THE ASCE PITTSBURGH SECTION
GEO-INSTITUTE CHAPTER PRESENTS

March 14, 2019 – Dinner Meeting

Evaluation of axial pile response for load-displacement-capacity and load transfer using seismic piezocone tests

Presented By: The Cross-USA Lecturer, Paul W. Mayne, PhD, P.E.,
Professor of Civil and Environmental Engineering at the Georgia Institute of Technology

For deep foundations, cone penetrometer (CPT) and piezocone (CPTu) data can be used in either traditional bearing capacity solutions via interpreted geoparameters, or alternatively with direct-CPT methods that scale the measured cone tip resistance and sleeve friction to unit end and unit side resistances of the full-scale pile foundation. A Modified Unicone Method is presented based on 330 pile load tests, compared with 105 load tests for the original Unicone Method. With seismic piezocone tests (SCPTu), the small-strain stiffness (G0) is obtained from the shear wave velocity measurement. A modulus reduction curve can be expressed in terms of the mobilized load (Q/Qult) which is in essence, the factor of safety. Introducing closed-form elastic solutions for axial pile displacement and load-transfer with depth, the use of SCPTu permits a construction of the load-displacement-capacity curves and axial load distribution for driven, jacked, and drilled pile foundations. Case studies from South Carolina, Georgia, British Columbia, Texas, Alabama, and Alberta are presented

With 42 years in geotechnical engineering**,** Paul is an expert in geotechnical site characterization, particularly the cone penetrometer, piezocone, dilatometer, and seismic tests with applications to foundation systems and ground modification. He has published 320 technical papers and participated in 120 short courses. Of recent, Paul authored the Synthesis 368 on Cone Penetration Testing (www.trb.org), co-authored the SOA-1: Geomaterial Behavior & Testing at the 17th ICSMGE in Egypt in 2009, gave the ASCE SOA lecture on In-Situ Testing (GeoOakland 2012), 16th Sowers Lecture (2013), 12th Jennings Lecture in South Africa (2014), James Hoover Distinguished Lecture at Iowa State Univ. (2014), invited keynote KN2 at CPT'14, 2014 Hal Hunt Lecture at the 39th Annual DFI Conference, invited keynote at ISC-5 Brisbane (2016), Nonveiller Lecture in Zagreb (2016), 34th Manuel Rocha Lecture in Lisbon (2017), and was selected as a GeoLegend by GeoStrata (2016).

Dr. Mayne is an active member of ASCE, TRB, DFI, ADSC, CGS, USUCGER, and ISSMGE**,** and served as chair of the international committee on in-situ testing (TC 102) from 2000-2013 and ISSMGE Vice President for North America from 2013-2017. Of additional note, Paul has worked as a consultant on recent projects in Australia, Virginia, Washington, South Carolina, Ontario, Puerto Rico, Alabama, Georgia, Belgium, North Carolina, and Alaska. He is married with one daughter and plays bass guitar.

DATE: Thursday March 14, 2019

Place: Cefalos Banquet and Event Center
428 Washington Ave.
Carnegie, PA 15106

RSVP by 3/8/19:
$25 ASCE Pittsburgh Section Members / Government Employee
$35 Non-members
Free to Students

Time:
6:00 PM – 7:00PM Socializing and Cash Bar
7:00 PM – 8:00PM Dinner
8:00 PM – 9:00PM Presentation

PLEASE RSVP by contacting Dr. Maria Jaime at mjaime@agesinc.com OR by registering online at http://www.asce-pgh.org/ Online registration is highly encouraged and payments can be made with credit card. Only cash or checks will be accepted at the door.