

**American Society of
Civil Engineers
Pittsburgh Section: Geo-Institute**

**RECENT ADVANCES IN THE STATE OF
PRACTICE OF GROUND
MODIFICATION TECHNOLOGIES**

Last name First name Initial

Company / School

Mailing Address

City State Zip Code

Email Address

Phone Number
(No shows will be billed at a non-member rate)

Pgh. GI Member \$175.00

Full-Time Student \$90.00

Non-Member (Pgh. GI) \$195.00

Total Amount Enclosed: \$ _____.

(Registration will not be processed without payment) Please detach this form and return by March 19, 2014 with a check made payable to:

ASCE Geotechnical Engineering Group:

Attn: Steven Lowden, P.E.

GAI Consultants, Inc.

385 East Waterfront Drive

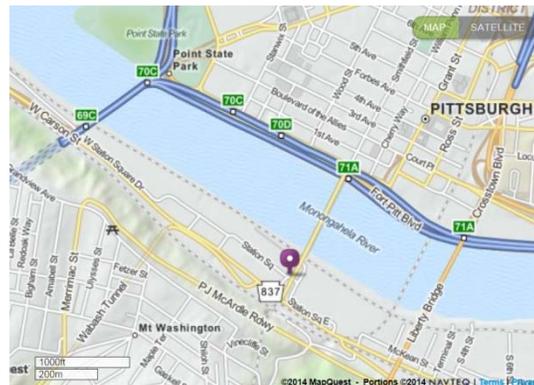
Homestead, PA 15120-5005

Or register On-line at: <http://www.asce-pgh.org/>

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OF PRACTICE OF GROUND
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7:00 to 7:30	Registration
7:30 to 7:45	Introduction
7:45 to 9:45	Deep Mixing
9:45 to 10:00	Coffee Break
10:00 to 10:30	Deep Mixing cont.
10:30 to 12:00	Aggregate Columns
12:00 to 1:00	Lunch
1:00 to 1:30	Vibro-concrete columns
1:30 to 2:30	Column Supported Embankments
2:30 to 2:45	Break
2:45 to 3:30	Shored MSE
3:30 to 4:30	Geotech Tools Demonstration

The seminar fee includes the cost of a continental breakfast, lunch, coffee and seminar notes. To register for the short course complete the attached form and mail it along with a check to the address enclosed on the back of this brochure. Cancellations received after March 19, 2014 and no shows will be billed. If you have any questions, please contact Steven Lowden (412) 476-2000 x1529 or via email at s.lowden@gaiconsultants.com



**American Society of
Civil Engineers**

**Pittsburgh Section: Geo-Institute
Presents a One Day Short Course:**

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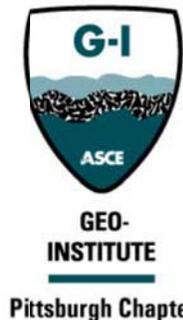
By: James G. Collin, Ph.D., P.E., D.GE.

Saturday, March 29, 2014

Grand Concourse
100 W. Station Square Dr.
Pittsburgh, Pennsylvania

7:30 AM to 4:30 PM

8 PDH's eligible for attendees
(NY not eligible)



RECENT ADVANCES IN THE STATE OF PRACTICE OF GROUND MODIFICATION TECHNOLOGIES

Subject of Course/Course Description

One of the biggest obstacles to the use of many ground improvement technologies is that there are no uniformly accepted design guidelines for consultants to rely on in preparing a design. In the last 5 years the Federal Highway Administration (FHWA) has developed and published design guidance on many ground improvement technologies that are being used extensively today. This seminar will present FHWA design guidance for the following technologies; deep mixing; aggregate columns (i.e., stone columns and rammed aggregate piers); vibro-concrete columns; column supported embankments; and shored mechanically stabilized earth (SMSE).

Participants will be provided with electronic copies of the FHWA design manuals for deep mixing, column supported embankments and SMSE. The seminar will wrap up with a demonstration of the GeoTechTools website. A website developed under the direction of FHWA to provide a selection and guidance system on the use of 50 ground improvement technologies. It is the one place to go to find out the most current state-of-practice and state-of-art when your project requires ground modification.

Instructor

The seminar will be conducted by Dr. Jim Collin, P.E., president of The Collin Group, Ltd. Dr. Collin has led the use of column-supported embankments on load transfer platforms in the United States. The design methodology used to design these structures was pioneered by Dr. Collin, and it has contributed to the growing use of column supported embankments with load transfer platforms. He was the principal investigator for an FHWA research program to develop design guidelines for column supported embankments (Collin, J.G., Han, J., and Huang, J. (2005), "Design Recommendations for Column Supported Embankments" Federal Highway Administration FHWA-HRT).

Dr. Collin is co-author of the FHWA manual "Ground Improvement" (FHWA NHI-06-019) and has been teaching the NHI Ground Improvement course to State DOTs for over a decade. He is also part of a team that just recently finished a new FHWA Design Manual on Deep Mixing for Embankment and Foundation Support. More recently, Dr. Collin was a principal investigator for the SHRP2R02 project on "Geotechnical Solutions for Soil Improvement, Rapid Embankment Construction, and Stabilization of the Pavement Working Platform." The culmination of the research program was the development of a web based Ground Improvement selection and guidance system.

Course Outcomes:

Upon completion of the course the participants will be able to:

- Use Geotech tools to assist in the selection of a ground improvement technology appropriate for their project
- Understand the current FHWA guidelines for the design of soil mixing as a form of ground improvement
- Discuss the advantages and disadvantages of aggregate column
- Know where to find detailed information on FHWA guidance on the design of aggregate columns
- Perform design checks of vendor supplied designs for vibro-concrete columns
- Discuss the differences in the catenary and beam method for the design of load transfer platforms for Column Supported Embankments
- Perform preliminary design for Shored MSE wall following the latest FHWA guidance.