ASCE NATIONAL CAPITAL SECTION

eNewsletter

National Capital Section

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Alexandria Transit Company (DASH) Zero Emission Bus (ZEB) Implementation Plan

September "Lunch" Section Meeting

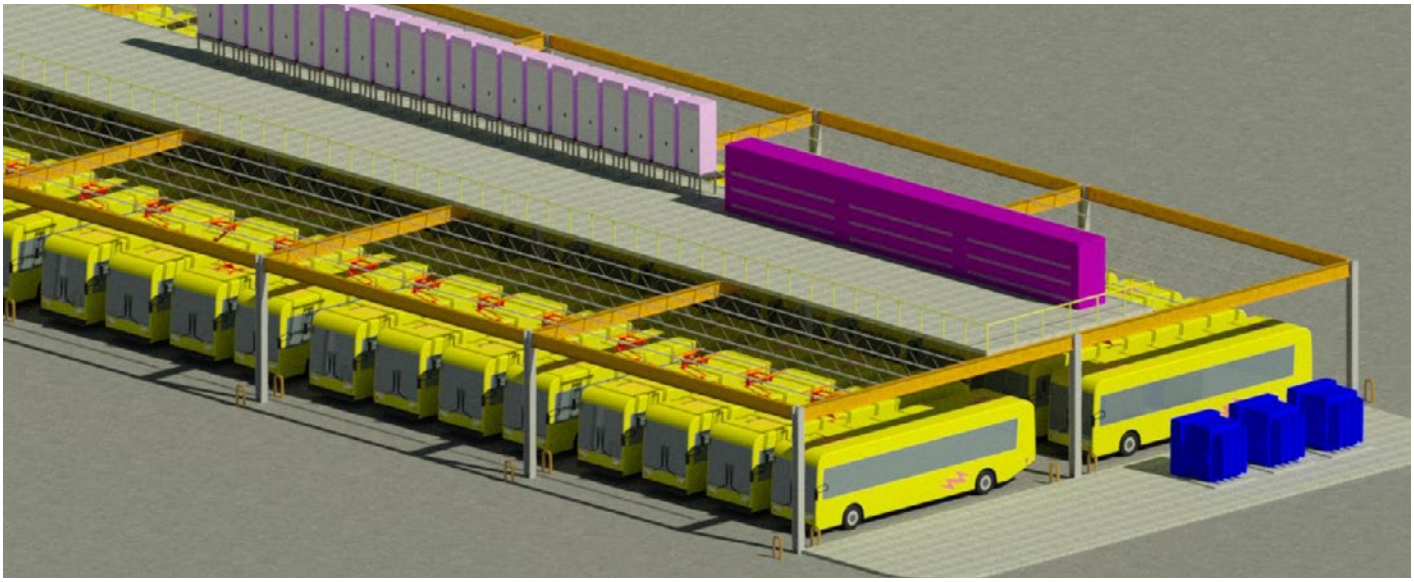
DASH and WSP collaborated in early 2021 to develop a ZEB Implementation Plan supporting the extension of their current maintenance facility to accommodate a future zero emission bus (ZEB) fleet. DASH plans to transition 100% of their fleet to battery electric buses (BEBs) by 2037. This transition will bring widespread community benefits by substantially lowering carbon emissions and decreasing noise pollution throughout Alexandria neighborhoods. To accomplish this transition, WSP assessed the existing DASH bus depot and determined optimal battery electric charging solutions, preferred vehicle flow to minimize disruptions, and provided a future ready solution utilizing automated yard design strategies.

About the Speakers:

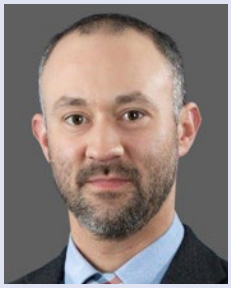
Raymond Mui is the Assistant General Manager for Alexandria Transit Company, DASH, and has been with the agency for over 10 years serving in a variety of high-profile roles. Currently, Mr. Mui oversees bus maintenance and operations personnel, with a leadership role in the recently launched battery electric bus (BEB) pilot deployment including six BEBs and six ground-mounted plug-in chargers. The BEB Pilot is one of the more advanced demonstrations in Northern, VA and will hold valuable lessons-learned for transit agencies throughout the region.

Severin Skolrud is WSP's Zero Emission Market Lead for DC, MD, VA, and WV. He is currently serving as MDOT MTA's Zero-emission Program Manager overseeing one of the largest fleet transitions in the Mid-Atlantic with a $1B CAPX over the next 9 years. Additionally, Mr. Skolrud is WSP's National Bus Automation Lead and is the lead author of the recent white paper focusing on Bus Automation Solutions for transit agencies in North America. Mr. Skolrud recently served as Project Manager for DASH's ZEB Implementation Plan and is leading a stakeholder coalition with the Advanced Energy Group (AEG) to increase the deployment of battery electric infrastructure in the Washington, DC region to expedite zero emission fleet transitions. ■

Please join us virtually on **Tuesday, September 21st** from 12:00 pm to 1:00 pm for a modified ASCE National Capital Section September Lunch Meeting! The program will approximately consist of a one-hour presentation with a webinar format and one (1) PDH credit will be awarded. The cost will be $5 for all members, non-members, and students. For questions, please contact president@asce-ncs.org. Please **click here** to register by **Monday, September 20th**.



President's Corner



Greetings National Capital Section.

This is my last President's Corner article for the NCS newsletter as Section President before we turn-over to the new Board of Directors. This past year as Section President has been great, though certainly different than what I would have though in years past.

Although the NCS did not have in-person section meetings during this past year, the NCS was able to adapt and continue with monthly programming through the year. Taking advantage of virtual section meeting offerings enabled the section to secure out-of-town speakers, including a highly attended presentation last November from a representative of the ASCE Lebanon Section who spoke on the 2020 Port of Beirut Explosion. In addition, the March Annual Awards Banquet was held in a virtual format, and welcomed great attendance from both awards & scholarship recipients and NCS membership.

As we transition into the fall, the NCS will continue with the virtual section meeting format through November 2021. Please do keep look out for meeting announcement, as the NCS leadership has been working hard to line-up some great presentations.

As my term as President comes to a close, I'd like to extend a much deserved thank you to all the NCS Board of Directors, Committee Chairs, and the NCS membership. Next month I will be transitioning into the role of Past-President, and look forward to continuing to serve on the Board of Directors.

Hope to see you soon!

Mike Venezia
ASCE NCS President, 2020-2021

Upcoming Events

Until further notice, all in-person ASCE NCS events have been cancelled. Opportunities for virtual events will be announced as they are planned.

Newsletter

Maria Raggousis, *Editor*

October 2021 Issue Deadline: September 24, 2021

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

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Committee Chairs

Please refer to the NCS website for a current list of NCS committees and chairs.

Dr. Z's Corner

Extreme Weather is Occurring Worldwide: Are We on Track to Mitigate Climate Change?

Across the globe, extreme weather is becoming the new normal. July and August 2021 have been marked by extreme weather conditions – from drought and fires in Europe, Russia and North America to severe flooding in Western Europe, Africa and Asia. The images from Europe are startling and horrifying: houses, shops and streets in the picturesque cities and villages along the rivers violently washed away by fast-moving floodwaters.

The recently released report from the Intergovernmental Panel on Climate Change (IPCC) paints a bleak picture of the future of the world's climate [1]. Due to projected increases in global temperatures, natural disasters like wildfires and severe floods will occur with increasing frequency. In fact, the world has already seen the culmination of many of these amplified dangers. For example, five of the top ten worst wildfires in California occurred last year and the second worst wildfire is currently ongoing [2]. Another example is that the population of the world that is exposed to flooding is estimated to be ten times higher than it was twenty years ago [3]. These climate impacts define the challenges that may face the next generation of engineers, but the actions taken today will critically impact the magnitude of those challenges.

The IPCC report compares current temperatures to pre-industrial levels as a means to track and project human influenced climate change and the world is currently at 1.1 degrees Celsius above pre-industrial levels. The IPCC report also describes five different future scenarios ranging from aggressive reductions in CO_2 emissions to global economic battles that rapidly increase CO_2 emissions. Even under the scenario with drastic cuts to CO_2 emissions that reach net zero by the mid-2050s, the global temperature is projected to peak above 1.5 degrees Celsius and then return to 1.4 degrees Celsius above pre-industrial levels by the end of the century. This means that even in the best-case scenario, the dangers of wildfires and flooding are going to get worse. The reality of progress being made towards lowering CO_2 emissions shows that the world is on track to fall short of even the worst-case scenario in the IPCC report.

Emissions of CO_2 for 2021 are expected to be above 33 billion tons which is a 1.5 billion ton increase from 2020. The continued construction of coal-fired power plants is projected to continue to push CO_2 emissions higher instead of lowering them. The transportation sector accounts for 29 percent of global CO_2 emissions with electricity production accounting for another 25 percent [4]. Thus, these two sectors are at the forefront of plans to reach net zero carbon emissions. The goal for transportation is to convert to electric vehicles which will further drive demand for electricity which heavily relies on fossil fuels for production. The goal for electricity production is to change from fossil fuels to renewable energy sources, but the shifts in other sectors are generating higher demand. Demand for electricity generation is expected to increase by 49% by the year 2040 which highlights a major issue in that the current growth of renewable energy is not matching the increase in demand [5]. Unless more resources and attention are devoted towards renewable energy, fossil fuels will continue to be used to make up the deficit purely to meet demand.

Transportation faces a major infrastructure challenge in that there are only 38,000 charging stations for electric vehicles in the United States while there are over 150,000 fueling stations for gas powered vehicles [6]. A reliable network of charging stations is a necessity in order for the greater population to feel comfortable with the adoption of an electric vehicle. To put things into perspective, a driver of a gas-powered vehicle can trust that a fueling station is on every exit of an interstate but the same cannot be said for electric vehicles. The current directives from the leadership of the United States aim to increase the number of charging stations and for electric vehicles to account for half of the vehicles sold by 2030 [7]. Given that last year electric vehicles only accounted for two percent of sales, the directives are very ambitious and still only create a fraction of the necessary infrastructure to support electric vehicles. Aside from that, the average age of vehicles in the United States is

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Dr. Z's Corner, continued

12 years meaning that the rollout of electric vehicles to the greater population will take well over a decade. With all of these considerations, the net zero carbon emissions target of 2050 will not occur unless older vehicles are removed from circulation.

If the current trends continue, the world will see the worst-case scenario of the IPCC report fully realized resulting in a 4.4 degrees Celsius increase in temperatures above pre-industrial levels. In that scenario, 50-year extreme heat events are 39 times more likely to occur and 10-year storms are 2.7 times more likely to occur [8]. The latter point is especially concerning due to the fact that the infrastructure for handling storm water is typically designed around a 100-year storm which will be occurring much more frequently and thus further straining aging infrastructure. Additionally, the projections point towards a one-meter increase in mean sea level under the worst-case scenario with the potential for a two-meter increase based on the uncertainty of ice sheet stability. With 30% of the global population living in low-lying coastal regions, the effects will be devastating. The IPCC report should be a call-to-arms for engineers to lead a much-needed culture shift in order to avoid the global pain of that worst-case scenario.

The current trends show that drastic action is needed across multiple industry sectors and coordinated efforts must be initiated now if we as a society are going to address this critical issue without serious future repercussions.

Dr. Bryan Higgs
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References

[1] T. F. Stocker *et al.*, "Climate change 2013: The physical science basis," *Intergov. Panel Clim. Change Work. Group Contrib. IPCC Fifth Assess. Rep. AR5Cambridge Univ Press N. Y.*, vol. 25, 2013.

[2] Cal Fire, "Top 20 Largest California Wildfires." https://www.fire.ca.gov/media/4jandlhh/top20_acres.pdf (accessed Aug. 22, 2021).

[3] B. Tellman *et al.*, "Satellite imaging reveals increased proportion of population exposed to floods," *Nature*, vol. 596, no. 7870, Art. no. 7870, Aug. 2021, doi: 10.1038/s41586-021-03695-w.

[4] O. US EPA, "Sources of Greenhouse Gas Emissions," Dec. 29, 2015. https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions (accessed Aug. 22, 2021).

[5] "Our Energy Needs: World Energy Consumption & Demand," *CAPP*. https://www.capp.ca/energy/world-energy-needs/ (accessed Aug. 22, 2021).

[6] O. US EPA, "Electric Vehicle Myths," May 14, 2021. https://www.epa.gov/greenvehicles/electric-vehicle-myths (accessed Aug. 22, 2021).

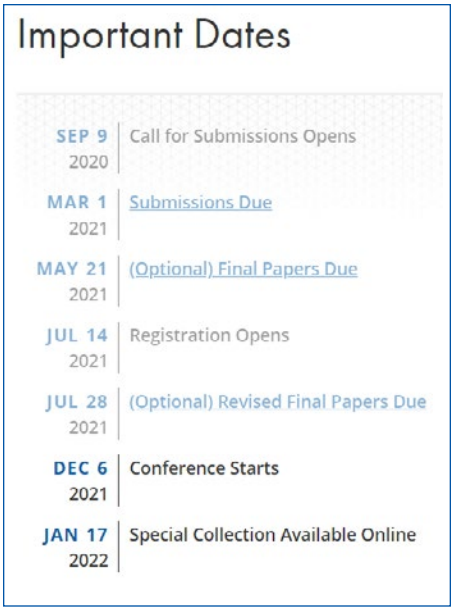
[7] "FACT SHEET: President Biden Announces Steps to Drive American Leadership Forward on Clean Cars and Trucks," *The White House*, Aug. 05, 2021. https://www.whitehouse.gov/briefing-room/statements-releases/2021/08/05/fact-sheet-president-biden-announces-steps-to-drive-american-leadership-forward-on-clean-cars-and-trucks/ (accessed Aug. 22, 2021).

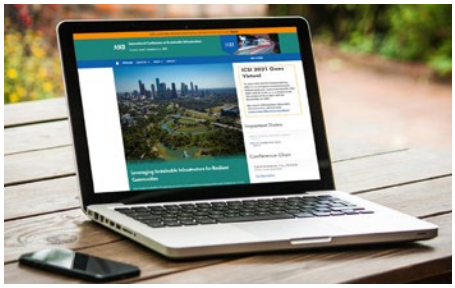
[8] V. Masson-Delmotte *et al.*, Eds., *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, 2021.

International Conference on Sustainable Infrastructure (ICSI)

ICSI 2021 is a virtual event focused on sustainable infrastructure and resilient communities and will offer presentations from experts from the local communities all the way to global issues. You will have opportunities to engage with speakers, as well as fellow attendees, in discussion forums and other networking opportunities.

We hope you will join us as ASCE leans into our commitment to sustainability by hosting this noteworthy conference virtually from December 6th to December 10th, 2021. Click here to register! ■





Civil Engineering and You

Digital Twins: A Showcase of People and Projects

The fifth in a series of articles on digital twins in civil engineering, written by Ranjit Sahai, PE, F.ASCE.

The four prior articles in this series – appearing in the January, February, March, and May 2021 issues of this newsletter – defined the concept of Digital Twins, explored two examples, and described the technical infrastructure that underpins it.

This article identifies resources that showcase people and projects that are blazing a trail through the civil infrastructure landscape to a future without drawings.

Future-Proof Your Firm

ENR hosted a webinar on September 2, 2021 titled: "Is Your Firm's Tech Stack Ready to Bid on New Infrastructure Work?" A replay of this webinar is available on demand through September 2, 2022.

The webinar features Granite Construction's survey chief Brandon Barnum, Minnesota DOT's CAD supervisor Greg Hruby, and Utah DOT's director of project development Kris Peterson.

Granite Construction showcases two projects where its survey team developed digital models necessary for use by modern earthwork equipment. Minnesota DOT showcases bridge inspection projects using drones and LiDAR technology that not only saved time and increased safety but delivered reusable digital models as project data containers for future work. Utah DOT showcases its new initiative that replaces drawings with digital models as deliverables by engineering firms to contractors, with 7 projects awarded without "cutting sheets" and 5 now in construction.

Improve Building Delivery

VectorWorks hosted a webinar in April 2021 titled: "Improving Buildings Delivery with BIM." This webinar is a part of the no-cost PDH earning opportunities offered by VectorWorks.

The webinar features Rob Glisson, co-founder of the 10-person firm ROJO Architecture based in Florida. Rob narrates his firm's journey from delivering drawings to using dynamic design, a process that resulted in a quantum leap for his firm through the adoption of integrated project delivery.

In his words, "Our industry needs to continue to develop our delivery methods through the use of BIM, which gives our industry the ability to serve our clients better by establishing budgets much earlier in the process, reducing risk to the owner and virtually eliminating the Value Engineering stage of a project." In this engaging webinar he shares insights on how intelligent digital modeling enables acceleration of "schedules by involving sub-consultants earlier into the design process and to reduce the cost through the elimination of the constant round up that takes place through the current system."

Integrate Data

On September 1, 2021 ENR published the article, "GIS and BIM Take First Major Steps to Integration."

The article's focus is on ESRI ArcGIS Online, Autodesk BIM 360, and the ArcGIS GeoBIM online service.

The article is written by Jeff Yoders and includes information from his conversations with CAD and GIS vendors and with HDR (Ontario Line project) and HNTB (Jamaica Station project).

The article sets the stage by noting that engineers have been using CAD and GIS software for over 30 years but information between them has remained siloed. Though one has been able to reference information from one to the other for many years, the article continues, interoperability between both systems reaches a milestone when ESRI and Autodesk release, later this year, ArcGIS GeoBIM, a cloud solution that establishes connectivity between ArcGIS Online and Autodesk BIM 360. For Long Island Railroad's Jamaica Station project HNTB brought together design, cost, and schedule data into the single GeoBIM interface for visualization and decision making. For the Ontario Line project, HDR leveraged BIM 360 to integrate more than 300 models and several different types of LiDAR scans to "help designers and contractors better contextualize how information fits together."

Connect Model with Sensor Data

Bentley's iTwin and Microsoft's Azure Digital Twins IoT platforms were used for Doosan Heavy Industries by a partnership between Bentley

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Civil Engineering and You, continued

and Microsoft to monitor and predict renewal energy output from a wind farm. Doosan, a manufacturer of wind turbines, is based in South Korea. The project video, available on YouTube, explains the project setup and outcome.

LiDAR scan of the project site and a wind turbine 3D model created a visual context for the project. Sensors to capture environmental data (weather, temperature, wind speed) and turbine performance (power output, physical condition) were mounted on each of ten turbines for a pilot wind farm. The digital model was connected to live sensor data and hooked up to an Artificial Intelligence-driven mathematical predictive model that learns from deviations between actual and predicted power output values.

Imagine your digital model, as you iterate and design a wind farm, even during the project's conceptual phase, being able to predict the notoriously variable power output, based on historical weather data for the site under consideration, even before the wind farm is actually constructed.

Summary

When your projects require drawings as the final deliverable – and the use of CAD to draw lines, arcs, and text is expected, find ways to future-proof your firm by adopting workflows that leverage BIM technologies to improve project delivery and asset lifecycle.

If you're already leveraging BIM technologies, consider exploring data integration platforms such as Autodesk BIM 360, Bentley iTwin, ESRI ArcGIS GeoBIM, Trimble Quadri, and the like to deliver outcomes made possible with integrated design data.

Though the concept of an infrastructure digital twin that adjusts to mimic reality by monitoring sensor data may seem farfetched, our industry's pace of innovation is accelerating in this space. Embrace it for a shot at your own quantum leap.

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.

2021–2023 ASCE Geo-Institute National Capital Chapter Board Nominees

Anna Kotas is a Geotechnical Engineer with over twenty years practical experience in Virginia. She has been with GTX for almost 4 years doing business development throughout the Mid-Atlantic region and beyond. She tells anyone who will listen that this is her dream job. She is a licensed Professional Engineer in the state of Virginia where she resides with her family. She moved to the US from Canada in 2000 after obtaining her B.S. Degree in Geological Engineering from the University of Saskatchewan. Since then, she has been living the American dream.

Throughout her career, she managed geotechnical projects from the earliest phases including site recon, drilling, lab testing, analysis, and report preparation. She rose from the role of staff engineer to branch manager in ten years, appreciating every lesson along the way…most importantly about effectively working with people. She believes her hands-on experience in the early years of her career combined with her management roles were invaluable to her current role as a representative of a world-class geotechnical laboratory.

She has been involved with the American Society of Civil Engineers from the beginning of her career, joining the Richmond chapter as a rookie in 2000. Since then, she has played many roles in the society believing that it is important to participate in society events but also to contribute as a board member as one grows in his/her Civil engineering career. She is currently on the board of the ASCE Richmond Chapter as a membership co-chair and the GI National Capital Section chairperson elect.

Adam Marolf is a Senior Geotechnical Engineer and the Branch Manager of the McLean, Virginia office of American Geotechnical & Environmental Services (A.G.E.S.), Inc. and has managed large geotechnical projects which include multiple structure replacements, retaining walls, and roadway improvement projects. He has more than 18 years of experience in planning and managing subsurface investigations; testing of soils and rock in the laboratory and field; evaluating soil and rock properties and behavior for design and construction; and analyzing and designing shallow and deep foundations. He has performed services consisting of design, design review, design/build construction, and construction management. Mr. Marolf is currently working on transportation design-build projects in Fairfax and Loudoun Counties and is responsible for the company growth within the DC Metro region. Adam has served as the Director of Programs for the National Capital Geo-Institute Chapter since the chapter was adopted as an official Geo-Institute member. His professional affiliations include ASCE, ASHE, ACEC, and VTCA.

Rajul Teredesai, PE, PMP, DGE leads the geotechnical practice within AECOM and is in Germantown, MD office. He has a bachelor's degree in Construction Engineering from University of Mumbai, India and master's degree in Geotechnical Engineering from University of Oklahoma, Norman. He has 17+ years of experience working on small to

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2021–2023 ASCE Geo-Institute National Capital Chapter Board Nominees

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large water, wastewater and transportation infrastructure and defense related projects within the United States and internationally.

Santiago Caballero, PhD, PE is a Geotechnical Engineer in AECOM, Germantown MD office. He has a bachelor's degree in Civil Engineering from the Pontifical Catholic University of Ecuador. He obtained his Master of Science in Civil Engineering (Geotechnical) from the California State University, Fullerton and later his PhD in Geotechnical Engineering at the University of Texas at Arlington. He has about 5 years of experience in the industry and 6 years of research experience in Academia. He has been involved in ASCE GI student chapters, student competitions and is very active within the GI national organization. He has participated in national and international conferences, author of journal papers, technical notes in geotechnical engineering topics. He is currently working on different projects in the DMV area, including transportation infrastructure, wastewater, and other small to medium infrastructure. His goal in the ASCE GI NCS Board would always be to attract as many engineers as possible to the amazing world of geotechnical engineering, ang engage all members to participate within the organization to obtain professional networking and other benefits that this organization can offer.

Hayley Edwards – My name is Hayley Edwards, and I am a Project Manager for ECS. I have been with ECS for two years and enjoy working in a fast-paced environment, solving geotechnical problems, and creating relationships with clients. Since joining the ECS team, I have worked on projects utilizing shallow and deep foundations, recommending remediation for slope failures, and designing a Support of Excavation system for a three-story, below-grade parking garage. I graduated from Virginia Tech in 2019 with a bachelor's degree in Civil Engineering with a focus on Geotechnical Engineering.

My goal is to become more involved within the geotechnical community and grow my professional career through networking and building relationships with experienced Engineers. ACSE is a great organization where engineers can gather and share their experiences and projects with other engineers.

Shariar – I have been dealing with geotechnical engineering more than 8 years in academia and almost 3 years in industry. My professional experience and skills have grown due to my participation in projects in the United States and overseas. During the last 30 months, I have been affiliated to Intertek-PSI as a Geotechnical Project Engineer and designed project elements for Virginia Department of Transportation (VDOT) and Northern Virginia private sectors. I am extremely excited to be part of the ASCE board in northern Virginia. It would be my pleasure to collaborate as "Director of young professionals". I strongly believe this opportunity would help all the young engineers to form strong relationships and networks. This network of young professionals will help all new members to find the right path toward a prosperous future.

Shana Carroll is an Associate at DW Kozera, a geotechnical firm specializing in solving geotechnical, geostructural, and environmental challenges for clients throughout the mid-Atlantic United States. Shana was formerly a regional manager with GeoStructures, Inc., where she was involved in the design, estimating, and pre-construction management of specialty geotechnical systems throughout the East Coast for 14 years. Prior to this role she was an engineer at GeoSyntec Consultants focusing on geotechnical instrumentation and solid waste facility design. Shana holds a B.S. & M.S. degree in Civil and Environmental Engineering from Bucknell University and is a registered Professional Engineer in 5 states. She is the current Chair of the National Capital Section Geo-Institute of the American Society of Civil Engineers. In her spare time, Shana enjoys writing about topics related to young professionals on her blog www.outofthecube.net and traveling.

Michael Sun – Virginia Branch Manager for CTL Engineering, Inc. with nearly 25 years of professional experience in the execution of geotechnical investigations, engineering analysis, and construction services on a variety of civil engineering projects nationwide. Successfully leads and manages full service Geotechnical and Construction Materials Testing Operation in Metro DC region for both small and large public and private clients. Specific geotechnical engineering experience and responsibilities include project management, subsurface explorations, shallow and deep foundation analyses, pavement design and rehabilitation, slope stability evaluation, construction supervision, materials assessment and testing, laboratory assignments, and data interpretation. Specific managerial experience includes business development, budget, and proposal planning, staffing and resource management, maintenance of lab accreditations and technical certifications, and financial performance evaluations. ■

AAAS Seeks STEM Professionals to Work in DC Area Classrooms

For more than 15 years, the AAAS STEM Volunteer program has placed scientists, engineers, and mathematicians in DC area K-12 schools. In 2019, over 250 classrooms in 5 school districts participated. When the pandemic hit, volunteers continued to support teachers through virtual learning opportunities including: tutoring, Ask a Scientist Q&A sessions, discussions and presentations via Zoom and the creation of video presentations on STEM topics. School year 2021-2022 promises to be an exciting year – volunteers will be back in classrooms assisting teachers and students!

School districts and teachers value the support from volunteers:

- Fairfax County Public Schools invited the program to join the Ignite Partnerships to support learning experiences that prepare students for careers.
- 3 Montgomery County Public Schools volunteers were awarded the MCPS Distinguished Service Award to Education in 2015, 2018, 2020. Jack Smith, Montgomery County's superintendent, praised the program saying "I am incredibly thankful for the work they do. They are positively affecting students."

Teachers and volunteers form respectful partnerships and support each other – the teacher providing pedagogical guidance and the volunteer enhancing the teacher's science expertise. As one teacher said, "My volunteer has made me a better teacher."

Volunteers must commit to the entire school year. Retired volunteers are in schools a few hours a week, those still working a few hours every 2-3 weeks. Volunteers attend a one-day orientation before being assigned to schools.

Read about two of our volunteers.

Melody Mobley, the first U.S. black female forester, attended the University of Washington and graduated with a BS in forest management. When she retired, Melody reached out to the Arlington, VA public schools because she was looking for ways to serve her community. She has been a STEM volunteer for over 5 years, working with second and fifth graders. She's also on the district's Science Advisory Committee.

George Kralovec, a former fighter pilot, has been a volunteer for more than 7 years, working in elementary schools in Fairfax County VA. George has a bachelor's in aerospace engineering from the University of Illinois. He spent 26 years in the Marine Corps, flying F-4 Phantoms in more than 200 missions during the war in Vietnam. In addition to helping multiple teachers in their classrooms, George worked with two teachers on stream monitoring projects.

If you would like to join Melody, George, and the other volunteers in their important work, please contact Betty Calinger, bcalinge@aaas.org. ■

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.

ASCE-NCS Committee and Branch News and Updates

ASCE NATIONAL CAPITAL SECTION
YOUNGER MEMBER FORUM

Younger Members Forum

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 3 virtual happy hours of the summer on Webex! We hope for a bigger turnout at our next virtual happy hour starting at 6PM on September 1st on Webex, look out for some emails soon with registration details. We hope to see you there!

We have our planning meeting coming up soon, where we will discuss the organization of future professional development and social events, as well as electing and installing a new leadership board for the 2021-2022 year. Keep a look out in your email for registration details.

Professional Development: Additionally, if you have suggestions for professional development meeting topics or would like to become more involved with the YMF in other areas, please contact the YMF President at ncsymfpresident@gmail.com.

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! If you would like to become more active with the YMF or would like more information on our events, please email the YMF President.

Education Committee

By Jameelah Muhammad Ingram, PE, M.ASCE

A Fresh Start: The ASCE NCS Education Committee is excited to welcome students back to school from summer break! There are five student chapters within ASCE NCS, which includes the Catholic University of America (CUA ASCE); George Mason University (GMU ASCE); George Washington University (GW ASCE); Howard University (HU ASCE); and the University of the District of Columbia (UDC ASCE). The beginning of the school year is a terrific time to contemplate on lessons learned last year. Students (and professionals too) should consider asking themselves:

1. Which study habits would I like to maintain?
2. Which habits would I like to change?
3. Should I start any new habits?

Taking a moment to self-reflect can promote a successful start to the school year. ASCE has several resources to assist with the journey. Please see below for links and other announcements:

ASCE 2021 Convention: The ASCE 2021 Convention will be virtual this year and is a great opportunity to learn from dynamic speakers. It is set for October 6th through 8th, 2021. Please visit this link to register: https://www.asceconvention.org/

Region 2 Assembly: This year's Region 2 Assembly will be hosted by the University of Maryland on November 13, 2021. All Sections, Branches, Younger Member Forums, Student Chapters, Faculty Advisors and Practitioner Advisors are encouraged to attend for professional development and networking.

Region 2 Student Conference Realignment: ASCE NCS Student Chapters are now a part of the Mid-Atlantic West Student Conference, as a result of efforts to align student conference boundary lines with Regional boundaries. For more information, please visit: https://source.asce.org/asce-realigns-student-conferences-enhances-student-experience/

Annual Student Steel Bridge Competition: ASCE's partnership with AISC (American Institute of Steel Construction) has been renewed, and the Annual Student Steel Bridge Competition has returned to ASCE's official slate of student competitions! Please check out this article for more information: https://source.asce.org/steel-bridge-returns-to-roster-of-asce-student-competitions/

ASCE Collaborate: ASCE Collaborate is an online resource available for students to exchange knowledge with ASCE members around the world. Please check out: https://collaborate.asce.org/home

Speaking of a new start, the incoming ASCE NCS Education Committee Chair for the 2021–2022 school year will reach out to all ASCE NCS Student Chapters this fall! It has been my sincere pleasure to connect with you through this column over the years.

Sustainability Committee

Call for Nominations for "ASCE Innovation in Sustainable Engineering Award"

Nominations are due 5:00 PM Eastern Time, November 1, 2021!

The ASCE Innovation in Sustainable Engineering Award is given annually to a civil engineering project in recognition of creativity in the form of innovative sustainability. Projects may be any that demonstrate innovation in sustainability. Innovation means new approaches, new techniques and substantial results. The lessons of this project promised broad application to future projects.

To be eligible for consideration, projects must, first and foremost, demonstrate

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adherence to the principles of economic, social and environmental sustainability. Projects developed or implemented in the 6 year period preceding the year of award and not a candidate for the Outstanding Civil Engineering Achievement (OCEA) Award are eligible.

The criteria used to evaluate projects are:

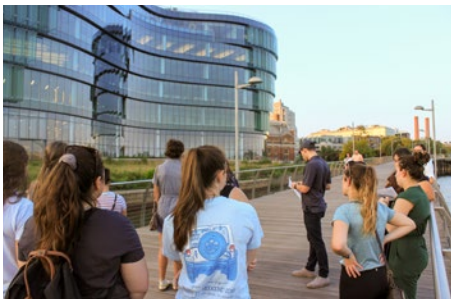
1. the extent to which innovative design or construction methods improve Economic, Social and Environmental sustainability;
2. the promise shown by the innovation to extend future developments in sustainability which may be evidenced in part by Envision rating and/or institute, section or branch sustainability awards;
3. the degree to which the project extends public understanding of sustainability in construction as demonstrated by working with the public at the planning, design, construction, and operations stages in the development of the project; and
4. the significance of collaboration as an important aspect of the project as demonstrated by significant participation by other disciplines on the team.

Entries for the award should include a rationale statement describing how the project exemplifies the economic, social and environmental principles of sustainability, the merits and title of the project, a clear description of the innovation in sustainability, the anticipated advantages to be obtained, and a statement of how the sustainable project met the client's needs. This award was established in May 1981 as the Innovation in Civil Engineering Award through an endowment by Arsham Amirikian, Hon.M.ASCE and member of the National Academy of Engineering. In 2010, the award was renamed the Innovation in Sustainable Engineering Award.

For more information on the award and how to submit a nomination, please visit https://www.asce.org/career-growth/awards-and-honors/innovation-in-sustainable-engineering-award for details or reach out to awards@asce.org or tccsus@asce-ncs.org with any questions.

Architectural Engineering Institute (AEI) Committee

On August 5th, the AEI DC Committee held their third walking tour, featuring unique information on the architecture, construction, and engineering of notable buildings and landmarks near the Navy Yard and southwest quadrant of Washington, DC! The 2-mile tour started at The Kiley Apartments and ended at Tingey Plaza and featured insider information on places like Wheat Row, Audi Field, and the DC Water headquarters. Feel free to suggest areas in DC that we should include on our next tour by contacting aei.washingtondc@gmail.com!



GEO-INSTITUTE National Capital Chapter

Geo-Institute

Geotechnical Symposium on Innovations and Lessons Learned in Ground Improvement

The ASCE Geo-Institute National Capital Chapter would like to extend the invitation to our 2021 Geotechnical Symposium on Innovations and Lessons Learned in Ground Improvement to be held on Wednesday October 27th, 2021.

Click here to register! Once you make the payment you will be automatically registered in our system.

Cost per attendee is $225 per person and includes parking, continental breakfast, and lunch. We anticipate PDH approval of 7.5 credits this year.

Location: Tysons Corner Marriott, 8028 Leesburg Pike, Tysons Corner, VA 22182

Date: October 27th, 2021

Registration 7:30 am

Symposium Sessions starts at 8:00 am to 5:15 pm

Link for hotel room at a discounted rate for out of town guests is below:
Book your group rate for ASCE NCS GEC Symposium

We offer sponsor options during this event. We have 4 available Tabletop Sponsors only at this time. Please contact Santiago or Shana directly to inquire about sponsor options or if you have questions regarding the event.

GEO-INSTITUTE
National Capital Chapter

Geotechnical Symposium on Innovations and Lessons Learned in Ground Improvement

Wednesday, October 27th, 2021

Time	Topic	Speaker
7:30 am – 8:00 am	Check-in / Continental Breakfast	
8:00 am – 8:15 am	Introductions	
8:15 am – 8:45 am	A Discussion on Dynamic Compaction	Chris Woods, PE, GE, D.GE. Vice President, Densification, Inc.
8:45 am – 9:15 am	Ground Improvement of Compressible Soils using Mechanically Stabilized Earth Surcharge Embankments Adjacent to Existing Structures and Utilities	Hiren J. Shah, PE, Senior Associate, Mueser Rutledge Consulting Engineers
9:15 am – 10:00 am	Global Failure of MSE Wall Founded on Ground Improvement	Tim Stark, Ph.D., PE, D.GE, F.ASCE, University of Illinois
10:00 am – 10:15 am	Break	
10:15 am – 11:00 am	Case Studies Using Cement-Treated Rammed Aggregate Piers™	Valerie Merida, PE, GeoStructures, Inc.
11:00 am – 12:00 pm	Lake Eloise Drive Elevation increase using Permeable Low-Density Cellular Concrete (PLDCC 25-35 lbs/ft^3)	Nico Sutmoller, Global Lightweight Fill Specialist, Aerix Industries
12:00 pm – 1:15 pm	Lunch	
1:15 pm – 2:00 pm	Case Histories of Complications & Innovations with Rigid Inclusions in the Capitol Region: Where Ground Improvement Meets Deep Foundations	Taylor Towle, PE, M.ASCE, Senior Design Engineer, Menard Group US
2:00 pm – 2:30 pm	Foamed Glass Aggregate Lightweight Fill as Ground Improvement: Case Studies in Transportation and Commercial Development	Theresa Loux, Ph.D., PE, Technical Director, Aero Aggregates of North America
2:30 pm – 2:45 pm	Break	
2:45 pm – 3:30 pm	Highway Embankment Failure even with Prefabricated Vertical Drains and Controlled Filling	Tim Stark, Ph.D., PE, D.GE, F.ASCE, University of Illinois
3:30 pm – 4:30 pm	Case History, Design, Numerical Analysis, Ground Improvement	Giovanni Bonita, PE; GEI Consultants, Inc., and Ken Kniss, PE; Hayward Baker/Keller
4:30 pm – 5:00 pm	Monitoring of a Marginally Stable Hill in Edmonton, Canada, During Construction of a Temporary Work Bench	Kimberly Hummer, PE, Bechtel Nuclear Security Environmental
5:00 pm – 5:15 pm	Closing Remarks	