

National Capital Section

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MDTA Renovation and Maintenance Programs for Chesapeake Bay Bridge (US 50/301)

By Alex Rosenheim

Few people realize that the Chesapeake Bay Bridge on Route US 50/301, crossing the Chesapeake Bay near Annapolis, MD, is also known as the William Preston Lane Jr. Memorial Bridge. With its massive dual spans, this bridge provides a direct connection between recreational and ocean regions on Maryland's Eastern Shore to the metropolitan areas of Baltimore, Annapolis and Washington, DC. This structure has an average traffic volume of approx. 27 million vehicles annually. At four miles, the spans are among the world's longest and most scenic overwater structures. The original span opened in July 1952 and provides a two-lane roadway for eastbound traffic. The parallel structure opened in June 1973 and has three lanes for westbound travelers. During periods of heavy eastbound traffic, one lane of the westbound bridge is "reversed" to carry eastbound travelers ("two-way" traffic operations). Tolls are collected in the eastbound direction only. The Chesapeake Bay Bridge is maintained and operated by the Maryland Transportation Authority (MDTA).

As part of the MDTA's \$29.6 million rehabilitation project for the westbound suspension span, crews installed access platforms in various locations along and beneath the westbound Bay Bridge roadway in fall 2016. The platforms remained for the duration of the project,





reducing the need for and the frequency of lane closures. Work included the installation of supplemental cables, rehabilitation of the suspension span superstructure and bearings, as well as priority repairs found during annual inspections. A project to clean and paint the structural steel components of the westbound Bay Bridge began in 2011. The project was broken into four phases and included the painting of girders, deck-trusses, through-trusses, suspension spans, the suspension towers, and steel rail posts. Phases 1 and 2 were completed in October 2013 and phase 3 was completed in May 2015. The final phase of westbound span painting began in spring 2017. This phase involved cleaning and painting the through-truss span and welded steelgirder spans on the eastern portion of the bridge.

The work is part of a series of construction projects on the bridge over the past decade. The deck of the westbound span was replaced between June 2006 and October 2010. The bridge was then cleaned, painted and repaired between April 2011 and May 2015. Several projects on the westbound span and the older eastbound span are ongoing. Between August 2012 and October 2018 cables were re-wrapped and dehumidified. Various structural repairs and miscellaneous modifications have been

Please join us on Tuesday, May 21 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, networking, and light hors d'hoeuvres will be from 5:30 to 6:30 pm, followed by dinner. The program will end by 8:30 pm. The cost is \$55 for those preregistering, \$20 for students and \$65 for walk-ins, as space allows. For questions, please contact **Emily** Dean. Please click here to register by **May 16.**

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 walkins is higher because the Section is charged accordingly by the hotel for late registrations.

completed on both spans since 2015 and will continue through 2020.

In August 2016, the MDTA Board approved \$5 million in funding for a Tier 1 National Environmental Policy Act (NEPA) Study to identify the location and potential funding options for a new Chesapeake Bay crossing. The Tier 1 study will pursue environmental regulatory agency concurrence and agreement from counties on the Eastern Shore on the location of a future additional crossing. The study will take

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President's Corner

Greetings, National Capital Section!

We are wrapping up a very active and successful year. Our May Section meeting will be the last one before we break for the summer, but fear not, we are planning several activities throughout the

summer. We hope you will continue to come out and join us between your vacations and long weekends.

First, our Younger Members will continue to meet for happy hour monthly, and are also planning an outing at Nationals Stadium for a baseball game. The Younger Members will also host their planning meeting towards



the end of the summer, so if you are looking to get more involved with the Younger Members or are just curious about what is going on, please plan to attend.

Our Sustainability Committee is planning a morning of community service to help clean up a

local National Park and will also be organizing another Boat Tour in the Chesapeake Bay. We will be learning about the Chesapeake Bay and the bridge that crosses it. Stay tuned for more information!

Lastly, if you're looking to get more involved with the Section, we will be meeting at the end of June to plan

next year's section activities. We have a couple of ideas in the pipeline, but also want to encourage new ideas and volunteers. Please keep an eye out for how to attend! We are always looking for topics and speakers for our monthly Section meetings, so if you know someone or a project that should be highlighted, we would love to hear from you!

Have a great summer!

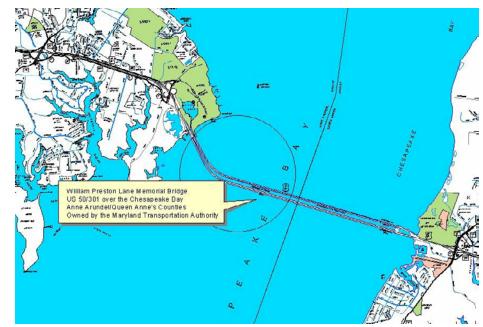
ASCE-NCS President

Emily Dean

MDTA Renovation and Maintenance Programs for Chesapeake Bay Bridge (US 50/301) continued from page 1

four years to complete and will include traffic, engineering, and environmental analyses. The study is the first step in a process to address the demand for additional capacity across the Chesapeake Bay. Studies show that although the Bay Bridge can be safely maintained through 2065 with preservation and maintenance work, motorists could experience up to 14-mile delays daily in the summer, and every weekend throughout the rest of the year, by 2040.

Brian Wolfe, Tekeste Amare, and Jonathan Morey will represent the Maryland Transportation Authority (MDTA) to discuss the background of the bridge, recent structural renovations, maintenance programs, the general outlook of the bridge, and future plans for the William Preston Lane Jr. Memorial Bridge on Route US 50/301. ■



Newsletter

Sumon Chatterjee, Editor

September 2019 Issue Deadline: August 16, 2019

To Submit Articles: newsletter@asce-ncs.org

NCS eNewsletter Archives: go to <u>www.asce-ncs.org</u> 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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Please refer to the <u>NCS website</u> for a current list of NCS committees and chairs.

Advice to Engineering Students/Engineers: How to Advance and be More Marketable in the 21st Century

You thought that graduating with a BS would open every door, but are surprised that the value of the degree has not kept pace with societal transformations. Quite often students and engineers find themselves in this situation and ask for advice.

Market developments, decaying infrastructure, cost overruns, schedule delays, new technologies, changes in legislation, scope changes, lack of data, loss of reputation, and cyber incidents are a few reasons why engineering organizations around the globe brace themselves against an era of greater uncertainty.

Engineering organizations need professionals trained in the risk analysis sciences to be prepared to respond to this risky environment. Fortunately, an online Master of Science in Risk Assessment and Management is offered at Notre Dame of Maryland University (NDMU). NDMU MS in Risk Management is a fully online program in Risk Management comprising ten 3-credit courses in the risk analysis sciences. The program has a postbaccalaureate certificate (six 3-credit courses). These stackable credentials are designed for engineering professionals who desire further professional qualifications in the emerging and fastgrowing field of Risk Assessment & Management. The U.S. Army Corps of Engineers has chosen this program to educate its leaders since 2015. I invite you to learn risk management where USACE does.

I recommend the NDMU MS in Risk Management because I know the qualifications of the people running the program. This program is unique among risk management programs in its focus on risk analysis science (Aven, 2018), rather than on a more-narrow discipline-based approach to risk management. This assures that engineering professionals from any community of practice will gain practical, insightful, useful, and adaptable knowledge of risk analysis science including risk management, risk assessment, and risk communication. The MS in Risk Management provides students an

in-depth education that prepares them to become risk management experts. Students are also empowered to introduce the practice of risk management into their organizations or to contribute in substantial ways to organizations that already practice risk management.

The program enables its graduates to:

- Introduce the best practice techniques of risk management and risk analysis science to their organizations;
- Acquire the skills required to manage risks to avoid loss and to take prudent risks for potential gain;
- Build qualitative and quantitative risk assessment skills;
- Communicate effectively in crisis and risk situations that threaten your organization or its constituents and stakeholders;
- Conduct one's self-ethically in situations where systems breakdown and rules of conduct are challenged; and,
- Introduce a risk management framework to risk-management naïve organizations or to enhance the effectiveness of existing risk management practices.

Working online with other professionals from around the nation and world, students learn the principles of risk management, risk assessment, and risk communication in eight-week courses. Graduates will become risk experts in their chosen fields and may find new career opportunities that include Risk Management Director, Risk Assessor, Risk Manager, Risk Analyst, Risk Management Consultant, Risk Control Supervisor, Director of Corporate Risk Management, and Chief Risk Officer.

Courses are taken one at a time where the recommended sequence begins in the fall with Risk Management followed by Risk Assessment, spring courses are Uncertainty and Quantitative Risk Assessment. The two summer courses are Risk Communication and Ethics and Risk Governance. This sequence completes the certificate. The second fall comprises Enterprise Risk Management and Managing Together followed by Adaptive Leadership and

Decision Making Under Uncertainty during the second spring to complete the MS.

Professor Charles Yoe, Ph.D., Director of the Risk Management program, has over three decades of domestic and international experience working on risk issues in over two dozen nations. He was a principle trainer for many U.S. FDA and Department of Agriculture risk analysts and is the author of a popular textbook, Principles of Risk Analysis Decision-Making Under Uncertainty, second edition. His experience includes work on over 50 risk-based engineering projects and over 25 years of teaching risk analysis methods to engineers. Program faculty have an industry-leading domain of experience in risk.

Here what some students have said about the program:

"I had almost no background in this field. I now have resources and knowledge that can assist me in my current job and possibly applying for jobs that require this knowledge..."

I now have knowledge of uncertainty that I can apply in making recommendations to Risk Managers, especially in the ability to resist giving a onedimensional answer."

"One obvious measure of course value is if the material can or will be used on the job. Not only have I applied the lessons learned at work but also have shared what I have learned with co-workers."

"Relevant, challenging, timely, so aligned with job, use content at work on daily basis."

For more information see https://online.ndm.edu/online-degrees/m-s-in-risk-management/ or contact Director, Professor Yoe cyoe@ndm.edu

Until next time, Ahmet Zeytinci (Dr.Z.) az@akfen.com

AEI 2019 Conference Summary

By Gillian C. Love

The theme of the AEI 2019 Conference was, 'Integrated Building Solutions - The National Agenda.' The conference was hosted jointly by the American Society of Civil Engineers' (ASCE) Architectural Engineering Institute (AEI) and The Pennsylvania State University, on April 3-6, 2019, in Tysons, VA. The schedule included an impressive 80 technical presentations, committee meetings, professional projects, student presentations, and many opportunities for industry networking and outreach. There were over 300 conference registrants, with attendees from 29 states and 8 countries. More than 20% of the attendees were local to the DC area - to include several of our fellow NCS professional and Student Chapter members.

The AEI Professional Project Awards recognize outstanding achievements in design and construction by honoring the art and science of an integrated approach to architectural engineering. The program focuses on high performance buildings including structural, mechanical, electrical and lighting systems, as well as construction management and architectural engineering integration. Projects are evaluated on originality and innovative character, integration, collaboration, sustainability, energy efficiency, economics, effective use of technology, constructability, and site logistics. This year's winners for Best Overall Project were Northwestern Mutual Tower and Commons (Alvine Engineering) and the DC Water Headquarters (SmithGroup). Of additional note, the International Spy Museum (Vanderweil Engineers) and Forest Park High School Renovation/Addition (Smolen Emr



Ilkovitch Architects) earned awards for Most Innovative Projects. For a full list of winners, please visit https://www.asce.org/architectural-engineering/news/20190408-2019-aei-professional-project-award-winners/.

The Conference included the final presentations for the Student Design Competition. This year, the competition challenged students to address the design, integration, and construction issues associated with The Jack H. Miller Center for Musical Arts, at Hope College. Eighteen teams registered for the competition. Seven teams, from seven architectural engineering programs, participated in the submittal portion of the competition, while four teams were invited to present at the finals before a volunteer panel of practitioner jurors. The Student Design Competition was an impressive demonstration of

the ambition and innovation of the next generation of building industry professionals. Congratulations to all the winners! For more information on the competition and this year's winners, please visit https://www.aeisdc.org/about/history/2019-award-winners

Finally, one of the highlights of the conference was the addition of a community component. ASCE's Architectural Engineering Institute Conference hosted more than 50 Boys Scouts and Girls Scouts from the Northern Virginia area for a screening of "Dream Big: Engineering Our World." At the end of the movie AEI President Amy Hackney, P.E., LEED AP, M.ASCE and ASCE Board Member John Casana, P.E., LEED AP,D. WRE,F.ASCE fielded many inquisitive questions from the scouts revealing their curious nature.

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ASCE-NCS Committee and Branch News and Updates

ASCE-NCS Reston Branch

By Shainur Ahsan, PE, M. ASCE, Reston Branch Vice President

On April 23rd, the Reston branch hosted Gary Runco, VDOT NOVA District Structure and Bridge Engineer, at its branch meeting to discuss the state of the NOVA district and upcoming/ongoing projects. The presentation highlighted the District's current challenges and goals, as well as their typical operations.



The next Reston Branch meeting will be on May 14th at the ASCE Headquarters in Reston. For the upcoming meeting, the branch will be hosting speakers on two separate topics. Sara Schmieg, P.E., and Christa Lash, P.E., of the NOVA chapter of Engineers without Borders will be presenting on the Independence Village Water Supply Project. The project is under the Community Engineer Corps (CEC) and its purpose is to study the Independence Village community water supply to provide engineering recommendations for the upgrade of the system. Michael Sanio, ENV SP, CAE, F.ASCE, is the Director of Sustainability and International Alliances at ASCE where he is responsible for the societies sustainability program globally. He

will be discussing ASCE's sustainability roadmap.

One PDH will be awarded to attendees.

ASCE NCS Education Committee – Collegiate

By Jameelah M. Ingram, PE, M. ASCE

ASCE NCS Coffee + Connections: Student and Professional
Networking Event. On a spring evening in April, the ASCE NCS
Education Committee hosted Coffee + Connections at a café in Washington, D.C. The weather was mild, yet brisk enough to warrant a hot beverage. The event was an opportunity for students across ASCE NCS chapters to engage with other students and professionals, outside of a career fair environment – over crafted coffee, tea, and hot chocolate. Refreshments were plenty, ranging from savory avocado toast to sweet

At the café, ASCE NCS Student Chapter leaders were given an opportunity to address guests about their chapter's favorite moment of the year. Speakers included Cavan Hagerty of the Catholic University of America, Kledi Mita of

lemon tarts.

George Mason University, both Thomas Arena and Samantha Brick of George Washington University, and Laxman Dahal of Howard University. There were trivia questions from ASCE NCS's award winning tome, "Engineering the Nation's Capital: A Century of Innovation and Promise for the Future" posted throughout the café as well as book giveaways. Norine M. Walker, P.E., F.ASCE, one of the book's co-authors and a Project Manager at VRE, signed copies for students.

Students were eager for guidance and professionals were excited to share their knowledge throughout the continued on page 6





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event. Joe Whartenby, the ASCE NCS's Younger Member Forum President, connected with a student interested in land development and provided an impromptu resume review. Other topics of conversation included perspectives on how the presence of women in civil engineering has changed over the years, the influence of policy in the civil engineering industry, and a definition of the field of Transportation. That night, ASCE NCS continued to build a bridge between professionals and student chapters, allowing for students to receive advice in a casual atmosphere as they prepare to enter the engineering industry.





Younger Members ForumBy Maria Raggousis, EIT, YMF Co-Secretary/Newsletter 2018–2019

Monthly Happy Hours: The NCS Younger Members Forum (YMF) holds monthly happy hours, generally 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 NCS YMF enjoyed some food and drinks at the November ASCE YMF happy hour at Penn Social in Arlington,

VA, on April 3rd, 2019. Several members attended the event and shared great conversation over appetizers.

Join us for our next ASCE Happy Hour sponsored by the Younger Members Forum on June 5th at Wet Dog Tavern near U Street NW in Washington, DC!

Social Events: Any one interested in social running? A group from Walter P. Moore in Washington, DC, takes part in Friday afternoon runs and would like to have others from nearby offices join them. Runs begin at 1747 Pennsylvania Ave NW, Washington, DC, at 4:30 PM. If you are interested, please reach out to Mia Jimenez (mjimenez@walterpmoore.com).

Professional Events: The YMF board is planning upcoming professional development events for 2019. 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. Also, follow us on Twitter (@asce_ncsYMF).

Get Involved! Are you interested in getting involved with more Younger Members activities? Do you have ideas for social events or volunteering activities? Would you like to be a board member? 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.

ASCE NCS Education Committee – Collegiate

By Kledi Mita, GMU-ASCE Program Coordinator

The past academic year proved to be a busy one for the George Mason University Chapter of ASCE. Presided by seniors Sarah Shay, and her VP - Andres Izquierdo, the GMU chapter successfully hosted the Region 2 Assembly in November and the annual ASCE Virginias' Student Conference in March.

Both events were well-attended, with the Virginias' Conference seeing over three hundred students and faculty from the furthest corners of Virginia, West Virginia, and DC, take to George Mason's Fairfax campus to compete in a wide array of challenges. These engineering challenges included the Multidisciplinary Competition, the famous Hardy Cross Oratory Competition, the Blueskies Challenge, a Geotechnical Challenge, the Concrete Frisbee Competition, the Marr Technical Paper, and the Concrete Canoe Races.

One of the main highlights of the Conference was George Mason's second consecutive Hardy Cross Oratory Competition win - by senior Mera Shabti's innovative research on the, "Development of a Methodology to Quantify the Effects of Wetlands on Erosion of Coastal Shorelines." The hosts also won the Multidisciplinary, Marr Technical Paper, Geotechnical Challenge, and the Blueskies Competition, for which they will be representing the region at Nationals.

Last, but not least, Congratulations to Fairmont State University for winning the Concrete Canoe Competition! Additional congrats to West Virginia University for their second place win, and Virginia Polytechnic & State University, who tied for third.

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Educational Committee K-12By Victor I. Crawford, P.E., M.ASCE

The National Capital Section continued our outreach program when we took the Windy City exercise from the Dream Big movie to Wakefield Forest's STEAM Fair. This Science, Technology, Arts, Engineering, and Math (STEAM) Fair hosted elementary schools from across Fairfax County at an evening event for students and parents. With the "Dream Big" movie kits going out to schools across the area in 2019, we wanted students and their parents to see and participate in this

exercise, taken directly from the movie. For those that have not seen the movie, this exercise challenges students to build a structure that can remain standing in a strong wind, while they learn how our civil engineering profession benefits the public. For those that have not seen this award-winning movie, remember you can see "Dream Big" on Netflix.

For those that have more time, we are continuing to work with the American Association for the Advancement of Science (AAAS) program for STEM,

which has been bring engineers and scientists into classrooms for over eleven years (http://www.aaas.org/senior-scientists-and-engineers/programs-dc). Please consider becoming an AAAS volunteer in supporting STEM in the school districts in the DC metro area, including surrounding counties in both Virginia and Maryland. If you are interested in giving back to the profession while sharing the joy of engineering to eager young minds, please contact Victor I Crawford at victor.crawford51@gmail.com.



L. J. Sauter, Jr., Vic Crawford, Diego and Michelle Y. Cortes-Salva, and High School Volunteer at the Wakefield Forest's STEAM Fair 2019



Students and Parents Building Towers to Wind Test



The Thrill of Testing Against the Wind

Employment Clearinghouse

Summer Internship Position Open

The Interlocking Concrete Pavement Institute (ICPI or www.icpi.org) seeks computer and database-savvy summer intern who can expand an existing database of technical papers and resources on interlocking concrete pavements, permeable interlocking concrete paving slabs. We support and document research on (and applications of) environmentally friendly, runoff—and pollution-reducing pavements in support of green infrastructure and low-impact development in the U.S. and Canada.

Located in Chantilly, VA near Dulles International Airport, ICPI is a trade association that represents manufacturers and installers of these products/paving systems.

Work involves categorizing, scanning, and digital filing of many technical papers, reports, and articles of interest to design professionals, contractors, and ICPI members. Work also involves online searching, downloading and documenting state and provincial departments of transportation and agency stormwater sites websites for guidelines and specifications on design, construction and maintenance of interlocking and permeable interlocking concrete pavements. The resulting data, developed by the intern, will be used by ICPI staff in contacting selected agencies with offers to introduce, and/or update, specifications as well as offers to conduct training.

Pay rate is \$15/hour for a maximum of 7 weeks. Please email a resume of your experience and academic training to David R. Smith, Technical Director, dsmith@icpi.org.

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 and visit our jobs page.

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Upcoming Events (Also available on the NCS website under the Events tab.)

May 14

Reston Branch Meeting – Sara Schmieg, P.E. and Christa Lash, P.E. – NOVA Chapter of Engineers without Borders; Michael Sanio, ENV SP, CAE, F.ASCE – Director of Sustainability and International Alliances, ASCE.

May 16

2019 Geotechnical Symposium on Support of Excavation at Tysons Corner Marriot. 8 am to 5 pm.

May 18

National Park Clean-Up – Saturday Morning – 9 AM to Noon – The Sustainability Committee will be coordinating with the National Park Service (NPS) to organize members of the Section (and their friends and family) to participate in a volunteer clean-up of a National Park. Depending on the needs of the NPS, they expect to assign us to one of three major icons of our Nation's Capital: The Lincoln Memorial, The Washington

Monument, or The Jefferson Memorial. Please direct questions to the ASCE-NCS Sustainability Committee at tcc-sus@asce-ncs.org.

May 21

ASCE-NCS Section Meeting,

6:00 pm, Arlington Hilton. Join ASCE-NCS for the MDTA presentation on Renovation and Maintenance Programs for Chesapeake Bay Bridge near Annapolis, MD.

June 9 to 12

T&DI Conference – The Transportation & Development Institute (T&DI) of ASCE is hosting its flagship conference in the national capital region at the Hilton Mark Center in Alexandria, Virginia. The Conference Steering Committee is seeking a local representative to participate as a member of the Conference Steering Committee. The local representative sets up a Local Organizing Committee (LOC), that helps recommend and

organize technical tours for the conference, and also helps promote the conference for sponsorships and exhibits by local organizations. Through the course of the next few months, T&Dl will need National Capital Section's help to promote the conference at its events, and through its newsletter, eblasts, and other means of outreach and promotion. The immediate need for promotion is for the call for abstracts which was recently released. Further information is available on the conference website at www.asce-ictd.org.

June 14

YMF Night at the National's Stadium, Washington DC. More details to follow.

June 25

NCS Planning meeting, 6 to 9 pm at WJE's offices in Falls Church, VA. More details to follow.

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