

eNewsletter

National Capital Section

FOUNDED 1916

May 2016 Volume 62, Number 8

Visit ASCE-NCS on the web: <http://asce-ncs.org>

Smithsonian National Air and Space Museum Renovation

Presented by Michael Henry, PE, the Smithsonian Institution

Please join us on Tuesday, May 17, 2016 as we honor our history and heritage in civil engineering in the National Capital region. This year the ASCE-NCS welcomes Mr. Michael Henry, PE, Civil Engineer with Smithsonian Facilities within the Smithsonian Institution. Mr. Henry is the Design Manager for the National Air and Space Museum – Mall (NASM-Mall) Revitalization program. Mr. Henry will be discussing the role of Smithsonian Facilities and the NASM-Mall Revitalization program, in particular.

The Smithsonian Facilities operate and maintain the facilities of the Smithsonian Institution in Washington, D.C., which attract over thirty million visitors each year. This office includes



eight Zones, Systems Engineering, Support Services, Business Operations, Safety, Energy Management, and Organizational Development. The Smithsonian Facilities works behind the scenes, ensuring the maintenance and operations work is performed to the highest standards.

The Smithsonian Facilities has begun the rehabilitation of the National Air and Space Museum, a total renovation necessitated by the existing building's deterioration, inside and out. The comprehensive overhaul of one of the Smithsonian Institution's most popular attractions is expected to last nine years and cost \$410 million. The Air and Space is expected to remain open throughout the project, though sections at a time will be closed.

Critical to the program will be respect for the need to protect the museum's tangible evidence of aviation and space exploration history, held carefully in trust for the education of contemporary and future visitors. The collections, some of which have already sustained some damage from the museum's antiquated building systems, may be destroyed by exposure to sudden fluctuations in temperature or humidity.



Join us **Tuesday, May 17, 2016**, 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 6–6:45 pm, followed by dinner. The program will end by 8:45 pm. The cost is \$55 for those preregistering, \$20 for students, and \$65 for walk-ins, as space allows. For questions, please contact [D. Scott Wolf](#). Please click [HERE](#) to register by **May 12**.

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.

About the Speaker: Michael P. Henry, P.E. is the Design Manager for the National Air and Space Museum Mall Building Revitalization Project and has been with the Smithsonian Institution since May 2012. Prior to this, Mr. Henry was a Resident Engineer and then a Project Manager with the U.S. Army Corps of Engineers (USACE), Baltimore District for various design and construction programs in the DC area. Mr. Henry began his career with USACE New York District in 1993, managing military construction projects in New Jersey, and then likewise in Germany with USACE Europe District between April 2000 and September 2003. ■

President's Corner

April was another eventful month for NCS members. On April 16–17, NCS members and ASCE staff participated in the USA Science and Engineering Festival at the Washington DC Convention Center, engaging and educating thousands of students on the wonders of civil engineering. At our April 19 dinner meeting, members learned about the National Park Service's 17th Street Levee project and flood protection facilities within the National Mall and Memorial Parks. Members were also engaged by a presentation on an innovative stormwater management concept for the Washington Monument grounds and Constitution Avenue. We'll keep our focus on the National Mall for this month's dinner meeting on May 17 which will feature a presentation on current construction projects being undertaken by the Smithsonian Institution.



Our Centennial Committee continues fulfilling their charge to prepare Centennial themed meetings, tours, events, and celebrations. Over 120 NCS members, family and friends boarded the Potomac River Company's Miss Mallory on the evening of May 1 for a three-hour boat tour to learn about and view the major bridges spanning the Potomac and Anacostia Rivers. Our Centennial Commemorative Book will be hot off the presses later this month and Centennial logo shirts and water bottles are now available for purchase to show your Centennial pride. Lastly, registration is open for our Centennial Conference on June 3 at the National Press Club. The Conference provides a unique opportunity to engage with leaders from across our region and to learn about achievements and future projects across all civil engineering disciplines. I look forward to

seeing you at the Conference and your engagement in making this the pinnacle of our Centennial year.

Lastly, please help to promote [Infrastructure Week](#), May 16–23, to tell the story about what infrastructure means to the Washington, DC metropolitan area and the nation. Infrastructure matters to the movement of people and goods, to our daily commutes and our summer vacations, to drinking water from our faucets, to the lights in our homes, and ultimately to every aspect of our daily lives.

[#InfrastructureMatters](#)

*D. Scott Wolf, PE, PLS, F.NSPE
ASCE-NCS President (2015–2016)*

Volunteer Opportunity for Supporting Science, Technology, Engineering, and Math (STEM)

By Victor Crawford, PE, M.ASCE, Centennial Committee Chair, NCS

As a volunteer, you will be assisting K-12 teachers using your experience and knowledge to bring civil engineering concepts to students. This program works particularly well for retirees that can devote 1 day a week to volunteering. We are focusing on elementary schools where your expertise in civil engineering would be welcomed by teachers introducing science concepts to young students. However, there are also many programs at all class levels

including Project Lead the Way, which has a civil engineering component.

We are doing this through the American Association for the Advancement of Science (AAAS) program for STEM, which has been bring engineers and scientists into the classrooms for over 10 years (<http://www.aaas.org/senior-scientists-and-engineers/programs-dc>). Recognizing the importance of STEM for the continuance of our Civil Engineering

profession, NCS has embraced this educational outreach program and has been working with the AAAS in supporting STEM in school districts in the DC metro area.

If you are interested in giving back to the profession while sharing the joy of engineering with eager young minds, please contact Victor Crawford at vicris51@verizon.net. ■

Newsletter

Rachel Schneider, Editor

September 2016 Issue Deadline: August 15, 2016

To Submit Articles: newsletter@asce-ncs.org

NCS eNewsletter Archives: go to www.asce-ncs.org and click on the Newsletters tab.

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 (2015–2016)

D. Scott Wolf, President

Jordan Pitt, Vice President

Brian Barna, Secretary

Emily Dean, Treasurer

Rachel Schneider, Newsletter Editor

James Palmer, Editor in Training

Kelly Cronin, YMF President

Piers Causton, Director

Alex Rosenheim, Director

Shri Yamijala, Director

Victor Crawford, Director

Christian Manalo, Past President

Ranjit S. Sahai, Previous Past President

Committee Chairs

Please refer to the [NCS website](#) for a current list of NCS committees and chairs.

Join ASCE-NCS in Celebrating 100 Years

National Press Club, June 3, 2016

By Lucy Menon, PE, M.ASCE, Chair Dream Big Subcommittee and Education Committee, NCS

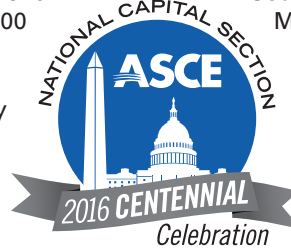
Please join the NCS as we celebrate our 100-year anniversary of the National Press Club in Washington, D.C. on Friday, June 3, 2016. The conference features distinguished speakers throughout the day discussing sectors and organizations that they represent, including past accomplishments and future challenges, as well as providing their perspective on the future of infrastructure and the civil engineering profession.

Our keynote speaker is Major General Mark Yenter, P.E., Deputy Commanding General for Military and International Operations, U.S. Army Corps of Engineers. Major General Yenter is responsible for policy, programming, and technical support in the execution of more than \$18 billion of design, construction, and environmental programs.

The selection of Major General Yenter as our keynote speaker is most fitting as it was the Army Chief of Engineers who led the formation of the National Capital Section more than 100 years ago. Major General Yenter will discuss the Corps' distinguished history of planning, building, and sustaining infrastructure across the nation and around the world.

Other speakers draw from various reaches of the infrastructure and civil engineering community, including from the fields of transportation, utilities, facilities, environmental, geotechnical, water resources, sustainability, and construction. This

includes: Mr. Mark Woodson, P.E., D.WRE, ASCE National President; Mr. Victor Mendez, P.E., U.S. Deputy Secretary of Transportation; Ms. Barbara Rusinko, P.E., President of Bechtel National; Mr. Andrew Off, P.E., PMP, WMATA Assistant General Manager for Rail Services; Ms. Liliana Maldonado, P.E., BCEE, DC Water Director of Engineering and Technical Services; Mr. Shapour Ebadi, CCM, General Services Administration Project Executive for the Dept. of Homeland Security headquarters; Dr. Bob Kapsch, Ph.D., AIA, author of *Building Washington*; and many more.



AMERICAN SOCIETY OF CIVIL ENGINEERS

Engineering the Nation's Capital

Confirmed Conference Presenters:

ASCE President: Mark Woodson, P.E., L.S., D.WRE, F.ASCE, 2016 ASCE President

KEYNOTE: Major General Mark Yenter, P.E., Deputy Commanding General for Military and International Operations, U.S. Army Corps of Engineers (USACE)

Highways: Victor Mendez, P.E., U.S. Deputy Secretary of Transportation, 2014-Present; Federal Highway Administration (FHWA) Administrator, 2009-2014

Transit/Rail: Andrew Off, P.E., PMP, Assistant General Manager for Rail Services, Washington Metropolitan Area Transit Authority (WMATA)

Bridges: Gary Runco, P.E., P.S., No. Virginia District Bridge Engineer for Virginia Dept. of Transportation (VDOT) & Konjit Eskender, P.E., Bridge Engineer for D.C. Dept. of Transportation (DDOT)

Water/Wastewater Utilities: Liliana Maldonado, P.E., BCEE, Director of Engineering and Technical Services, DC Water

Environmental: Jeff Lape, Deputy Director, USEPA Office of Science and Technology, Former Director, USEPA Chesapeake Bay Program

Sustainability: Fernando Pons, P.E., LEED AP, Managing Principal, Pons & Associates, LLC

Dream Big: Barbara Rusinko, P.E., President of Bechtel National

Building Washington: An Engineering and Construction History of a New Federal City: Robert Kapsch, Ph.D., Hon. AIA, Author and Recipient of 2016 ASCE History and Heritage Award

Engineering the Nation's Capital – A Century of Innovation and Promise for the Future: David Smith, P.E., A. Morton Thomas & Associates, and Centennial Book Sub-Committee Chair, ASCE-NCS

ASCE-NCS Project of the Year: Presented by: Jordan Pitt, P.E., HDR Inc. and Vice President, ASCE-NCS

ASCE-NCS Annual Sustainability Award: Presented by: Alex Rosenheim, P.E., Construction Manager, U.S. Naval

Research Laboratory, and Director, ASCE-NCS

Facilities and Construction: Shapour Ebadi, CCM, Director, Office of Infrastructure and Campus Development, General Services Administration (GSA) and Project Executive for St. Elizabeth's DHS Campus

Geotechnical: Brian Zelenko, P.E., Vice President, WSP | Parsons Brinckerhoff and Scott Hoffman, P.E. Project Manager, Skanska USA Civil

Water Resources and Flood Control: Joe Manous, P.E., Ph.D., D.WRE, F.ASCE, F.EWRI, Water Resources Engineer and Manager of International Activities, USACE Institute for Water Resources

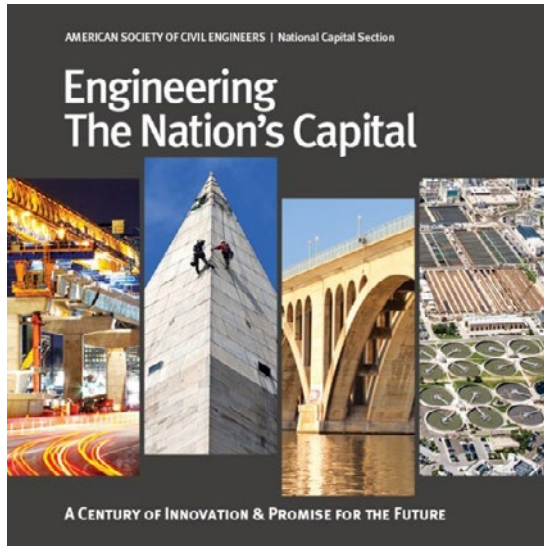
Report Card for D.C.'s Infrastructure – Raising the Grade: John Casana, P.E., LEED AP, D.WRE, F.ASCE, Senior Lead Engineer, Booz Allen Hamilton; Mike Jelen, P.E., Vice President, AECOM; Brittney Kohler, Senior Manager, Infrastructure Initiatives, ASCE; and Ranjit Sahai, P.E., F.ASCE, President, RAM Corporation and Chair, D.C. Report Card Committee

ASCE-NCS wishes to thank Booz Allen Hamilton for its support of the Centennial Anniversary Conference.

Booz | Allen | Hamilton
100 YEARS

For more information or to register for the conference, please contact Victor Crawford at (703) 732-9004 or via email at vicris51@verizon.net.

Order Your Copy of the Centennial Commemorative Book



Engineering the Nation's Capital – A Century of Innovation and Promise for the Future. More than two years in the making, this 120-page hardcover book in coffee-table format presents stories and pictures of some of the most notable infrastructure in the D.C. area. The book is suitable for home or office and will inspire generations of civil engineers to come.

Featured projects and initiatives include:

- D.C.'s Metrorail
- Reagan and Dulles Airports
- Washington Monument
- U.S. Capitol
- Woodrow Wilson Bridge
- The Capital Beltway
- D.C.'s Clean Rivers Project
- The Pentagon
- Springfield Mixing Bowl
- George Washington Memorial Parkway
- Francis Scott Key Bridge
- Arlington Memorial Bridge
- Monocacy Aqueduct
- Federal City Boundary Stones
- Nationals Ballpark
- Blue Plains Wastewater Treatment Plant
- Many more...

Centennial Program Participating Organizations*



Smithsonian
Institution



**Note the logos of the organizations included herein merely indicate participation and are not an endorsement of ASCE-NCS or its views.*

An Interview with J.A. Padgett, P.E., F.ASCE

Editor's Note: Beginning October 2015, the NCS began publishing interviews of prominent members of our Section, asking them to reflect on their career and profession. The NCS Centennial Committee, including Dr. Phillip Melville, PE, PhD, F.ASCE, and Lucy Menon, PE, M.ASCE, of the Dream Big Subcommittee, have organized the interviews. We hope you enjoy reading these interviews and gain insight from these leaders in civil engineering.

J. A. "Jay" Padgett, P.E., F.ASCE is a native of the Washington, DC area where he has worked his entire career. He is president of a small business that specializes in subsurface investigations both geotechnical and geo – environmental, prospecting, in-situ testing, geotechnical instrumentation, construction-related services and ground water issues, serving the mid-Atlantic region. He began managing a predecessor firm seven months after starting his first full-time professional employment and continued for the next 21+ years, serving as president for the last fourteen. During the same period he did consulting work and served in a variety of administrative *positions* for the owner, a consulting firm. In 1993 he formed his own company, GeoServices Corporation, which led to a greater breadth of services and clientele and more challenging opportunities.

Education: Dickinson College with a major in physics and a minor in math. MS in civil engineering Rensselaer Polytechnic Institute. He is a licensed professional engineer in the District of Columbia and a licensed master well drifter in Maryland.

Professional Organizations and Volunteerism: Active volunteer for ASCE, on NCS committees, the Board, President ('86-'87), and the Scholarship *Trust*, then at Society level on some two dozen committees and task committee; Director ASCE's Board of Direction; oversee program development 2002 ASCE 150th Anniversary Conference in Washington, DC.; was Geo-Institute Governor, volunteer on Institute committees; and ASCE delegate to other organizations.

What do you consider your major achievements in our Section area?

I'll have to divide my answer into two parts, which I'll label professional services and volunteerism.

My professional services portion consists of experience from a 43+ year career working on thousands of projects, many high-profile, often under challenging circumstances, and finding ways to deliver for the client. Sometimes it's complicated but we've been pretty successful over the years meeting client needs, not just technically but in whatever ways it took.

Among projects where I think we made a difference, a few of note include 1) an environmental problem where we tracked a contaminated plume to depths of up to 200 feet for 7,000 ± feet through rolling wooded terrain downrange from a firearms range, using an obscure sampler I found, not meant to be used as we planned, but we customized it. It yielded excellent results and saved the client hundreds of thousands of dollars; we finished by installing cost-effective multiport wells; 2) exploration and instrumentation of problem embankments on Amtrak's Northeast corridor rail lines in Maryland, working on the tracks at night in abbreviated work windows to clarify problems that had been misunderstood for some time; there had been studies around the edges but never right where they needed to be; and 3) planning and executing a program to perform the deepest land-based dilatometer soundings ever done (400 feet), and co-authoring a paper to tell others how to do it.

A different kind of professional achievement was the years I spent with a business and civic organization (one year as President) wherein I got to know many of the local and state politicians, which led to appointments to a couple of public commissions,



one a multi-year county-wide land planning/land usage study and report to be used as a zoning master plan, and one on landfill policies. Civil engineering knowledge was useful in both.

On the volunteer side, I consider being Section president an achievement and honor. Being able to serve ASCE as a Director, and participate in Society business at that level, has been beyond anything I'd ever imagined. Some of the things that stand out most for me are 1) my 18+ years working on Society governance, helping rewrite and reorganize the Society's governing documents, helping make structural changes, and serving on the committee which makes revisions at the Board's direction; 2) putting together the 150th Anniversary Conference; 3) participation in the *Vision for 2025* summit, and 4) working with the committee that provides leadership training for Section and Region officers.

Why did you decide on a career in civil engineering?

During my last year of college I was considering career options along with the outlook for my Army service (via ROTC). I wanted to find a way to use my science and math in real-world applications. Civil engineering seemed to offer that with lots and lots of options plus I'd had a little bit of construction experience, so I knew I enjoyed the building process. I chose the Corps of Engineers as my Army

continued on page 6

branch and worked out an arrangement to go to graduate school to study civil engineering before going on active duty.

What do you consider the best guidance to young people for a future career in Civil Engineering?

A civil engineering career offers vast variety. First, there is such breadth and range of disciplines and applications: construction, environmental, structural, geotechnical, sanitary, land management, water resources, transportation, and many more technical specialties, plus the applications can include constructor, consultant, designer, facility operations, resource management, teacher, public service and so on. As a civil engineer you can practice in many, many ways. My own career path is a great example; unconventional, but it worked. Second, civil engineers ultimately are designing, constructing and managing the built environment and protecting the natural environment – so there will always be work to do. It's hard to imagine a technically literate, adventurous, intellectually curious person could not find exciting opportunities with so many choices.

For those considering a career in civil engineering, it's essential to have a

solid science and math foundation leading up to college.

For those starting a career, I believe early experience with and mentoring from established professionals is key, to learn the right way to do things and the right things to do, right from the start.

Keep in mind you've been trained technically, but your biggest professional headaches will probably be people-related matters. Learning to master the various personal relationships and management skills involved in any kind of professional practice is crucial.

Young engineers often get a good deal of responsibility fairly quickly – the “throw them in the water and see if they can swim” approach – not necessarily best practice but fairly common. Accept the challenges, ask questions, work hard and learn to deliver. Obtain professional licensure when eligible.

Become engaged beyond your employment, with technical and professional organizations and your community. Volunteer for meaningful roles. Lend your professional perspectives to public matters. Being involved will have its rewards.

What do you consider the major challenge to a career in civil engineering?

Broadly, our whole civilized lifestyle is dependent on civil engineers but as a profession we aren't particularly well-understood or appreciated.

As individuals, I think a major challenge is potential erosion of control of our profession. Civil engineering is a endeavor requiring knowledge, skill and thought, recognized as a learned profession, with licensure to protect the public. In retail engineering a lot of product has become a commodity. We risk being marginalized. There are increasing numbers of non – engineers trying to set standards and manage outcomes.

ASCE's *Vision for Civil Engineering 2025* lays out aspirations for civil engineers as leaders and innovators, facilitators and synthesizers, as well as designers in traditional roles. ASCE has strategic initiatives in place and actively underway to achieve the vision. I'd encourage civil engineers and those who want to be civil engineers to find out about the *Vision* and the initiatives and do what you can to help our profession flourish.

Become An ASCE-NCS Sponsor!

By Christian Manalo, PE, BCEE, M.ASCE, Sponsorship Committee Chair, NCS

The NCS was chartered in 1916 and has grown to more than 3,400 members. The Section serves the District of Columbia and surrounding areas of Virginia and Maryland. Our sponsorship program offers a variety of opportunities for you to meet the needs of your organization. We are happy to work with you to customize a sponsorship package that best meets your organization's preferences.

Centennial Anniversary Conference: Our full-day conference will be held at the National Press Club on June 3rd, 2016. We have a full slate of highly distinguished speakers planned. We will also award outstanding projects of the year. Sponsorship includes recognition and booth space. **Deadline May 16, 2016**

Monthly Section and Committee Meetings: ASCE-NCS hosts dozens of events each year, including our monthly

evening section meetings and committee-organized events. Sponsorship allows you to address attendees at these events.

Newsletters: Our eNewsletters are issued throughout the year and are distributed to more than 5,000 individuals.

Website: Our Section website was awarded Website of the Year by ASCE in 2014.

Scholarship Trust: More than \$330,000 in scholarships have been awarded by our Section since 1988. Your contribution helps support our local students.

For more information on becoming a sponsor, please contact Sponsorships Committee Chair, Christian Manalo, P.E., BCEE, at (703) 377-1697 or via email at manalo_christian@bah.com.

Our Centennial Celebration is in Full Swing

By Victor Crawford, PE, M.ASCE, Centennial Committee Chair, NCS

How does a cable stay bridge work? How many washers can a bridge made from a sheet of paper hold? How does a key stone work on an arch? These were the questions students were able to answer with hands-on activities by building bridges and an arch at our booth at the USA Science and Engineering Festival. A major goal for the Centennial has been student outreach. What better way to do outreach to over 350,000 students and their parents, along with teachers and the general public than by having students build bridges, by promoting the IMAX Dream Big movie coming out in 2017, and by showing how civil engineers support sustainability? Thanks to all the volunteers that came out to support this excellent opportunity for Science, Technology, Engineering, and Math (STEM).

Continuing our outreach, we are requesting our members become STEM volunteers. The American Association for the Advancement of Science (AAAS) has been bring STEM volunteers into the classrooms for over ten years, so taking advantage of this superb student outreach program, we have partnered with AAAS. Please see the write-up on this exceptional program, and consider signing up, so we can bring your knowledge and experience into the classroom.

Long awaited, the Centennial Commemorative Book Subcommittee's *Engineering the Nation's Capital – A Century of Innovation and Promise for the Future* has been published. If you did not receive your message for purchasing this outstanding book, please

let us know. We want all our members to have their own copy so you can let your family and friends know about your profession and what we do as civil engineers. We are also continuing to seek members to work with local libraries to have a book shown in the local interest display case. Please let us know if you are interested; our grant from ASCE will pay for the book but we need volunteers to contact their local library.

We are continuing our excellent series of Centennial Engineer of the Month articles. This month we honor Engineer Jay Padgett, a past President of the NCS and Director of ASCE's Board of Direction. He is no stranger to anniversary celebrations, having overseen the ASCE 150th Anniversary Conference in Washington, DC in 2002.

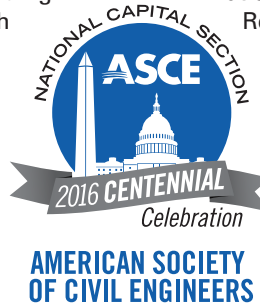
On May 1, 2016, our members, along with their future civil engineers, took a tour by boat to see the underside designs of DC bridges. What better way to see the accomplishments made by civil engineers than by looking up at the structure that supports the transportation needs of the Nation's Capital?

So what's ahead? Our Centennial Conference on June 3, 2016. This will be the spectacular culmination of our first 100 years. Therefore, one of our speakers will be from the Army Corps of Engineers in honor of General Alexander MacKenzie, a former Chief of the Corps,

who in 1905 led a five-member committee to form the Washington Society of Civil Engineers. This resulted in our Charter being approved at the ASCE National Convention in 1916.

Representing ASCE, of course, will be the current President of ASCE, Mark Woodson. This Conference will be the Civil Engineering event of our Centennial Year, so please join us. You should already have seen the registration message for this Conference. If you have not signed up, now is the time since space is limited. As discussed elsewhere in this Newsletter, the Conference will support not only your continuing education through our technical sessions, but will also provide insight on the future of our civil engineering profession in the Nation's Capital.

We, as the NCS, represent the ASCE in the Capital Area. As part of our continuing commitment to the profession and the public, we have already had many Centennial Celebration activities. However, we have several additional activities scheduled as part of this commitment. This includes our STEM outreach to schools, and our interactive map to highlight our profession's accomplishments to the public. Your assistance will help make these ongoing endeavors a success. So, whether you are a Young Member, a Life Member, or somewhere in between, we need your help. Please join us by contacting the Centennial Committee at vicris51@verizon.net. ■



AMERICAN SOCIETY OF CIVIL ENGINEERS

Engineering the Nation's Capital

ASCE-NCS Newsletter Patrons

Christopher H. Lester, PE
Associate Vice President
Office Sales Manager

HNTB Corporation
2900 South Quincy Street
Suite 600
Arlington, VA 22206
(703) 824-5100
Direct (703) 253-5951
Cell (703) 597-3985
Fax (703) 671-6210
E-mail clester@hntb.com
www.hntb.com



The HNTB Companies



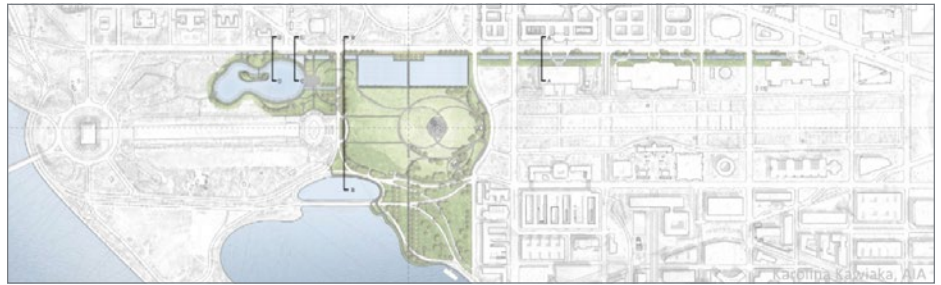
SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

April 2016 Meeting Recap – An Evening of Sustainability, Resilience and Flood Mitigation with Karolina Kawiaka, Dartmouth College, and Ned Wallace, National Park Service

By Alex Rosenheim, PE, LEED, AP, Chair, Sustainability Committee, NCS

The April 2016 NCS meeting focused on flood mitigation in downtown Washington, DC. The program was filled with two excellent speakers. Ms. Karolina Kawiaka, Senior Lecturer at Dartmouth focused on innovative approaches to dealing with Washington, DC internal flooding focusing on the Federal Triangle area. Mr. Ned Wallace, Civil Engineer with the National Park Service discussed the 17th Street Levee for the protection of the National Mall and Memorial Parks at risk from Potomac River flooding.

Ms. Kawiaka's presentation looked at low impact, green infrastructure approaches to address interior flooding in the Federal Triangle. Her proposal is designed to handle stormwater by recreating some of the natural hydrological conditions of Federal Triangle and restoring aspects of the historic Washington Canal. She discussed the impacts that hardscaping the interior areas of this area over time has created flooding events in recent years that could be mitigated through natural



features. Her vision presented great challenges due to the number of entities with vested interests in the affected areas, and was very optimistic that great strides can be made with innovative out-of-the-box thinking to return us to a more natural solution to the city's needs.

Mr. Wallace focused on the National Park Services' efforts to deal with flooding on the adjacent parcels of land on the National Mall and the Memorial Parks. He presented historical background on the flood prone areas and the FEMA designated areas of most concern in the affected areas on and near the National Mall. Of great interest are the Constitution Gardens, World War II Memorial, Martin Luther King, Jr. Memorial and Franklin Delano Roosevelt Memorial. These and many other sites are within the 100 year floodplain and have been designed and maintained to be able to withstand an event of that magnitude. The 17th Street Levee is made of a substantial earthen berm and removable panels that can be installed within approximately 6 hours or less with many redundant means of



NPS workers practice erection of 17th Street levee

installation kept available at all times. The nature of floods acting with 2 to 3 day delay from rain events means vigilant monitoring of Washington, DC area weather is critical to the success of the implementation of the levee for reliable flood control. The system is designed to withstand past the 500 year floodplain. Once completion of punchlist items is complete, USACE will re-certify the system and the FEMA floodplain maps will be revised to incorporate this feature of this critical part of the resilience of Washington, DC infrastructure. ■



Visualization of possible swale/restored canal along Constitution Avenue

ASCE-NCS Newsletter Patrons



Robert A. Pronier
Senior Vice President / Regional Manager
Robert.Pronier@cardno.com
1881 Campus Commons Drive, Suite 103
Reston, VA; Phone: 703-391-0024
www.cardno.com

www.cardnohayneswhaley.com

Practicing the Art of Structural Engineering

We provide structural engineering services nationwide and internationally for a broad range of projects, including:

- > Commercial
- > Institutional
- > Public

Booz | Allen | Hamilton

100 YEARS

USA Science and Engineering Festival

By Dean Westman, PE, M.ASCE, NCS Past President

Over 300,000 people attended the USA Science & Engineering Festival (USAS&EF) at the Washington Convention Center April 15–17. Volunteers from the NCS and ASCE World Headquarters in Reston participated in the 3 day event that included scientific and engineering displays and activities geared for people of all ages.

ASCE sponsored 3 booths at the event:

- Dream Big featuring information regarding the Civil Engineering profession
- ASCE-NCS with 3 bridge building activities
- ASCE-NCS Sustainability Committee with the ASCEville activity for younger children and a display on permeable asphalt concrete provided by the Asphalt Paving Alliance (APA).

ASCE EPA P3 Sustainable Development Award

This year's biennial USAS&EF included the Environmental Protection Agencies People, Prosperity and the Planet (P3) EXPO. This is a unique college competition for designing solutions for a sustainable future. EPA P3 offers students hands-on experience that brings their classroom learning to life. The competition has two phases. In the first phase teams are awarded a \$15,000 grant to develop their idea. They the results of their work at the EPA P3 EXPO each April in Washington DC.

To compliment EPA's awards, ASCE has presented a Sustainable Development Award at EPA's P3 EXPO, since 2006.



NCS Booth with foam arch, cardboard suspension bridge, and paper beam bridge



Parents and future civil engineers learn about civil engineering at NCS booth

The ASCE National Committee on Sustainability sponsors the annual \$1,000 award which based on the following criteria:

1. Use of local raw materials
2. Simplicity of design
3. Widespread impact on quality of life for the developing region.

Prior winners of the ASCE Sustainable development award include:

- 2011 – University of Toledo, “Pathogen and NOM Removal in Riverbank Filtration for the village of La Barranca, Honduras.
- 2012 – Gonzaga University, “Integrating Improved Sustainability Technologies into the Heart of the Home – The Kitchen.”
- 2013 – Stanford University, “Community-Scale Water Disinfection in Bangladesh.”
- 2014 – University of Arkansas, “Water Systems for Developing countries / Disaster Relief Made with Local Materials.”
- 2015 – University of Florida, “Feed the UriNation Using Contaminant-Free Fertilizer.”

The University of Dayton received the 2016 ASCE Sustainable Development Award for their “Solar-Thermal



ASCE Dream Big Booth with Jeannine Finton, Senior Manager of Pre-College Outreach, ASCE World Headquarters

Adsorption Refrigerator”. The project comprised an off-the-grid refrigerator that can be used to preserve vaccines in areas without electric service. It runs on human-generated electricity (one hour of pedaling a day) combined with solar panels. Power generated during daylight hours is used to make ice which provides cooling at night. The team has a pilot in India where they are partnering with Engineers in Technical Humanitarian Opportunities of Service-Learning (ETHOS) to refine the design. The 2016 ASCE judges were: Rob Field, Cat Shrier, Danmeg Shuai, and John Casana.

Thanks to all the ASCE S&EF volunteers. Special thanks to Jeanine Finton, Vic Crawford, Alex Rosenheim and Dean Westman for their leadership. ■

NCS Committee News and Updates



Younger Members Forum

By Mike Venezia, PE, M.ASCE, YMF Secretary/Newsletter

Happy Hours. The ASCE-NCS Younger Members Forum (YMF) holds monthly happy hours in Arlington, VA or Washington, D.C. Happy hours are typically held the first Wednesday of each month unless a holiday falls during that week.

The NCS YMF held their April Happy Hour at Hard Times Café in Arlington, VA on April 6. Approximately 25 members attended the event and several stayed afterwards for trivia night!

The next monthly happy hour will take place at *Local 16* on U Street in Washington, DC at 6pm on Wednesday, May 4th. Look out for emails with specific locations for future monthly happy hours!

Stay Connected! Check out photos and stay up-to-date with YMF events by visiting the new YMF Facebook page: <http://www.facebook.com/ASCENationalCapitalYMF>. Also, follow us on Twitter (@asce_ncsYMF) at https://twitter.com/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 ASCE 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 contact the YMF President (ncsymfpresident@gmail.com).

Construction Committee

by Jeff Tan, PE, PMP, LEED AP, Chair of ASCE-NCS Construction Committee



Construction Committee Meeting.

The next Construction Committee meeting previously scheduled for May 5th has been postponed. NCS members interested in participating in the Construction Committee are highly encouraged to attend. Please contact Jeff Tan if you are interested or would like further information.

In a future Construction Committee meeting, Lieutenant Colonel Jerry

Himes will present how Herman Haupt created a standard-design bridge system that could be rapidly constructed by untrained, unskilled labor during the U.S. Civil War and made the emerging technology of the railroad a reliable means of supply for Union forces (*Design and Construction on the U.S. Military Railroads during the Civil War*). LTC Jerry Himes is a transitioning career military engineer that currently works on Strategic Business Intelligence for the U.S. Army Corps of Engineers at the Headquarters based in Washington, D.C. He previously served as the Executive Secretary (SGS) to the Chief of Engineers, LTG Thomas Bostick, from April 2013 to August 2015. He is a Professional Engineer (PA-Civil) with a Master's degree in Civil Engineering from Carnegie Mellon University. He graduated from West Point in 1996 and taught in the Civil and Mechanical Engineering Department there from 2006–2009. Stay tuned to email to find out when this exciting presentation is rescheduled!

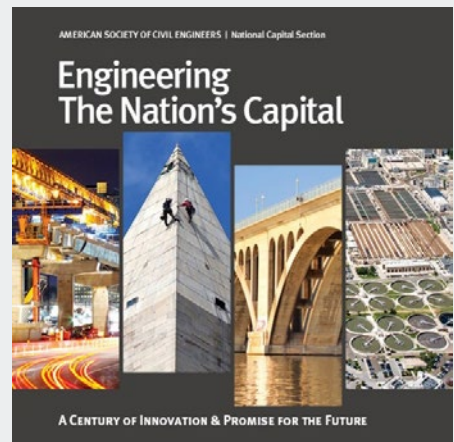
Survey. Please take a few minutes and complete this survey to help your Construction Committee plan for 2016: <http://goo.gl/forms/zkt9YrWkzd>. Thank you in advance.

2016 CENTENNIAL

Discover Local Civil Engineering Wonders

Are you interested in uncovering the civil engineering wonders in the metropolitan Washington, DC area? Check out our Centennial coffee-table book. Inside you will find civil engineering projects, both historic and new, that have shaped the region's past and are poised to shape its future. Take the time to browse excerpts on some of the projects it features.

The Book is hot-off-the-press and available at a bargain rate of \$45. We have a limited supply of the book; do not let the opportunity slip you by to own a piece of our region's history and its future and to cherish it for years to come. Contact vicris51@verizon.net to place your order.



Let's Talk about Engineering Ethics: NCEES Rules of Professional Conduct – Part-II

Did you know that the 31st president of the United States was a Professional Engineer? He enrolled at Stanford University when it opened its doors in 1891 and graduated as a mining engineer. His term (1929–1933) was marked by the stock market crash of 1929 and the beginning of the Great Depression.

This great engineer once said: The great liability of the engineer, compared to men of other professions, is that his works are out in the open where all can see them. He cannot, like the doctors, bury his mistakes in the grave. He cannot, like the lawyers, argue them into thin air. He cannot, like the architects, cover his failures with trees and vines. He cannot, like the politicians, screen his shortcomings by blaming his opponents. The “engineer” simply cannot deny he did it; if his works do not work, he is damned! Herbert Hoover

In last month's article, we started discussing the Model Rules, the important guidelines for professional engineers. As you may remember, these rules were comprised of the following three major sections: (A) Licensee's Obligation to the Public, (B) Licensee's Obligation to Employers and Clients, and (C) Licensee's Obligation to Other Licensees. And we covered the first model rule. Today we will talk about the second and third.

II. Licensee's Obligation to Employer and Clients

1. Licensees shall undertake assignments only when qualified by education or experience in the specific technical fields of engineering or surveying involved.
2. Licensees shall not affix their signatures or seals to any plans or documents dealing with subject matter in which they lack competence, nor to any such plan or document not prepared under their responsible charge.
3. Licensees may accept assignments and assume responsibility

for coordination of an entire project, provided that each technical segment is signed and sealed by the licensee responsible for preparation of that technical segment.

4. Licensees shall not reveal facts, data, or information obtained in a professional capacity without the prior consent of the client, employer, or public body on which they serve except as authorized or required by law or rules.
5. Licensees shall not solicit or accept gratuities, directly or indirectly, from contractors, their agents, or other parties in connection with work for employers or clients.
6. Licensees shall disclose to their employers or clients all known or potential conflicts of interest or other circumstances that could influence or appear to influence their judgment or the quality of their professional service or engagement.
7. Licensees shall not accept compensation, financial or otherwise, from more than one party for services pertaining to the same project, unless the circumstances are fully disclosed and agreed to in writing by all interested parties.
8. Licensees shall not solicit or accept a professional contract from a governmental body on which a principal or officer of their organization serves as a member. Conversely, licensees serving as members, advisors, or employees of a government body or department, who are the principals or employees of a private concern, shall not participate in decisions with respect to professional services offered or provided by said concern to the governmental body that they serve.
9. Licensees shall not use confidential information received in the course of their assignments as a means of making personal profit without the consent of the party from whom the information was obtained.

III. Licensee's Obligation to Other Licensees

1. Licensees shall not falsify or permit misrepresentation of their or their associates', academic or professional qualifications. They shall not misrepresent or exaggerate neither their degree of responsibility in prior assignments nor the complexity of said assignments. Presentations incidental to the solicitation of employment or business shall not misrepresent pertinent facts concerning employers, employees, associates, joint ventures, or past accomplishments.
2. Licensees shall not offer, give, solicit, or receive, either directly or indirectly, any commission, or gift, or other valuable consideration in order to secure work, and shall not make any political contribution with the intent to influence the award of a contract by public authority.
3. Licensees shall not injure or attempt to injure, maliciously or falsely, directly or indirectly, the professional reputation, prospects, practice, or employment of other licensees, nor indiscriminately criticize other licensees' work.
4. Licensees shall make a reasonable effort to inform another licensee whose work is believed to contain a material discrepancy, error, or omission that may impact the health, safety, or welfare of the public, unless such reporting is legally prohibited.

As always we conclude our remarks with another important reminder. Keep in mind that many problems in the FE and PE exams can be solved by either analyzing the answers or reverse engineering ([visit this month's problem set](#)). Read the options very carefully.

Good Luck,
Ahmet Zeytinci, P.E.
drz@4drz.com



Upcoming Events *(Also available on the NCS website under the [Events tab.](#))*

May 16–23

Celebrate [Infrastructure Week](#), the 2016 theme, Infrastructure Matters, tells the story of what infrastructure means to Americans. It matters, in big ways and in small, to our country, our economy, our quality of life, our safety, and our communities. Roads, bridges, rails, ports, airports, pipes, the power grid, broadband... infrastructure matters to the goods we ship and the companies that make and sell them; it matters to our daily commutes and our summer vacations, to drinking water from our faucets, to the lights in our homes, and ultimately to every aspect of our daily lives.

May 17

NCS Section Meeting, 6:30–8:30 pm, Hilton Arlington. Join us for an exciting presentation detailed in this month's Newsletter. Look for more information in future emails and on our [website](#).

June 1

YMF Monthly Happy Hour 6–8 pm, at [Carpool](#) in Arlington, VA. Join other younger members from the area for while you enjoy free appetizers and drink specials. Watch for upcoming emails for more information.

June 3

NCS Centennial Conference at the National Press Club, DC. Mark your calendars for this event! See newsletter article and upcoming emails for more information.

June 10

YMF Nationals Baseball Game Nationals Park, DC. Join the Younger Members Forum at a Nats vs. Phillies ball game. Watch for upcoming emails for more information.

July 6

YMF Monthly Happy Hour 6–8 pm, at [Sehkraft Brewing](#) in Arlington, VA. Join other younger members from the area for while you enjoy free appetizers and drink specials. Watch for upcoming emails for more information.

October 10–12

The GeoVirginia 2016 Conference in Williamsburg, VA is just around the corner – [Register Now!](#) Early Bird cutoff date is May 31. Contact [Sara Phillips](#) if you have any questions.

May 22–26

EWRI World Congress, West Palm Beach, Florida. This year's theme is Critical Infrastructure Needs: Water and the Environment and featured speakers Major General Donald E. Jackson, Jr., USACE, Peter Antonacci, Executive Director, South Florida Water District, Marc Edwards, PE, M.ASCE, EWRI, Virginia Tech.

May 23

NCS GEC Metrorail Sivlerline Project Presentation and Tour, 1:30–4:30pm, Dulles Metro Project Office, Herndon, VA. Cost is \$25, only 20 registrations allowed. [Register Now!](#)

June 26–29

International Conference on Transportation & Development 2016, Houston, Texas. This year's theme is Projects and Practices for Prosperity. The conference includes 40 sessions under five parallel tracks, and participants earn up to 24 PDHs. Keynote speakers include James M. Bass, Executive Director, Texas Department of Transportation, Mario Diaz, Director, City of Houston Department of Aviation, Houston Airport System, and Shaun McCabe, Texas Central Railway.

July 17–20

Pipelines Conference 2016, Kansas City, Missouri. This year's theme is Out of Sight, Out of Mind, Not out of Risk. Pipelines 2016 is part of the new ASCE [Utility Engineering & Surveying Institute](#), with an expanded program. Keynote speakers include Kansas City Mayor Sly James and Terry Leeds, PE, M.ASCE, Director of Water Services.

August 3

YMF Monthly Happy Hour, 6–8 pm, at [Penn Social](#) in Washington, DC. Join other younger members from the area for while you enjoy free appetizers and drink specials. Watch for upcoming emails for more information.

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](#) and visit our [jobs page](#).

ASCE-NCS Newsletter Patrons

**Ethan Grossman
Engineering**