



eNewsletter

National Capital Section
FOUNDED 1916

March 2016 Volume 62, Number 6

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

NCS Annual Awards Banquet – Fostering Creativity in Engineering

Join the American Society of Engineers-National Capital Section (ASCE-NCS) at the Hilton Arlington on **Tuesday, March 22**, for the 2016 NCS Annual Awards Banquet, as we recognize and celebrate local excellence of those who have contributed to the civil engineering profession and our community!

For our Centennial year, the NCS will be turning its focus to the one thing that makes our section so great: our members. The NCS will recognize outstanding graduating seniors from each of the five local civil engineering universities, and recipients of the NCS Student Scholarship Awards will be announced. Other individuals to be recognized will include the Meritorious Service and Community Service Award winners, the President's Appreciation Awards, and those members of the NCS who have achieved Life Member or Distinguished Member status during the past year.

This year's keynote topic is "Fostering Creativity in Engineering," presented by Ranjit Sahai, a past president of the NCS. Civil Engineering curriculums taught in colleges and ASCE's Civil Engineering Body of Knowledge lack exposure to methods that can spark creativity when working on new or

challenging problems. Deferring exposure to tools that spark creativity can cause two problems:

1. Creative students that are drawn to engineering may lose interest in engineering when the only exposure they are subjected to during their early college years are analytical subjects;
2. Students restricted to studying analytics may find it difficult to harness their creativity because it relies on the study of human cognition ([How We Know](#)), which is integration, and not analysis.

The presentation will help engineers discover what the principles of creativity can do for you, personally and professionally, by observing three case studies. As Roger Babson, the founder of the Babson College in Massachusetts said, "The world as a whole benefits most when you do something new or when you do it better or differently." Help us celebrate the excellence and creativity of our students and members by joining us at the Banquet in March! ■

Join us **Tuesday, March 22, 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 **March 17**.

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.

ASCE-NCS Centennial Conference: Celebrating our Past, Engineering the Future

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

"Celebrating our Past, Engineering the Future" is the theme of the Centennial Conference. As discussed in last month's newsletter, the Conference will feature a keynote speaker and top industry leaders with in-depth knowledge of the major and regional civil engineering projects that have contributed to improve our daily lives. The goal of the Conference is to address

topics that matter to you and to inspire and empower the civil engineering community to carry on the tradition of outstanding work that will continue into the next 100 years.

The Conference program will consist of a Students & Engineers Breakfast, Opening Welcome and Keynote, Centennial Luncheon, technical sessions, and exhibits designed to provide a learning and networking environment

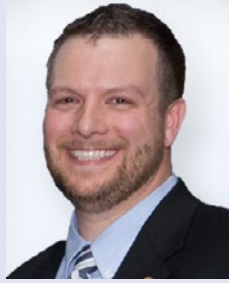
continued on page 2



2015 CUA Scholarship recipient Bridget Rogers poses with NCS Past President Fady Afif and NCS President Christian Manalo at last year's awards banquet.

President's Corner

February was an eventful month for NCS members. Several NCS leaders attended the 2016 Multi-Region Leadership Conference for Regions 1, 2, 4 and 5 at the William Penn Hotel in Pittsburgh, PA. As it turns out, the William Penn Hotel was also the location of the ASCE Annual Convention in 1916 when the constitution for our Section was first approved. The YMF happy hour event brought members together for networking near the Navy Yard and the U.S. Department of Transportation headquarters. Then, our February dinner meeting provided an opportunity to learn about the history of the Federal Highway Administration's Turner-Fairbank Highway Research Center and emerging transportation technologies. Finally, we capped off the month with National Discover Engineers Week events to celebrate the engineering profession and to inspire the next generation of engineers.



March brings the celebration of achievements by outstanding civil engineering students from local universities as well as the contributions of NCS members at our Annual Awards Banquet. Please join us on March 22 at the Hilton Arlington as we congratulate outstanding graduating seniors, members achieving Life Member status, and service award recipients. We will also be presenting checks to this year's scholarship recipients – the NCS has awarded over \$300,000 in scholarships to deserving civil engineering students over the years! The excitement continues on March 31, as students from fourteen schools will descend upon George Washington University for Virginia's Regional Student ASCE Competitions for Steel Bridge and Concrete Canoe. Please plan to attend these events and show your support of talented engineering students.

Lastly, our Centennial Committee continues fulfilling their charge to prepare Centennial themed meetings, tours, events, and celebrations for our members to enjoy in the year ahead. Our Centennial Commemorative Book highlighting over a century of local civil engineering accomplishments is finalizing, and planning for our Centennial Conference on June 3 is in high gear. More information on upcoming events and opportunities for you to participate are available in the Centennial Committee section of the newsletter.

Again, it is an exciting time to be a civil engineer and a member of the NCS. I look forward to seeing you at upcoming events and your engagement in making this a memorable and successful year.

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

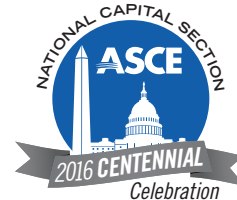
ASCE-NCS Centennial Conference: Celebrating our Past, Engineering the Future

continued from page 1

for students, young professionals, civil engineers, and managers. You can:

- Network with industry movers and shakers.
- Meet experts with years of experience and knowledge in every category of civil engineering.
- Confer with colleagues, greet old friends, and make new ones.
- Interact with exhibitors to learn about industry technologies and become acquainted with leading edge technologies.

After opening with a high-level keynote address highlighting some of the contributions and achievements by the NCS's civil engineers, there will be a Students & Engineers Breakfast for students to network with professional engineers; learn about the engineering sub-disciplines, and career opportunities. Next, the technical sessions will feature high profile projects and current and future projects in transportation, water resources, construction, structures, and sustainability. Do not miss the Centennial Luncheon, which is sure to be a phenomenal treat. After lunch,



AMERICAN SOCIETY OF CIVIL ENGINEERS
Engineering the Nation's Capital

there will be a reception and more networking opportunities. Check your email and the next issue of the NCS eNewsletter for the latest exciting news on the Centennial Conference. ■

Newsletter

Rachel Schneider, Editor

April 2016 Issue Deadline: March 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
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](http://www.asce-ncs.org) for a current list of NCS committees and chairs.

ASCE's Newest Institute: The Utility Engineering & Surveying Institute

On October 1, 2015, the ASCE officially launched its ninth Institute, the Utility Engineering & Surveying Institute (UESI). UESI was created from three existing groups and divisions within ASCE. The Pipelines Division and the Geomatics Division from the Committee on Technical Advancement and the Utility Committee from the Construction Institute. The creation of UESI presents a tremendous opportunity for ASCE. At present, there is no such established and recognizable home for civil engineers practicing in and supporting the utility infrastructure and surveyors in the U.S. and internationally.

UESI's vision is to be the worldwide leader in generating products and services that promote and reward excellence in the engineering, planning, design, construction, operations, and asset management for utility infrastructure, engineering, and surveying. Currently, there are three divisions that are active—the pipelines, surveying, and utilities and when UESI is operational as an institute, UESI plans to have six divisions:

Asset Management Division:

Provides leadership for infrastructure systems owners and stakeholders and enhance the efficiency of operations and maintenance through asset management of infrastructure systems with a focus on collaboration of effective tools, practices, processes, and policies.

Construction Management Division:

Develops surveying and engineering best practices that employ established installation, inspection, project

management, and construction management that contribute to an efficient constructed project that will meet the requirements for long-term sustainability requirements for our utility infrastructure.

Pipeline Division: Leads the advancement and correlation of scientific knowledge and engineering practice, and promotion and coordination of socio-economical and environmental development and construction of engineering projects relative to the transmission of liquids, gases, or solids by pipelines.

Standards Division: Coordinates UESI activities related to the development, revision, or discontinuance of standards in the areas of surveying, geomatics, and utility engineering and ensure compliance with the ASCE Rules for Standards Committees.

Surveying Division: Provides leadership to surveying and engineering professions for the acquisition and management of spatial data required as part of scientific, administrative, legal, and technical operations for surveying, cartography, photogrammetry, multi-purpose cadastral, remote sensing, and geographic information systems.

Utilities Risk Division: Promotes utility engineering and coordination issues as a fundamental technical discipline within civil engineering. The Division will explore the best practices regarding utility issues for project delivery

methods such as Traditional Design, Bid, Build; Design-Build; Construction Management at Risk and Public Private Partnerships (P3).



UESI will provide excellence in the identification, development and delivery of quality programs, services and products that meet the needs of the Institute members and their organizations; to provide leadership within all aspects of utility infrastructure, pipeline engineering and engineering surveying; to provide a neutral forum for open exchange of ideas; and collaborate with others for actions and improvement on critical issues in utility and civil engineering.

If you work in the utility, pipeline or surveying industry consider joining UESI today as an Inaugural Founding Member of UESI. If you are already a member of ASCE consider making UESI as your primary or secondary Institute. UESI is also in search of volunteers interested to participate to work on products and services that would benefit the utility and pipeline engineering and surveying community. For more information: www.asce.org/uesi or contact John Segna, Director of UESI at jsegna@asce.org or Frank Kim at fkim@asce.org.

The UESI will also be hosting the annual 2016 Pipelines Conference in Kansas City on July 17–20, 2016. You can find more information on the conference at: <http://www.pipelinesconference.org/>. ■

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

An Interview with Ahmet Zeytinci, PE, PhD, M.ASCE: Centennial Engineer of the Month

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 Ms. 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.

Ahmet Zeytinci, PE, PhD, M.ASCE, Fellow – National Society of Professional Engineers (NSPE) is an award-winning structural engineer, author, professor, and former chair of the Department of Engineering, Architecture and Aerospace Technology at the University of the District of Columbia in Washington D.C. (UDC). His students and colleagues more fondly know Dr. Zeytinci as “Dr.Z.” He is passionate about engineering, and in promoting innovative teaching methods in the field. In addition to his many professional interests, since 2014 Dr. Zeytinci has been writing the column “Dr. Z’s Corner” for the monthly NCS newsletter and for the past 10 years has done *pro bono* teaching for practicing engineers and students in preparation for the state engineering License Exam. He is a fervid crusader for professional licensure. He is also actively involved in research and peer-reviewed conference presentations.

Dr. Zeytinci earned his PhD, MS, and BS from Istanbul Technical University in Istanbul, Turkey. As the Principal of Alpha International Inc., he worked on the initial phase of the Marmaray, a \$4 billion railway tunnel project linking Europe to Asia in Istanbul, Turkey and

the initial phase of the Akkuyu Nuclear Power Plant project at Akkuyu, Turkey. Dr. Zeytinci is the recipient of numerous local, regional and national awards, including the recent national award, “Excellence in Engineering Education-2015” from NSPE and the 2016 Dr. Marjorie Holloman Parker Distinguished Educators Award. We applaud Ahmet Zeytinci, PE, as our Engineer of the Month, and congratulate him on his award, as we interview him on his commitment to engineering and teaching.

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

I have been in the education business for more than three decades. Thirty years ago engineering was a probably the “best” profession, but not anymore. It is no secret that today most young people are not drawn to engineering. They flock to medical and law schools, even Masters of Business Administration programs. Therefore, as an engineering educator, I have decided to take a different approach, work closely with the students and the practicing engineers, and promote the profession. I consider myself very fortunate that I was able to inspire,



motivate, and most importantly educate many students and engineers to fulfill their dreams. Vice Chancellor of Montana Tech, Dr. Beverly

Hartline, told the audience in one of the award ceremonies in 2012

Dr.Z’s genius as an engineering educator is based on deep engineering knowledge, uncompromising commitment to students and their learning, and an amazing ability to establish strong bonds of mutual trust. His classes are lively, learning-intensive, and fun, with innovative pedagogies and teaching aids.

I think one of my major achievements was to help a native Washingtonian, Curtis Day, a sanitary worker and truck driver, become a structural engineer who currently works for BOEING.

Why did you decide on a career in civil engineering?

Civil engineering is one of the world’s oldest professions, no less important today than it was in the time of ancient Egypt. Civil engineers design bridges, buildings, transportation systems, and other critical elements of public infrastructure. We help cities meet the challenges of a new century, and work to make them livable for the citizens who inhabit them. As a structural engineer, I have started my journey as

continued on page 5

ASCE-NCS Newsletter Patrons



Specializing in Design and Supply of Mechanically Stabilized Reinforced Earth® Walls and Precast Concrete Arch Structures

Keith Brabant
Mid Atlantic Regional Manager

12001 Sunrise Valley Dr., Suite 400, Reston, VA
800-446-5700
www.reinforcedearth.com

Highways & Roads
Bridges
Railways
Industrial
Waterways & Dams
Protective Structures
Commercial & Public Facilities



A. JAMES CLARK
SCHOOL OF ENGINEERING

Graduate Programs Designed for Working Engineers

- Civil & Environmental Engineering
- Project Management
(available 100% online)

- PE Exam Review
(Fall/Spring)

www.advancedengineering.umd.edu

a project engineer designing buildings. I consider myself fortunate because I was able to design many award winning structures including the "7th District Police Station." I wanted to be an engineer and design structures so that people could see the final product and appreciate the work that we do when they actually use the structure.

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

Today, the world is undergoing vast changes – the technological revolution, population growth, environmental concerns, and more. All create unique challenges and opportunities for potential civil engineering students. Young people should know that civil engineers are problem solvers, meeting the challenges of pollution, traffic congestion, drinking water and energy needs, urban redevelopment, and community planning. They should be aware of the fact that our future as a nation will be closely tied to space, energy, the environment, and our ability to interact with and compete in the global economy. As a civil engineer, they will perform a vital role in linking these themes and improving quality of life for the 21st century and they will be in the forefront of technology. The next decades will definitely be the most creative, demanding, and rewarding of times for all young civil engineers.

Also, current high school students should be informed about the recent great news from the Bureau of Labor



Every Saturday, Dr. Z. holds pro bono licensure classes. Featured participants from February 6, 2016 class include (standing from left) Seawright Anderson (RKK Engineers, Howard U), Suraj Narain (UDC), Dr. Z., Khaled Hassan, Ashrafuzzaman Khan, and Emanuel Teferi (UMD College Park), (sitting from left) Emma Needham (CUA), Anne Zheng (GMU), Liz Anderson (GMU), Alexander Myre (Howard U).

Statistics (BLS). According to BLS, two engineering disciplines that are expected to offer substantial growth in the coming years are *Biomedical Engineering* and *Civil Engineering*. BLS also projects a 20 percent increase in the number of civil engineers by 2022, given aging infrastructure and increasing water needs.

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

I think there are two separate issues here:

On the public side, the public has little awareness or appreciation of the civil

engineering profession. Although the engineering community and organizations like ASCE, NSPE and ASEE spend greatly to improve public awareness. Still, recent studies found little coordination among them and few measures of success. I would say raising public awareness of civil engineering would be the major challenge.

On the academic side, teaching prerequisite math courses like calculus and differential

equations for engineering students has to be reformed. Currently math teachers teach calculus in teacher-centered classrooms; in other words, the teacher is the primary source of learning and knowledge. The lessons are presented in a lecture format where the teacher explains the concepts and the student plays a secondary role simply by taking notes during the lecture, and trying to read and learn from the textbook. Over the years, I have seen many civil engineering students become discouraged and changed their majors even before taking any engineering courses or talking to any engineering faculty.

ASCE-NCS Newsletter Patrons

Where **Experience**
Meets **Vision**



mcmjac.com



NICHOLSON
www.nicholsonconstruction.com

Mark Rothbauer, P.E.
Mid-Atlantic Regional Manager
mark.rothbauer@nicholsonconstruction.com
412-221-4500

- ANCHORS
- AUGERCAST PILES
- DIAPHRAGM WALLS
- DRILLED SHAFTS
- GROUTING
- MICROPILES
- SECANT PILE WALLS
- SOIL MIXING
- SOIL NAIL WALLS
- SOLDIER PILE WALLS

BUILD ON US

Become a Centennial Anniversary Sponsor!

The ASCE National Capital Section is celebrating its 100-year anniversary in 2016 and has planned many activities throughout the year. We have opened many of these activities to sponsorship. Being a sponsor increases your organization's exposure to the more than 3,400 members of our Section. Opportunities for sponsorship include our Centennial Anniversary Commemorative Book, Centennial Anniversary Conference, Annual Awards Banquet, newsletters, website, and more. Descriptions are provided below for each of these:

Centennial Anniversary

Commemorative Book: Entitled *Engineering the Nation's Capital*, this 120-page hardcover book is presented in a coffee-table format with glossy photos and stories behind major civil works

in the D.C. area. More than 2 years in the making, the book will inspire generations of civil engineers to come.

Centennial Anniversary

Conference: Our full-day conference will be held at the National Press Club on June 3rd. We have a full slate of highly distinguished speakers planned representing all aspects of the civil engineering profession both locally and nationally. We will also award outstanding projects of the year.

Annual Awards Banquet: This evening banquet will be held on March 22 at the Arlington Hilton and will feature recognition of members of our Section, including newly installed life members, scholarship recipients, and other outstanding local civil engineers and students.

Newsletters: Our eNewsletters are issued throughout the year and are distributed to more than 5,000 individuals. Sponsorship allows your organization to be recognized in the newsletter.

Website: Our NCS website was awarded Chapter Website of the Year by ASCE in 2014. It continues to be an excellent medium for our 3,400 members and others seeking civil engineering services.

Additional sponsorships are also available. Packages range from \$100 to \$5,000. For a full menu of sponsorship options, please contact Christian Manalo, Sponsorships Committee Chair, at Manalo_christian@bah.com or (703) 377-1697. ■

Submit Nominations for 2016 ASCE-NCS Outstanding Civil Engineering Project of the Year and Sustainability Project of the Year Award Today!

The NCS is actively seeking nominations for the Outstanding Civil Engineering Project of the Year and the Annual Sustainability Award. This year, the awards will be bestowed at the Section's Centennial Conference to be held on June 3, 2016, at the National Press Club. **All NCS members are encouraged to nominate projects for one of the Project of the Year awards.**

Outstanding Civil Engineering Project

This award recognizes a civil engineering project within the National Capital



region that demonstrates the greatest civil engineering skills and represents the greatest contribution to civil engineering progress. In 2015, the NCS awarded the outstanding civil engineering project to Thornton Tomasetti and A+F Engineers for their innovative work on the Marriott Marquis Convention Center Hotel Project.

Sustainability Award

The NCS Sustainability Award recognizes private-industry outreach initiatives and projects or public legislation/programs in the metropolitan Washington D.C. area. The project shall advance or promote the responsible and sustainable development of infrastructure, the built environment, or the conservation of natural resources. In 2015, DC Water's innovative \$400 million biosolids program at the Blue Plains Advanced Wastewater Treatment Plant received the sustainability award.

A description of each award, the respective requirements, and additional information were presented in the [February Newsletter](#). Please provide a succinct description of the project or



initiative (100 word limit), include the public or private entity responsible for the program (include point of contact information), and describe how the nomination meets the criteria outlined above. Nominations should be submitted by either e-mail or traditional mail to [Chris Manalo](#) and received no later than **April 22, 2016**. The nominating individual must provide his/her name, affiliation, telephone number, and e-mail address. ■

2016 Multi-Region Leadership Conference Rundown

By Jim Palmer, EIT, NCS Newsletter Editor in Training

The 2016 Multi-Region Leadership Conference (MRLC) for Regions 1, 2, 4 & 5 took place over Valentine's weekend, and in what more fitting and romantic a venue to meet than the William Penn Hotel in Pittsburgh, PA; the very same hotel in which the charter for what would become the Nation Capital Section was signed a century ago! The MRLC was divided into three separate groups to benefit engineering leaders of differing status and experience: the Workshop for Student Chapter Leaders (WSCL), the Eastern Regional Younger Member Council (ERYMC), and the Workshop for Section and Branch Leaders (WSBL). The goal of the conference was to develop leadership skills ranging from emotional intelligence and meeting etiquette to ethics and professional correspondence. In addition to learning "soft skills," representatives to the conference had the chance to interact with a number of ASCE National

Leaders including President Mark Woodson, President-Elect Norma Jean Mattei, and various region governors. A debate between president-elect nominees Robin Kemper and Kristina Swallow was hosted to much acclaim.

The Conference also gave ASCE a chance to present the Society's current advocacy initiatives, specifically, Raise the Bar, the Grand Challenge, and Dream Big.

Raise the Bar promotes change in state licensure laws so that educational requirements for professional licensure would include a master's degree in engineering or 30 credits of courses in engineering, science, and professional practice topics completed inside or outside a university setting following a baccalaureate degree. New Jersey is expected to lead the change within the next few years.



The Grand Challenge facing civil engineers over the next decade is to close the gap between infrastructure needs and available funding through reduction in life-cycle cost of engineering projects by 50 percent by 2025.

Dream Big hopes to inspire the next generation of students to pursue careers in Civil Engineering through the release of an IMAX experience in February 2017, coinciding with ASCE sponsoring the 2017 Engineer's Week. ■

February Meeting Recap – FHWA's Turner-Fairbank Highway Research Center and Emerging Transportation Technologies

By Scott Wolf, PE, PLS, F.NSPE, NCS President 2015–2016

At the February Section meeting, the NCS continued its Centennial year theme with a presentation on emerging transportation technologies and the history of the Federal Highway Administration (FHWA) Turner-Fairbank Highway Research Center (TFHRC).

A century ago, research and technology played a primary role in the conversion of unpaved to paved roads using asphalt and concrete pavement materials, an innovation that led to greater and safer mobility on our Nation's highways. Today, as in the past, researchers continue to develop innovations and solutions to transportation challenges. The FHWA TFHRC plays a key role in leading the national transportation research needed to meet the challenges now and in the future.

Michael F. Trentacoste, Associate Administrator, FHWA Office of Research, Development, and Technology, began his presentation with a discussion of today's transportation challenges from the 30,000+ highway fatalities to the 5.5 billion hours of travel



delay per year. Mr. Trentacoste then looked back at how much technology has changed in the past 30 years, followed by a look to the future with the U.S. Department of Transportation's [Beyond Traffic](#) framework.

With the past, present, and future contexts in mind, Mr. Trentacoste discussed FHWA's Research, Development and Technology Agenda and research stages from identification of a problem, to development of a technology, and finally implementation of the technology into practice. Mr. Trentacoste then discussed the three R&D focus areas along with emerging technologies in

each area: 1) Infrastructure, 2) Safety, and 3) Operations. Emerging technologies discussed include ultra-high performance concrete, robotic infrastructure assessment tools, diverging diamond interchanges, and connected automated vehicles. Next, Mr. Trentacoste discussed FHWA's programs to accelerate the deployment of innovations including the [Every Day Counts](#) initiative and the [Accelerated Innovation Deployment Demonstration program](#).

Mr. Trentacoste finished his presentation with a discussion of the history of the TFHRC. The TFHRC is a federally owned and operated national research facility for applied and exploratory advanced research on 44 acres in McLean, VA. Research began in the center in 1950, and it has since grown to three buildings with more than 20 laboratories, data centers, and facilities to support the work of 110 federal employees and over 180 contractors and visiting researchers.

For more information of FHWA's RD&T program, please visit www.fhwa.dot.gov/research/. ■

NCS Committee News and Updates



Younger Members Forum

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

Monthly Happy Hours. The NCS Younger Members Forum (YMF) holds monthly happy hours in Arlington, VA or Washington, DC. Happy hours are usually the first Wednesday of each month unless a holiday falls during that week. The next monthly happy hours will take place on **March 2 at Ireland's Four Courts** in Arlington, VA and on **April 6, at Hard Times Cafe** in Arlington, VA. Join younger members from the area for free appetizers and drink specials. Look for emails with specific locations for future monthly happy hours!

The NCS YMF held their February Happy Hour at The Bluejacket Brewery in Washington, DC on February 3. Approximately 35 members attended the event, including several new faces!

NCS YMF at Eastern Regional Younger Member Council. On Friday and Saturday, February 12–13, ASCE's annual Eastern Regional Younger Member Council (ERYMC) was held at the Omni William Penn Hotel in Pittsburgh, PA. Michael Venezia represented the NCS YMF. More than 80 younger members attended the ERYMC, which was held in conjunction with the Workshop for Section & Branch Leaders and Workshop for Student Chapter Leaders—more than 400 members from Regions 1, 2, 4 & 5 attended the event. The ERYMC provides younger members with valuable leadership and networking training, in addition to hosting the

annual ERYMC business meeting where younger members discussed and voted on key resolutions and policy initiatives. More information on the conference is available in Jim Palmer's newsletter article, [2016 Multi-Region Leadership Conference Rundown](#).

The NCS YMF would like to extend their gratitude to the Pittsburgh YMF for hosting the wildly successful ERYMC.

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](#).

Centennial Committee: Engineering the Nation's Capital Science, Technology, Engineering, and Math (STEM).

By Victor Crawford, PE, Centennial Committee Chair, NCS

We have all heard the term, STEM. Recognizing the importance of STEM for the continuance of our civil engineering profession, the Centennial

Celebration Committee is embracing educational outreach of STEM. In February, we were at the Discover Engineering Family Day at the National Building Museum. April will find the NCS at the USA Science & Engineering Festival at the DC Convention Center in DC. At these events, we reach out to K-12 students, showing them not only how civil engineers enrich their lives but also how a STEM curriculum can afford them the opportunity to join our profession. We also are very active at the university level. In February, we honored Dr. Deborah Goodings for her many accomplishments including teaching over 2000 engineering students studying for their BS, MS, or PhD at the University of Maryland or at George Mason University. This month we honor another educator, Doctor Ahmet Zeytinci, (author of the famous Dr. Z's Corner) as Centennial Engineer of the Month. March also means the arrival of the NCS Annual Awards Banquet, where we recognize those that have pursued a STEM based education – our Outstanding Graduating Seniors from each of our five local civil engineering universities.

As we anticipate warmer weather, we are finalizing our plans for NCS's Centennial Tour on the area's rivers. This boat tour will provide a unique perspective to show the work accomplished by civil engineers in the design and construction of DC bridges, with the added benefit of an enjoyable cruise on the Potomac and Anacostia Rivers. This will also be an excellent STEM experience, so bring your future civil engineers along.

continued on page 9



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



Schnabel
ENGINEERING

Another STEM experience for students is an interactive map to learn about engineering accomplishments in the Nation's Capital. By clicking on this internet-accessible map, students will be able to obtain descriptions of the NCS's engineering achievements along with photos and fun facts. What a great way for students and their parents to learn how civil engineering benefits the public and how a STEM curriculum benefits the student so they can join our profession.

In April, we will be at the Science and Engineering Festival. This will be the major STEM event for our Centennial. This event will fill the DC Convention Center with organizations promoting STEM to the next generation, so please join us as we show the benefits and satisfaction we have obtained from pursuing degrees in civil engineering to the thousands of students and their parents attending the Festival. Your participation helps to ensure that our profession will continue to grow as we recruit future civil engineers from the Festival's attendees.

We also plan to use the Centennial Commemorative Book for STEM outreach. As stated last month, we are so proud of this book that we obtained a grant from ASCE Headquarters to present copies to public libraries as part of our Centennial outreach. Now we are seeking sponsors to support making the book available to science and engineering classrooms in order to show the wide range of engineering accomplishments over the years in the DC Area.

Our Centennial Conference on June 3, 2016, will support those that pursued a STEM curriculum to become engineers. The Conference will include support education through our technical sessions. The Conference will also highlight a major 2017 STEM opportunity; the Dream Big movie will be an excellent educational tool for outreach to students and the public when released in 2017. Therefore, we plan to show the trailer and have a discussion of the movie at our Conference.

As the representatives of the ASCE in the Capital area, one of our goals has been student outreach as we strive to promote our civil engineering profession to the next generation. We have many activities where your assistance will help make the Centennial

Celebration a success. 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.

Construction Committee Update

By Jeff Tan, PE, PMP, LEED AP, Chair, Construction Committee, NCS



Professional Development Session.

The NCS Construction Committee held the second education session at 6511 Princess Garden Pkwy, Lanham, MD, on January 16, from 2:30 to 3:30pm. Dr. Ching-Tzone Tien, PE, Division Chief of the Groundwater Discharge Permit Division of the Maryland Department of the Environment, discussed the topic of Water Reuse – Engineering Principles and Public Policy. Approximately forty attendees received the professional development hour certificate.



Construction Committee Meeting.

The Construction Committee will meet on March 3, at 5pm at [Così](#) in Washington, DC. 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.

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.



Sustainability Committee

By NCS Sustainability Committee

Join the Sustainability Technical Committee for an evening event at the Ragtime Restaurant, Arlington, VA, on Thursday, March 31, from 6–8:30 pm. Dr. Burak Tanyu will present on recycled materials in geo-engineering and transportation; ground improvement (physical, chemical, and biological methods); earth retaining structures and reinforced soil; and slope instabilities and landslide prediction.

About the speaker: Burak F. Tanyu is an assistant professor of geotechnical engineering. He joined the Department of Civil, Environmental, and Infrastructure Engineering in the Volgenau School at George Mason University in 2011. Prior to joining George Mason, Dr. Tanyu was a senior engineer at Geosyntec Consultants. In his eight years of practice, he worked on landslide forensic analyses, earth retention system designs, design, and permitting of residual waste landfills, and seep investigation and embankment stability. Since 2008, he has been a National Highway Institute certified instructor teaching design of earth retaining structures.

For additional information, contact Alex Rosenheim at tcc-sus@asce-ncs.org or 202-412-3090. ■

DISCOVER GLOBAL MARATHON

MARCH 8-10, 2016

For, By and About Women in Engineering & Technology

ENGINEERS MAKE A WORLD OF DIFFERENCE

You Finally Are Ready To Take the Exam: Now What Do You Do?

To answer many of our new readers' questions, today we would like to review all the basics for the first time FE exam takers and tell you step-by-step what to do before the exam and during the exam day morning.

As you may know, The National Council of Examiners for Engineering and Surveying (NCEES) develops and scores the FE, PE, and SE exams for engineering licensure. The FE Exam is the first step in the arduous process leading to obtaining a Professional Engineering (PE) license and it is designed for recent graduates and students who are close to finishing their undergraduate degrees.

How do you register for the FE exam?

If you are ready to take the FE exam first time, do the following to register:

- Visit the NCEES website at www.ncees.org
- Click on the exam tab in the menu,
- Select your state or foreign entity from the drop-down list,
- Follow **all** the instructions to get approval to sit for the exam,
- Create an account with NCEES and register *before* the deadline,
- Pay the exam fee required in your state or territory,

Once you complete all the above, then wait for the confirmation email.

What do you do on the morning of the exam?

Once your registration is approved, you will receive an email notification that you have been authorized to take the exam and are eligible to schedule your exam appointment. FE tests are computer based tests and offered in testing windows throughout the year

during January, February, April, May, July, August, October and November.

When approaching the FE Exam for the first time, it is natural to feel a bit overwhelmed. The best way to build your confidence is to prepare for the test ([visit this month's problem set](#)) and to know the ins and outs of the test.

Once you register and know your exam date, we suggest you arrive at the testing center 30 minutes prior to your scheduled appointment. Upon arrival:

- A representative will provide you with a copy of NCEES-CBT (Computer Based Test) rules for your review.
- After reviewing, provide your digital signature to confirm that you have read the rules and agreed to abide by them.
- You will need to provide a current government issued identification (such as a driver's license).
- Once the representative confirmed your identification and the exam that you are taking, you will be asked to provide palm vein scan and have your photo taken.

Prior to being admitted into the testing room, a representative will confirm that the only NCEES-allowed items with you in the testing room. These include your ID, an NCEES-approved calculator and eyeglasses. Most test centers have secure storage lockers on site for you to store prohibited items such as cell phones, other electronic devices, and personal belongings (e.g., wallet and bag).

Once you complete the check in process, report to an exam proctor who will confirm your ID through a palm vein scan. The proctor will then provide with you with a reusable booklet

and marker for scratch work, review the exam rules, and escort you to the exam room and assigned workstation, and launch the exam.

Before starting your exam, all examinees are required to read and agree to the NCEES' non-disclosure agreement and complete a brief tutorial to learn how to ADVANCE to the next item, RETURN to a previous item and FLAG items for review.

After completing approximately 55 questions, examinees will be prompted on screen with the option to take a 25-minute break. Examinees who wish to take the scheduled break should raise their hands and wait for the prompter for assistance. Unscheduled breaks may be requested at any time during the exam by following the same procedure. However, be aware that the **clock will not stop during an unscheduled break.**

After completing the exam and a brief survey, you should raise your hands and proctor will verify that you had properly exited from exam, escort you from testing room, and collect your booklet and marker. You will receive an email from NCEES within 7 to 10 days notifying you that your results are available for viewing in your MYNCEES account.

Remember during the FE exam, timing is everything and that is why you must have a game plan and a wristwatch.

All the best!

Until next time,
Ahmet Zeytinci, PE
az@alfam.com



Dr. Z is our March 2016 NCS Centennial Engineer of the Month! [Read his interview in the newsletter.](#)

Book Review: Introduction to Creativity and Innovation for Engineers

Book reviewed by Ranjit S. Sahai, PE, F.ASCE (Past President 2013–14 NCS)

Having valued the clarity of presentation in Stuart “Stu” Walesh’s webinars on engineering management at www.asce.org, I reached out to him in early January 2015 to enquire about his interest in creativity and innovation in the engineering industry, a topic he highlighted on his online profile. Turns out, he was at work on his book, *Introduction to Creativity and Innovation for Engineers* for Pearson Education. Subsequently, I previewed and offered feedback on his manuscript in the first quarter of 2015 when the book was still under development, which was released on January 13, 2016.

Stu’s more than 40 years of engineering experience includes employment as professor and dean at a U.S. engineering college and as contributor to ASCE’s professional education programs. He was motivated to write this book after critically examining ASCE’s Civil Engineering Body of Knowledge (CEBOK) and the curriculum commonly taught in U.S. engineering schools.

He observed that engineering college curriculum and CEBOK lack exposure to methods that spark creativity. Why is it important to address these problems? He answers this question by quoting journalist Geoff Colvin, “In a world of forces that push toward the commoditization of everything, creating something new and different is the only way to survive.”

In Chapter 1, Stu summarizes information about the future direction of “knowledge work.” Think of “knowledge work” as the product of civil engineering knowledge, like analysis or computations that can be automated or completed by cheaper labor abroad. The author contends that such “knowledge work” will not be why civil engineers in developed nations are sought after in the future. Civil engineers will be required to produce a synthesis of work from many more specializations than before. [ASCE’s Vision 2025](#) document predicts similar a similar future.

By raising the red flag about the state of engineering education, Stu is standing up against a prevalent system that is

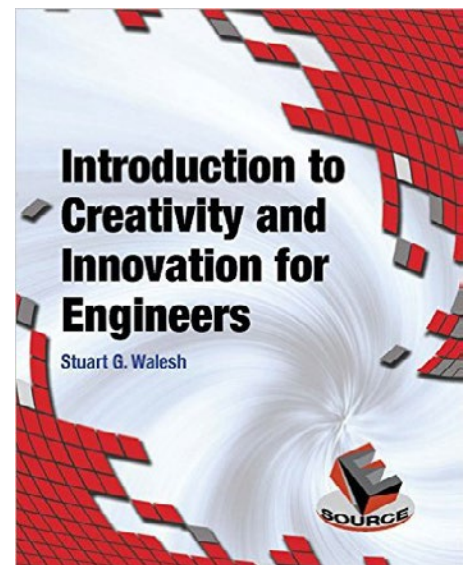
broken. He deserves kudos for whipping up the motivation required to research creativity over several years to compile the fodder necessary to challenge ASCE’s CEBOK’s lack of focus in the area of creativity, an area that is necessary for civil engineers to play a role in solving the grand challenges of engineering ([Engineering Challenges](#)).

Subject and Theme: The book is a celebration of engineering accomplishments and of the human brain’s capacity to conceive and build them. It is also an introduction to the basics of recent developments in neuroscience (scientific study of the nervous system) and to methods that harness the whole brain, both the left (logical) and right (creative). The underlying theme permeating the book is the idea that creative thought need not be an unpredictable bolt of inspiration; it is a learnable skill that must be cultivated deliberately by engineers to successfully tackle grand challenges now and in the future.

Audience: The book addresses engineering educators looking for ways to attract and keep intelligent kids to the profession. It also addresses those interested in learning and teaching concepts and methods of creative thought.

A non-motivated student cannot learn on his own from this book because he will not find the book interesting. A student must already be highly motivated by the subject itself to extract full value from the book. I equate motivated students to the audience (CEBOK editors, and educators/business owners embarking on a vital change they care about) in the above paragraph. The motivated student will enjoy the fascinating engineering examples the author has carefully sprinkled throughout the book and in the very well thought-out exercises, he has handpicked. A motivated student with an interest in sketching and drawing is likely to be awed, as I was, by the gorgeous pencil sketches the author himself created and included in the book.

Assessment: If you already have, or wish to secure a role in updating ASCE’s CEBOK, this book will prove invaluable



in motivating you to consider the ways in which creativity can be fostered in engineering curriculum. If you are charting a new direction for your civil engineering firm as a business owner or if you are looking to change the curriculum of the civil engineering class you teach in college, the ready access to sources in the extensive bibliography along with the introduction to concepts covered in this book will prove valuable.

If you are a civil engineering student, you will need a great teacher to help you get through this material. This book can be used for self-study as it expertly compiles invaluable material as noted above; however, most students who lack sufficient engineering work experience are likely to find the sequence of presentation, and the depth of content, problematic because I think it will not help them get through the book on their own with a focused mind. I say this because a necessary ingredient in the proper education of the young mind ([Teaching Johnny to Think](#)) is contextual motivation. I did not find enough of this ingredient in the book and think more of the ingredient is necessary to help a young engineer kindle the spark of motivation in his own mind to stay focused. A great teacher with an interest in this subject will be required to provide that missing ingredient. ■

March 2

YMF Monthly Happy Hour, 6–8 pm, at [Ireland's Four Courts](#), 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.

March 3

Construction Committee Meeting, 5pm, at [Cosi](#), 1501 K St NW, Washington, DC. Please contact [Jeff Tan](#) if you are interested or would like further information.

March 4

Engineers Without Borders Spring Gala, Josephine Butler Parks Center, Washington DC. This semi-formal event will include dancing, an open bar, Eat & Smile Catering, as well as a silent auction. Proceeds go toward ongoing EWB-DC projects. For additional information, visit <http://www.ewb-dc.org/1309/tickets-on-sale-now-ewb-dc-spring-gala/>.

March 6–9

Systems of Systems: Perspectives on Critical Infrastructure Management in Response to Climate Change and Sea Level Rise, University of Virginia, Charlottesville. A workshop designed for academics, engineers, government and public and private officials concerned with national critical infrastructure adaptation to climate change. [Click to view the Workshop Page](#). Cost: \$100. Contact/Registration: [Rosemary Shaw](#).

March 7

Structural Committee Meeting. The NCS Structural Committee plans to hold its first coordination meeting Monday, March 7 at WJE's office (2751 Prosperity Ave., Suite 450 Fairfax, VA 22031). The meeting is an opportunity for committee members to discuss and plan the upcoming year, including scheduling professional development ideas and other networking and participation events. For more information about the committee, please contact [Paul Parfitt](#).

March 8

Recent Innovations in Airport Pavement Design, George Washington University. Hugh Weaver, PE, an expert on aviation pavements with over 30 years of experience at airports across the country discusses modern airport pavement design methods, which provide increased safety, longevity, constructability, and sustainability.

March 8–10

Global Marathon For, By, and About Women in Engineering and Technology provides global and regional opportunities for women and provides a place to put forward ideas, solve common problems and come together.

March 22

NCS Annual Awards Banquet, Hilton Arlington. Join us as we recognize and celebrate local excellence of those who have contributed to the civil engineering profession and community! More information available in featured article of this newsletter.

March 31

Sustainability Committee Dinner Speaker – Geotechnical Focus, 6–8:30 pm, at [Ragtime Restaurant](#), Arlington, VA. Dr. Tanyu will present on Recycled materials in geo-engineering and transportation; ground improvement (physical, chemical, and biological methods); earth retaining structures and reinforced soil; and slope instabilities and landslide prediction. Please contact [Alex Rosenheim](#) with questions. More information available in featured article of this newsletter.

March 31–April 2

2016 Virginias Regional Student ASCE Competition, George Washington University. Fourteen schools from DC, Virginia, and West Virginia will travel to Foggy Bottom to compete in the Steel Bridge and Concrete Canoe regional competitions. GWU is seeking volunteers to help judge the Steel Bridge and Concrete Canoe competitions. The Steel Bridge

Competition will be held Friday, April 1 from 7am to 4pm and the Concrete Canoe competition is will be held Friday, April 1 from 9:30 am to 1pm. **If you are interested in helping judge either competition or help with any other volunteer duties, please contact [Julian Olin](#).**

April 6

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

April 16 and 17

USA Science & Engineering Festival at the DC Convention Center. NCS and ASCE World Headquarters sponsors a booth. The Festival is held every other year and includes hundreds of sponsors and thousands of visitors of all ages. Contact [Dean Westman](#) for more information.

April 19

NCS Section Meeting, 6:30–8:30 pm, Hilton Arlington. Ned Wallace, PE, from the National Park Service will present on the 17th Street Levee Project. Look for more information in future emails and on our [website](#).

May 17

NCS Section Meeting, 6:30–8:30 pm, Hilton Arlington. Join us for an exciting presentation on the Smithsonian African American History Museum. Look for more information in future emails and on our [website](#).

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.