



**GEO-
INSTITUTE**
Delaware Valley
Chapter



American Society of Civil Engineers

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DELAWARE VALLEY GEO-INSTITUTE

DVGI January 2017

Volume 17, Issue 1

January 2017 Dinner Meeting

SPEAKER: Moustafa A. Gouda, P.E., D.GE, F. ASCE
Senior Consultant, Maser Consulting

TOPIC: Case Histories and Lessons Learned in Geotechnical Engineering

DATE: Tuesday, January 17th, 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

***Registration and Payment Online at <http://www.dvgi.org/> ***

This 60-minute presentation will be packed with information with various geotechnical successes and failures. The case histories will include fascinating work and new foundation systems employed by the speaker to solve challenging geotechnical problems. The speaker will also address risks in practicing engineering and how to avoid litigation.

ABOUT THE SPEAKER:

Mr. Gouda is well-known in the industry for his innovative approach to problem solving. Over the course of his fifty-year career, he has worked extensively on numerous large domestic and international Geotechnical Projects. Mr. Gouda is currently a senior consultant with Maser Consulting in their Red Bank, New Jersey office. Mr. Gouda earned a Bachelor of Science in Civil Engineering and Master of Science in Geotechnical Engineering from Cairo University. He also earned a Master in Civil Engineering from New Jersey Institute of Technology. Mr. Gouda was named the Philadelphia Civil Engineer of the Year in 1987 for his work on the sinking homes of in the Logan Section of Philadelphia. His other accolades include the Distinguished Civil Engineer of the Year by the New Jersey ASCE Central and South Branches in 1995 and 1999 as well as the Delaware Council of Engineering Societies 1999 Life Time Achievement Award in for his services to the engineering communities.

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



November 2016 Dinner Meeting

New Methods in Direct Push Geotechnical Testing Roger A. Failmezger, P.E.



Image courtesy of presenter

seafloor system pushed the probe to 135 feet below the mudline before encountering penetration refusal. Seismic (p and s) dilatometer tests (SDMT) used heavy underwater hammers that generated either the compression wave or shear wave and measured those wave velocities. The undrained shear strengths in the cohesive soils and the constrained deformation moduli from CPT, DMT, pressuremeter (PMT) and vane shear test (VST) compared well with each other. A second case study for the Lynchburg Hospital was presented where the owner wanted to add two more floors to the existing hospital and use the existing spread footings when possible. Portable equipment bolted to the concrete base-slab pushed the dilatometer probe for 20+ test soundings to the top of the decomposed rock (20 to 50 feet). The chosen locations for the soundings were carefully planned to avoid numerous utilities both above and below the soundings and large existing concrete footings. The small portable push system barely fit into these small areas that were available. Based on the deformation moduli from the DMT, the engineer could determine which footings could support the additional loads and which ones needed to be underpinned.

Mr. Failmezger presented two case studies where new methods in direct push testing were used to overcome common difficulties with working in a river and inside a building. The first case study was about the Route 301 Bridge over the Potomac River between Maryland and Virginia. A direct push system, weighing 15 tons was placed on the mudline with a 100 ton capacity crane, and efficiently performed cone penetrometer test (CPT) and dilatometer test (DMT) soundings. This method effectively pushed those probes and avoided many problems that occur when pushing from the barge, such as vertical movement from tides and waves, lack of lateral support between the deck and the mudline and inaccuracies of depth measurements. At one of the CPT soundings, the

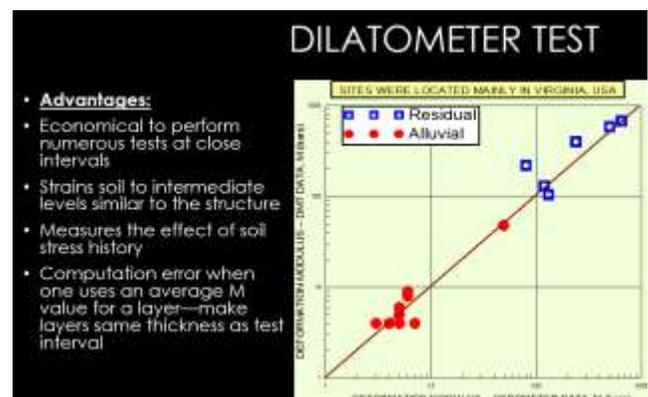


Image courtesy of presenter

ABOUT THE SPEAKER:

Mr. Failmezger graduated from Lehigh University with a Bachelor's degree and from the University of Florida with a Master's degree. He is a registered professional engineer in Virginia, Maryland and Pennsylvania and a Fellow of the American Society of Civil Engineers. In 1995 he started In-situ Soil Testing with the purchase of the old University of Florida research direct push truck for \$2200. Since then he has performed more dilatometer tests than anyone else (over 100,000 tests), many miles of CPT, over 4000 pressuremeter tests (more than anyone in U.S. other than a few people in Chicago) and about 500 borehole shear tests. He has published over 20 technical papers on in-situ testing and probability. Since 2005 he has chaired the Virginia Geo-Institute Chapter and organized four GeoVirginia conferences, recognized by the Geo-Institute as their model regional conference. He organized and edited the "Second International Conference on the Flat Blade Dilatometer Test".



ANNOUNCEMENTS

Earn PDHs at 2016-2017 DVGI Events

Upcoming Dates for 2016-2017 Dinner Meetings and events are as follows:

- ◆ January 17th: Moustafa A. Gouda, P.E., D.GE, F. ASCE,
“Case Histories and Lessons Learned in Geotechnical Engineering”
- ◆ February 21st: Chris Meehan, Ph.D.,
“Construction and Performance of a Geosynthetic Reinforced Soil Integrated Bridge System”
- ◆ March 23rd: Student Night @ Villanova

One PDH will be awarded for most dinner meetings that you attend.

*If you are interested in presenting at one our monthly meetings,
please get in touch with a DVGI board member.*

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@golder.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



ANNOUNCEMENTS



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
January 4	W-5	Geosynthetics in Hydraulic Applications
January 18	W-18	Pond Liner Design & Performance
February 8	W-19	Geomembrane Wave (or Wrinkle) Management
February 22	W-20	Geonet and Geospacer Drainage Materials Connections and Attachments
March 8	W-9	Behavior & Analysis of 20 Solid Waste Landfill Failures
March 22	W-10	Wet (Bioreactor) Landfills for Rapid Degradation of MSW Organics
April 12	W-11	Lateral & Vertical Expansions over Landfills
April 26	W-6	Geosynthetics in Heap Leach Mining
May 10	W-12	Landfill Covers: Past-Present-Emerging
May 24	W-13	Beneficial Uses of Abandoned and/or Closed Landfills
June 14	W-14	Lifetime Predictions of Exposed & Nonexposed Geosynthetics
June 28	W-21	A Brief Overview of Geosynthetics and Their Major Applications
July 12	W-15	In-Situ Stability of Soil Slopes Using Nailed GS
August 9	W-16	Sand Drains-to-Wick Drains to Sand Columns
September 13	W-17	Geosynthetics in Erosion Control
October 11	W-1	MSE Wall Failure Data Base (300 cases)
October 25	W-2	MSE Wall Back Drainage Design
November 8	W-3	MSE Wall Remediation and Monitoring
December 13	W-4	MSE Wall Field Construction Inspection Practices



JOB POSTING

Philadelphia Area Senior Geotechnical Engineer / Project Manager



TRC Companies, Inc. (NYSE: TRR) is an engineering, consulting, and construction management firm that provides integrated services to the Environmental, Energy, Infrastructure, Transportation and Real Estate markets. Our multi-discipline project teams provide turnkey services to help our clients implement complex projects from initial concept to delivery and operation. A broad range of commercial, industrial, and government clients depend on us for customized and complete solutions to their toughest business challenges.

TRC is seeking a qualified Project Manager / Senior Geotechnical Engineer in the Philadelphia Area. TRC's Geotechnical Engineering Group consists of a geotechnical engineering division, a full-service drilling division, an ASTM/AASHTO accredited soil mechanics and concrete testing laboratory, a PDA testing and vibration monitoring component, and a commercial construction inspection division, all of whom work together to provide high-quality and cost-effective geotechnical design solutions for a wide range of project applications. Typical projects include industrial processing facilities, mooring structures, municipal wastewater treatment facilities, power generation and transmission projects, low to high-rise residential developments and office complexes, multi-story parking facilities, highways, bridges, schools and churches. Our service area is primarily located within PA, NJ, NY, VA, WV, OH, DE, DC, and MD.

The responsibilities associated with this position include participating in project pursuits and serving in a project management and/or lead technical role for geotechnical projects. Typical tasks will include proposal preparation, the planning, analysis, design, reporting, and preparation of specifications for geotechnical projects, and mentoring of junior technical staff. Specialized experience with regard to site investigation programs, design and in-situ testing of deep foundations, soil and rock slope stability evaluations, design of retaining walls and reinforced soil slopes, and settlement evaluation and mitigation measures is required.

Qualifications

- BSCE required, MSCE in Geotechnical Engineering preferred.
- PE license.
- DOT and/or Turnpike Authority experience a plus.
- 5 to 10+ years geotechnical engineering experience required.
- Demonstrated leadership skills, communication skills, and ability to work with various technical disciplines in a team setting are essential.

TRC offers a very competitive salary and benefits package. Please send inquiries to mgillespie@trcsolutions.com.

EOE Minorities/Females/Protected Veterans/Disabled



JOB POSTING



Tenure-track faculty position in Geotechnical Engineering

Villanova University's Department of Civil and Environmental Engineering seeks candidates for a full-time tenure-track assistant professor position in geotechnical engineering starting in the fall 2017 semester. The Department is recognized as a national leader in providing a distinctive broad-based civil engineering education grounded in Augustinian Catholic values, encouraging our students to have a strong commitment to service, and performing high-quality scholarly research.

The Department has fifteen full-time faculty members, approximately 230 undergraduate students, and 125 graduate students. Degree programs offered through the Department include B.S. (Civil Engineering), M.S. (Civil Engineering and Water Resources/Environmental), and Ph.D. degrees. We are acknowledged as a premier program known for our outstanding pedagogy and curricula, international opportunities, and personal attention to students at both the undergraduate and graduate levels. Additionally, we strive for research excellence while integrating the outcomes into the education of our undergraduate and graduate students.

The Department is looking for a geotechnical engineering faculty member that can contribute to and enhance our research strengths in transportation infrastructure and systems, effective stormwater management, geoenvironmental applications, and/or resilient building systems. The Department has built excellent infrastructure to support teaching and scholarship, including soils, structural, environmental, fluids, and water resources laboratories. In addition, the campus is home to multiple instrumented stormwater control measures that form an outdoor laboratory. Additional laboratory facilities maintained by other departments within the College of Engineering are also available for multi- and cross-disciplinary work.

Requirements include a Ph.D. in Civil Engineering or a related field (must be completed at the time of hire), work towards professional registration, a dedication to teaching excellence at both the undergraduate and graduate levels, a commitment to high-quality and visible scholarship, and a commitment to impactful engineering service. The successful candidate will be expected to develop and teach undergraduate and graduate courses, develop a strong research program, and perform service within and beyond the academic community.

Applications must be completed online at <https://jobs.villanova.edu/> (Posting number 2016339F). Application packages must include curriculum vitae; academic transcripts; statements on teaching philosophy, research interests (specifically detailing how these interests will align with our existing research strengths), and design experience; and the names and contact information of three references. Review of applications will begin on January 15, 2017 and continue until the position is filled.

Villanova University is ranked in the top 50 of the nation's best colleges and universities by US News & World Report in its 2017 "Best Colleges" rankings. The university is located 12 miles from Philadelphia along the historic Main Line. From its founding in 1842 to its position today as a leading Roman Catholic university, Villanova University has forged a path of academic excellence.

Villanova is sponsored by the Augustinian order. Diversity and inclusion have been and will continue to be an integral component of the University's mission. Villanova is an Equal Opportunity/Affirmative Action employer. The Department of Civil and Environmental Engineering values dynamic and diverse faculty members who are committed to teaching, scholarship, and service — and who can contribute to the University's conversation regarding truth, community, values, and social justice.

Please feel free to contact Dr. Kristin Sample-Lord (kristin.sample-lord@villanova.edu), Co-chair of the search committee, if you have questions regarding the position.



EVENTS AND CONFERENCES

CENTRAL PENNSYLVANIA GEOTECHNICAL CONFERENCE

Hershey, Pennsylvania January 25, 26, & 27, 2017

<http://www.central-pa-asce-geotech.org/>

You will be sure to see a familiar face ...Many DVGI Members and Sponsors will be in attendance as speakers, attendees, and exhibitors!

SPEAKER	TITLE	AFFILIATION
Joseph Cavey	26th Street Emergency Retaining Wall Replacement, Baltimore, MD	Hayward Baker, Inc.
Joseph Coe, PhD	Application of Nondestructive Testing and Geophysical Methods to Evaluate Unknown Foundation Geometry	Temple University
David Elton, PhD, PE	A Brief History of Geotechnical Mistakes	Auburn University
George Filz, PhD	Kennedy Space Center	Virginia Tech
Arthur Hoffman, PE, DGE	Future Geo-Business Trends	Gannett Fleming, Inc
Robert Holtz, PhD	To Be Determined	University of Washington
Eric Klein, PE, DGE	Tied-Back Micropile SOE to Support Active Rail Loads	RK&K
Michael Malusis, PhD, PE	Soil-Bentonite Cutoff Wall Instrumentation	Bucknell University
Michael McGuire, PhD, PE	As-Built Verification and Condition Assessment of MSE and GRS Retaining Structures using 3D Point Cloud Data	Lafayette College
Sarah Missenda, PE	East Branch Dam	USACE
Daniel Ruffing, PE	A Case Study: Soil Mixing for Soft Ground Improvement at a Landfill	Geo-Solutions, Inc.
Johanna Simon, PE	A Hybrid Retaining Wall to Conquer a Massive Slope	Schnabel Engineering
Steve Wendland, PE, PG, DGE	Impacts of Superfast Construction on Slope Stability	Kleinfelder, Inc.
John Wolosick, PE	Revisiting Normandy Beach - Bluff Stabilization	Hayward Baker, Inc.
Joseph Zwetchkenbaum, M.S., E.I.T., A.M., ASCE	Fully Softened Shear Strength of Northern Virginia Potomac Clays	Virginia Tech



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EVENTS AND CONFERENCES

SAVE THE DATE FOR GETT 2017

Girl's Exploring Tomorrow's Technology (GETT) is a free, fun, informational event for middle and high school girls in grades 5 through 10 and their parents that features successful women in technology. Attendees learn the facts about how technology careers can be fulfilling, fun and rewarding personally, professionally and financially.

DVGI participated in last year's Expo, with more than 1,000 in attendance (including 622 girls in grades 5-10 and 176 parents and educators). We provided interactive activities illustrating principles of shallow and deep foundation design and liquefaction using every-day items such as cool whip, gelatin, wood sticks, legos, sand and colored water. We're looking to participate again in 2017 and welcome volunteers and/or ideas for new and interesting hands-on demonstrations.



Image courtesy of K. Backlund

GETT 2017 is scheduled for March 25, 2017 at West Chester East High School. For information about registering a parent, student, and/or educator, or to participate in the expo as an exhibitor independent of DVGI, visit www.gettpa.org.

If you'd like to volunteer at GETT 2017 as a representative as of DVGI, or have suggestions for demonstrations, please contact Theresa Andrejack Loux (theresa_loux@golder.com) or Melissa Gillespie (mgillespie@trcsolutions.com).

SAVE THE DATE *2017 Mid-Atlantic Geo-Wall Competition*

Saturday, April 8, 2017
University of Maryland, College Park

We are looking for sponsors! \$150 per firm.

Name will be displayed at competition.

Please contact Eric Backlund
(ebacklund@kleinfelder.com) if interested.





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EVENTS AND CONFERENCES

Joint Dinner Meeting with ASHE Delaware Valley Section - PA (no PDH)

Overview of Turnpike's modernization and upgrade program, including new I-95 interchange and widening on the Northeast Extension.

SPEAKER: Brad Heigel, Chief Engineer,
PA Turnpike Commission
LOCATION: Valley Forge Casino Resort
DATE: Wednesday, January 18th, 2017
TIME: 6 PM Networking, 7 PM Dinner
COST: \$50 after January 12, 2017
\$20 government employees/students
RSVP: delvalley.ashe.pro

SEI: DeIDOT BR 1-717 - An Accelerated Bridge Deck Replacement Using Precast Deck Panels (1 PDH)

This presentation will walk through the decisions made during design that lead to the preferred alternative, highlight the critical ABC deck panel design details, and present construction photos and discuss construction lessons learned.

SPEAKER: Jeffrey Knueppel, SEPTA
LOCATION: Valley Forge Casino Resort
DATE: Thursday, January 26, 2017
TIME: 5:30 PM Networking, 6:30 PM Dinner,
7:15 PM Presentation
RSVP: By January 20, 2017
www.sei-philly.org

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<http://www.central-pa-asce-geotech.org/>



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