



WHAT'S INSIDE:

- 02 SAME-MSP Classified
- 03 President's Update
- 04 Welcome New Members
- 04 December Meeting Summary
- 04 January Meeting Summary
- 05 Centennial Celebration Update
- 06 Post Education Grants Available
- 06 Small Business Corner
- 07 Post Scholarships Available
- 07 Post Scholarship Chair Volunteers
- 08 Sustaining Firms

SAME-MSP BOARD MEMBERS:

President

Lindsey Roberts McKenzie
SEH

Vice President

David Johnson
Houston Engineering, Inc.

Jr. Vice President

Erin Krug
U.S. Army Corps of Engineers

Secretary

Dan Kvasnicka
HDR

Treasurer

Cora Núñez Orta
U.S. Army Corps of Engineers

Past President

Jane Flewellen
Mortenson Construction

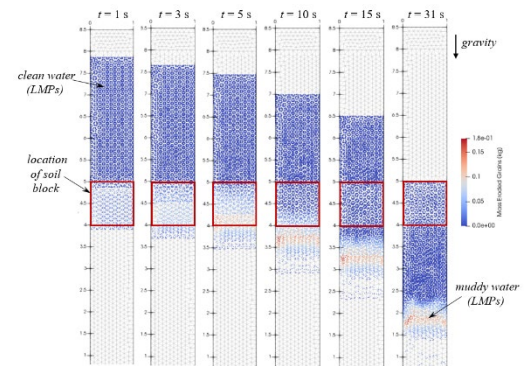
Directors

Dave Ausdemore
 Ann Banitt
 Katy Thompson
 Allen Witt

VIRTUAL MEETING: 02.17.2021

The Material Point Method: An Introduction, Background, and Applications 0.5 PDH

The Material Point Method (MPM) is a numerical method being adapted to solve large deformation geotechnical problems. The MPM is a hybrid of mesh based and particle tracking methods. For large deformations, mesh based methods, e.g. Finite Element Method (FEM), can suffer from excessive mesh entanglement and can lose the stress history which is important for geotechnical engineering applications. Particle tracking methods, e.g. Discrete/Distinct Element Methods (DEM), become very computationally expensive for practical scale problems. The MPM overcomes these limitations by tracking movement of material points while performing the calculations on a fixed background mesh.



The presentation will introduce the MPM and how it fits within the suite of numerical methods. After the background the presentation will cover a series of practical applications and a few fun applications. The presentation will finish discussing the use of the MPM to model internal erosion.

Presenter Biography:

John Murphy, PE is currently a PhD Candidate at University of California (UC) Berkeley and a Research Civil Engineer at the U.S. Army Research and Development Center (ERDC) Geotechnical and Structures Laboratory (GSL). He received his Bachelor of Science in Civil Engineering from the University of Wisconsin-Platteville in 2006. After graduating, he worked for eight years in the St. Paul District U.S. Army Corps of Engineers. During that time, John took a leave of absence to complete his Master of Science at UC Berkeley in 2013, and in 2015, John transferred to ERDC in Vicksburg, MS. He was accepted into ERDC's long-term training program and returned to Berkeley to begin his PhD studies in fall of 2017. He is advised by Professor Soga and is co-advised by Professor Alba Yerro from Virginia Tech.

Details: Wednesday, February 17, 2021 at 12:00pm-1:00pm CST

Cost: SAME Members: FREE, Non-Members: FREE

Location: ONLINE (details to be provided with Eventbrite receipt)

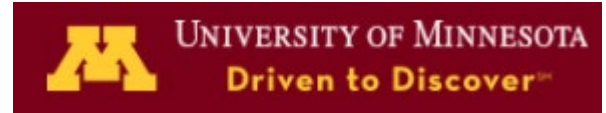
RSVP: <https://www.eventbrite.com/e/same-february-post-meeting-tickets-139996299701>

SAME-MSP CLASSIFIED

Mark your calendars, despite the pandemic, there are still some upcoming virtual events and opportunities!

MINNESOTA WATER RESOURCES CONFERENCE

The Minnesota Water Resources Conference Planning Committee is accepting abstracts for the 2021 Water Resources Conference which will be held October 19-20, 2021! Abstracts for presentations and posters will be due Friday, April 16th. Nominations for the Dave Ford Award are also being accepted for an individual who has an extended history of contributing to the betterment of water resources in Minnesota. Check out the UofMN website for more detail and submittal instructions. <https://conference.umn.edu/minnesota-water-resources-conference>



2021 SAME VIRTUAL CAPITAL WEEK

Attendees can expect to hear from participating agencies including the U.S. Army Corps of Engineers, Naval Facilities Engineering Command, Air Force Civil Engineer Center, Army Installation Management Command, Army & Air Force Exchange Service, Bureau of Overseas Buildings Operations, National Nuclear Security Administration, U.S. Customs & Border Protection, General Services Administration, Department of Veterans Affairs, and the Defense Health Agency. The event will include one-on-one appointments where you can connect with others to discuss the needs of your organization and booths from our sponsors and exhibitors where you can learn more about the products and services they offer. For more information, please visit the official website: <https://www.samecapweek.org/index.cfm>



2021 SAME VIRTUAL JETC

VJETC 2021 will be an immersive virtual experience that showcases the best of SAME. From connecting with colleagues to enhancing your knowledge base, from discussing the services and products from our exhibitors to strengthening your company and agency, VJETC is the place where it all happens. We invite you to grow, connect and excel during this virtual event made specifically with you in mind. For more information and to register, please visit: <https://www.samejetc.org/index.cfm>



2021 WEF STORMWATER SUMMIT

The 2021 Stormwater Summit will be held from June 21-23, 2021 in Minneapolis, Minnesota. This Summit is crafted to deepen the technical knowledge of professionals involved in stormwater and provide forums where leading issues in the sector are discussed. The conference will include oral presentations, interactive discussions, pre-conference workshops, exhibits, mobile sessions, opportunities for networking in dynamic settings, as well as virtual components. For more information use the following link: <https://docs.google.com/document/d/13Qv2h-P4YuSXJXCqfH29i5rZNIJajCmnmkvkeDbtFE/edit?usp=sharing>



DONATIONS

Every year, the Minneapolis - St Paul Post of the Society of American Military Engineers (SAME-MSP Post) offers up to \$6,000 of educational grants to elementary and secondary schools. These grants serve to achieve a fundamental goal of SAME: "To promote an understanding of, and appreciation for, the engineering related disciplines and to help the young people in our communities be better prepared to become our future engineers." The on-going coronavirus pandemic has had a big impact in our lives and in our fundraising capabilities. To continue supporting our STEM community, the SAME-MSP Post would like to respectfully request your help in the form of a donation. All donations will go towards helping us to achieve the goal of providing educational grants for the schools and classroom teachers who are committed in supporting the math and sciences that support future engineering-related career opportunities. Please consider [donating to the SAME-MSP Post's Paypal](#) if you can and help support the next generation of engineers. Thank you for supporting our community!

PRESIDENT'S UPDATE

Well, we made it through January 2021 and have arrived in February! Let's hope Punxsutawney Phil's predictions of another six more weeks of winter are filled with some beautiful winter days to enjoy here in Minnesota. My family has been enjoying some great snowshoeing in the Twin Cities area. Wherever you may call home, I hope you are able to enjoy the outdoors while we still try to stay home and stay safe.

Thank you to those who were able to join us for our January 2021 meeting. We were fortunate enough to have Terry Williams, a Project Manager with the US Army Corps of Engineers, present on the status of the Fargo-Moorhead Metro (FMM) flood protection project. This project is unique because it is the first Public-Private Partnership for the Corps of Engineers. During the session, it was wonderful to hear that so many of our Post members have contributed their time and talent to this project over the years, and Terry and her team continue to work hard to successfully provide flood protection for nearly 230,000 people. Thank you, Terry!

I hope you will be able to join us for our February 2021 meeting, which will feature John Murphy, a PhD Candidate and a Research Civil Engineer at the U.S. Army Research and Development Center (ERDC) Geotechnical and Structures Laboratory (GSL). John will be presenting on the Material Point Method (MPM), a numerical method being adapted to solve large deformation geotechnical problems, and its use to model internal erosion. Make sure you extend an invitation to your best geotechnical engineer friend (we all have at least one)!

Please note the recent change in registration for our monthly meetings – we are now using Eventbrite! A link is included in this newsletter, as well as on our website. We understand that some of our members are having difficulty accessing the Eventbrite page due to firewalls on Government or corporate computers. If you are unable to access the Eventbrite page to register, please reach out to **Dan Kvasnicka** via email at Daniel.kvasnicka@hdrinc.com and he can get you registered via email. We don't want you to miss out!

The MSP Post will continue to provide monthly programming on a virtual platform through spring 2021. The events will be free for all attendees. PDH credits will be provided when applicable, so please make sure you register for the event. The Post continues to evaluate the feasibility of holding in-person events in 2021 and will continue to keep members updated via the Post newsletter and website.

SAME continues to grow and we are looking for some assistance in a critical role that helps to keep the post operational. Please consider getting more involved with SAME. Additional details regarding this volunteer opportunity with our post are as follows:

- ★ **Chair of Records and Archiving:** We are looking for a SAME member who would be willing to assist with setting up a record storage management system. This position will require approximately one (1) hour per week to set up an external document management folder that will allow SAME-MSP to manage archives in an efficient and organized fashion, as well as sort through our previous records for proper filing within the new system.

Please consider donating your time and talent to the Post – we would greatly appreciate it!

As always, I am honored and delighted to be your Post President. Please don't hesitate to reach out to me or our Post Board if you have any questions or concerns. We are happy to support you!

Lindsey Roberts McKenzie, PE
2020-2021 SAME-MSP Post President
Email: lroberts@sehinc.com



WELCOME NEW MEMBERS!

The following individuals have joined the SAME-MSP Post this month – thank you for joining us and welcome to the Minneapolis-Saint Paul Post!

- ★ Krista Nebraska, RSP Architects, Ltd.
- ★ Dangelo Gayle, DLR Group, Inc.
- ★ John Tinker, DLR Group, Inc.
- ★ Matthew Strasser, DLR Group, Inc.
- ★ Anthony Montex, DLR Group, Inc.
- ★ Donald Horkey, DLR Group, Inc.
- ★ Brandon Davis, LS Black Constructors
- ★ John Hudson, Stanley Consultants Inc.
- ★ Dan Mahrt, Terracon Consultants, Inc.
- ★ Jeff Fenimore, DLR Group, Inc.
- ★ Charles Solberg, Benham Design, LLC
- ★ Tom Waner, Benham Design, LLC



DECEMBER MEETING SUMMARY

Ann Banitt – U.S. Army Corps of Engineers

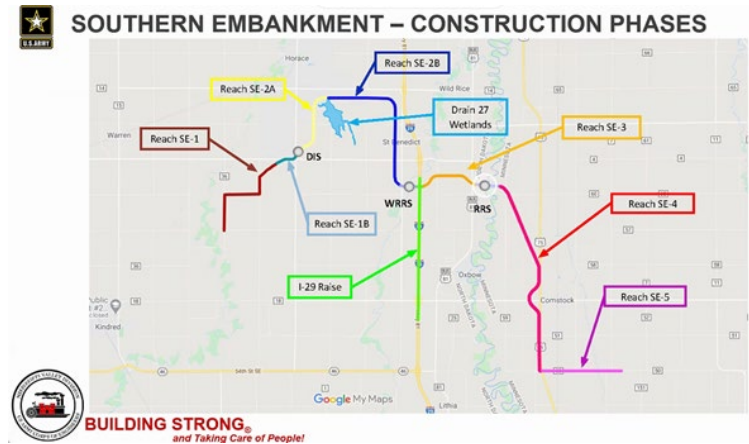
December's Post Webinar on December 16th was presented by **Clay Tallman**, a USACE Project Manager with the St Paul District. Clay described what it was like to live and work in the Republic of Korea in his overseas work assignment. The presentation covered a brief history of Korea, USACE involvement, and responsibilities of the Far East District. Clay discussed some of the challenges with working in a foreign environment, living in a politically focused area, and enjoying some of the recreation opportunities in Korea. Clay described a Yongsan Relocation Project that was a \$10.7 billion endeavor, primarily funded by the Korean Government, to relocate the 8th Army and UN command. The footprint of the project was 2454 acres, which is larger than the footprint of the Los Angeles International Airport. Project features included a Communication Center, Hospital and Ambulatory Care Center, Aircraft Parking Apron and Operations Center which is a hardened underground secure facility. Clayton described the complexity of the security and construction controls. Clayton also shared some of the unique recreational experiences his family shared in this lifetime adventure.



JANUARY MEETING SUMMARY

Ann Banitt – U.S. Army Corps of Engineers

On January 20th, **Terry Williams**, the USACE Program Manager for the Fargo Moorhead Metropolitan Area (FMM) project presented the status of the flood risk management project. Terry gave an overview of the project, and shared construction pictures of the Diversion Inlet and Wild Rice River Structures. The project will reduce the risk of future flooding by constructing water control structures, in-town features like levees and floodwalls, and a southern embankment that will redirect flows towards a 30-mile long diversion channel. Upstream of the project, there will also be associated pond storage to help absorb and slow the runoff from extreme events. Terry shared a figure for the various reaches and construction phases that make up the Southern Embankment.



This project is very unique because it was the first Public-Private Partnership for the Corps of Engineers, where the Corps of Engineers partners with a Diversion Board of Authority and private engineering firms in the basin to deliver a flood risk management solution. Terry shared that the project's success will be providing flood protection for 230,000 people in Minnesota and North Dakota. She is very proud of the work and technical expertise of the FMM team. Terry shared a link where you can learn more about the project and follow the progress of this very large flood risk management project; <https://FMdiversion.gov>



CENTENNIAL CELEBRATION UPDATE: OPPORTUNITIES TO VOLUNTEER AND SERVE

Kenton Spading – Criterium-Schimnowski Engineers

Volunteering for service is a tradition within SAME that extends to the Board of Direction at the national level all of whom are volunteers. The board is led by five national officers, twelve directors, seventeen regional vice presidents and the chairs of the mission committees and councils and additional non-voting volunteer members.

At the local level, when you become a community service volunteer, you are lending your skills, time, and resources to help those in need. Mentoring is a component of volunteering exposing the people you encounter to engineering and science. There are many opportunities to volunteer within the SAME-MSP Post that allow you to expand the networking you do at luncheon meetings to fellow volunteers and within the community at large. The MSP Post volunteer opportunities include science, technology, engineering, and mathematics (STEM) outreach such as Future City Competition: Minnesota Regional Championships judging and Elementary School Outreach as well as Habitat for Humanity projects.



2020 Post Readiness for Natural and Manmade Disasters Award Winners:
New London-Spicer Middle School

The Future City Competition was offered for the first time in Minnesota during the 2000-2001 school year. The mission is to expose middle school students to engineering in a creative, hands-on approach. MSP Post volunteers mentor student teams and share real-life STEM experiences, technical guidance and translate academic concepts to the world of engineering and city design.

For information on STEM volunteer opportunities contact **Peter Allen** at: 612 712-2002, Peter.Allen@stantec.com.

Habitat for Humanity (HFH) was founded in 1976. The Post volunteers spend a Saturday assisting new construction, or rehabilitating an existing home, that often be occupied by a first-time homeowner. Similar to a STEM volunteer HFH provides an opportunity to make a difference. HFH works to eliminate poverty housing by creating affordable homes in healthy neighborhoods with access to jobs, transportation and quality schools. For information on Habitat for Humanity volunteer opportunities contact **Kenton Spading** at: 651-272-7970, KSpading@Comcast.net

Other ways to volunteer within the Post includes serving on a committee. To learn more visit <https://www.same.org/mpls-stpl> under: Get Involved, STEM Outreach or Habitat For Humanity. The Scholarship Committee and Grants for Educators committees are additional opportunities to provide community service while expanding your professional network.



2019 Habitat for Humanity Project

2021 SAME EDUCATION GRANTS!

Chris Erickson – U.S. Army Corps of Engineers, St. Paul District

The 2021 Education Grant Application Forms are now available on the [STEM Outreach](#) page of the web site, as well as via the contacts below. The SAME Minneapolis-Saint Paul Post is offering educational grants for up to \$3,000 for elementary and secondary schools for the upcoming 2020-2021 school year. Our fundamental goal of SAME is to “Promote and understanding of, and appreciation for, the engineering-related disciplines and to help the young people in our communities become better prepared to become our future engineers.”

The Minneapolis-Saint Paul Post is requesting applications from schools and classroom teachers who are:

- ★ Committed to supporting the math and sciences that support future engineering-related career opportunities; and
- ★ Located within a 100-mile radius of Saint Paul, Minnesota.

Applications will be reviewed on the following criteria:

- ★ Creativity and quality of the proposed project,
- ★ Demonstrated demand or need for the project, and
- ★ Support of the Minnesota or Wisconsin math and/or science academic standards.



Application documents may also be downloaded from the SAME website here:

- ★ [PDF Application](#)
- ★ [MS Word Application](#)

The deadline for submitting scholarship applications is **Friday, April 2nd, 2021**. For additional information or to request the application forms directly, please contact [Chris Erickson](#). To see previous winners and examples of the projects funded, a listing of historical grants is available on our [Grants for Educators](#) webpage here:

https://www.same.org/Portals/0/DNNGalleryPro/uploads/2021/1/5/Summary_Awarded_Educational_Grants_2009-2020.pdf

SMALL BUSINESS CORNER

Sherry Van Duyn – Landmark Environmental

Mark your calendar for the 22nd Annual Small and Disadvantaged Business Opportunities Council (SADBOC) Government Procurement Fair for Thursday, April 29, 2021. This trade fair is intended to provide opportunities and assistance to small businesses interested in pursuing Government contracts. Like 2020, the 2021 conference will be a virtual conference. For more information on the upcoming conference and to see the slides from the 2020 conference, visit <https://minnesota.feb.gov/programs/small-business-opportunities/>



POST SCHOLARSHIP APPLICATIONS AVAILABLE

Erin Krug – U.S. Army Corps of Engineers, St. Paul District

The 2021 Scholarship Application Forms are now available on the [STEM Outreach](#) page of the web site, as well as via the links below. The SAME Minneapolis-Saint Paul Post will be granting three scholarships: two (2) one-time \$1,500 scholarships and one (1) \$1,500 multi-year scholarship. The deadline for submitting scholarship applications is **Friday, April 2nd, 2021**.

If you know someone who is deserving of a scholarship, please urge the young person to apply for one the Post's scholarships. Applicants are rated in a number of areas including academics, school activities, and community activities. High school seniors and Post-secondary students are eligible if they are either:

- ★ **Children, grandchildren, or siblings, of members of the Minneapolis-Saint Paul Post.** Sponsoring members must be a SAME Minneapolis-Saint Paul Post member for the current year and have been a member of the Post for a minimum of at least one year prior to the current year.
- ★ **Student Members of the SAME Minneapolis-Saint Paul Post** who will be registered as full-time post-secondary students in the fall of the year of selection. Applicants under this category must be registered through SAME as a Student Member; student memberships are free for full-time undergraduates at an accredited college or university, or high school students.



Applicants must be registered as full-time post-secondary students in the fall of the year of selection and be majoring in an accredited engineering, science, math, or technology-related field and/or disciplines that will specifically support these fields of study.

A committee of Post members evaluates the applications. All applications are kept confidential, and only the winners are announced. For additional information, please contact Erin Krug at Erin.E.Krug@usace.army.mil or 651.290.5576. Scholarship Application Packages can be downloaded from the Post's website at: <https://www.same.org/Get-Connected/Find-a-Post/MPLS-STPL/STEM-Outreach/Post-Scholarships>

POST SCHOLARSHIP VOLUNTEERS NEEDED!

Erin Krug – U.S. Army Corps of Engineers, St. Paul District

The Post Scholarship Review Committee is looking for four new committee members starting in 2021. The Post Scholarship Review Committee members typically hold three-year terms and review scholarship applications in mid-April every year. The estimated annual commitment is between 5 and 20 hours depending on how applications are received. Contact Erin Krug at Erin.E.Krug@usace.army.mil or 651.290.5576 for more information on joining this fulfilling committee!



THANK YOU!

Thank you to all our Sustaining Firms – SAME-MSP appreciates your support and wants to make sure all our members are aware of it, too!

- ★ AECOM
- ★ Anderson Engineering of MN
- ★ Ayres Associates
- ★ Barr Engineering
- ★ Bergmann Associates
- ★ Burns & McDonnell
- ★ Cardno Inc.
- ★ CH2M Hill
- ★ Cushing Terrell
- ★ Eaton Corporation
- ★ EMR Inc.
- ★ Hammel Green and Abrahamson
- ★ Hanson Professional Services
- ★ HDR Engineering
- ★ HNTB Corporation
- ★ Jacobs
- ★ Landmark Environmental
- ★ Mortenson Construction
- ★ Parsons
- ★ Quantum Spatial
- ★ Rani Engineering
- ★ RSP Architects
- ★ SEH
- ★ Stanley Consultants
- ★ Stantec
- ★ Terracon
- ★ Weston Solutions
- ★ Wood Group

Did you know that as part of your sustaining membership we encourage you to talk about yourselves to our members? Please email Sherry Van Duyn at svanduy@landmarkenv.com or Dave Ausdemore at dave@hsscience.com, if you would like more information on how to get involved!

