

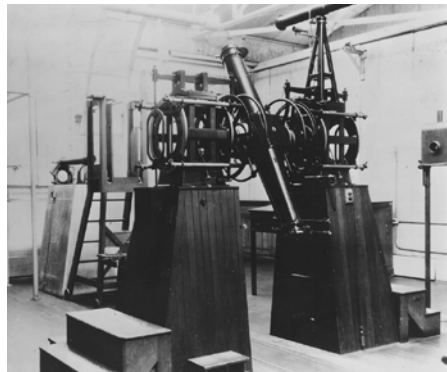
The Jefferson Stone, The Naval Observatory, and America's Prime Meridian

During the early formation of the District of Columbia, in the years following the Revolutionary War, there was a strong desire to separate the new nation from Europe, in all aspects. One facet of that belief was the establishment of an American Prime Meridian. One in which there would be no relation to the existing acceptance of the Prime Meridian established at Greenwich.

During the presidential administration of Thomas Jefferson, he soon realized the necessity of a prime meridian as he commissioned the Lewis and Clark Expedition. Prior to the expedition's departure, Jefferson elicited the help of Andrew Ellicott to assist members of the expedition in the use of instruments for rudimentary measurements for latitude and longitude. Ellicott had just completed his survey of the District of Columbia boundary and he set about to help with instruction in the use of the instruments and the calculations for astronomical observations.

Within a short period of time Jefferson also mandated an American prime meridian, a line he proposed that would run through the White House and marked by a stone monument placed near the site of what was to become the Washington Monument. However, over the next decade or so it was discovered that any meridian other than that of Greenwich was found to be too cumbersome, especially when navigating at sea.

In the years following Jefferson's presidency the Navy began their efforts with the creation of the Depot of Charts and Instruments and as an outcome an observatory was established on the grounds of the Capitol Building. The Navy, with a pronounced interest in an adequate navigation system, officially established the US Naval Observatory in the 1840's. with its first observatory



The Six-Inch Transit Telescope – Old Naval Observatory

building located east of the White House, near what is now the Kennedy Center. And, much later to its current location on Massachusetts Avenue. Although his idea for a unique American prime meridian was not realized Jefferson's idea for a rectangular land partition system did become reality to eventually become the U.S. Public Land Survey System. To serve as the base line for that effort an American prime meridian, correlated to the Greenwich Observatory was established through the old Naval Observatory to be used for the establishment of longitude in the various states and territories.

This presentation examines the origins of an American Prime Meridian with Jefferson's early efforts in the District of Columbia, and the Navy with the establishment of a national observatory. All of which culminated with the U.S. Public Land Survey.

About the Speaker

Steve Pennington is a Senior Manager with Geo Instruments, Inc. an affiliate of Keller North America. The company operates out of several regional



Please join us on **Tuesday, February 21st, 2023** at the Hilton Arlington, 950 North Stafford Street, Arlington, VA, on the second floor in the Gallery Ballrooms. Parking is available at the hotel (\$10), at the Ballston Mall garage (\$1 after 6 pm), and on the street (free after 6 pm). The Hilton is on the same block as the Ballston Station on Metro's Orange and Silver lines. Registration and networking will be from 6:00 to 6:45 pm, followed by dinner. The program will end by 8:30 pm. The cost is \$45 for those preregistering, \$10 for students and \$55 for walk-ins, as space allows. For questions, please contact [Elizabeth Wheeler](#). Please click [here](#) to register by **Friday, February 17th**.

Note that no-shows will be charged the full registration fee. We welcome walk-ins, including any registrations made after the guaranteed number of guests is provided to the hotel. However, the cost for walk-ins is higher because the Section is charged accordingly by the hotel for late registrations.

offices throughout the country specializing in the design and implementation of instrumentation systems for investigation of engineering applications, both structural and geotechnical. He is based in the company's Virginia office in suburban Washington, DC. He holds two degrees in civil engineering and is a licensed professional engineer in eight states and a professional land surveyor in two.

Steve is a member of the American Society of Civil Engineers and is active in the Society's National Capital Section

continued on page 2

President's Corner

Ciao, National Capital Section! Wow – I can't believe how busy these last couple of months have been. From traveling to Italy and experiencing the breathtaking views of the Dolomites, to traveling to Charlotte for the 2023 Regions 1, 2, 4, & 5 Multi-Region Leadership Conference (MRLC), I feel like I have so much to share with you all.

Back in December, I had the special opportunity to visit Italy with one of my best friends, Kayla. If you're like me, I had always thought of Italy as cobblestone roads where you could eat as much pizza and pasta as your heart desired. This past trip to Italy, though, taught me that there is so much more to the country if you take



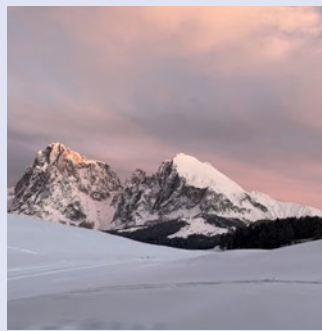
the chance to travel outside of your comfort zone. While there, we visited the South Tyrol region of Italy where we spent a week exploring the Dolomite mountains by playing in the snow, eating tons of *canederli*, and meeting new people. The trip started out with a stay in the city of Verona,

which is where Shakespeare based his play *Romeo and Juliet*. During our stay in the city, we visited the Christmas Markets for which Italy is known. From there, we traveled to Seiser Alm where we took a horse-drawn carriage ride to a local restaurant and warmed up with mulled wine and vegetable soup. The landscape of this region was absolutely spectacular – snow-capped mountains rising up out of rolling hills that were covered in a blanket

of pure-white snow. A vibrant sunset filled with soft pinks and beautiful blues was nothing short of magnificent. I didn't think we could see anything else as beautiful as those mountains, but I

was proven wrong with our final stop in Lago di Braies, where we stayed at a 123-year old hotel situated on a lake. Although we didn't stay long in the area, we stayed long enough for us to meet people from all over the world – Italy, Brazil, even Mexico. The trip was a once-in-a-lifetime opportunity that I am so fortunate to have been able to experience. If anyone in the Section ever has the opportunity to visit the region, I highly recommend you go! As for those who might have already visited, I'd love to hear more about your trip!

Fast forward several weeks and I was once again getting on a plane, but this time for a short trip down to Charlotte, NC for the opportunity to attend the 2023 MRLC for our Region. For those of you who are looking to get involved with the Section, I cannot recommend this conference enough. By learning more about ASCE's platform of resources available, I felt that the conference gave me more confidence in my knowledge about the Society so I can be a better President for the Section. They also had several helpful presentations on professional development topics, such as Non-Verbal Communication Skills and Presentation Skills – How to Wow
continued on page 3



The Jefferson Stone, The Naval Observatory, and America's Prime Meridian

continued from page 1

where he has been a two-time recipient of the section's "Meritorious Service Award" advocating for the history of the profession. He is also a member of the American Railway Engineering and Maintenance of Way Association

(AREMA) and the Society of American Military Engineers (SAME.)

Steve is the author of a recently published biography of Benjamin Wright whom ASCE declared the father of the

profession in America. He has also previously co-edited publications and conference proceedings and this recent biography of Wright is Steve's first as an author. He, along with his wife, Joan, reside in Fairfax Station, Virginia. ■

Newsletter

Maria Raggousis, Editor

March 2023 Issue Deadline: February 24, 2023

To Submit Articles: newsletter@asce-ncs.org

NCS eNewsletter Archives: go to www.asce-ncs.org and view along the sidebar.

Address Changes: Call 1-800-548-ASCE, e-mail member@asce.org, visit www.asce.org, or write: ASCE – Membership, 1801 Alexander Bell Drive, Reston, VA 20191. Include your membership number.

National Capital Section

Officers (2022–2023)

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Christopher Friend, P.E., Reston Branch President

Committee Chairs

Please refer to the [NCS website](http://www.asce-ncs.org) for a current list of NCS committees and chairs.

President's Corner, continued

Your Audience!, both given by Dr. Brock Barry, P.E.

While there, I had the opportunity to meet numerous civil engineers from around the country, including all of our Region 2 Governors. Unfortunately, during my talks with the Governors, I was informed that for the past several years, there has been minimal involvement from the National Capital Section on a Region-scale. As a goal for my presidency during the 2022–2023 year, I'd like to try and start making an effort to change that. By having representatives from the Section at the various events around the country, we are able to share that knowledge with the other



members of the Section and continue to grow the profession of Civil Engineering.

If anyone would like more information about getting involved in the Section

or would like to attend the 2024 MRLC in Miami, Florida, please feel free to contact me. There are plenty of ways to get involved, and I'd be more than happy to work with you to find the opportunity that best fits your interests.

For now, *arrivederci*, National Capital Section. I'm looking forward to our next Newsletter and all of the exciting updates I will have for you then.

Sincerely,

Elizabeth M. Wheeler, P.E., M. ASCE
ASCE NCS President

National Nature Assessment with ASCE National President

ASCE hosted a collaboration session to help shape the first ever National Nature Assessment on Wednesday, February 1, 2023 from 10:00 am – 12:00 pm. This new assessment, being led by the U.S. Global Change Research Program (USGCRP), aims to take stock of nature



across the nation, synthesize what we know about how nature matters to the economy and people's lives, and explore how nature is likely to fare in the future.

Whether you are an engineer, designer, planner, or someone who just cares about resilient infrastructure, water, or nature, the Federal Steering Committee guiding the assessment wants to hear from you:

- What does nature mean to you?
- What decisions should this assessment support?
- What questions should it answer?
- How do we make this assessment as useful as possible?

ASCE hosted this session to provide a brief overview of the scope of the National Nature Assessment and an opportunity to give direct input to the open request for information on framing the assessment. Those in attendance heard from Maria Lehman, PE (President, American Society of Civil Engineers), Dr. Jane Lubchenco (White House Office of Science and Technology Policy), Assistant Secretary of the Army for Civil Works Michael Connor, and Dr. Heather Tallis (USGCRP). The event took place at the Reservoir Center for Water Solutions in Washington, D.C. ■

ASCE-NCS Newsletter Patrons



In Memorial: Norine M. Walker, 1959–2023

Norine M. Walker (63) passed away on January 24, 2023. Her sunny smile and warm presence will be missed by all who knew her. A virtual/online Memorial event is planned for 1 pm EST Monday, February 27, 2023, and later this summer an outdoor Celebration is planned for friends to gather. Additional information will be posted [here](#) closer to the date.

Throughout her illustrious career, Norine amassed a vast array of friends, associates, and professional accomplishments covering many facets of transportation engineering in the Baltimore/Washington area. A Professional Engineer (PE) specializing in transportation, she excelled in and enjoyed community outreach, environmental protection and traffic management. One of her favorite projects was the “new” Woodrow Wilson Bridge \$2.3 billion mega-project. The project, for which construction began in 2000, involved multiple stakeholders to build the world’s largest drawbridge on I-95. She was deeply involved in the environmental planning and approval phases, and then in design oversight work and construction phases. She led the community relations aspects, highlighting her strong communications skills.

Over the years, her volunteer activities encompassed serving on the Boards of Directors for the National Capital Section of the American Society of Civil Engineers (ASCE) and for the Washington DC Section of the Institute of Transportation Engineers (WDCSITE), as well as stints with many committees. Norine received the ASCE “Lifetime Excellence in Service Award” in 2018. She was elected a Fellow of the ASCE in 2016. That year, she co-authored the award-winning book, “Engineering the Nation’s Capital” commemorating the 100th anniversary of the Section. Largely for her work with the Section, but also due to her work on a major widening project of the Baltimore Beltway (from I-70 to I-97), WDCSITE honored her with the Young Engineer of the Year award in 1992.

A proud graduate of the University of Maryland (UMD), she invested many hours mentoring undergraduates and younger engineers. She regularly



attended Women’s Transportation Seminar (WTS-DC) events in the region, supporting advancing women in the transportation field. She was active in the American Council of Engineering Companies of Metropolitan Washington and their Transportation Committee. The National Academy of Sciences’ Transportation Research Board (TRB) hosts its annual meeting, “home” to many in the transportation community for a week each January, similarly drew Norine. She served on many TRB committees and subcommittees throughout her career; the impressive list appears below.

Norine was a former member of the Board of Directors of the Arthritis Foundation. Having contracted rheumatoid arthritis in her teens, she largely ignored its debilitating effects and simply soldiered on through challenges. This past year, she weathered an unrelated condition with her usual grace and optimism. Finally, she succumbed to complications after surgery for the condition.

An “Army brat”, born at Fort Belvoir, VA, Norine spent her early years in California before her parents settled in Laurel, MD. While pursuing dual degrees in Civil Engineering and Urban Studies at UMD, Norine interned with the Maryland Department of Transportation in its Washington Regional Office. Upon graduation, she took a position at Rummel, Klepper and Kahl in Baltimore in their growing NEPA planning department and she rose with her Engineer-in-Training and subsequent PE license. Her career then took her to Greiner (now AECOM) where she continued to lead NEPA planning studies, including for the Woodrow Wilson Bridge project. At one point in mid-career she went solo but was lured back to the corporate world working for Sabra Wang & Associates. Later Norine switched over to the public sector when she worked at Virginia Railway Express. Most recently she was Vice President for SYSTRA’s metropolitan Washington area office.

Norine is survived by two brothers, several cousins, many lifelong friends and a host of colleagues.

Among her Awards and Honors

- University of Maryland B.A. ‘81 urban studies and B.S. ‘83 civil engineering
- Fellow, American Society of Civil Engineers (ASCE), 2016
- Lifetime Excellence in Service Award by ASCE, 2018
- Trailblazer Award, Conference of Minority Transportation Officials (COMTO), 2006
- Changing Our World: True Stories of Women Engineers, a 2006 book featured four UMD Clark School of Engineering alumnae, including Norine M. Walker.
- Maryland’s Top 100 Women, by The Daily Record, 2000
- Young Engineer of the Year, Washington DC Section Institute of Transportation Engineers, 1992

Transportation Research Board Committee Assignments

- Member, TRB Standing Committee on Statewide Multimodal Planning, 1996–2002
- Member, NCHRP Project Panel on Quantification of Benefits and Cost Effectiveness of Context Sensitive Design and Solutions in Transportation Facilities, 2005–2009
- Chair, NCHRP Project Panel on Transportation Project Management – Best Practices, 2005–2010
- She also had been a “Friend” of standing committees on Public Involvement and Sustainability since 2016.

Donation Suggestions

- The ASCE/NCS Scholarship Trust: <https://asce-ncs.org/index.php/special-features/scholarship-program/37-scholarship/228-the-asce-ncs-scholarship-trust-funding-sources>
- Washington DC Section of ITE: https://wdcsite.org/Become_a_Sponsor
- WTS Scholarships: <https://www.wtsinternational.org/chapters/washington-dc/scholarships>
- TRB Minority Student Fellows Program: <https://www.trb.org/AboutTRB/MinorityStudent.aspx>
- Arthritis Foundation: <https://info.arthritis.org/donate-today/>

Concerns of plastics in the environment: a UN treaty to end plastic pollution?

Dr. Hossain Azam, P.E., Assistant Professor of Environmental Engineering, University of the District of Columbia, Washington, DC

The world produces around 460 million metric tonnes of plastic a year, and without urgent action, this production will triple by 2060 (UNEP, 2023). Moreover, the world generated 139 million metric tons of single-use plastic waste in 2021 (Charles and Kimman, 2023). Over 14 million metric tonnes of plastic enters and damages aquatic ecosystems annually, and greenhouse gas emissions associated with plastics are expected to account for 15% of the total emissions allowable by 2050 if the world wants to limit global warming to 1.5°C (UNEP, 2023).

There are major concerns among scientists and engineers as we (humans) are ingesting microplastics (very small-often microscopic pieces of plastics) with our food, beverages, water and even with the air that we breathe. We often use plastic products as they have outstanding properties (e.g. light-weight, durable, versatile, low production cost etc). Recently, plastic debris has raised serious global concerns over its environmental consequences with its wide distribution in marine environments, freshwater systems, sediments as well as even in air. It was estimated by scientists that up to 10% of plastic fragments might end up in marine environments. Microplastics generally enter into the natural environment from a variety of sources including cosmetics, clothing, and industrial processes. Microplastics can diminish the aesthetic value of the water environment, cause biodiversity loss, affect the food chain and likely pose threats to public health.

The microplastics are mainly defined as plastic particles not exceeding a 5 mm size limit with smallest size classes of plastic particles being below 100 nm or 1000 nm. Sometimes microplastics with sizes <100 nm or <1000 nm are called nanoplastics [NPs]. Humans, unfortunately, have spread microplastics to every ecosystem on the planet from deep sea to remote places on land. Furthermore, microbeads, a type of microplastic, are very tiny pieces of manufactured polyethylene plastic that are added



as exfoliants to health and beauty products, such as some cleansers and toothpastes, can easily pass through water filtration systems and end up in the environment posing a potential threat to aquatic life. On December 28, 2015, Former US President Obama signed the Microbead-Free Waters Act of 2015, banning plastic microbeads in cosmetics and personal care products. There have been major studies done in the US on microplastics recently and they reported that Americans eat, drink and breathe between 74,000 and 121,000 microplastic particles each year depending on their age and sex. There is evidence that microplastics can affect fish and its subsequent production patterns. Exposure to plastics can harm human health by potentially affecting fertility, hormonal, metabolic and neurological activity, while open burning of plastics contributes to air pollution. Plastics can also alter global carbon cycling through their effect on plankton and primary production in marine, freshwater and terrestrial systems.

Thus, there is an urgent need to reduce plastic pollution. According to the United Nations (UN), a life-cycle

approach can reduce the volume of plastics entering the ocean by over 80% and save governments US\$70 billion by 2040. It can also reduce greenhouse gas emissions by 25% and create 700,000 jobs. This approach revolve around four main areas needed to transition to a circular economy: a) eliminating and substituting unnecessary plastic and hazardous additives, b) designing plastic products to be reused and recycled, c) ensuring products are reused and recycled, and d) managing plastic pollution in an environmentally responsible manner.

A major step has been taken by world leaders to end plastic pollution at the UN Plastic Summit held at Nairobi, Kenya in hybrid mode from February 28 to March 02, 2022. The fifth session of the UN Environment Assembly adopted a draft resolution called "End plastic pollution: Towards an international legally binding instrument" at the summit on March 02, 2022. The Heads of State, environment ministers and other representatives from 175 nations, endorsed this historic resolution to end plastic pollution, and to finalize an international legally binding agreement by the end of 2024. This is the most important multilateral pact adopted by world leaders since the Paris Climate accord of 2015. This meeting was attended by more than 3,400 in-person and 1,500 online

continued on page 6

Dr. Z's Corner, continued

participants from 175 UN Member States, including 79 ministers and 17 high-level officials.

The treaty is expected to address the full life cycle of plastic that includes production and design, as well as waste. The plastic is responsible for a soaring environmental crisis that is destroying marine habitats and contaminating the food chain. Hopefully, this treaty with its final adoption in 2024 can alleviate the impacts of plastic production and pollution on the triple planetary crisis of climate change, nature loss and pollution.

About the Author

Hossain Azam, Ph.D., P.E. is currently working as an Assistant Professor of Environmental Engineering at the Department of Civil Engineering of the University of the District Columbia (UDC) in Washington, DC. He worked previously at Manhattan



College and the George Washington University (GWU). He also performed pilot/full scale wastewater research at DC Water as a Research Associate and worked as a Post-Doctoral Research Associate at University of Illinois at Urbana Champaign (UIUC). Dr. Azam completed his PhD degree in Environmental Engineering from University of Illinois at Urbana Champaign (UIUC), MSc degree in Water Resources and Environmental Engineering from North Carolina State University (NCSU) and BSc degree in Civil Engineering from Bangladesh University of Engineering

and Technology (BUET). Currently, he teaches different undergraduate and graduate environmental engineering courses including courses on environmental pollution, water & wastewater treatment and water-energy-food-climate nexus. He is leading an active research group at UDC and is performing different applied and fundamental research projects in the field of water and wastewater as well as water-energy-food-climate nexus at UDC. He secured ~1.3 million PI grant and ~4.64 million Co-PI grant at UDC in the last 3 years from different federal agencies and industries such as NSF, DoD, USDA, NASA, DC Water, DC WRRRI etc. Professionally, he is actively engaged with Water Environment Federation (WEF) and its different national and regional committees as well as leading a book on Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) as Editor and authors of several chapters. He is a professional engineer and currently, he is licensed as P.E. in Washington, DC.

DCCEAS National Engineers Week

The District of Columbia Council of Engineering and Architectural Societies (DCCEAS) helps the engineering, architectural, and technically lead organizations in the District of Columbia metropolitan area render public service and advance the professions through public interest, scientific, and educational activities and outreach pursuits.

Join us as we celebrate National Engineers Week with the Washington DC Area Engineering community Celebrating 85 Years of Service to the DC Metro Area.

To our many engineers representing the societies in the DCCEAS community deserving recognition at the national level for their individual efforts, both from the senior and junior ranks, goes our hardy appreciation and recognition for their service to the community. We wish continued success in their endeavor now and into the future. On behalf of the DCCEAS please join our outreach and salutation to those who are seen as worthy of distinction and individual recognized awards.

Engineers Week Events

DCCEAS National Engineers Week Proclamation Luncheon

February 22, 2023

11:30 to 1:30 pm, Wednesday
Maggianno's Little Italy Restaurant
5333 Wisconsin Ave NW
Washington DC, 20015
Tickets are \$50 for individuals

DCCEAS National Engineers Week Awards Banquet

February 25, 2023

6:30 to 9:30 pm, Saturday
Maggianno's Little Italy Restaurant
5333 Wisconsin Ave NW
Washington DC, 20015
Tickets are \$65 for individuals

Improving Defenses Against Tort Claims

Simple changes in processes can significantly improve defenses against tort claims.

by Ranjit Sahai, PE, F.ASCE

The content in this article is based on an ASCE hosted presentation by Nazir Lalani, PE. It had been available in 2022 as a free PDH on-demand webinar titled, "Risk Management and Design Immunity – An Interactive Approach to What Works and What Doesn't (AWI032620)."

Though Nazir's background and focus is on transportation projects, the lessons he shares are universal across all specializations in civil engineering.

Two other helpful resources worth reviewing include: [Chapter 8](#) from FHWA's course on bicycle and pedestrian transportation, and ACEC's "[Do You Know the Standard of Care?](#)".

Top Vulnerabilities in Tort Cases

To mitigate risks, it is important to understand issues that frequently create those risks and expose engineers and/or their clients to liability for tort claims. For transportation infrastructure projects, those issues are:

- Access to latest approved plans
- Deployment location of traffic control devices
- Operations and maintenance issues

Requirements for a Tort Claim

How does a case for damages (monetary compensation) from a tort (wrong or injury) move through the court system?

A tort involves a defendant (the accused) and a plaintiff (the injured), where the former owes a legal duty to the latter, where the former has breached their duty to the latter, where the neglected duty is the cause of the injury, and the wronged has suffered damages.

It is important to note that each of the four requirements that constitute a tort case – owe legal duty, breach of duty, neglected duty as cause, and damages suffered – must hold true before a case can successfully move through the court system and be judged.

"A crime is a wrong arising from a violation of a *public duty*.
A tort is a wrong arising from the violation of a *private duty*."

The term "private duty" in the quote above from [is.muni.cz](#) refers to the professional "standard of care" doctrine in tort law.

Almost every fatal accident results in a claim. Either the injured party finds an attorney or an attorney finds the injured party, usually from newspaper stories. Insurer seeks to spread/reassign risk. Attorneys from both sides hire forensic and technical experts to assist with issues on each requirement for tort claims.

Questions that arise include but are not limited to: Is the accused the asset owner? When were design and construction completed? Who performed those services? Is asset operated and maintained per industry standards? Is there a history of accidents at the asset? Was the injured to blame for the injury? Was the cause an existing dangerous asset condition that could have been discovered through proper inspection procedures?

Documentation Improves Defense

- Document consideration of multiple alternatives
- Evaluate and document design decisions
- Maintain control over design decision making
- Demonstrate commitment to mitigate safety concerns through past inspection and maintenance actions
- Monitor design exceptions to improve decision making
- Demonstrate impacts of meeting minimum or lower design criteria (serviceability, safety, operations, future maintenance) and have design exceptions reviewed and approved by appropriate stakeholders

The most common problem with design immunity defense is the inability to find signed and stamped plans! It is vital to implement a system for

storage and retrieval of contract plans and inspection/maintenance records when needed.

Trial costs for a transportation agency defendant to go to court can be \$350K or more. This is the sobering reality that motivates many cases to settle out of court.

Parting Words

Engineers are typically unfamiliar with legal terms and civil court procedures. Consequently, their design processes do not prioritize the development and retention – alongside project plans and specifications – of documentation that courts require of them to support their defense arguments against tort claims.

Implementing processes for documenting considerations and decisions, implementing inspection and maintenance processes that demonstrate commitment to finding and remediating dangers go a long way in improving defenses. And don't forget the value of implementing document management best practices in support of accumulating relevant evidence as proof of commitment to safety of asset users.

About the Author

Ranjit, a Past President (2013–14) of ASCE-NCS, is a principal and founder of RAM Corporation, a firm serving State DOTs with a focus on traffic engineering design, stormwater facility inspections, and IT solutions for engineering workflows.



ASCE-NCS Committee and Branch News and Updates

Architectural Engineering Institute (AEI) Committee

Join AEI DC for [Ice Skating at the National Gallery of Art Sculpture Garden](#) on February 22nd at 7 PM! Take a spin on the ice surrounded by the grand architecture of national museums and monuments. Enjoy splendid views of large-scale sculptures from artists in our renowned collection, including Alexander Calder, Louise Bourgeois, and Roy Lichtenstein. AEI DC will plan to meet for light appetizers (on us) and drinks from 6 to 7 PM at [Oyamel Cocina Mexicana!](#) Ice skating will be from 7 to 9 PM. Tickets are \$12 and skate rentals are \$6 if you don't have your own. Fees cover two consecutive, 45-minute skating sessions that each begin on the hour, leaving a 15-minute break for ice maintenance. Tickets are first come, first served, no reservations are available for open-skate.



STRUCTURAL
ENGINEERING
INSTITUTE

Structural Engineering Institute (SEI) Committee

It's been a long time since you have heard from the SEI committee but we are here and planning to reinstate the monthly structural committee talks and other activities related to SEI. We would love to have your support if you are interested, and we have several roles to fill in the SEI committee.

Please reach out to [Ardalan Mosavi](#) if you have ideas for potential presentation topics, are interested in presenting, or are interested in serving as a board member.

Sustainability Committee

The ASCE-NCS Sustainability Committee and the ASCE-NCS YMF are looking for enthusiastic volunteers to help out and provide support for planning and championing of supplemental

networking events, technical tours, and local celebrations and events to enhance the 2023 INSPIRE Conference.

If you are interested in volunteering and would like to learn more about how you can help, please contact Alex Rosenheim at tcc-sus@asce-ncs.org.

ASCE INSPIRE 2023

Arlington, VA | November 16–18, 2023
ASCE INSPIRE 2023 offers an opportunity to connect with, share knowledge, and learn from experts actively bringing the future to life with plenary speakers, technical sessions, local tours of engineering projects, and the Hall of Inspiration.

Conference Focus: Future-Ready Infrastructure involving nature-based design and technological advancements in materials, energy use, and system-to-system communication and adaptive planning and management capabilities that respond to the risks from increasingly interconnected infrastructure. Understanding and adapting to risks such as changes in the earth's temperature, increasing frequency of natural hazards, and the impact of sea level rise drive the need for civil engineers to design and build equitable, smart, hazard-resilient, people-centric engineering projects.



Important Dates

| | |
|----------------|--|
| OCT 19 2022 | Call for Abstracts Open |
| JAN 13 2023 | Abstract Submission Deadline |
| MAY 5 2023 | Optional Final Draft Papers Due |
| JUN 14 2023 | Registration Opens |
| JUN 30 2023 | Optional Final Papers Due |
| NOV 16 2023 | ASCE INSPIRE 2023 Begins |

As the United Nations and governments across the globe are implementing requirements and regulations for public and private entities to disclose carbon impacts, civil engineers will be ready to respond, helping to mitigate carbon emissions, and respond to the demand for resilient infrastructure and community designs.

For more information, visit: <https://inspire.asce.org/>.



Younger Members Forum (YMF)

By Kush Vashee, P.E., CAPM, M. ASCE

Monthly Happy Hour. The NCS Younger Members Forum (YMF) holds monthly happy hours, alternating between Arlington, VA and Washington, DC. Happy hours are usually the first Wednesday of each month unless a holiday falls during that week.

The group held their first happy hour of the year on Wednesday, January 6th at Penn Social! We hope everyone had a great time! The second in-person happy hour was on February 1st at BlueJacket in Navy Yard. Look out for some emails soon with registration details and location information. We hope to see you there!

Professional Development: Please share suggestions of any professional development activities you would like us to organize in the future.

Stay Connected! Check out photos and stay up-to-date with YMF events by visiting the new YMF Facebook page (ASCE National Capital Section Younger Members Forum), following us on Twitter (@ASCE_NCS_YMF), LinkedIn (ASCE National Capital YMF), and Instagram (@asce_ncs_ymf)

Get Involved! Are you interested in getting involved with more Younger Members activities? Do you have ideas for social events or volunteering activities? The NCS Younger Members Group is always looking for new members! Let us know if you are not already on our mailing list!

continued on page 9

Environmental & Water Resources Institute (EWRI) Committee

EWRI NCS committee welcomed Dr. Jason Davison and members of his laboratory to our monthly webinar series on Thursday, February 2, 2023, 12:00 – 1:00 pm EST.



This presentation discussed two separate student led activities that investigated the transport and movement of plastics in the hydrosphere. The first research project led by PhD student Grace Pooley Deans focuses on the Sligo Creek catchment in the Anacostia Watershed.



Grace collected water samples at a 0.5 mile interval over the 10 mile creek using a battery-powered peristaltic pump and two inline stainless steel filters. The samples were then processed in the laboratory and counted with an optical microscope. Microplastic concentration data is then input into our custom numerical code called PARTI (Particle Tracking-Inversion) to find the source location of plastic waste. The end goal of this work is to create a plastic waste distribution map.

The second project from the COSTIA senior design team focuses on creating a plastic waste object detection and counting algorithm with low cost cameras. The project team will implement small cameras across a watershed that automatically count the movement of plastic debris as they advect downstream. The team is composed of four computer science students that are creating a complete software package for external end users. Additionally, the team is using a multimodal approach to increase precision for diverse environments.



We look forward to seeing you at the next EWRI monthly webinar!

Reston Branch

By Michael J. Magyarics, P.E., M. ASCE, Reston Branch Vice President

On January 10, 2023, the Reston Branch hosted Jennifer Greenawalt, PE, SE, Senior Project Engineer at Thornton Tomasetti in Washington, DC, for her presentation entitled, “Capital One Hall.” This was the first fully in-person lunch-time meeting since before the pandemic. Her presentation discussed the new, high-end corporate event and performing arts center, named Capital One Hall, which includes a 1,600-seat main theater, 225-seat black box theater, and large atrium. It is located in the heart of the Capital One Center campus in Tysons, VA, just inside the capital beltway. The venue, with its more than 3,000-ton steel frame, is topped with a sprawling landscaped public park on the roof and sits above retail, an 18,000-square-foot loading dock and parking, which are shared with



the adjacent grocery store and hotel tower. Some of the notable structural challenges were supporting the heavy, active rooftop over the column-free atrium and theater spaces, ensuring patron comfort at the aggressively cantilevered seating balconies, and supporting the signature sawtooth marble and glass façade. The venue hosts a wide range of programs, from Broadway shows, concerts, and entertainment arts to local arts groups, partnering with ArtsFairfax.

Jennifer Greenawalt, P.E., S.E., LEED Green Associate is a senior project engineer at Thornton Tomasetti in Washington, D.C. Her experience includes analysis and design as well as renovations of concrete and steel structures in the Washington, D.C. metro

area, including a multitude of commercial, government, residential, performing arts, and sports projects. She holds bachelor’s and master’s degrees in civil engineering with a focus in structures from The Pennsylvania State University. Jen has been working as a structural engineer with the firm since graduating in 2015. She is a licensed structural engineer in Illinois and a licensed professional engineer in Maryland and California.

On January 14 the Reston Branch participated in the Chantilly High School TSA STEM Tech Fair. Reston Branch board members including Conglong (Vicky) Yu, Shainur Ahsan, and Mike Magyarics



participated in the event by running a booth highlighting aspects of civil engineering, including a display of Capital area projects over the last 100 years. They also created interactive engineering activities for participating grade – and middle-school students, including a paper tower building contest and a foil boat challenge. This was the first STEM Tech Fair sponsored by Chantilly High School, and it was a success that will probably be repeated for years to come. The Reston Branch will continue its outreach with the school and is planning another activity for the spring.

On February 7 the Reston Branch will host Joshua D. Valentino, PG, PhD, Project Geologist and Karst Geologist at Terracon in Ashburn, VA, for his presentation about the challenges of construction in karst terrains (title TBD). Similar to January, this luncheon meeting will be a fully in-person event at ASCE Headquarters (1801 Alexander Bell Dr, Reston, VA 20191). His presentation will discuss how construction in karst terrains can present a challenge to development, and how the industry has become increasingly aware of the impact, both to the site infrastructure and to human health and the

continued on page 10

environment, that may result from mismanagement of construction activities. These impacts include development of new karst features or acceleration of existing features, short term and long term damage to water supply wells from nearby homeowners, and the potential to negatively impact federally listed endangered species. To address these concerns, we developed a karst survey protocol specifically designed for the assessment of karst impact and risk at proposed construction sites, which is comprised of 1) desktop data review, 2) subsequent field reconnaissance to verify features, and 3) risk assessment determined per karst feature through a parsimony analysis consisting of five

karst feature coded variables. Examples of karst feature protection and remediation, geophysical investigations, and karst aquifer characterization will be summarized through case studies.

Joshua D. Valentino has been an avid caver since the age of 5 years old and grew up in a household full of geologists where his father, mother, and brother all have advanced geology degrees. This led to his interest in geology from an early age. He received his bachelor's degree in Geology from the State University of New York in Oswego, NY in 2011. He received his Doctor of Philosophy degree specializing in tectonics, geochronology, and glaciology at

Virginia Tech in Blacksburg, VA in 2017. He is currently a Professional Geologist (PG) working as a project geologist and karst geologist with Terracon, located in Ashburn, VA. His specialties include engineering geology, ArcGIS management and modeling, hydrogeology, and karst characterization, remediation and management.

The Reston Branch has launched a group on LinkedIn to provide regular updates for the Branch as well as offer a place for branch members to connect. See the following link for additional information: <https://www.linkedin.com/groups/13759693/>. ■

Employment Clearinghouse

The NCS provides the Employment Clearinghouse as a free service to its membership. The Clearinghouse allows members to post short notices for available positions or candidates seeking employment. All employers listed herein are equal opportunity employers. If you have questions, are seeking employment or would like to post a position please contact the [newsletter editor](#).