



**GEO-
INSTITUTE**

National Capital Chapter

November 2025
VOLUME 3-25

LETTER FROM THE PRESIDENT



Sharon Hartley

President

Not everyone is a fan of change. We've all worked with that engineer who is a meticulous creature of habit and routine (and if you happen to be thinking of yourself right now, no judgement from me). However, the chapter recently had to face the unthinkable: Maggiano's temporarily closed, and we needed to find a new spot for our monthly lunch seminar.

The month of October saw us at a new location: the Wildfire restaurant in Tysons. We made the transition as painless as possible by choosing a place in the same building as

Maggiano's. You didn't even have to pick a different parking spot if you didn't want to! The food was delicious and attendees had positive reviews. We look forward to more events there.

All jokes aside, if you weren't able to make it to our presentation last month, you missed out on a fantastic talk on ground motion modeling from Dr. Ashly Cabas from NC State. You can read more about her presentation in the write up later on in this newsletter. Dr. Cabas was the professor for the final class of my graduate degree, and her Earthquake Engineering class was all that stood between me and graduation. Having had her as a teacher, I already knew she was a gifted presenter, and her seminar lived up to my expectations and more.

At the National Capital Section, we are truly fortunate to have not only outstanding local professionals leading our seminars, but also the resources to bring in excellent speakers from the broader geotechnical community. This is all thanks to our sponsors and the dedicated member base we have consistently supporting the chapter and making our events so well attended. Thank you all, and I hope to see you at the next one!

UPCOMING EVENTS AND LECTURES

Preventing Serviceability Issues in MSE Wall Design and Construction

ABSTRACT

When it comes to mechanically stabilized earth (MSE) walls, one principle stands above all others: when all fundamentals are followed, performance tends to take care of itself. Yet, across more than 65 MSE walls in a single infrastructure program, widespread serviceability issues emerged as early as the first year of service. The goal of this presentation is to bring clarity and actionable lessons to the audience by case study examination—highlighting where critical design and construction practices deviated from established guidance and the resulting performance implications.

We will explore the extensive investigation program which was implemented to understand the widespread problem. In addition to a traditional geotechnical monitoring program, this project used measurements and soil testing from highly invasive complete wall-take downs from a select number of walls to develop a non-invasive evaluation tool for predicting remaining service life across the broader wall inventory. The presentation will conclude by discussing methodologies for distinguishing design-related versus construction-related defects and offering practical “Do’s and Don’ts” for future projects to ensure long-term performance and compliance with MSE design principles.

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DETAILS

WHO: Ashley Loyola

WHEN: Thursday, November 20th
11:15 am to 1:15 pm

WHERE: Wildfire in Tysons Corner,
McLean, VA 22102

COST: \$55 BEFORE Monday, November 17, 2025 (\$65 after that date) (contact bstark@gmu.edu for student and government employee code for discounted rates)

1.0 Professional Development Hour (PDH)

REGISTRATION LINK:

[Preventing Serviceability Issues in MSE Wall Design and Construction Tickets, Thu, Nov 20, 2025 at 11:15 AM | Eventbrite](#)

UPCOMING EVENTS AND LECTURES



Ashley Loyola

Speaker

Ashley Loyola is a geotechnical engineer whose leadership in the field of mechanically stabilized earth (MSE) and geosynthetic reinforced soil structures spans 15 years. A graduate of Worcester Polytechnic Institute, Ashley holds professional engineering licensure in Utah and has served both public and private sectors clients. She has a unique perspective on the subject due to her combination of hands-on field experience, forensic expertise, instrumentation and monitoring insight, and applied knowledge of design and construction best practices for reinforced soil systems.

Over her career, Ashley has evaluated over 130 deficient retaining and reinforced earth structures. Her experience includes roles at Geocomp, Inc. (Project Manager/Technical Expert, 2010–2017), Solmax (Engineering Business Manager, 2017–2023), and she is currently the Project Manager for a \$10M Coastal Infrastructure Study at Florida

International University (<https://coastal-subsurface.fiu.edu/>), where she continues to advance research and best practices in geotechnical engineering. Ashley has also participated in several FHWA research projects to understand the behavior and capabilities of Geosynthetic Reinforced Soil – Integrated Bridge System (GRS-IBS).

Ashley has delivered technical presentations at numerous national and international venues—including sessions at state DOTs, the Transportation Research Board (TRB) committees, guest lectures at several universities, and international conferences. Related to today’s presentation, she presented “Proposed methods and considerations to allocate damages for deficient mechanically stabilized earth walls” at the 7th International Young Geotechnical Engineers Conference (Sydney, 2022) and has authored articles such as “Performance Evaluation of a Multi-Span Geosynthetic Reinforced Soil-Integrated Bridge System (GRS-IBS)” in *Geosynthetics Magazine* (April 2019).

OCTOBER MEETING RECAP



On October 16th, the NCS GI chapter hosted Dr. Ashly Cabas at Wildfire in McLean. Dr. Cabas is an Associate Professor in the Department of Civil, Construction, and Environmental Engineering at North Carolina State University where she leads the Geohazards and Earthquake Engineering Research Lab (GeoQuake). In Dr. Cabas' presentation, titled "Geology Matters: Incorporating Geologic Data into Assessments of Ground Motion and Deformation," she presented ongoing research that is bridging the gap between regional geology and site-level seismic response. The event was attended by 25 geotechnical professionals from across the DMV region.

As suggested by her presentation title, Dr. Cabas stressed the importance of the local geology in understanding the ground motions at a site-scale. Dr. Cabas presented a fitting quote from Karl Terzaghi's first lecture on Engineering Geology at Harvard. "[It is my intention] to open your eyes to the influence of the geological factors on engineering operation and to the benefits to be derived from geological reasoning...If you don't succeed, you better keep away from earthwork engineering, because most failures in that field are due to ignoring the consequences of geological factors and not errors in computation." Dr. Cabas addressed three main points through her presentation: aspects of geology that are helpful to geotechnical/earthquake engineering, how geology can be incorporated into evaluations of ground motion, and how geology can be incorporated into ground deformation evaluations.

Dr. Cabas discussed the complexity of ground motion at a site and how various geologic aspects, such as the seismic source location, wave path, and geologic structures can influence ground motion characteristics. For example, Dr. Cabas presented a geologic map of the Northeast United States and overlaid with a response map from the 2011 Virginia Earthquake. Dr. Cabas noted that the geologic conditions in the DMV region likely made this earthquake uniquely felt. Washington DC sits at the Fall Line between the Piedmont Plateau and Atlantic Coastal Plain. She suggested that the regional difference between older and more dense Piedmont strata, and softer Coastal Plain sediments increased the amplitude of ground motions and linked this example to regional geologic basin effects influencing site-level seismic responses.

Dr. Cabas also presented research regarding updated models for site shear wave velocity that incorporate sediment thickness for the US Atlantic and Gulf Coastal Plains. She emphasized the importance of shared shear wave velocity (V_s) profiles to refine these models and asked for those with publicly available data to reach out to her team. For those who could not attend the talk, Dr. Cabas has a Geo-Institute Summer School Seminar (S02 E07) on Site Response Analysis.

Summer School Seminar: [youtube.com/watch?v=UuOz364pkTg&feature=youtu.be](https://www.youtube.com/watch?v=UuOz364pkTg&feature=youtu.be)

GEO-SUCCESS



We are proud to share that Dr. Burak Tanyu, ASCE National Capital Geo-Institute Board Member and Professor at George Mason University, has been elected as an ASCE Fellow.

This prestigious honor recognizes Dr. Tanyu's outstanding contributions to the civil engineering profession and his continued commitment to advancing geotechnical engineering within our community.

Please join us in congratulating Dr. Tanyu on this well-deserved achievement!

Annual Lunch Series Sponsorship

Thank You to Our 2024-2025 Annual Lunch Series Sponsors!



As a valued sponsor, your logo will be prominently featured in this newsletter and displayed in the pre-meeting slideshow at a minimum of six lunch events throughout the series.

Interested in becoming a sponsor? Reach out to Anna Kotas or Sharon Hartley today to secure your spot and elevate your visibility within our community!

Sign up to sponsor:

<https://www.eventbrite.com/e/1501992202109?aff=oddtcreator>

GEO SUCCESS

In each edition of our new newsletter, we'll be highlighting the incredible accomplishments of our members. Have you or someone on your team recently received an award, earned a promotion, or reached a professional milestone? Are you presenting at an upcoming conference or event? We want to celebrate with you!

Please send your success stories to ascencsgec@gmail.com with the subject line "Geo-Success" so we can share them in an upcoming issue. Let's inspire and uplift each other by spotlighting the great work happening in our community!

Field Foundations



Jose L.M. Clemente

Manager of Geotechnical Engineering
Bechtel Corporation

What's your current role, and what does a typical day look like for you?

I currently manage the geotechnical engineering group throughout Bechtel. In this role I perform functional duties, e. g., staffing, personnel development, technical reviews, etc. On a typical day I may participate in various meetings dealing with these topics and also dedicate time for technical work.

How did you get started in this field?

I had a professor during my undergraduate days in Brazil who was passionate about geotechnical engineering and a great motivator. I was certainly influenced by his charisma/enthusiasm and during my last (fifth) year in undergraduate school I focused entirely on what was then called Soil Mechanics. I joined an engineering firm soon after my graduation and started my geotechnical engineering career. I have remained a geotechnical engineer throughout my professional career, including a short stint in academia.

Was there a defining moment or project early in your career that shaped your path?

The first job I worked on after graduation involved repairs to a failed small dam. Soon after I started on my first job I was sent to the field with a senior geologist to oversee a

geotechnical investigation. After that field exposure I worked on the engineering aspects of the repair. I was also involved in hydroelectric projects in Brazil before I came to the United States to pursue graduate studies at Duke University. That initial professional exposure cemented my life-long interest in geotechnical engineering.

Can you share a project you're especially proud of? What made it meaningful?

I worked on a Bechtel lump-sum project in Saudi Arabia where I had the opportunity to contribute to significant cost savings by developing and implementing a ground improvement program that was eventually adopted. The original design (by others) required the installation of bored piles through challenging subsurface conditions that included the presence of coral-like layers. The piles would have been more expensive and riskier to install than the eventual ground improvement solution. I have been an advocate for the adoption of ground improvement methods ever since (under the right subsurface and foundation loading conditions).

What's the most challenging field condition or site constraint you've worked with?

I worked on a large (about \$2B) aluminum smelter modernization project at a site with subsurface conditions consisting of post-glacial sand/gravel overlying silts/clays. The silt/clay layer was mostly very soft and extended to varying depths that reached more than 300 ft. Use of piles was mostly not economically feasible. In the end we had to be carefully creative to come up with a shallow foundation system that met project requirements. I also worked on a power plant project where subsurface conditions included a very soft/loose silt layer that extended to depths of up to about 120 ft. In this case, we ended up using piles because of project requirements.

How do you approach troubleshooting or unexpected conditions in the field?

Cautiously! I believe it's very important to fully understand what led to the unexpected conditions before any troubleshooting can be attempted. Additional subsurface investigation is often needed to obtain high-quality data and gain an understanding of existing conditions. Only just then can troubleshooting really be attempted.

How has your perspective changed from your first few years in the profession to now?

Practice never makes perfect, but it certainly helps a lot. Today I have a much better understanding of what can cause problems, and take preventive action before the problem develops. This is something that you gain from experience. I'm a strong proponent of exposing geotechnical engineers to field activities, be it subsurface investigations or construction support. There's no better way to learn and gain experience in our field, which is still very reliant on experience.

What changes or innovations have you seen in the field in recent years and how do you stay current with new tools, standards, etc.?

When I started on my first job, I had to rely on a deck of cards and a mainframe computer that my company did not own, but had access to. When I had to run a slope stability analysis, I had to take the deck of cards, hop on the metro and go to a different building where this mainframe computer resided. Personal computers became available when I was pursuing graduate studies at Duke University. Today my iPhone is vastly more powerful than at least some of these tools that I used at the beginning of my career. We have obviously come a long way in terms of the computational tools we use in the office and we are way into a revolution in how we do construction work. Things like intelligent compaction, autonomous construction equipment, etc. are constantly being improved and deployed.

What keeps you motivated or inspired in your work?

Seeing new engineers who want to pursue a career in geotechnical engineering, helping provide them with opportunities for acquiring experience that will help them in their career development.

What's one tool, app, or piece of gear you won't leave the office or job site without?

My iPhone! :-) Obviously when I visit job sites my number one concern is with safety and wearing all appropriate personal protection equipment.

Give our emerging leaders one piece of advice as they navigate their geo-careers.

Whenever possible, take advantage of field opportunities. You'll learn more than you'll ever imagine. I know it can be challenging and difficult on the family, but if you can manage it, please do. I'm also a strong believer that good communication is essential. We need to communicate clearly and be as direct as the situations allow us to be.

Meet Your Board



Rajul Teredesai

Sr. Global Strategy Engineer/ Geotechnical SME
Amazon Web Services

What is your role on the board, and how long have you served?

I have been involved on this board for the past 5 years and currently serving in the capacity of a treasurer.

What inspired you to get involved with the ASCE NCS Geo-Institute?

It is important for everyone to be involved with largest professional community of their field. ASCE NCE Geo-Institute provides a platform for all the geotechnical professionals in the Washington DC metro area to grow their professional network, and learn from each other's experience, and contribute towards developments in the profession.

What's your favorite part of being on the board?

My favorite part is meeting professionals from all walks of experience level and providing geotechnical services in various industry sectors, and learn from their perspectives on how to apply geotechnical best practices to their focus industry.

What do you hope to contribute during your board term?

I want to work towards making board initiatives accessible and of value to all the professionals, especially early career professionals so that they find value in collaborating on this platform and continue growing this group.

What's one goal the board is working toward that you're especially excited about?

Encouraging more civil engineering undergraduate students to pursue geotechnical engineering for graduate school and a career choice.

How do you see the board supporting members or advancing the profession?

Board routinely seeks diversity of topics in monthly luncheons to expose our members to new ideas and experiences. It also helps planting the seeds of innovation within the members through collaboration between the consultants and the contractors.

What's your day job, and what does your typical work involve?

My role involves geotechnical risk identification, quantification and mitigation for Amazon data centers globally.

How has your involvement in this organization impacted your professional life?

I am one of the three geotechnical engineers within Amazon. Being part of an organization like ASCE NCS Geo-Institute keeps me connected to my industry peers and benefit from learning about most cutting edge work being carried out in our profession.

Are there any skills from your job that help you in your board role — or vice versa?

In my job, I collaborate with numerous consulting engineers from various firms with unique experiences and backgrounds with specialized experience in specific geologic problems. This has helped in to provide suggestions to the board in ensuring diversity of educational content we provide our members.

What advice would you give to someone thinking about getting involved?

Get involved right from the school, continue to be part of the local board, show up to all the events regularly, make at least three new contacts at each event. Within a year, you will be connected to more than 30 companies in the area that would serve as your potential future employers or clients.

What's a misconception people may have about board service?

It takes a lot of your time. Trust me, it does not. I do not spend more than 1 or 2 hours a week at the most in board services. We have grown the size of the board in recent years to involve more interested candidates so that workload gets divided and we can do more fascinating things for our members.

What do you wish more members knew about the work the board does?

Board really strives hard to make sure that the contents of our monthly meetings, symposiums are new, informative and enriching. Board also strives very hard to increase student participation in the regular events through use of incentives such as reduced entry fee, scholarships, etc.

What is the most useful thing on your desk right now?

Most useful thing on my desk right now is IBC and Eurocode manual as I use these routinely for my work!

BOARD MEMBERS



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Geostructures, Inc.



Shana Carroll

Communications Director
D.W. Kozera, Inc.



Sandarva Sharma

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