National Capital Section
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ASCE-NCS Monthly Dinner Meeting

October 2019 Preview

Title:

United Nations Sustainable Development Goals

Preview:

The United Nations' Sustainable Development Goals (SDGs) are the blueprint to achieve a better and more sustainable future for all. They address the global challenges we face, including those related to poverty, inequality, climate, environmental degradation, prosperity, and peace and justice. The Goals interconnect and in order to leave no one behind, it is important that we achieve each Goal and target by 2030. The ASCE-NCS October 2019 Dinner Meeting will focus on SDGs that impact the field of civil engineering and how our meeting these goals will affect our world now and in the future. Among the goals that will be discussed will be Goal 6: Clean Water and Sanitation, Goal 7: Affordable and Clean Energy, Goal 8: Decent Work and Economic Growth, Goal 11: Sustainable Cities and Communities and Goal 13: Climate Action.

Speaker:

William E. Kelly, Practitioner Adjunct Faculty in Sustainability, George Mason University

Biography:

William E. Kelly, Ph.D., P.E., recently retired as director of external affairs at the American Society for Engineering Education (ASEE). At ASEE, his responsibilities included



the engineering dean's council, ASEE's K-12 activities, and ASEE's ABET activities. Prior to joining ASEE in September of 2007, he was a professor of civil engineering at the Catholic University of America in Washington, D.C., where he also served as dean of the school of engineering from 1996-2001. While dean, he served on the JETS board and the board of directors for the Washington ACE mentor program. Dr. Kelly was on the ABET Engineering Accreditation Commission (EAC) from 1993-2003 and was chair in 2001-2002. Currently he is a member of the American Society of Civil Engineers (ASCE) Committee on Sustainability and is teaching sustainability as a practitioner adjunct faculty member at George Mason University. He is also on the Board of Directors of the Civil Engineering Certification Board. Dr. Kelly received his Ph.D. in civil engineering from the University of Notre Dame and received an engineering honor award from his alma mater in 1999.

SUSTAINABLE GALS

Please join us on Tuesday, October 15 at the Hilton Arlington, 950 North Stafford Street, Arlington, VA, on the second floor in the Gallery Ballrooms. Parking is available at the hotel (\$10), at the Ballston Mall garage (\$1 after 6 pm), and on the street (free after 6 pm). The Hilton is on the same block as the Ballston Station on Metro's Orange and Silver lines. Registration and networking will be from 6:00 to 6:45pm, followed by dinner. The program will end by 8:30 pm. The cost is \$45 for those preregistering, \$10 for students and \$55 for walk-ins, as space allows. For questions, please contact Kelly Cronin. Please click here to register by Wednesday, October 9.

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.

September Section Meeting Recap

By Brian Barna, P.E., NCS Past President

Per Struck, P.E., of Whitman, Requardt, and Associates, LLP, in Baltimore, Maryland, was our featured presenter for the first meeting of the 2019–20 Section year. Mr. Struck presented on improvements made to Baltimore's Back River and Patapsco Wastewater Treatment Plants to reduce the nitrogen and phosphorous discharged into the Chesapeake Bay by over

90% by a system known as Enhanced Nutrient Removal.

The program to reduce the nutrients discharged into the Chesapeake Bay was driven by a statewide Chesapeake Bay Restoration Program and by a Wet Weather Consent Decree placed on Baltimore by the EPA requiring elimination of sanitary sewer overflows,

reduction of inflow/infiltration, sewer system rehabilitation, and improvements to conveyance capacity. The larger Back River WWTP has a treatment capacity of 180 million gallons per day (MGD). Adding the equipment necessary for Enhanced Nutrient Removal came with a design and construction schedule of 10 years and a cost of over \$500 million. The total construction cost for the

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President's Corner

Hello NCS Members! I am privileged to be the new **ASCE National Capital** Section President. I have been active with NCS for over a decade and am looking forward to helping lead the section into another exciting year! I want to first acknowledge all the hard work and

support of the past Board of Directors, committee chairs, and most importantly, the Past-Present Emily Dean.

The 2019-2020 year looks to be full of many different events, several of which have already taken place. We



had a great turn-out at our September Section Meeting, our Younger Members Group held their Annual Planning Meeting, and we started an Architectural Engineering Committee. We strive to have something for everyone. We have groups for specific professional interests (Construction, Geotechnical,

Water Resources...to name just a few), groups for age demographics (Younger Members Group, Life Members), and groups to improve the section (Corporate Relations, Best Practices, Report Card, K-12 Education, College Outreach, and many others).

All of our new Board members have been active with the Section and our various groups. If you can't find something that interests you, I encourage you to reach out to the Board of Directors with ways we can inspire you to be more active.

This year I look forward to getting to know more of you and hope that more members become engaged with the section. Please feel free to reach out to me or the Board with suggestions, questions, or a friendly introduction!

Kelly Cronin, PE ASCE-NCS President

September Section Meeting Recap

continued from page 1

nutrient removal upgrades and the wet weather facilities was nearly \$1.2 billion.

The nutrient removal at Back River includes a traditional biological process using activated sludge and nitrification to remove approximately 70% of nitrogen and 90% of phosphorous. The water then goes through a denitrification

process where the water is pumped through a carbon source which converts the nitrate (NO₃) to N₂. This requires an external carbon source, which for this facility is provided by thousands of gallons of methanol daily. The end result is water with 90% nitrogen and 95% phosphorous removal. This technology has resulted in a total reduction of

nearly 2 million pounds of nitrogen and phosphorous discharged into the Bay in its first year of operation.

Before the main presentation, Region 2 Director John Casana inducted the new slate of National Capital Section officers for the 2019-2020 year, including new Section President Kelly Cronin.





Newsletter

Maria Raggousis, Editor

November 2019 Issue Deadline: October 16, 2019

To Submit Articles: newsletter@asce-ncs.org

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

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

National Capital Section

Officers (2019-2020)

Kelly Cronin, President Mike Venezia, Vice President/ President-Elect

Vic Crawford, Treasurer Jameelah Ingram, Secretary Emily Dean, Past President Brian Barna, Previous Past President

Maria Raggousis, Newsletter Editor

Joe Whartenby, YMF President Norine Walker, Director **Elizabeth Wheeler, Director**

Lisa Anderson, Director Tricia Wolfbauer, Director

Shainur Ahsan, Reston Branch President

Committee Chairs

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

The Future of Professional Engineer Seals - II

By Ranjit S. Sahai, PE, F.ASCE

About a dozen states permit the use of digital signatures in lieu of hand-written signatures, seals, and stamps to certify identity of the professional engineer in charge of the development of drawings, reports, and agreements.

When you examine the laws that permit their use, you'll uncover four attributes required of digital signatures to be acceptable.

Unique

Law enforcement relies on fingerprints to uniquely identify a subject. Digital signatures serve the same purpose; so they must be unique to an individual. The digitally signed document must contain credentials that can identify the signatory with certainty.

Verifiable

The parties agreeing to terms of highvalue transactions, such as contracts for engineering services, need to be sure that those signing such agreements are who they claim to be. A notary public is a legally approved authority who verifies your hand-written signature by observing you sign it and verifies your identify by comparing your face with your photograph in a passport or other identity verification card. Digital signatures are also



required to have a legally approved authority who can verify a digital signature and the identity of its signatory.

Secure

Your finger is a physical part of you. It is secure in the sense that only you possess your fingerprint. Someone would have to have physical possession of your finger to generate your fingerprint. Similarly, digital signatures must have a physical key or equivalent that, like the key you carry to lock and unlock your home, must be in your possession along with an additional verifying token, such as a sequence of digits similar to what you might use in a combination lock. This

requirement places the responsibility on you to ensure that you, and you alone, securely maintain ownership of the physical key or equivalent that is required to generate the digital signature.

Tamper-Evident

The purpose of this requirement is to ensure the integrity of the digitally signed content. In other words, there must exist a means to verify whether or not the digitally signed content has been tampered. This implies that the digital content and the digital signature are integrated.

Next month we examine the technology that enables these four requirements for digital signatures.

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. He is also an author and speaker.

SHELADIA ASSOCIATES, INC.

Teaching Engineering Ethics to Our Engineering Students: The Story of a National Contest

Engineering has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by engineers require honesty, impartiality, fairness, and equity, and must be dedicated to the protection of the public health, safety, and welfare. In this month's Dr. Z's Corner article, we'll discuss a real-world case study in ethics and how we use this opportunity as a tool to teach engineering ethics to our engineering students. I still remember the joy of team UDC, with my late colleague and friend Philip Brach (Phil), winning another prestigious national competition. The contest was about ethics, sponsored by the National Society of Professional Engineers (NSPE) and titled "2007 Milton F. Lunch Ethics Contest."

A civilized society requires acceptable habits and customs if it is to survive anarchy. Historically the prohibitions of unacceptable practices were through the sanction of either law or religion. Less serious offenses were usually dealt with by socially ostracizing the offender. Today our customs are divided into moral or ethical issues. Dan H. Pletta defined morals as the principles or the standards of *right or wrong* conduct involving voluntary action, and ethics, as the study of human actions regarding right or wrong.

An engineer is a critical player in any modern technological society. His or her values, and how he or she participates in the global economy, is and will be a critical component of the well being of our society. As engineering educators, we have an important role to play in forming the "ethical values" of the engineers of the future and tempering them in the application of ethics regards to their practice of the engineering profession.

Here we'll focus on that aspect of acceptable human behavior known as ethics: precisely, the ethical behavior expected of engineers in the practice of their profession.

Each year NSPE announces a question of ethics. Engineering students and engineers have the opportunity to answer the question and submit their arguments in support of their answers to the question. There is a \$1000 prize to those that submit the best analysis and defense.

As an instructor, we first present the case to the students and explain the facts. Then, the students are assigned the task of determining which sections of code might be relevant to the ethical issue in question. Then collectively, a discussion among the students is held in class to arrive at a consensus of which canons will be used to determine the ethics of the case and to defend their answer to the question.

The following is the summary of a response that was submitted by our engineering students at UDC to the 2007 Milton F. Lunch Annual Ethics Contest. Our students made us proud again and won the 1st Prize.

Ethics Contest Question

A licensed engineer (Engineer A) advertised on his website that he would "seal" drawings for a fixed price. Is this action ethical or unethical?

Our senior class found this ad to be *unethical* as did the NSPE Committee.

The NSPE Code of Ethics indicates under professional obligations, "Engineers shall conform with state registration laws in the practice of engineering" (III.8a). The question

here is, to which state is he going to conform, if his service is designed to meet with every local or state requirement. This is impossible to accomplish as regulations and laws differ from one state to another. Therefore, in this case, Engineer A's website is an exaggeration of his ability to provide services in areas where he is not licensed.

Not only that, the website's claim is unethical because Engineer A is charging a nominal fee for sealing any project and this is not right. Because it is impossible to know how much work is required to perform a thorough review of the required documents to assure that they conform to every applicable engineering standard. Engineer A also overlooks the potential for complicated designs in pursuit of attracting customers, which could lead to unsafe consequences. The Code of Ethics states "Engineers shall not promote their own interest at the expense of the dignity and integrity of the profession (III.1.e).

It is important to realize that right or wrong is an essential aspect of behavior, however in our class on ethics our primary goal was to expose the students to a process for arriving at an ethical decision. As with the adage, "Beauty is in the eye of the beholder," so also is the issue of ethics, a function of culture and background.

As engineering educators, our goal should be to ensure that our students have experienced the process of critically examining their professional behavior in accordance with the established ethical norms.

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

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ASCE AMERICAN SOCIETY OF CIVIL ENGINEERS



All Sections, Branches, Younger Member Forums, Student Chapters, Faculty Advisers and Practitioner Advisers are strongly encouraged to attend the 2019 Region 2 Assembly.

The 2019 Region 2 Assembly theme will focus on Leadership and Professional Development through presentations and activities. This event offers a chance for interaction between students, professors, practitioners, and job employers/recruiters the opportunity to grow professionally and to learn more about what ASCE can do for you.

Please plan on sending a representative or emerging leaders from your section to the Assembly. We encourage the sections to mentor new leadership from your section to the assembly and younger member groups and student chapters at this event.

ASCE-NCS Committee and Branch News and Updates

Virginia Geo-Institute

By Jonathan Bennett, PE, D.GE On August 15, 2019, the Virginia Geo-Institute held a Chapter Meeting at Brock's Riverside Grill in Fredericksburg, VA. Approximately 20 people were in attendance at the event.

Jonathan Bennett presented to the group on LRFD for Micropiles.

As part of the Chapter Business Meeting, the following were elected as officers for the Virginia Geo-Institute Chapter:

- Roger Failmezger, PE, F.ASCE, D.GE - Chairman/President In-Situ Soil Testing, LC raf@insitusoil.com 703-627-0451
- Jonathan Bennett, PE, D.GE -Treasurer Specialized Engineering Jonathan.bennett.pe@gmail.com 304-707-4840

Member Survey

By Norine M. Walker, PE

Look for the NCS Member Survey coming soon! We are striving to improve our organization by getting feedback from YOU! A committee is currently putting together a questionnaire to be sent to the members-at-large during this year.

If there is something you think we need to poll members about, please contact Norine Walker at nwalker@systra.com. If you are from another ASCE Section and would like us to add a committee or program that you experienced in your previous Section that this Section is

missing, we can gauge interest by asking our members.

Thank you for your support of ASCE!

AEI DC Committee

By Camile Stefani

The Architectural Engineering Institute (AEI) NCS-DC committee is aimed to promote the integration of architecture, engineering, and facilities professionals with their peers and individuals entering the local industry. The AEI board recently hosted a planning and development meeting to outline the events we are planning on hosting throughout the next year, including presentations on local projects with a focus on interdisciplinary design, community service events, and networking happy hours.

We hope you enjoyed our recent event on interdisciplinary design in southeastern DC, featuring the design and construction of museums, monuments, and the Wharf. On September 26th, approximately 30 people attended a walking tour starting at Museum of the Bible and ending at The Wharf, just in time for a sunset view behind the Monument. Keep an eye out for our upcoming events before the end of the year, including a community service opportunity with the SEA Metro



Washington chapter, and an opportunity for networking and happy hour with the ASCE NCS Younger Members Forum!

To learn more about upcoming events and information please check out our website or email aei.washingtondc@ gmail.com. For your dose of interdisciplinary design and engineering in your feed, don't forget to follow us on Instagram @aei_dc!

Education Committee (Collegiate)

By Jameelah M. Ingram, P.E., M. ASCE

Fall is Resume Season. The fall semester is brewing, like a pumpkin flavored latte, for colleges and universities in the ASCE National Capital Section (NCS). Our section includes students from 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). Beyond preparing for homecoming and midterms, fall is the perfect time for NCS students to sharpen their resumes.

The ASCE NCS Education Committee will be hosting a resume workshop with GMU ASCE on Thursday, October 24th at the Fairfax Campus of George Mason University, located at 4400 University Drive, Fairfax, VA 22030. The workshop will be held from 6:00 pm to 8:30 pm. Professionals and Students from all chapters across the section are invited to sign up to attend. The evening will include refreshments, a presentation, and appointment-based resume reviews. continued on page 7

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Student Members: Please save the date! A link to sign up for a resume review appointment will be provided in future ASCE NCS correspondence. In the meantime, here are some tips to consider:

- 1) Include a Cover Letter If an employer requests a resume, it is an excellent idea to include a cover letter. The cover letter is the companion to the resume. It is an opportunity for a student to emphasize the specific qualities that make them a perfect fit for a particular position and to demonstrate writing skills.
- 2) Write an Efficient Resume Much like our structural designs, resumes should be efficient. Clarity and brevity are key, as studies show that recruiters do not tarry when it comes to reading resumes. One page with a standard font type is an excellent start for a collegiate resume.
- 3) Visit ASCE Collaborate The "Career by Design" Forum in ASCE Collaborate offers a useful, online platform for students and young professionals to seek career advice and learn from others' experiences. By perusing the ASCE site, students will often walk away with important advice for their own resume. For more information, please visit: https://collaborate.asce.org/careerbydesign/home

ASCE NCS Education Committee Call for Volunteers & Instructor.

Professional Members: To volunteer to review a resume with a student at the October 24th Resume Workshop, please contact Jameelah Ingram at jameelah. muhammadingram@wsp.com.

Professional Members: If you are interested in volunteering to present about an engineering project at a Senior Design Course for the Catholic University of America, please contact Jameelah Ingram at jameelah.muhammadingram@wsp.com.

Reston Branch

By Christopher J. Friend, P.E., Reston Branch Vice President

On September 9th, the Reston Branch hosted it's first lunch meeting of the 2019–2020 season. Michael Loulakis, President of Capital Project Strategies, LLC, presented on current trends for delivering capital projects. He discussed the variety of project delivery systems

being used regionally and nationally, as well as the key challenges and opportunities they provide. At the end of the meeting, Michael was formally recognized for his life member status.





Also at the September 9th meeting, our new Reston Branch Board members were installed by John Casana, Director of Region 2 for the ASCE Board of Direction. The newly installed board members are as follows:

- **Shainur Ahsan**, P.E., M.ASCE Branch President
- Christopher J. Friend, P.E., A.M.ASCE Branch Vice President
- Michael James Magyarics, P.E., M.ASCE
 Branch Secretary
- Vivi Tjhang, P.E., M.ASCE Branch Treasurer
- David Vanaman, P.E., M.ASCE Branch Director
- Jacob Austin Green, P.E., M.ASCE Branch Director
- Lisa Marie Anderson, P.E., F.SEI, F.ASCE Branch Past-President

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



DC Report Card 2020 Special Committee

The effort to update the 2016 edition of the DC Report Card to the 2020 version began in January 2019. The content research and development phase is coming to a close. This will be followed with an extensive review, feedback, and editing process in conjunction with ASCE HQ to finalize it by the end of this year. The release of the Report Card is tentatively scheduled for the first quarter of 2020. I'd like to thank our tireless volunteers who have worked on this team from the beginning of this year to help us march toward this milestone: Hari Aamidala, Robert Principato, Caitlin Jones, Gretchen Bruggeman, Ken Klewicki, David Townsend, Brenna Thorpe, Eric Uhl, Jason Levinn, Michael Gaines, and Arthur Scott Kiefer.



Younger Members Forum

By Maria Raggousis, EIT, YMF Secretary/ Newsletter

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 hosted our annual planning meeting on September 17th where we discussed the organization of future professional development and social events as well as electing and installing a new leadership board!

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

October 2

YMF Happy Hour. Where: Bacha Beer Garden in Navy Yard, 79 Potomac Ave SE, Washington, DC 20003. When: Wednesday, October 2nd, 6–8 PM. Come join us for a joint event between ASCE NCS Younger Members Forum, AEI DC Committee, and SEA-MW Younger Members Group!

October 8

Reston Branch Meeting. October 8th, 12PM to 1 PM. Where: ASCE Headquarters. Topic/Speaker: To Be Determined

October 15

October Dinner Meeting. Join us for the October Dinner Meeting featuring a discussion on the United Nations Sustainable Development Goals presented by William E. Kelly. When: October 15th. Networking at 6:00 PM, followed by dinner. The program will conclude by 8:30 PM.

October 24

College to Career Workshop. ASCE NCS Education Committee + GMU ASCE: College to Career Workshop and resume review. Date: Thursday, October 24, 2019. Time: 6 PM to 8:30 PM. Location: Fairfax Campus, 4400 University Drive, Fairfax, VA 22030

November 2

Region 2 Assembly. Where: Drexel University. When: Saturday, November 2nd. All Sections, Branches, Younger Member Forums, Student Chapters, Faculty Advisers and Practitioner Advisers are strongly encouraged to attend the 2019 Region 2 Assembly.

ASCE-NCS Committee and Branch News and Updates

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The leadership for the 2019–2020 year is as follows:

- President: Joe Whartenby
- Vice President: Ariana White
- Secretary/Newsletter: Sarah Shay
- Social Chairs: Tara Luongo and Amanda Frosztega
- Communications Chairs: Todd Allen-Gifford and Kush Vashee
- Professional Development: Javier Revilla
- Outreach/Service: Nick Nigro and Dheeraj Mango
- Diversity and Inclusion Chair: Kelsey Prem

Our next event will be a happy hour at Dacha Beer Garden at the DC Navy Yard (79 Potomac Ave SE, Washington, DC 20003) on Wednesday, October 2nd, just in time for a Octoberfest themed excursion! We hope you come join us

to network with coworkers, friends, and acquaintances alike! This happy hour will be a joint event with both the AEI DC Committee and the Structural Engineers Association of Metropolitan Washington (SEA-MW) Younger Members Group (YMG).

We also would like to inform our readers of leadership events and trainings in the area. At the end of January in Philadelphia, PA, the Eastern Regional Younger Member Council will host a conference. ASCE NCS YMF plans to send two of our young leaders. Additionally, the ASCE HQ hosts a Younger Member Leadership Symposium in the summer and we plan to encourage all of our members to attend and hone their leadership skills.

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. ■

Employment Clearinghouse

Surveying Instructor, CEE 101 Spring 2020

Catholic University of America, Washington, DC

Salary: Dependent upon qualifications

Job Type: Part Time Adjunct Professor

Contact Jameelah Ingram at jameelah.muhammadingram@wsp. com for more information.

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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