



**GEO-
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**Delaware Valley
Chapter**

DELAWARE VALLEY GEO-INSTITUTE

DVGI November 2017

Volume 17, Issue 8

November 2017 DVGI Dinner Meeting

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SPEAKER: Robert J. Palermo, P.E.,
Senior Vice President, GZA GeoEnvironmental, Inc.

TOPIC: Foundation Design and Construction of the New NY Bridge

DATE: Tuesday, November 14th, 2017

LOCATION: Valley Forge Casino Resort Hotel, Parkview Ballroom
1160 First Avenue, King of Prussia, PA 19406

TIME: 5:30 PM Social Hour, 6:30 PM Dinner and
7:15 PM Presentation

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Registration and Payment Online at www.dvgi.org

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The New NY Bridge (Tappan Zee Bridge Replacement) is a \$3.14B Design-Build project with the New York State Thruway Authority. The project consists of the design and construction of two new 3-mile long multiple span structures that carry I-87/287 across the Hudson River between Rockland and Westchester Counties. The first span of the new twin-span bridge opened on August 24, 2017. The second bridge is scheduled to be complete in 2018. The new bridge is being designed and constructed to last 100 years without major structural maintenance. The 1,100 pipe pile foundations for the new crossing are up to 6 feet in diameter, and are designed to accommodate future bus rapid transit, light rail or commuter rail. The bridge was designed and is being constructed by Tappan Zee Constructors, LLC (TZC), a consortium of Fluor, American Bridge, Granite, and Traylor Bros. HDR is the lead designer and major sub-consultants include GZA, Buckland & Taylor and URS. This presentation will address the high capacity deep foundations used to support the new bridge superstructure. The nominal resistance of these piles is up to 31,135 KN (7,000 kips). The remaining portions of the bridge are designed to be supported on 3-ft and 4-ft diameter, open-ended steel pipe piles, about half of which are friction piles in the deep glacial lake varved clay deposit. The required nominal resistance of the friction piles is up to 19,125 KN (4,300 kips).

ABOUT THE SPEAKER:

Bob Palermo is a Senior Vice President with GZA GeoEnvironmental has 40 years of experience with in geotechnical engineering for bridges, buildings and underground construction. Bob was the Lead Geotechnical Engineer on the Tappan Zee Constructors (TZC) design-build team for the Mario Cuomo Memorial Bridge (formerly New NY Bridge) project, where he was responsible for the subsurface exploration program, foundation design, pile load test program and instrumentation monitoring of the existing Tappan Zee Bridge during pile installation for the new bridge.

Some of Bob's other project experience includes the rehabilitation of the Queens Boulevard Bridge in Queens, the Second Avenue Subway and No.7 Line Subway Extension in Manhattan, the Central Artery/Tunnel project in Boston and the Carolina Bays Parkway in Myrtle Beach, SC. Bob is a registered professional engineer in 19 states.

*One Professional Development Hour (PDH)
will be provided for this dinner meeting.*



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October 2017 Dinner Meeting

Pocono Raceway- The Tunnel Turn Rehabilitation James A. McKelvey, P.E., D.GE, Earth Engineering, Inc.



(Image courtesy of presenter).

Development of the Pocono Raceway in Long Pond, Pennsylvania began in 1965 with the first race on the 2½-mile track being held in 1971. The track is unique on the Indy Car and NASCAR circuits featuring a three turn design, with each individual turn mimicking the curve radius and banking of other important racing tracks around the country. Turn 2, modeled after the 8-degree banked turns at the Indianapolis Motor Speedway, had two tunnels constructed beneath the race track, providing vehicular access to the infield. During the 1980's, both tunnels displayed interior deformation, and were internally braced. However, the added bracing significantly reduced the vertical clearance within the tunnels, hampering vehicular access to the infield. Towards the end of the 2013 racing season a truck impacted the last brace within the

outbound tunnel, causing significant deformation of the tunnel in this location. The track owners decided rehabilitation of the tunnels was needed to improve infield access by replacing the interior bracing with an alternate solution while improving the aesthetics of the tunnel entrances.

This presentation discussed the design and construction of the soil nail reinforcement used to temporarily support the tunnels while the interior bracing was removed and the design and construction of the permanent concrete shells that would serve to support the overlying race track. The design and construction of the tunnel entrances was also discussed, which featured both permanent soils nails and mechanically stabilized earth systems to support the sculpted shotcrete fascia.



(Image courtesy of presenter).



(Image courtesy of presenter).

ABOUT THE SPEAKER:

Jay McKelvey is a practicing geotechnical engineer with over 28 years' experience and is registered as a professional engineer in six states. Having received a BS and MS in Civil Engineering from Drexel University, Jay has published over 30 technical papers in journals and conference proceedings. In addition to his Diplomate of Geotechnical Engineering status within the Academy of Geoprofessionals, he has been elected to Fellow within ASCE and serves on the ASCE national technical committees for earth structures and geosynthetics. Jay also serves on the editorial board of ASTM's Geotechnical Testing Journal and is currently the Past Chair of DVGI.



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Geosynthetic Institute

GSI Webinars for 2017—(1.5 PDH/each)

From 11:30 AM—1:00 PM (Eastern Time)

Topics, Dates and Registration at www.geosynthetic-institute.org/webinar.htm

Cost: GSI Members \$200; Nonmembers \$250

Date	GSI No.	Title
December 13	W-4	MSE Wall Field Construction Inspection Practices

HAVE DVGI PUBLISH YOUR ARTICLE, ADVERTISEMENT, OR JOB POSTING

- Do you have an interesting article on a project or individual in your organization that you would like to have published in the DVGI newsletter?
- Would you like to get the word out about a job opening, new venture, etc. to our membership via the newsletter?

Please submit your articles or news items for consideration in the next edition of the newsletter or get in touch about our reasonably-priced advertising by contacting Theresa Loux (tloux@aeroaggregates.com).

DVGI Merchandise Available for Purchase

Coffee mugs (\$8) and lapel pins with the DVGI logo (\$5) are available for purchase. See Russ Preuss if you are interested in purchasing either of these items.

ASCE/G-I Members:
Read past and present issues of Geo-Strata magazine online at www.asce.org



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MEMBER SPOTLIGHT

Jerry (Tse-Wei) Chen WSP, DVGI At-Large Board Member

Jerry (Tse-Wei) Chen has dual bachelor degrees in Civil Engineering and Geology from National Taiwan University. Bringing his curiosity of the soil and rock to the States, he finished his M.S. degree in Geoengineering in University of California at Berkeley. After graduation in 2014, he joined WSP in the Lawrenceville, NJ office. Jerry is specialized in geotechnical earthquake engineering; he worked on several related projects such as seismic retrofit, seismic design and seismic hazard evaluation for bridge, building and embankments. Jerry is also experienced in various types of site investigation methods such as SPT, CPT, test pile, infiltration test, off shore vibrate core and hand augering. In the office, he performs analyses of pile/shallow foundations, MSE walls and embankments. His footprint of geotechnical engineering covers NY, NJ and PA area, serving different transportation clients such as DOT, Turnpike and Port Authorities. Residing in Lower Bucks County, Jerry enjoys aspects of both city and suburban life. He is a Sixers fan and a season ticket holder; you might be able to find him in section 216A in home games.



Jerry (Tse-Wei) Chen (Image courtesy of J. Chen)

Q: What advice would you give to students studying a geo-profession?

A: Intelligent guessing is called estimating; always know the range of the answer should be before you begin; understand the consequence of a wrong estimation before you start.

Q: What are three career lessons you've learned thus far?

A: 1) Field experience is important. 2) Always have good communications with people. 3) Keep learning new things and new approaches.

Q: What are your hopes for our industry?

A: Create safer and faster connections for the world.

Q: What is your favorite thing to do in Philadelphia?

A: Watching Sixers' games in Wells Fargo Center.

Q: What aspect of your job do you enjoy the most?

A: Switching in and out from the office to the field.

Q: What is the most challenging aspect of your job?

A: Identifying the soil in winter days in the field.

Q: What do you like most about WSP?

A: The ability to work on local and global projects from the same office.

Q: What has been your favorite project at WSP that you have been a part of?

A: LaGuardia Airport Central Terminal Replacement.

Q & A with Jerry:

Q: What got you first interested in the geo-world?

A: The ability to understand and prevent loss of lives from geohazards.

Q: What is your favorite thing about your Alma Mater?

A: Various types of people who work in different industries.

Q: Tell us something about yourself that would surprise us.

A: I dug ten (10) six-foot deep hand auger holes in a day.

We will continue to feature DVGI members in upcoming issues of the Newsletter. Please feel free to contact any of the board members with any general comments or member spotlight suggestions. Board member email addresses can be found on Page 3.



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JOB POSTING



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JOB DESCRIPTION

Overview:

Throughout our 100-year history, Gannett Fleming has been an innovator and leader on a global level, providing world-class services in engineering, consulting, design, program, and construction management. With more than 60 offices worldwide, we are consistently ranked among the nation's most prestigious engineering firms.

Our Geotechnical Practice is currently seeking a self-motivated **Geotechnical Engineer** or **Engineering Geologist**, possessing 0-4 years of related experience, to join the **Valley Forge, PA or Marlton, NJ** offices.

Responsibilities:

- Perform geotechnical calculations for various projects and facilities including, but not limited to, shallow and deep foundations, retaining structures, tieback anchors, soil nails, slope stability design and/or stabilization.
- Assist in the preparation of geotechnical reports and documentation, correspondence, design details and drawings, proposals and specifications.
- Execute subsurface investigations in support of geotechnical design and evaluation efforts, including test boring inspection, installing and monitoring instrumentation, and other data collection activities as required.
- Compile and manage geotechnical data and prepare typed boring logs and subsurface profiles.
- Provide construction observation support during the construction phase of projects.

Qualifications:

- Master's Degree with a Geotechnical, Geological Engineering, or Applied Geosciences focus required.
- 0-4 years of related experience, EIT/GIT certification preferred.
- Project experience with bridges, roadways, retaining walls, towers, embankments, reinforced slopes, ground improvement, pavement design, and soil and/or rock slope mitigation is preferred.
- Experience with common geotechnical/geological software programs such as gINT, SLIDE, SLOPE/W, LPILE, GROUP, GRLWEAP,
- Experience with AutoCAD, MicroStation and ArcGIS is a plus.
- Geotechnical field experience including test boring inspection
- Some travel required for reconnaissance, inspection and construction observation activities

If you are interested in joining our team please send cover letter and resume to **Ara Mouradian (amouradian@gfnet.com)**.



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JOB POSTING



VILLANOVA
UNIVERSITY

Adjunct Faculty Position in Geotechnical Engineering for Spring 2018 Graduate Course

*Villanova University, Department of Civil and
Environmental Engineering*

The Department of Civil and Environmental Engineering at Villanova University invites applications for an adjunct professor to teach the geotechnical graduate course *CEE 8106 Embankments and Slopes* in the spring 2018 semester. The course meets one night a week from 6:15 pm to 9:15 pm on Villanova's campus. Spring classes run from January 16th through May 3rd, 2018.

The goal of the course is to provide students with a comprehensive understanding of the design of slopes and embankments in geotechnical engineering. Students are expected to learn about theory and analysis methods commonly used to evaluate stability and seepage in natural and engineered slopes, and apply those methods in design examples. Additional topics covered in the course have included slope reinforcement, dam design, and case studies.

Candidates for the adjunct faculty position should have a graduate degree in Civil and Environmental Engineering or a related field. Prior teaching experience is preferred, but not required. Engineering consulting experience also is desirable, but not required. Applications must be submitted online at <https://jobs.villanova.edu> (Posting number 2013107F). Application packages should include: (1) a cover letter, (2) resume or curriculum vitae, and (3) a one page statement briefly describing your teaching philosophy and prior teaching experience, if applicable. Review of applications will begin immediately and continue until the position is filled.

Villanova is a Catholic university sponsored by the Augustinian order. Diversity and inclusion have been and will continue to be an integral component of Villanova University's mission. The University is an Equal Opportunity/ Affirmative Action employer and seeks candidates who understand, respect and can contribute to the University's mission and values.

Questions regarding this position should be directed to Dr. Kristin Sample-Lord (kristin.sample-lord@villanova.edu).



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EVENTS AND CONFERENCES

MASTT - Trenchless Technology Seminar (PDHs Available)



Seminar presentations will discuss a wide variety of techniques to avoid open cut through the use of trenchless technology. Full day seminar including breakfast, lunch, and social hour. PDH credits available.

Speakers: Mr. Jeff Twardzik (PWD) and others TBA.

Date/Time: Tuesday, November 28, 2017
All day Event

Location: Clarion Hotel & Conference Center;
76 Industrial Hwy; Essington, PA

Fees: \$150 per person;
\$100 for ASCE Members

RSVP via online at www.mastt.org or contact Leonard Ingram at 1(888) 817-3788 or leonard@engconco.com

Case Studies - Chlorinated Hydrocarbon Constituents in Groundwater in Frac- tured Bedrock: Using Conceptual Site Models to Investigate and Remediate Impacted Sites (1 PDH)



Speakers: David Side, P.G. (Amec Foster Wheeler)
Mike Edelman, P.G. (TRC Solutions)

Date/Time: Wednesday, November 15, 2017 at 12 pm

Location: PADEP Office
2 East Main Street, Norristown, PA

Fees: Members \$15
Government Employees and Students \$10

RSVP by Tuesday, November 13th, 5:00 pm via online reservations. <http://sections.asce.org/philadelphia/events>

Lehigh Valley ASCE Holiday Banquet Presents ASCE Society President Elect



Come meet our ASCE Society President Elect, Robin Kemper, for 2018 and hear her vision for the years ahead at the Society level. She was just recently inducted as President Elect at the ASCE 2017 National Convention in New Orleans and has also chaired several ASCE committees, including the Member Communities Committee, EWB Task Committee 3, and the Region 1 Formation Team. In 2015, the New Jersey Section honored Kemper as Civil Engineer of the Year.

Please feel free to contact Joe McFadden (jmcfadden@mbakerintl.com) for any general questions.

Speaker: Robin Kemper, P.E.

Date/Time: Thursday, December 7, 2017
5:30 PM - 9:00 PM

Location: ArtsQuest Blast Furnace Room
101 Founders Way, Bethlehem, PA 18105

Fees: \$60 - Members & Non-members,
\$30 - Students

RSVP by December 4th via online reservations.
<http://www.lvasce.org/events/>



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EVENTS AND CONFERENCES

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Calling All Volunteers! It's PA Infrastructure Report Card Time Again!

ASCE in Pennsylvania needs your help to research, analyze, write and promote the 2018 Report Card for Pennsylvania's Infrastructure. The report card is one of ASCE's greatest tools to convey to elected officials and the public the status of Pennsylvania's infrastructure. The committee is looking for people in each of the following categories to help evaluate the state's conditions: Dams, Drinking Water, Hazardous Waste, Levees, Solid Waste, Waste Water, Aviation, Bridges, Inland Waterways, Ports, Rail, Roads, Transit, Parks and Recreation, Schools and Energy.

We're also looking for people publicize the report card once its released. Volunteers can anticipate a 4-8 hour/month commitment over a six month period with most of the work occurring on your schedule. New volunteers, students and younger members are welcomed!

If interested in helping with the Report Card in some fashion, please fill out the following survey, which will help track our volunteer pool. <https://www.surveymonkey.com/r/VHRYNCY>

Please reach out to Jason Bowes at jbowes@gpinet.com or 570-703-0458 for more information or with any questions.



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