, and answer the registration question, then click "Register."
- Follow the link that appears ("Please click this URL to join.") to enter the Zoom Webinar.
- You will be asked to **Open Zoom Meetings**. If you need to install Zoom, click the link to "download and run Zoom." If you already have Zoom installed, follow the prompts to launch the meeting. If you are unable to download/run the Zoom application, you may click the link to "join from your browser." Note that joining from a browser may result in limited functionality.
- Note that you may enter a waiting room if the session hasn't started yet.
- During the meeting, enter questions or comments in the "Q&A" feature, found in the toolbar at the bottom.
- Upon completing the "Webinar Registration" you will also get an email with the link to join the Zoom Webinar. Refer to the email if you need to re-join a session for any reason. The email will also have instructions to join via telephone audio if your computer does not have audio capabilities.

Technical assistance

If you are having trouble with the virtual meeting, we can help! Contact our technical help contact for assistance:

Jill Miller - wi.sec.asce@gmail.com
Brad Severson - Brad.Severson@rasmith.com

2021 Annual Meeting Schedule and Program

Friday, September 24, 2021 - 8:00 am - 4:00 pm

8:00 - 8:20 WELCOME & OPENING REMARKS

8:20 - 9:10 SPOTLIGHT ETHICS PRESENTATION

The Updated ASCE Code of Ethics Highlighted by Case Histories

John Frauenhoffer, P.E.,

9:10 - 9:25 BREAK

9:25 - 10:15 KEYNOTE SPEAKER

Engineering in the Future

K.N. "Guna," Gunalan Ph.D., P.E., D. GE, F.ASCE

10:15 - 10:30 BREAK

10:30 - 11:20 TECHNICAL SESSION #1

- **Geotechnical**: Recent Transportation Systems Geotechnical Research - Raul Velasquez, P.E., Ph.D. - Minnesota DOT
- **Construction**: River One Office Building Project - Milwaukee, WI - Nathan Liggett, P.E. and Patrick Soldner
- **Environment and Water Resources:** PFAS History and Background, Regulatory Overview, and Case Studies - Erica Lawson, PE, Senior Project Manager at TRC Companies, Inc and Mike Ursin, PG, Team Leader at TRC Companies
- **Structural**: The Ascent High Rise Timber Building - Jordan Komp, P.E., S.E.

11:20 - 11:30 BREAK

11:30 - 12:15 AWARDS & OFFICER INSTALLATION

Darrell Berry, ASCE Wisconsin Section Awards Chair

Larry Buechel, ASCE Wisconsin Section Outgoing President

Jennifer Schaff, ASCE Wisconsin Section Incoming President

12:15 - 12:45 LUNCH

12:45 - 1:35 KEYNOTE SPEAKER

Design Infrastructure for an Unpredictable Future

Marty Janowitz, ACC, MES, ENV SP

1:35 - 1:50 BREAK

1:50 - 2:40 TECHNICAL SESSION #2

- **Geotechnical:** Assessing Performance of Coastal Resiliency Projects - Samuel Giannakos, Professional Staff, Anchor QEA
- **Environment and Water Resources:** Watershed Response to Green Infrastructure Installation - Bill Selbig, USGS Upper Midwest Water Science Center and Phil Gaebler - City of Madison Engineering Division
- **Construction/Architectural:** La Crosse Center Expansion - Design Process Best Practices & Lessons Learned - Kevin Bills, AIA - ISG
- **Structures:** Structural Design Using Hollow Structural Section (HSS) Moment Connections - Cathleen Jacinto, FORSE Consulting

2:40 - 2:55 BREAK

2:55 - 3:45 TECHNICAL SESSION #3

- **Geotechnical**: Unmanned Aerial Vehicle Application in Geotechnical Engineering - Dimitrios Zekkos, PhD, PE, Associate Professor, Department of Civil and Environmental Engineering, University of California, Berkeley
- **Engineers Without Borders:** EWB-Marquette Las Guacamayas Pedestrian Bridge - Matt Frank, Construction Engineering Student
- **Environment and Water Resources:** Safeguards for Rivers, Communities, and Lives at Wisconsin's Hydropower Projects- Ellen Faulkner, PE and Cheryl Laatsch
- **Construction**: More Durable and Longer Life Concrete, 2022 Will Be A Very Important Year - Kevin W. McMullen, P.E., President of Wisconsin Concrete Pavement Association

3:45 - 4:00 COMPLETE THE ASCE WI ANNUAL MEETING EVENT FEEDBACK SURVEY!

ASCE WISCONSIN SECTION

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SPOTLIGHT ETHICS PRESENTATION
8:20 AM TO 9:10 AM

SPEAKER: John Frauenhoffer, P.E., S.E., M.ASCE

TOPIC: ASCE Code of Ethics Highlighted by Case Histories

John will present the updated ASCE Code of Ethics highlighted by Case Histories.

John is a Past Director of the American Society of Civil Engineers, and Founder of Frauenhoffer and Associates, P.C. He currently serves as a structural engineer at Engineering Resource Associates.

ASCE WISCONSIN SECTION

2021 Annual Meeting Schedule and Program
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KEYNOTE SPEAKER
9:25 TO 10:15 AM

SPEAKER: K.N. "Guna," Gunalan Ph.D., P.E., D. GE, F.ASCE

TOPIC: Engineering in the Future

A snapshot of what the future might hold for the profession and for those practicing in the profession. The challenges of today will and needs to be transformed into opportunities of the future.

It takes vision, commitment, leadership and resolve to make transformative changes. ASCE and Civil Engineers will need to lead the way.

K.N. Gunalan (Guna) is senior vice president, transportation, alternative delivery, Americas at AECOM, based in Salt Lake City, UT. Previously, he was a vice president at Parsons Brinckerhoff. Guna has managed large complex infrastructure projects, providing technical advice on civil, structural, geotechnical, pavement, and materials issues on a variety of projects around the world. His collaborative approach has contributed to many successful programs and projects ranging from a few thousand dollars to more than 3 billion dollars.

He has been active in ASCE for many years, including leadership roles as Region 8 director (2009-2012), Region 8 governor (2005-2007), Utah Section president (2002-2003), and Texas Section High Plains Branch president (1992). He served as the chair of ASCE's 2014 Global Engineering Conference in Panama City, Panama, in celebration of the 100th anniversary of the Panama Canal. Most recently, he served as a governor for the Geo-Institute and was a member of the steering committee for the 2017 ASCE India Conference.

Guna has been married for 36 years to Duru. They have a son, Kabilar, and a daughter, Pallavi. He loves to read, travel, and learn about new cultures.

TECHNICAL SESSION #1
10:30 TO 11:20 AM

GEOTECHNICAL

TOPIC: Highlights of Recent Geotechnical Research at Minnesota DOT

SPEAKER: Raul Velasquez, P.E., Ph.D., Geomechanics Research Engineer, Minnesota Department of Transportation

This presentation summarizes on-going and recently completed geotechnical research at the Minnesota Department of Transportation (MnDOT) and as part of the National Road Research Alliance (NRRA). Themes of highlighted research include geotechnical asset management (e.g., development of slope vulnerability maps of interstate network), sustainability (e.g., recycled pavement foundation subject to drastic environmental changes), and climate resilience (e.g., management of flooded pavements).

Raul A. Velasquez, P.E., Ph.D. Geomechanics Research Engineer works at the Office of Materials and Road Research (OMRR) at the Minnesota Department of Transportation (MnDOT). He is mainly involved in conducting subsurface research with a focus on pavement foundation and related new technologies. Additionally, he provides technical assistance to the MnDOT Office of Materials Specialty Sections (e.g., Geotechnical Section), District Materials and Construction Engineers, and Local Agencies through the Local Road Research Board (LRRB) in the areas of pavement foundation analysis and design, in-situ and laboratory testing, and performance evaluation.

He worked as a Post-Doctoral Researcher at the University of Wisconsin-Madison dealing with research and educational efforts related to the thermal and mechanical behavior of asphalt materials and later as a Senior Geotechnical Engineer at Barr Engineering where he provided general geotechnical consultant services (e.g., slope stability, foundation design, etc.) and advanced computational modeling services to government agencies and clients in the mining and energy industry.
His past experience involves the experimental characterization and numerical modeling of geo- materials subjected to static, cyclic, and thermal loads. Experimental experience includes elementary and indirect testing under monotonic and cyclic loading as well as non-destructive methods. Numerical modeling includes the use of the finite element and finite difference methods.

TECHNICAL SESSION #1 (CONTINUED)

10:30 TO 11:20 AM

CONSTRUCTION

TOPIC: River One Office Building Project - Milwaukee

SPEAKER: Nathan Liggett, P.E. and Patrick Soldner

The R1VER ("River 1") mixed-use development is widely touted as a transformational force in the redevelopment of Milwaukee's Harbor District. The 6-acre site on the corner of Becher and 1st streets is bordered on two sides by the Kinnickinnic River. The top three floors of the first office building completed in the complex houses the Michels' Milwaukee regional office in the development owned and led by the Michels family, owners of Michels Corporation. Michels was contracted by general contractor Gilbane Building Company to build the deep foundation system for the mixed-use development. This presentation will focus on how Michels foundations operations contended with an existing riverwall with tiebacks and a deadman anchor system, as well as challenging geology and high river levels to design and build the foundation system for the project.

Nathan Liggett, P.E.
Nathan is a Senior Engineer at Michels with 8 years of experience providing geotechnical and structural value engineering support for deep foundation systems, earth retention systems, ground improvement, dewatering, and slope stability. Nathan joined Michels in early 2020 having spent his previous years in geotechnical consulting. He is a graduate of the University of Illinois at Urbana-Champaign with a Master of Science (MS) degree in civil engineering. He is a member of the American Society of Civil Engineers and Deep Foundations Institute.

Patrick Soldner
Patrick is a Superintendent with 8 years of experience with Michels foundations operations. Patrick has supervised the construction of footings, walls, piers, columns and slabs for structural buildings, substations, transmission lines, pipeline stations, and marine projects. Patrick is a graduate of the University of Wisconsin Milwaukee with a bachelor of science degree in civil engineering with an emphasis on geotechnical design. He is a member of the American Society of Civil Engineers and American Institute of Steel Construction.

TECHNICAL SESSION #1 (CONTINUED)

10:30 TO 11:20 AM

ENVIRONMENT AND WATER RESOURCES

TOPIC: PFAS History and Background, Regulatory Overview, and Case Studies

SPEAKER: Erica Lawson, PE and Mike Ursin, PG

Per- and polyfluoroalkyl substances (PFAS) are a large group of over 9,200 synthetic compounds that have been manufactured since the 1940s and used in a variety of industrial, commercial, and consumer products and processes. Although PFAS have been widely used for decades, concern over the potential human health effects of low-level exposure (parts per trillion) of PFAS in the environment began in earnest in the early 2000s.

US Environmental Protection Agency proposed a Health Advisory Limit for drinking water for two individual PFAS (PFOS/PFOA) in 2016 but has not yet adopted any enforceable federal standards. The Biden Administration is expected to act quickly on regulating PFAS in the environment, including setting drinking water maximum contaminant levels (MCLs) and designating PFOS/PFOA as CERCLA hazardous substances. Wisconsin published its PFAS Action Plan in December 2020, which outlined initiatives to address public health and environmental concerns regarding PFAS. Wisconsin is currently in the rule- making process and has proposed standards for PFAS in groundwater (NR 140), drinking water (NR 809), and surface water (NR 105).

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This presentation will provide an introduction to the background and history of PFAS, provide an update on the evolving regulatory landscape (focusing on Wisconsin), and discuss case studies where PFAS has been or is currently being addressed by TRC. Case studies presented will include:
1) Proactive steps a municipal wastewater treatment plant is taking to understand and address PFAS in its influent, effluent, and biosolids in anticipation of future regulatory requirements;
2) A review of a feasibility study undertaken by a municipal water utility to evaluate treatment options and capital costs to return a highly productive deep bedrock well back to use at 1,000 gallons per minute; and
3) An overview of actions taken at an airport to address legacy use of aqueous film-forming-foam (AFFF) and the remedial solutions that have been implemented to reduce the PFAS mass discharged to surface waters by greater than 90%.

TECHNICAL SESSION #1 (CONTINUED)

10:30 TO 11:20 AM

ENVIRONMENT AND WATER RESOURCES (CONTINUED)

Erica Lawson, PE - Senior Project Engineer and Project Manager
Ms. Lawson is a dedicated environmental engineer with 10 years of experience in environmental consulting that includes project management of NR 700 Phase I and II Environmental Site Assessments (ESAs), contaminated materials management, waste characterization at contaminated sites, and environmental permitting projects. She is an active participant in the Wisconsin Solid Waste PFAS Coalition which was formed to share information and determine impacts of PFAS on the waste management industry. She has presented on PFAS for client webinars, contributes to stakeholder meetings regarding emerging contaminants regulations and enforcement, and recently co-published an article entitled, "Wisconsin Takes Proactive Approach to PFAS Regulation." Ms. Lawson is a Wisconsin- licensed Professional Engineer with a specific focus on the investigation and remediation sector.

Mike Ursin, PG, Senior Project Manager and Team Leader
Mr. Ursin has been supporting clients in the government, industrial, commercial, and real estate sectors as they navigate environmental issues related to their business operations since 2007. He is an experienced leader, having successfully directed, managed, and completed thousands of projects for clients nationwide. His extensive experience includes transactional due diligence, environmental investigations, remediation, environmental compliance, geotechnical investigations, contaminated material management, NEPA, client and regulatory communication, NR 700, emerging contaminants including PFAS, and building working relationships with clients. Mr. Ursin is a Wisconsin-licensed Professional Geologist and NR 712.03(1) Hydrogeologist and is a member of TRC's PFAS and Phase I ESA Center of Research & Expertise (CORE) teams.

TECHNICAL SESSION #1 (CONTINUED)

10:30 TO 11:20 AM

STRUCTURES

TOPIC: The Ascent High Rise Timber Building

SPEAKER: Jordan Komp, P.E., S.E.

Ascent, the 25 story residential tower located in Milwaukee, WI, will become the tallest timber building in the world, upon completion. This presentation will focus on Ascent's current state of construction, while discussing the project's structural system, permitting process, and groundbreaking project specific testing; touching on several of the challenges the team overcame, all of which open the door for future Mass Timber projects throughout the United States.

Jordan joined Thornton Tomasetti in 2010, after receiving his combined M.S./B.S. from Marquette University. He is a licensed Professional Engineer in Wisconsin and Structural Engineer in Illinois.

Jordan's design and project management experience encompass a variety of building types, including mid-rise to supertall buildings, long-span structures, and mass timber construction. Jordan was a key contributor to several of the firms most iconic jobs, and has been responsible for the design and construction of multiple projects throughout the Midwest and internationally.

Jordan was named one of ENR Midwest's 2018 Top Young Professionals, and is currently a member of the SEI/ASCE Tall Buildings Committee, as well as a founding member of ACE Milwaukee; serving as a mentor to high school students interested in the architecture, construction, and engineering industry.

ASCE WISCONSIN SECTION

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SECTION AWARDS, OFFICER INSTALLATION AND STATE OF THE SECTION PRESENTATIONS

11:30 AM - 12:15 PM

WISCONSIN SECTION AWARD RECIPIENTS

Darrell Berry, P.E., F.ASCE-Life, ASCE Wisconsin Section Awards Chair

Congratulations!

INDIVIDUAL AWARD WINNERS

DISTINGUISHED SERVICE AWARD

Mark J. Rapant, P.E., M.ASCE

DISTINGUISHED SERVICE AWARD

Michael W. Paddock, P.E., M.ASCE

WISCONSIN SECTION AWARD RECIPIENTS (CONTINUED)

Darrell Berry, P.E., F.ASCE-Life, ASCE Wisconsin Section Awards Chair

INDIVIDUAL AWARD WINNERS (CONTINUED)

ENGINEER IN CONSULTING PRACTICE AWARD

Paul R. Eiring, P.E., M.ASCE

ENGINEER IN EDUCATION AWARD

Dr. Philip J. Parker, A.M.ASCE

YOUNG CIVIL ENGINEER OF THE YEAR

Zachary M. Sadowski, P.E., M.ASCE

WISCONSIN SECTION AWARD RECIPIENTS (CONTINUED)

Darrell Berry, P.E., F.ASCE-Life, ASCE Wisconsin Section Awards Chair

PROJECT AWARD WINNERS

Videos of Each Project will be Presented

Engineering Achievement Award - Category A - Projects with Construction Cost less than $2 Million

CTH HH (Vanderperren Way) Reconstruction in Brown County

Owner: Brown County Department of Public Works
Nominated by: AECOM Technical Services, Inc.
Design Engineer: AECOM Technical Services, Inc.
Consultants: GEI Consultants, Inc.; PSI Intertek, Inc.; Commonwealth Heritage Group
Contractor: Peters Concrete Company

Engineering Achievement Award - Category B - Projects with Construction Cost over $2 Million and Less Than $10 Million

CTH CA, CTH CB to Casaloma Drive in Outagamie County

Owner: Outagamie County Highway Department
Nominated by: Westwood Infrastructure
Design Engineer: Westwood Infrastructure
Consultants: Saiki Design
Contractor: Vinton Construction

Engineering Achievement Award - Category C - Projects with Construction Cost over $10 Million and Less Than $20 Million

Little Falls Dam Reconstruction in Hudson, St. Croix County

Owner: Wisconsin Dept. of Natural Resources
Client: Wisconsin Division of Facilities Development Management
Nominated by: Mead & Hunt, Inc.
Design Engineer: Mead & Hunt, Inc.
Consultants: FreshWater Engineering, LLC; Stevens Engineers, Inc.
Contractor: Miron Construction Co., Inc

Engineering Achievement Award - Category D - Projects with Construction Cost over $20 Million

American Family Insurance Amphitheater Renovation at Summerfest in Milwaukee

Owner: Milwaukee World Festival, Inc. (Summerfest)
Nominated by: Larson Engineering, Inc.
Design Engineer: Larson Engineering, Inc.
Consultants: ZS Architectural Engineering; Eppstein Uhen Architects
Contractor: Hunzinger Construction, Inc.

2021 ASCE EDMUND FRIEDMAN PROFESSIONAL AWARD RECIPIENT

Mr. John Kissinger, P.E., S.E., M.ASCE

The Wisconsin Section of the American Society of Civil Engineers (ASCE) is pleased to report that Mr. John Kissinger, P.E., S.E., M.ASCE has been selected by the Society's Committee on Advancing the Profession to receive the 2021 Edmund Friedman Professional Recognition Award for "exemplary professional conduct and service in the field of civil engineering, delivering vital and enduring projects, for commitment to engineering education and helping young engineers from diverse backgrounds, and outstanding community leadership and philanthropy."

Mr. Kissinger is a longstanding member of ASCE, the Southeast Branch, and the Wisconsin Section. He currently is the President & CEO of GRAEF in Milwaukee, Wisconsin.

"I am honored to receive this recognition. This honor is as much for the team at GRAEF as it is for me, and I want to thank all of my teammates," said Kissinger. "I also want to thank the ASCE WI SE Chapter and State Chapter for co-nominating me for this award. It is humbling to see my name listed with the many distinguished past recipients. This is a great highlight in my career," he added.

WISCONSIN SECTION OFFICER INSTALLATION

Larry Buechel, P.E., M.ASCE, ASCE Wisconsin Section Outgoing President

Newly Elected Wisconsin Section Board Members

PRESIDENT ELECT

Danny X. Xiao, P.E., ENV SP, M.ASCE

TREASURER

Martin Hanson, P.E., F.ASCE

DIRECTOR AT LARGE

Brad Severson, P.E., M.ASCE

Jennifer Hurlebaus, P.E. M.ASCE

STATE OF THE WISCONSIN SECTION

Jennifer Schaff, P.E., M.ASCE, ASCE Wisconsin Section Incoming President

Recognition of Departing Section Board Members

WISCONSIN SECTION PAST PRESIDENT

Ken Mika, P.E., M.ASCE

SOUTHEAST BRANCH DIRECTOR

Nick Bobinski, P.E., M.ASCE

SOUTHWEST BRANCH DIRECTOR SECTION

Terry Armstrong, P.E., M.ASCE

NORTHWEST BRANCH DIRECTOR

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Gary Amel, P.E., M.ASCE

DIRECTOR-AT-LARGE

Tom Walther, P.E., F.ASCE

ASCE WISCONSIN SECTION

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KEYNOTE SPEAKER

12:45 - 1:35 PM

SPEAKER: Marty Janowitz ACC, MES, ENV SP

TOPIC: Design Infrastructure for an Unpredictable Future

Engineers are trained to methodically plan, design, and construct physical infrastructure to provide for the future needs of our communities. Indeed, every relevant professional - planners, scientists, architects, developers, and more, play a role in matching community needs with pragmatic solutions. But what if the future unfolds differently than what we expected? COVID has taught us that we as humans can adapt and adapt again quickly to real, present, and dynamic threats. But infrastructure, once constructed, is harder to adapt.

Some of the most vexing public works challenges facing civil engineers and your professional collaborators in the next 20 years will require different, counter intuitive skill sets and approaches. Marty's keynote will focus on the idea of having an adaptive mindset through all phases of the planned and constructed work and will outline some key strategies that can be applied successfully to your job tomorrow.

Marty Janowitz served as Vice President, Sustainable Development at Stantec until his retirement in 2020. His 40+ year career included consulting nationally and internationally in environmental and sustainability planning, policy and projects focused on communities, resource management and infrastructure. Marty was responsible for guiding Stantec, one of the world's leading consulting engineering, scientific and architectural firms, to become an exemplary model of sustainability in all its operations and led the company's initiatives to develop an integrated sustainability consulting practice.

Biography continued on next page.

KEYNOTE SPEAKER (CONTINUED)

12:45 - 1:35 PM

Marty continues to play a prominent role in the sphere of integrated sustainable infrastructure and community development including longstanding service on the Sustainable Infrastructure Advisory Board at the Harvard Graduate School of Design and on the Institute for Sustainable Infrastructure Board of Directors and its Envision Review Board. He is an Envision™ Sustainability Professional (ENV SP), Verifier and Trainer and was senior advisor on the first two Canadian projects to achieve Envision award (both Platinum) and held key roles on a number of other pioneering sustainable infrastructure projects, including in Wisconsin. He played a leading role in the development of the Federation of Canadian Municipalities' Integrated Community Sustainability Planning methodologies and Canadian Federal Sustainable Development Strategies. In the USA, he was an invited participant in the first (and only) White House Round Table on Sustainable Infrastructure, and to a Pentagon consultation on sustainable infrastructure opportunities on US military bases (both in 2012). He has presented at many national and international events including at national conferences of ACEC, APWA and ASCE's International Conferences on Sustainable Infrastructure. A dual citizen of the United States and Canada, Marty was selected to be a member of first Canada's Clean 50 - outstanding contributors to sustainable development and clean capitalism.

Marty holds a Masters' Degree in Environmental Studies from Dalhousie University and a B.A. from Brandeis University.

TECHNICAL SESSION #2

1:50 - 2:40 PM

GEOTECHNICAL

TOPIC: Assessing Geotechnical and Coastal Engineering Performance of Coastal Resiliency Projects - Lessons Learned from Shoreline Restoration in the Great Lakes, Atlantic and Gulf Coasts

SPEAKER: Sam Giannakos, Anchor QEA

The design of coastal restoration structures must consider both geotechnical and coastal engineering performance. Collecting and evaluating subsurface data offshore is challenging, and coastal modeling must consider a range of environmental factors. This presentation will describe the approach, challenges, and lessons learned during the geotechnical and coastal engineering design of several offshore structures that are being constructed to support habitat restoration and coastal resiliency.

Sam Giannakos is an engineer at Anchor QEA who works on a variety of upland and waterfront geotechnical projects. He holds a B.S. in Ocean Engineering and a Master's of Oceanography in Coastal Systems from the University of Rhode Island. He uses his diverse background in coastal and geotechnical engineering and applies his understanding of the connection between the two disciplines to a variety of projects, including the shoreline restoration projects underway in the Great Lakes, East Coast and Gulf Coast regions.

TECHNICAL SESSION #2 (CONTINUED)

1:50 - 2:40 PM

ENVIRONMENT AND WATER RESOURCES

TOPIC: Watershed Response to Reduced Impervious Cover through Installation of Green Infrastructure

SPEAKER: Bill Selbig, USGS Upper Midwest Water Science Center and Phil Gaebler - City of Madison Engineering Division

In response to the damage incurred due to recent extreme rainfall events, as well as the likely increasing frequency of such events due to global climate change, the City of Madison Engineering Division began developing watershed models and plans for areas of greatest concern in the Madison area.

Additionally, the city is working to minimize stormwater runoff entering storm drains through implementation of green infrastructure (GI) practices. Although much is known on the stormwater volume reduction benefits of individual GI practices, very little is known about the watershed response to a collection of practices.

In 2020, the U.S. Geological Survey, in cooperation with the City of Madison Engineering Division, began a monitoring campaign to compare changes in stormwater runoff patterns in an urban catchment experiencing conversion of impervious to pervious land cover through incremental additions of GI to a similar urban catchment without GI. The objective of the study is to determine how much of a reduction in effective impervious cover is needed before hydrologic changes can be observed downstream. The information learned from this study will help the city of Madison, and other cities around the Nation, determine whether a waterbody impaired by urban land use can revert to pre-settlement conditions through implementation of GI alone, what temporal scale to expect when developing plans for watershed and ecosystem restoration, and determine if hydrologic models that make use of GI simulations are accurate or misleading towards long-term watershed health.

This presentation will report on the design and construction of GI practices installed in the study catchment as well as the hydrologic response measured at the storm sewer outfall for the first year of a 5-year study.

Bill Selbig is a research hydrologist at the Upper Midwest Water Science Center of the U.S Geological Survey. For the past 25 years his research has focused on characterization of pollutants in urban runoff, identification of their sources, and evaluation of the techniques and practices designed to treat them.

Phil Gaebler is a water resources engineer for the city of Madison with 16 years of experience in the field. His focus is on water quality and MS4 compliance and flood mitigation. In his role at the City of Madison, he has done extensive work with water quality modeling, education for residents on best management practices and reviewing stormwater management plans. He is always looking of innovative ways to reduce pollution into our waterways.

TECHNICAL SESSION #2 (CONTINUED)

1:50 - 2:40 PM

CONSTRUCTION/ARCHITECTURAL

TOPIC: La Crosse Center Expansion - Design Process Best Practices & Lessons Learned

SPEAKER: Kevin Bills, AIA - ISG

This session will discuss process, successes and challenges throughout the La Crosse Center renovation and expansion design phase from pre-design through completion. The La Crosse Center is a public event facility that overlooks beautiful downtown La Crosse and the Mississippi River and was in need of major changes to enhance the visitor experience and create more revenue generating opportunities. A highly interactive public engagement process with a wide range of user groups positively influenced the $42 million expansion project that included a new entry lobby, exhibit hall, 900-person ballroom, outdoor patio, entry plaza, and support spaces; more convenient revenue generating amenities; and improvements to the arena and other existing indoor spaces.

Here to discuss process, successes and challenges throughout the La Crosse Center renovation and expansion design phase from pre-design through completion, **Kevin Bills** is an architect that has spent most of his professional career serving the La Crosse area. He is a focused designer with a strong background in construction and building materials. This allows Bills valuable insight into translating innovated and exciting architectural designs into practical constructions on-site. His detail-oriented, highly collaborate project management approach focuses on not only the design of meaningful spaces, but the successful delivery of their construction.

TECHNICAL SESSION #2 (CONTINUED)

1:50 - 2:40 PM

STRUCTURES

TOPIC: Structural Design Using Hollow Structural Section (HSS) Moment Connections

SPEAKER: Cathleen Jacinto, P.E., S.E.

In this presentation, we will explore moment connections and focus on the joint between a wide flange beam and an HSS column. Attendees will gain practical knowledge of why designing and constructing with HSS columns is a smart and effective choice. Using wide flange beams and HSS columns can lead to a very effective framing system, can improve structural efficiency in two directions, and they are aesthetically pleasing.

Learning objectives include:

- The types of moment connections as well as their economic considerations.
- Criteria to help the specifying engineer with which connection to use.
- Current research.
- Design examples and additional resources.

Cathleen Jacinto has 20 years of experience in the design industry as a structural engineer. Cathleen collaborated on a variety of building design projects while at Thornton Tomasetti and T.Y. Lin International in Chicago, Illinois, from small to large-scale project types in healthcare, aviation, commercial, infrastructure, cultural, and steel connection design. At FORSE Consulting, Cathleen assists other structural engineers with designs on a variety of projects, and contributes to FORSE's seminars and publications. One topic Cathleen highlights is structural steel HSS design, as a technical consultant to the Steel Tube Institute. She currently contributes as a Board Member to the Structural Engineers Association of Illinois. She has a Professional Masters in Structural Engineering from the Illinois Institute of Technology and a Bachelor of Science in Civil Engineering from the University of Illinois Urbana-Champaign. Cathleen is a licensed Structural Engineer (SE) and Professional Engineer (PE) in the State of Illinois.

TECHNICAL SESSION #3

2:55 - 3:45 PM

GEOTECHNICAL

TOPIC: Unmanned Aerial Vehicle Application in Geotechnical Engineering

SPEAKER: Dimitrios Zekkos, PhD, PE, Associate Professor, Department of Civil and Environmental Engineering, University of California, Berkeley

Unmanned aerial vehicles (UAV), or drones, are becoming increasingly popular in engineering practice and will soon be indispensable tools for infrastructure assessment and resiliency. Sensor-equipped UAVs provide an opportunity for spatially-distributed, mobile, data-driven sensing. This enables unprecedented characterization opportunities and optimized monitoring of geosystems, which are inherently distributed. In addition to their sensing capabilities, UAVs have outstanding, still largely untapped, computational capabilities that are paving new ways to characterize, design, and monitor geotechnical systems.

Practical examples of recent and ongoing UAV deployments using multiple sensors, that led to improved understanding of geo-processes and promoted resiliency and sustainability of geotechnical infrastructure systems will be presented. Examples presented will include stability assessment of earth masses, dam assessments and bridge failure mapping, as well as subsurface characterization.

Dr. Zekkos is an Associate Professor in the Civil and Environmental Engineering Department at UC Berkeley. He was previously an Associate Professor at the University Michigan. Dr. Zekkos received his BS from the University of Patras in Greece, and a MS and PhD Degree in geoengineering from UC Berkeley. Dr. Zekkos' research focuses on sensing and modeling of geo-infrastructure systems with the goal to enhance their resiliency and sustainability. Dr. Zekkos has published more than 150 scientific publications and his research work has been recognized by several awards including the Middlebrooks Award, Collingwood Prize and Casagrande Award by ASCE, as well as the Shamsher Prakash Research Award and the Outstanding Innovator Award by the International Society of Soil Mechanics and Geotechnical Engineering (ISSMGE). Dr. Zekkos is also CEO of ARGO-E an infrastructure data analytics company. Dr. Zekkos can be reached at: http://www.dimitrioszekkos.org

TECHNICAL SESSION #3 (CONTINUED)

2:55 - 3:45 PM

ENGINEERS WITHOUT BORDERS

TOPIC: Engineers Without Borders: EWB-Marquette Las Guacamayas Pedestrian Bridge

SPEAKER: Matt Frank, Construction Engineering Student, Marquette University

The village of Guacamayas Hamaca in the Joyobaj region of Guatemala has an existing pedestrian cable bridge built roughly nine years ago. Unfortunately due to available budget at the time, the bridge does not have strong enough structural elements which has resulted in the deterioration of the bridge making it unsafe to cross. EWB Marquette adopted the project to built a new cable bridge in the spring of 2019 and aimed to construct the bridge during the summer of 2020. Unfortunately due to the COVID-19 pandemic the timeline was sifted and a remote implementation was decided upon and completed this July. This session will discuss what methods of communication and planning the EWB-Marquette chapter used during the remote implementation of the project.

Matt Frank is a senior in Construction Engineering at Marquette University who will graduate in the fall of 2021. He is one of two project leads for the EWB-Marquette chapter Guacamayas Pedestrian bridge project located in Guatemala. He has participated in the design of two other projects within his 3 and a half years in the club. Matt is from Arlington Heights Illinois and enjoys sailing in his free time.

TECHNICAL SESSION #3 (CONTINUED)

2:55 - 3:45 PM

ENVIRONMENT AND WATER RESOURCES

TOPIC: Safeguards for Rivers, Communities, and Lives at Wisconsin's Hydropower Projects

SPEAKERS: Ellen Faulkner, P.E. and Cheryl Laatsch

This session offers two perspectives on some of the mechanisms in place to ensure that hydropower projects in Wisconsin are operated responsibly with respect to human life and environmental quality. An overview of how the Wisconsin Department of Natural Resources participates in the federal licensing of the state's hydropower projects will be followed by a discussion of current thinking and practice in the dam safety community.

Ellen Faulkner, PE, is a senior project manager in Ayres' Water Resources Group in Eau Claire. She has worked primarily as a consultant for dam and hydropower project owners for over 30 years, with much of her work focusing on the hydrologic safety and performance of dams.

Cheryl Laatsch is the Statewide FERC Coordinator for the Wisconsin Department of Natural Resources–a position she has held since August 2011. She is responsible for coordinating the agency's environmental and regulatory oversight of 130+ hydroelectric dams in Wisconsin. Her collaborative approach brings new ideas to how WDNR is addressing workload, resource management, and customer relations.

Prior to working with hydropower, Ms. Laatsch as one of the Wisconsin DNR project managers for large wind, transmission, distribution, and pipeline projects. Ms. Laatsch has worked for the WDNR for over 15 years. She has extensive knowledge and permitting expertise in waterway and wetlands, project management, technical oversight, and regulatory compliance for complex utility projects.

Ms. Laatsch received her B.S. in Environmental Science from the University of Wisconsin- River Falls. Ms. Laatsch and her husband have 2 daughters. They own a coffee shop, a retail boutique, and an agricultural consulting business. Ms. Laatsch extends her expertise in business and resource management into her community, where she volunteers for different associations. Ms. Laatsch resides in Beaver Dam, Wisconsin.

TECHNICAL SESSION #3 (CONTINUED)

2:55 - 3:45 PM

STRUCTURES

TOPIC: More Durable and Longer Life Concrete, 2022 Will Be A Very Important Year

SPEAKER: Kevin W. McMullen, P.E., President of Wisconsin Concrete Pavement Association

The Wisconsin Department of Transportation and the Wisconsin Concrete Pavement Association have been working together to overhaul the concrete and concrete pavement specifications. The emphasis has been on the national efforts on Performance Engineered Mixtures being championed by the Federal Highway Administration. We will be discussing new cement and supplementary cementitious materials, new aggregate specifications, new mix design procedures and new quality control and acceptance procedures. Our goal is to produce longer life and more durable concrete for the infrastructure in Wisconsin.

Kevin W. McMullen, P.E., President, Wisconsin Concrete Pavement Association

For the last 26 years Kevin has represented the concrete paving industry in Wisconsin. The last 25 years as President of the Wisconsin Concrete Pavement Association.Prior to WCPA, he worked for the Wisconsin Department of Transportation in the Construction and Materials Office's Pavement Engineering Section in the Central Office in Madison. For five years he was the supervisor for all pavement design engineering activities for the Department.

Kevin is a 1986 graduate of the University of Wisconsin-Platteville with a degree in Civil Engineering.

Kevin currently serves on the Steering Committee for the Wisconsin Highway Research Program, the Board of Directors of the Wisconsin Highway Technicians Certification Program, the national committee on concrete pavement construction of the Transportation Research Board in Washington DC, sits on the Board of Directors for the American Concrete Pavement Association and the Board of Directors of the National Center for Concrete Pavement Technology. He is also a founding member of the FHWA sponsored National Concrete Consortium that is now being managed by the National Center for Concrete Pavement Technology at Iowa State University.

Kevin and his wife Jennifer reside in Janesville, Wisconsin and have two adult children. William, 32, lives and works in Milwaukee and Anna, 29, currently living and working in Washington DC. In October of 2020, Kevin and Jenny became grandparents with William and his wife Alyssa announcing the arrival of their granddaughter Mazie.

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Please provide any suggestions or feedback to members of the planning committee, any of the board members mentioned in the program, or the conference committee chairs listed below.
Dan Borchardt - danborchardt83@gmail.com

Interested in becoming involved in ASCE?
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