NO LIMITS IN WHAT WE CAN DO - TOGETHER.

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Welcome From the Presidents

Dear IFCEE 2015 Colleagues,

It is our pleasure to welcome you to this epic geo-industry event, a joint Congress of ADSC: The International Association of Foundation Drilling, Deep Foundations Institute, Geo-Institute of ASCE and the Pile Driving Contractors Association. This Congress will surely help “Build the Foundation for a Solid Future.” Over the next several days, project owners, contractors, consulting engineers, academicians, researchers, and students will gather together with the common goal of addressing the most challenging issues in underground construction. This Congress is the venue for exploration of innovations in technology and advancement in implementation practices. The Equipment Expo will display the latest drilled shafts, anchored earth retention, micropile and pile driving installation equipment and services from around the world through the Indoor and Outdoor Exhibit areas. Check out the Congress highlights featuring the Keynote Address by Dr. Wayne Clough, Secretary Emeritus of the Smithsonian.

Enjoy your time in San Antonio, and thank you so much for joining us. It will be a busy and productive time for all!

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Congress Committee

Conference Chairman

Technical Program Chairmen
J. Brian Anderson, Ph.D., P.E., Auburn University

Technical Program Committee
Mary Ellen Large, P.E., D.GE, DFI
Peggy Hagerty Duffy, P.E., ADSC
Jesús E. Gómez, Ph.D., P.E., D.GE, GEI Consultants, Inc.
Mohamed Hussein, P.E., GRL Engineers
Michael D. Justason, P.E., M.Eng., M.B.A., McMaster University/Bermingham Foundation Solutions

Proceedings Editors
Debra F. Laefer, Ph.D., Chief Editor, University College Dublin
J. Brian Anderson, Ph.D., P.E., Auburn University
Magued Iskander Ph.D., P.E., NYU-Polytechnic
Muhammad T. Suleiman, Ph.D., Lehigh University

Organizing Committee
Michael D. Moore, ADSC – Chairman
Theresa Engler, DFI
Stevan Hall, PDCA
Rob Schweinfurth, Geo-Institute of ASCE
Tuesday, March 17 – 5:00pm-6:30pm

Karl Terzaghi Lecture

The Evolution of Specialty Geotechnical Construction Techniques: The “Great Leap” Theory
In historic literature, there is the “Great Man” theory, whereby history is reflected in the biographies of preeminent characters. In the more theoretical and academic branches of specialty geotechnical engineering, the theory holds true, with, of course, Professor Terzaghi one of the heroic great men—a researcher, problem solver, and inspiration sans pareil. In contrast, in the branch of specialty geotechnical construction, technological advances occur principally through “Great Leaps” as opposed to steady and progressive evolution.

Six criteria must be satisfied in support of awarding “Great Leap” status, beginning with a project-specific challenge of unprecedented scope or complexity, and ending with a legacy document detailing and codifying the leap. These steps are illustrated by reference to developments in drilling and grouting; cutoffs for dams; deep mixing; and micropiles, all techniques in which the author has been intimately involved throughout his professional career as a researcher, contractor, educator, and consultant.

For more than 50 years, the Karl Terzaghi Lecture has been given by an individual honored for their exemplary contributions to the field of geotechnical engineering.

Presented by Donald A. Bruce, Ph.D., D.GE, C.Eng., L.G., L.E.G., President, Geosystems, L.P.

Wednesday, March 18 – 8:30am-10:00am

Keynote Address

Purpose-Driven Execution of Large-Scale Institutional Capital Projects – A Personal View
In a career as a geotechnical engineer, President of Georgia Tech University, and Secretary of the Smithsonian Institution, Dr. Wayne Clough has launched more than $2 billion of capital construction projects. Join him as he reviews case histories illustrating the impact of institutional purpose, sustainability, and owner–designer partnerships in achieving long-range objectives.

Presented by Wayne Clough, Ph.D., Secretary Emeritus of the Smithsonian

Thursday, March 19 – 7:30am-8:30am

Jorj O. Osterberg Lecture

Load Testing of Deep Foundations: Developments, Applications, Results
DFI’s Annual Osterberg Memorial Lecture and Award was established in honor of Dr. Jorj O. Osterberg, one of the true pioneers of geotechnical engineering. This year, the lecture is presented by Frank Rausche, Ph.D., P.E., Founder and Principal of GRL Engineers, Inc. Dr. Rausche’s presentation explores various load testing methods, their relative cost, benefits and limitations, and will attempt to explain how these testing methods can lead to a successful project. As a result, a variety of load testing approaches with different levels of sophistication now exist, yielding more meaningful and reliable results than could be achieved prior to the advent of reliable instrumentation and computers.

Introduced by Ray Wood, C.Eng., Loadtest
Presented by this year’s recipient, Frank Rausche, Ph.D., P.E., Senior Consultant, GRL Engineers Inc.

Thursday, March 19 – 5:00pm-6:30pm

Dr. Michael W. O’Neill Lecture

Reflections, Changes and Grand Challenges
The ADSC’s Michael W. O’Neill Lecture Award will be presented triennially at each IFCEE for outstanding contributions to the advancement of state-of-the-practice in the design and construction of deep foundations through practical, applied research and/or through recommended improvements to design and/or construction methodologies. The inaugural award winner, Jerry A. DiMaggio, P.E., D.GE, will address three separate but closely related themes. The first reflects on Dr. O’Neill’s 1994 keynote paper entitled “Drilled Shafts: Effects of Construction on Performance and Design Criteria” delivered at the FHWA-sponsored International Conference on Design and Construction of Deep Foundations, from a personal perspective. The second theme examines practice changes in deep foundations and cut retaining wall design and construction, which have occurred during the past four decades (1974-2014). Finally, the third theme presents the most significant technical and professional challenges facing the geotechnical engineering and geo-construction communities looking forward from the present.


Friday, March 20 – 7:30am-8:30am

Ben C. Gerwick Award and Lecture

Marine Foundations Using Grout Bag Construction
Deep Foundations Institute (DFI) will present the 2015 Ben C. Gerwick Award for Innovation in Design and Construction of Marine Foundations to Proserve, Ltd., marine construction engineers in the U.K., for the development of the Proserve Grout Bag. Proserve has pioneered the use of grout bag systems, which reliably provides infill foundations to precast elements in the marine environment. The Annual award honors Ben C. Gerwick for his exceptional achievements and contributions to the design and construction of marine foundations.
Awarded to Proserve Ltd., Accepted by Martin Hawkswood B.Sc. C.Eng. M.I.C.E. M.I.Struct.E.
Presented by Roderic A. Ellman, P.E., Mueser Rutledge Consulting Engineers

Friday, March 20 – 3:00pm-4:30pm

H. Bolton Seed Medal Lecture
Evaluation of Soil Liquefaction – How Far Have We Come in the Past 30 Years?
Professor H. Bolton Seed and his colleagues developed a simplified method to evaluate cyclic liquefaction. Since then, significant developments have occurred in the past 30 years. This lecture will present a brief overview of the major developments to evaluate soil liquefaction based on in-situ tests, with an emphasis on the seismic cone penetration test (SCPT). The presentation will attempt to link the traditional simplified empirical methods with a more theoretical approach based on Critical State Soil Mechanics in an effort to present a unified approach that covers both cyclic and flow liquefaction. Delivered annually by the recipient of the H. Bolton Seed Medal for outstanding contributions to teaching, research, or practice in geotechnical engineering.
Presented by Peter K. Robertson, Ph.D., P.Eng, Professor Emeritus, University of Alberta, Technical Advisor, Gregg Drilling & Testing Inc.

Saturday, March 21 – 8:30am-10:00am

Ralph B. Peck Medal Lecture
Bio-Stabilization of Slopes and Stream Banks
The Ralph B. Peck Medal Lecture is delivered annually by a geotechnical engineer selected for outstanding contributions to the profession through the analysis and publication of case histories. Bio-stabilization has been used successfully at scores of sites across the U.S.A. A typical feature of this approach is the use of inert materials, e.g., rock and geo-synthetics, in combination with transplants and live cuttings. The cuttings are placed in the ground in various arrays and patterns where they can provide soil reinforcement, drainage, and barriers to soil erosion or shallow earth movement. These techniques lend themselves readily to hand labor, where access is problematic, but can also be adapted to placement and installation using heavy machinery. Selected techniques will be described briefly. Microbial stabilization, using fungi and bacteria, will also be discussed. A number of case studies, e.g., highway cut slope stabilization and stream bank protection, will be described where a bio-stabilization approach was adopted. Project evaluations and lessons learned will be included.
Presented by Donald H. Gray, Professor Emeritus, University of Michigan

Registration Hours

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Exhibit Hours

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Cooperating Organizations

- Academy of Geoprofessionals
- Association of Environmental & Engineering Geologists
- American Rock Mechanics Association
- Canadian Geotechnical Society
- DFI of India Chapter
- DFI Middle East Chapter
- DFI-Europe Chapter
- Federal Highway Administration
- geo-engineering.com
- Geoprofessional Business Association
- Structural Engineering Institute of ASCE
- Texas Department of Transportation
- US Universities Council on Geotechnical Education and Research

Special Contributors

- National Driller
- Pilebuck
- Piling Canada Magazine
- Worldwide Drilling Resource, Inc.
**IFCEE Special Events**

**Tuesday, March 17**

4:00pm-5:00pm – *Grand Oaks P/Q*

**Academy of Geo-Professionals Induction Ceremony**

Come share in the celebration of AGP’s 9th Diplomate Induction Ceremony in the Academy’s 7th year of existence. Each Diplomate in this class of board certified geotechnical engineers has achieved the Diplomate, Geotechnical Engineering (D.GE) credential and will be awarded with a certificate plaque and pin. You will hear about specialty certification within ASCE from ASCE President, Robert D. Stevens, Ph.D., P.E., F.ASCE, and learn about how you can become a D.GE from AGP President Larry Jedele, P.E., D.GE. (Business Dress)

**Wednesday, March 18**

7:15am-8:30am – *Lawn 1, by the Sunday House*

**5k Fun Run/Walk**

Check in time is 6:45am. Onsite registration available Tuesday, March 17th from 8am-5pm at the 5k check-in/registration table, and Wednesday before the race beginning at 6:30am at the race start line.

7:30am-8:30am – *Wisteria/Sunflower*

**Diversity & Inclusion Breakfast**

*The Directions of Public Infrastructure in the New Millennium*

Sheryl Sculley is the City Manager of San Antonio, Texas. With 40 years in city management, Sculley is the Chief Executive Officer of the municipal corporation of 12,000 employees, an annual operating and capital budget of $2.4 billion, and a city population of 1.4 million residents. San Antonio is the nation’s seventh largest city. During her tenure, Sculley has brought forth two major bond programs, both in excess of $550 million that represented significant investments into public infrastructure. City Manager Sculley will discuss the challenges and opportunities associated with public infrastructure management in the near and long-term futures.

*Moderator:* L. Sebastian Bryson, Ph.D., P.E., University of Kentucky

*Speakers:* Sheryl Sculley, City Manager, City of San Antonio; Robert D. Stevens, Ph.D., P.E., F.ASCE, ASCE President. Presenting overview of ASCE diversity program

4:00pm-6:00pm – *Grand Oaks G/H/I*

**G-I Awards & State of the Institute – A Conversation With Members**

Begin the evening by celebrating Distinguished Member Jean-Louis Briaud, and then join the Geo-Institute for an open discussion about the latest news, initiatives, and the profession; bring your ideas and questions to share. Then, be sure to stay for the Awards Program where your colleagues will be honored for their exceptional innovation and leadership in the geoprofession.

**Thursday, March 19**

1:00pm-3:00pm – *Magnolia*

**ADSC Women’s Association Meeting**

The ADSC Women’s Association is an inclusive group of spouses and significant others representing a wide range of ADSC members whose primary objective is raising funds to support industry initiatives and scholarships for engineering students at the graduate level. They are devoted to increasing awareness of ADSC values and its mission through meaningful friendships and engaging excursions. Immediately following the general board meeting will be a tour of the Equipment Expo.

7:00pm-8:30pm – *Verbena/Periwinkle*

**Professors’ Driven Pile Institute (PDPI) Reunion**

This special PDCA invitation only event will bring the previous seven PDPI attendees and presenters together for the first time to socialize and reminisce about their year at the Institute.

**Friday, March 20**

7:30pm-9:30pm – *Grand Oaks M*

**PDCA General Business and Awards Breakfast Meeting**

During this PDCA member’s only event, the PDCA will present the Presidential Award for Distinguished Service, Professional Engineers Service Award, Committee Chair of the Year Award and the John T. Parker, Jr., Industry Ambassador Award, along with the 2015 Project of the Year Awards video and presentations.

2:30pm-4:00pm – *Indian Paintbrush/Larkspur*

**DFI’s Women in Deep Foundations Committee**

This group is focused on creating networking and mentoring opportunities to increase participation and retention of women in deep foundations careers. The inaugural meeting was held at the DFI Annual Conference in Atlanta in October 2014. The first initiatives include planning a networking event at DFI’s 40th Annual Conference in Oakland in October 2015 and creating a grant for young professional women to attend the conference. Please join us to add your voice to the conversation.

6:15pm-7:00pm – *Grand Oaks K/L/M*

**Final Night Reception**

7:15pm-10:00pm – *Cibolo Ballroom*

**Final Night Dinner & Dance**

Don’t miss the Congress’ black & white themed event that promises fun, fellowship and delectable cuisine. You will be energized by the music performed by John Magaldi and the Prime Time Orchestra – big band sounds at its best! Get your dancing shoes ready for an evening you won’t forget. Attire for the evening is cocktail (black tie optional).
Registration Information

**Member Full Conference Registration Includes:** Entrance to Exhibit Areas, Wednesday Conference Breakfast, Wednesday – Friday Box Lunch on Exhibit Floors, Tuesday & Wednesday Evening Receptions, all Technical Sessions (excluding Short Courses), Coffee Breaks, Final Night Reception, Dinner and Dance, and One (1) Conference Proceedings (not included with Spouse/Companion or child registrations)

**Technical Session Day Pass Includes:** For day(s) selected – Technical Sessions, Exhibits, Coffee Breaks, and Box Lunch, and One (1) Conference Proceedings.

**Exhibits-Only Day Pass Includes:** For day(s) selected – Exhibits and Coffee Breaks.

**Short Courses, G-I Ethics Workshop, and 5K Fun Run/Walk** must be purchased separately and are not included in any registration package.

**ATTENDEE LIST**

An attendee list will be emailed to all full conference attendees and exhibitors following the show, and is also available to non-full conference registrants upon request.

**BADGES AND TICKETS**

Please wear your name badge at all times. Name badges are required at all activities. Tickets are required for receptions and meal events. Lost badges and tickets must be repurchased at the registration desk.

**BOOKSTORES**

Bookstores are located in the Indoor Exhibit Area and will be open during exhibit hours.

**CONFERENCE EVALUATIONS**

Your feedback regarding IFCEE 2015 is important! You will be emailed an evaluation at the conclusion of IFCEE.

**CONFERENCE PROCEEDINGS**

All peer-reviewed technical papers are included in the Proceedings provided to Member Full Conference, Government Full Conference, Student Full Conference, and Technical Day Pass attendees. There are over 265 papers in this Proceedings, which will be a valuable reference to all working the geoprofession. Following the standard practice of the Geo-Institute of the American Society of Civil Engineers, each paper published in this Geotechnical Special Publication (GSP) was peer reviewed by at least two anonymous, qualified, technical reviewers (and in some cases three or four reviewers) and selected for publication by the proceedings editors. An advanced document management service was utilized in order to assure anonymity and maintain uniformity of standards. Proceedings will also be available for purchase onsite at the ASCE bookstore or post-conference by download from the ASCE Library at www.ascelibrary.org or in CD format from ADSC at www.adsc-iafd.com, DFI at www.dfi.org or PDCA at www.piledrivers.org.

**CONFERENCE SHUTTLE**

Shuttle service will be provided from the following hotels to the JW Marriott Tuesday, March 17th through Saturday, March 21st.

- Cottonwood Suites North Stone Oak
- Courtyard by Marriott San Antonio North Stone Oak
- Hampton Inn
- Hyatt Place San Antonio/North Stone Oak

**SHUTTLE SCHEDULE**

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**EMERGENCIES**

In case of an emergency, please dial 911 first and then contact the hotel operator at 0 on a hotel phone.

Tickets to all events included in your registration purchase will be printed with your name badge at check in.
### Monday, March 16

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tr>
<td>8:00am-5:00pm</td>
<td>G-I Board of Governors</td>
<td>Sunday House</td>
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<td>12:00pm-1:00pm</td>
<td>G-I Board of Governors Luncheon</td>
<td>Magnolia</td>
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<td>12:00pm-5:00pm</td>
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<td>1:00pm-4:00pm</td>
<td>ADSC Executive Committee</td>
<td>Verbena</td>
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<td>3:00pm-5:00pm</td>
<td>PDCA Executive Committee</td>
<td>Larkspur</td>
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<td>5:00pm-6:00pm</td>
<td>Exhibitors Meeting</td>
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<td><strong>Grand Oaks E/F</strong></td>
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### Tuesday, March 17

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<td>7:00am-6:00pm</td>
<td>Registration Open</td>
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<td>8:00am-1:00pm</td>
<td>G-I Technical Coordination Council (TCC)</td>
<td>Cibolo 10/11</td>
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<td>8:00am-5:00pm</td>
<td>SC 1 In-Situ Testing and Deep Foundation Design</td>
<td>Cibolo 1</td>
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<td>8:00am-5:00pm</td>
<td>SC 2 Cost-Effective Driven-Pile Design</td>
<td>Cibolo 2</td>
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<td>8:00am-5:00pm</td>
<td>SC 3 Managing Safety from Design to Construction</td>
<td>Cibolo 3</td>
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<td>8:00am-5:00pm</td>
<td>SC 4 Deep Foundation QA/QC for Engineers, Contractors, and Inspectors</td>
<td>Cibolo 4</td>
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<td>8:00am-5:00pm</td>
<td>SC 5 Using the Compaction Grouting Consensus Guide (ASCE/G-I 53-10)</td>
<td>Grand Oaks E</td>
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<td>8:00am-12:00pm</td>
<td>SC 6 LRFD Design and Construction of Deep Foundations Made Easy</td>
<td>Grand Oaks F</td>
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<td>8:30am-10:00am</td>
<td>PDCA Technical Committee &amp; DFI Codes &amp; Standards Committee</td>
<td>Grand Oaks A/B</td>
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<td>9:00am-10:00am</td>
<td>ADSC Associates Committee</td>
<td>Grand Oaks C/D</td>
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<td>10:00am-10:30am</td>
<td>Short Course Break</td>
<td>Cibolo 6</td>
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<td>10:00am-12:00pm</td>
<td>DFI Deep Foundations for Landslides/</td>
<td>Dogwood</td>
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<td>Slope Stabilization Committee</td>
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<td>G-I Awards Committee</td>
<td>Bluebonnet</td>
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<td>PDCA Safety/Environment Committee</td>
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<td>G-I GeoWall Captains Meeting</td>
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<td>G-I Organizational Member Council Part I</td>
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<td>G-I Student Professional Development Workshop</td>
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<td>ADSC/DFI Micropile Committee</td>
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<td>USUCGER Annual Meeting</td>
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<td>G-I Student Orientation</td>
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<td>PDCA Communications Committee</td>
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<td>ADSC Soil Mixing Committee</td>
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<td>AGP Ceremony</td>
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<td>G-I Karl Terzaghi Lecture</td>
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<td>ADSC Midwest Chapter Meeting</td>
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<td>6:30pm-8:00pm</td>
<td>Welcome Reception</td>
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<tr>
<td></td>
<td><strong>Indoor Exhibit Hall</strong></td>
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</tbody>
</table>

*(ticket required)*
Wednesday, March 18

7:00am-6:00pm
Registration Open
7:15am-8:00am
5k Fun Run/Walk
Lawn 1
7:30am-8:30am
Conference Buffet Breakfast
(ticket required)
Cibolo 5/6
7:30am-8:30am
Diversity & Inclusion Breakfast
(90 seats available; first come, first served)
Wisteria/Sunflower
8:45am-10:00am
Welcome & Keynote Presentation
Grand Oaks G/H/I
10:00am-10:30am
Networking Break
Indoor/Outdoor Exhibits
10:00am-6:00pm
Exhibits Open
10:00am-11:30am
DFI Testing & Evaluation Committee
Wisteria/Sunflower
10:30am-12:00pm
Technical Session – Deep Foundations for a Multi-Billion Dollar Public Infrastructure Project (Panel)
Cibolo 1/2
10:30am-12:00pm
Technical Session – Augercast/CFA Piles
Cibolo 3/4
10:30am-12:00pm
Technical Session – Deep Foundations
Grand Oaks E/F
10:30am-12:00pm
Technical Session – Design & Performance of Excavation Support Systems
Grand Oaks C/D
10:30am-12:00pm
Technical Session – Engineering for Extreme Events, Part I
Grand Oaks A/B
10:30am-12:00pm
Technical Session – Soil Mixing
Grand Oaks N/O
10:30am-12:00pm
Technical Session – Sustainability in Geotechnology, Part I
Grand Oaks P/Q
10:30am-12:00pm
Technical Session – Recycled Materials for Sustainable Pavements
Grand Oaks R/S
10:30am-12:00pm
G-I Continuing Education Committee
Bluebonnet
11:30am-1:00pm
Lunch
Indoor/Outdoor Exhibits (ticket required)
12:00pm-4:00pm
G-I GeoChallenge – GeoPoster, GeoPrediction & GeoVideo
Cibolo 8/9
12:00pm-4:00pm
G-I GeoChallenge (GeoWall)
Cibolo 7
12:30pm-3:30pm
G-I Local Involvement Committee
Bluebonnet
1:00pm-2:30pm
DFI Manufacturers/Suppliers Committee
Grand Oaks L
1:00pm-3:00pm
ADSC Drilled Shaft Committee
Grand Oaks K
1:00pm-3:30pm
G-I GEOSTRATA Editorial Board
Magnolia
1:00pm-4:00pm
G-I Geoenvironmental Engineering Committee
Wisteria/Sunflower
1:00pm-4:00pm
G-I Soil Improvement/DFI Ground Improvement Committee
Grand Oaks M
2:00pm-3:30pm
PDCA/USUCGER Joint Council
Dogwood
2:30pm-3:00pm
Networking Break
Indoor/Outdoor Exhibits
3:00pm-4:30pm
ADSC Chapter Presidents Council
Indian Paintbrush/Larkspur
3:30pm-5:00pm
DFI Tiebacks & Soil Nailing Committee
Verbena/Periwinkle
### Wednesday, March 18 (cont.)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>3:30pm-5:00pm</td>
<td>PDCA Membership Committee</td>
</tr>
<tr>
<td>Dogwood</td>
<td></td>
</tr>
<tr>
<td>4:00pm-6:00pm</td>
<td>G-I Awards &amp; State-of-the-Institute – A Conversation with Members</td>
</tr>
<tr>
<td>Grand Oaks G/H/I</td>
<td></td>
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<tr>
<td>6:00pm-8:00pm</td>
<td>Reception (ticket required)</td>
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<tr>
<td>Outdoor Exhibit Hall</td>
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<tr>
<td>7:30pm-9:30pm</td>
<td>G-I Chapter Leader Forum</td>
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<tr>
<td>Crooked Branch</td>
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<tr>
<td>Lobby Bar</td>
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</tr>
<tr>
<td>7:30pm-10:00pm</td>
<td>G-I International Activities Council</td>
</tr>
<tr>
<td>Bluebonnet</td>
<td></td>
</tr>
<tr>
<td>8:00pm-12:00am</td>
<td>G-I Embankments, Dams &amp; Slopes Committee</td>
</tr>
<tr>
<td>Verbena</td>
<td></td>
</tr>
<tr>
<td>8:00pm-12:00am</td>
<td>G-I Geotechnics of Soil Erosion Committee</td>
</tr>
<tr>
<td>Periwinkle</td>
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<tr>
<td>8:00pm-12:00am</td>
<td>G-I Soil Properties &amp; Modeling Committee</td>
</tr>
<tr>
<td>Magnolia</td>
<td></td>
</tr>
<tr>
<td>8:00pm-12:00am</td>
<td>G-I Underground Engineering &amp; Construction Committee</td>
</tr>
<tr>
<td>Dogwood</td>
<td></td>
</tr>
<tr>
<td>8:00pm-12:00am</td>
<td>G-I Earthquake Engineering &amp; Soil Dynamics Committee</td>
</tr>
<tr>
<td>Wisteria</td>
<td></td>
</tr>
<tr>
<td>8:00pm-12:00am</td>
<td>G-I Pavements Committee</td>
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<tr>
<td>Sunflower</td>
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### Thursday, March 19

<table>
<thead>
<tr>
<th>Time</th>
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</thead>
<tbody>
<tr>
<td>7:00am-6:00pm</td>
<td>Registration Open</td>
</tr>
<tr>
<td>Grand Oaks G/H/I</td>
<td></td>
</tr>
<tr>
<td>8:30am-10:00am</td>
<td>Technical Session – Drilled Shaft/Best Practices Study (Panel)</td>
</tr>
<tr>
<td>Cibolo 1/2</td>
<td></td>
</tr>
<tr>
<td>8:30am-10:00am</td>
<td>Technical Session – Case Histories – Ground Improvement</td>
</tr>
<tr>
<td>Cibolo 3/4</td>
<td></td>
</tr>
<tr>
<td>8:30am-10:00am</td>
<td>Technical Session – Modeling &amp; Simulation of Fill Walls</td>
</tr>
<tr>
<td>Grand Oaks E/F</td>
<td></td>
</tr>
<tr>
<td>8:30am-10:00am</td>
<td>Technical Session – Excavation Support and Lateral Earth Pressures</td>
</tr>
<tr>
<td>Grand Oaks C/D</td>
<td></td>
</tr>
<tr>
<td>8:30am-10:00am</td>
<td>Technical Session – Engineering for Extreme Events, Part II</td>
</tr>
<tr>
<td>Grand Oaks A/B</td>
<td></td>
</tr>
<tr>
<td>8:30am-10:00am</td>
<td>Technical Session – Ground Improvement &amp; Grouting, Part I</td>
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<tr>
<td>Grand Oaks N/O</td>
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<tr>
<td>Time</td>
<td>Event</td>
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<tr>
<td>1:00pm-3:00pm</td>
<td>PDCA Education Committee</td>
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<tr>
<td>1:00pm-3:00pm</td>
<td>ADSC Women’s Association General Meeting</td>
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<tr>
<td>1:00pm-3:00pm</td>
<td>DFI Seismic &amp; Lateral Loads Committee</td>
</tr>
<tr>
<td>1:30pm-2:30pm</td>
<td>G-I Diversity &amp; Inclusion Committee</td>
</tr>
<tr>
<td>3:00pm-3:30pm</td>
<td>Networking Break</td>
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<tr>
<td>3:30pm-5:00pm</td>
<td>PDCA Market Development Committee</td>
</tr>
<tr>
<td>3:30pm-4:30pm</td>
<td>ADSC Membership Council</td>
</tr>
<tr>
<td>3:45pm-5:45pm</td>
<td>DFI Slurry Wall Committee</td>
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<tr>
<td>5:00pm-6:30pm</td>
<td>ADSC Michael O’Neill Lecture</td>
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<tr>
<td>6:30pm-7:00pm</td>
<td>ADSC Michael O’Neill Reception</td>
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<tr>
<td>7:00pm-8:30pm</td>
<td>PDCA PDPI Reunion Reception</td>
</tr>
<tr>
<td>7:30pm-8:30pm</td>
<td>G-I Student Travel Grant Winners &amp; Organizational Member Career Fair</td>
</tr>
<tr>
<td>7:30pm-9:30pm</td>
<td>G-I Geosynthetics Committee</td>
</tr>
<tr>
<td>7:30pm-12:00am</td>
<td>G-I Computation Geotechnics</td>
</tr>
<tr>
<td>8:00pm-12:00am</td>
<td>G-I Shallow Foundations Committee</td>
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<tr>
<td>8:00pm-12:00am</td>
<td>G-I Earth Retaining Structures</td>
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<tr>
<td>8:00pm-12:00am</td>
<td>G-I Unsaturated Soils</td>
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<tr>
<td>8:00pm-12:00am</td>
<td>G-I Geophysical Engineering</td>
</tr>
<tr>
<td>8:30pm-9:30pm</td>
<td>G-I Student Program: Organizational Member &amp; Student Reception</td>
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### Friday, March 20

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30am-5:00pm</td>
<td>Registration Open</td>
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<tr>
<td>7:30am-8:30am</td>
<td>DFI Ben C. Gerwick Award and Lecture</td>
<td>Grand Oaks G/H/I</td>
</tr>
<tr>
<td>7:30am-9:30am</td>
<td>PDCA General Business Breakfast Meeting</td>
<td>Grand Oaks M</td>
</tr>
<tr>
<td>8:00am-9:00am</td>
<td>ADSC Industry Advancement Steering Committee</td>
<td>Indian Paintbrush/Larkspur</td>
</tr>
<tr>
<td>8:00am-10:00am</td>
<td>DFI Sustainability Committee</td>
<td></td>
</tr>
<tr>
<td>8:30am-10:00am</td>
<td>Technical Session – Liquefaction: Recent Developments</td>
<td>Cibolo 1/2</td>
</tr>
<tr>
<td>8:30am-10:00am</td>
<td>Technical Session – Case Histories Problematic Soils</td>
<td>Cibolo 3/4</td>
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<tr>
<td>8:30am-10:00am</td>
<td>Technical Session – Driven Piles, Part I</td>
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<tr>
<td>8:30am-10:00am</td>
<td>Technical Session – Working in Dense Urban Environments</td>
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<tr>
<td>8:30am-10:00am</td>
<td>Technical Session – New Instrumentation Techniques, Case Studies, Lessons Learned, Part I</td>
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<tr>
<td>8:30am-10:00am</td>
<td>Technical Session – Geothermal Energy Foundations, Part I</td>
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<tr>
<td>8:30am-10:00am</td>
<td>Technical Session – Geoenviromental</td>
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<tr>
<td>8:30am-10:00am</td>
<td>Technical Session – Advanced Modeling of Geotechnical Systems</td>
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<tr>
<td>9:00am-10:30am</td>
<td>ADSC IAF Trustees (closed meeting)</td>
<td>Sunday House</td>
</tr>
<tr>
<td>9:00am-10:30am</td>
<td>G-I Organizational Member Council Part II</td>
<td>Dogwood</td>
</tr>
<tr>
<td>10:00am-10:30am</td>
<td>Networking Break</td>
<td>Indoor/Outdoor Exhibits</td>
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<tr>
<td>10:00am-6:00pm</td>
<td>Exhibits Open</td>
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<tr>
<td>10:30am-11:30am</td>
<td>ADSC Governance Committee</td>
<td>Indian Paintbrush/Larkspur</td>
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<tr>
<td>10:30am-12:00pm</td>
<td>G-I Regional Event Task Force</td>
<td>Dogwood</td>
</tr>
<tr>
<td>Time</td>
<td>Event</td>
<td>Location</td>
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<tr>
<td>10:30am-12:00pm</td>
<td>DFI Electric Power System Foundations Working Group</td>
<td>Verbena/Periwinkle</td>
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<tr>
<td>10:30am-12:00pm</td>
<td>Technical Session – Engineering Education (Panel)</td>
<td>Cibolo 1/2</td>
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<tr>
<td>10:30am-12:00pm</td>
<td>Technical Session – Deep Foundations/Ground Improvement (Panel)</td>
<td>Cibolo 3/4</td>
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<tr>
<td>10:30am-12:00pm</td>
<td>Technical Session – Driven Piles, Part II</td>
<td>Grand Oaks C/D</td>
</tr>
<tr>
<td>10:30am-12:00pm</td>
<td>Technical Session – Digging in the City – The Good, the Bad, and the Ugly (Panel)</td>
<td>Grand Oaks E/F</td>
</tr>
<tr>
<td>10:30am-12:00pm</td>
<td>Technical Session – New Instrumentation Techniques, Case Studies, Lessons Learned, Part II</td>
<td>Grand Oaks A/B</td>
</tr>
<tr>
<td>10:30am-12:00pm</td>
<td>Technical Session – Geothermal Energy Foundations, Part II</td>
<td>Grand Oaks N/O</td>
</tr>
<tr>
<td>10:30am-12:00pm</td>
<td>Technical Session – Engineering Geology &amp; Site Characterization</td>
<td>Grand Oaks P/Q</td>
</tr>
<tr>
<td>10:30am-12:00pm</td>
<td>Technical Session – Design and Assessment of Geostructures, Part I</td>
<td>Grand Oaks R/S</td>
</tr>
<tr>
<td>10:30am-12:00pm</td>
<td>Lunch (ticket required)</td>
<td>Indoor/Outdoor Exhibits</td>
</tr>
<tr>
<td>6:15pm-7:00pm</td>
<td>Final Night Reception (ticket required)</td>
<td>Grand Oaks K/L/M</td>
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<tr>
<td>7:15pm-10:00pm</td>
<td>Final Night Dinner &amp; Dance</td>
<td>Cibolo Ballroom</td>
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**Saturday, March 21**

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<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>7:30am-11:30am</td>
<td>Registration Open</td>
<td></td>
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<tr>
<td>8:00am-12:00pm</td>
<td>ADSC Board of Directors</td>
<td>Cibolo 8/9/10</td>
</tr>
<tr>
<td>8:30am-10:00am</td>
<td>G-I Ralph B. Peck Medal Lecture</td>
<td>Grand Oaks G/H/I</td>
</tr>
<tr>
<td>9:00am-12:00pm</td>
<td>Exhibits Open</td>
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<tr>
<td>10:00am-10:30am</td>
<td>Networking Break</td>
<td>Indoor/Outdoor Exhibits</td>
</tr>
<tr>
<td>10:30am-12:00pm</td>
<td>Technical Session – Lessons learned from Natural Disaster Reconnaissance and Litigation Analysis (Panel)</td>
<td>Cibolo 1/2</td>
</tr>
<tr>
<td>10:30am-12:00pm</td>
<td>Technical Session – Advanced Analysis &amp; Soil Structure Interaction for Shallow Foundations</td>
<td>Cibolo 3/4</td>
</tr>
<tr>
<td>10:30am-12:00pm</td>
<td>Technical Session – Driven Piles, Part III</td>
<td>Grand Oaks E/F</td>
</tr>
<tr>
<td>10:30am-12:00pm</td>
<td>Technical Session – Numerical Methods with Performance Observations for Deep Foundations</td>
<td>Grand Oaks C/D</td>
</tr>
<tr>
<td>10:30am-12:00pm</td>
<td>Technical Session – Design &amp; Assessment of Geostructures</td>
<td>Grand Oaks A/B</td>
</tr>
<tr>
<td>10:30am-12:00pm</td>
<td>Technical Session – Wind Energy Foundations</td>
<td>Grand Oaks N/O</td>
</tr>
<tr>
<td>10:30am-12:00pm</td>
<td>Technical Session – Unsaturated Soils</td>
<td>Grand Oaks P/Q</td>
</tr>
<tr>
<td>10:30am-12:00pm</td>
<td>Technical Session – Design and Assessment of Geostructures, Part II</td>
<td>Grand Oaks R/S</td>
</tr>
<tr>
<td>12:00pm-4:00pm</td>
<td>G-I H. Bolton Seed Medal Lecture</td>
<td>Magnolia</td>
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A FOUNDATION EQUIPMENT COMPANY
WITH AMERICA AT OUR CORE

Authorized CZM Dealers:
South Central US: blaze-equip.com | Central Canada: superiortruck.ca

EK250
SHORT MAST

TECHNICAL SPECIFICATIONS
CAT .................................................. 336 HHP
Base ........................................ CAT C9.3 Acert Tier IV
Drilling Depth ........................................... 60 ft
Drilling Diameter ........................... 156 inches
Maximum Torque ................................ 234,500 lbf.ft
Main Winch ................................ 58,700 lbf
Working Height ..................................... 30 ft
Transport Weight................................. 102,300 lbs

CZM Foundation Equipment
141 East Industrial Blvd
Pembroke, GA 31321
(912) 200-7661 | CZM-US.com

Please visit us at
Booths 3002, 3008, 3014
Short Courses

Tuesday, March 17 – 8:00am (PDHs Available)

SC 1 In-Situ Testing and Deep Foundation Design – Cibolo 1

Course Synopsis: This session will cover deep foundation design subjected to static loading on the basis of in-situ testing, specifically SPT, CPT, and PMT. It will include single piles and pile groups under vertical and horizontal loads but will not include non-destructive testing of bored piles and pile driving. Many worked out examples will be presented.

Instructor: Jean-Louis Briaud, Ph.D., P.E., Professor and Holder of the Buchanan Chair, Zachry Dept. of Civil engineering, Texas A&M University, and Distinguished Member of ASCE.

A copy of Professor Briaud's 2013 book: “Geotechnical Engineering: Unsaturated and Saturated Soils” is included in the cost of the short course.

SC 2 Cost-Effective Driven-Pile Design – Cibolo 2

Course Synopsis: This course will present innovative, practical, and pragmatic approaches to cost-effective driven-pile design, testing, and installation. The session will cover the concept of foundation support cost as a tool to compare the cost-effectiveness of viable design and testing alternatives. A rigorous approach to selecting appropriate allowable pile loads based on structure support requirements (load matching) will be presented. Various construction-control/field testing methods will be discussed, along with their potential costs and value-added benefits to both the geotechnical and structural aspects of driven-pile design. All topics will be illustrated with real-world case histories and cost evaluations.


SC 3 Managing Safety from Design to Construction – Cibolo 3

Course Synopsis: This safety course will provide a basic overview of how safety is integrated into the various stages of a deep foundation construction project from the design stage to the actual installation of the foundation or earth retention elements from a specialty subcontractor’s perspective. Areas that will be addressed will be: Design for Safety for Deep Foundations and Earth Retention; Insurance and Risk Management Basics; Overview of Existing Safety Standards that Govern Our Industry; and Basic Safety for Large Diameter Holes and Pile Driving Equipment. This training program, taught by experienced Safety Managers and Insurance Risk Control Specialists working in the Deep Foundation Industry is aimed at those individuals who will play a part in the successful completion of a project be it from a design or installation process.


SC 4 Deep Foundation QA/QC for Engineers, Contractors, and Inspectors – Cibolo 4

Course Synopsis: Quality Assurance and Quality Control are important and integral parts to the success of deep foundations projects. Design, construction, testing, and inspection constitute the four main components and interactively contribute to the process. This full-day short course includes presentations on the various QA/QC methods for driven piles, drilled shafts and auger-cast piles. Also presented will be discussions on deep foundations design principles, installation methods and equipment, important inspection aspects, and different testing methods’ applications, advantages and disadvantages.

Instructors: Michael Justason, P.E., M.Eng., M.B.A., McMaster University/Birmingham Foundation Solutions; Mohamad Hussein, P.E., GRL Engineers, Inc., Past-Chairman ASCE Geo-Institute’s Deep Foundations Committee and PDCA Education Committee


Course Synopsis: This is a practical course focused on concepts essential to effective compaction grouting. The basics of compaction grouting, including materials, equipment, design, and application will be addressed and demonstrated with case histories. The theoretical basis for compaction grouting will be covered together with applications using the guidance outlined in the Compaction Grouting Consensus Guide. The content of the Guide will be reviewed with an eye toward practical application. Additional discussions of other applications of the technology of Limited Mobility Grouting will also be presented.


This Short Course ends at 12:00pm

Course Synopsis: This interactive course addresses the practical application of Load Resistance Factor Design principles for driven and drilled deep foundations based on the American Association of State Highway & Transportation Officials (AASHTO) Bridge Design and Construction Specifications. The material presented represents good practice for all types of deep foundation projects, both public and private for all infrastructure projects and industries.

**Wednesday, March 18 – 10:30am-12:00pm**

**DEEP FOUNDATIONS FOR A MULTI-BILLION DOLLAR PUBLIC INFRASTRUCTURE PROJECT**

*Cibolo 1/2*

*Moderator:* Peggy Hagerty Duffy, P.E., ADSC: The International Association of Foundation Drilling

*Panelists:* Scott Dodds, P.E., Moretrench; Michael K. Minton, P.E., Hayward Baker, Inc.; Craig A. Myers, Hayes Drilling, Inc.; Silas C. Nichols, Federal Highway Administration (FHWA); Andrew Proffitt, McKinney Drilling Company

**AUGERCAST/CFA PILES**

*Cibolo 3/4*

*Moderator:* W. Morgan NeSmith, P.E., Berkel & Company Contractors Inc.

*Overburden Effect on the Axial Resistance of Instrumented CFA Piles*

*Thermal Integrity Profiling of ACIP Piles*
Matthew Becker, GRL Engineers; Travis Coleman, P.E., GRL Engineers; Daniel Belardo, GRL Engineers

*Region-Specific Load Transfer Model for Augered Cast-in-Place Piles in Granular Soils*
Nasim Adami, Oregon State University; Armin Stuedlein, P.E., Oregon State University

*Load Displacement Behavior of ACIP Piles in Mixed Soil Profile*
Kalaiarasi Vembu, Ph.D., Fugro GeoConsulting Inc.; Cumaraswamy Vipulanandan, P.E., Ph.D., University of Houston

**DEEP FOUNDATIONS**

*Grand Oaks E/F*

*Moderator:* Jesús Gómez, Ph.D., P.E., D.GE, GEI Consultants, Inc.

*Uplift Tests on Shallow Cast-in-Place Enlarged Base Pedestal Foundations in Clay*
Alan Lutenegger, Ph.D., University of Massachusetts

*Enhancement of Pervious Concrete Pile Subjected to Uplift Load Using Microbial Induced Carbonate Precipitation*
Hai Lin, B.S., Lehigh University; Muhamad Suleiman, Ph.D., Lehigh University; Hanna Jabour, Lehigh University; Derick Brown, Ph.D., Lehigh University

**A Study of Plane Strain Pile Jacking and Driving in Granular Media**
Filippo Boccalini, M.Sc., New York University; Zhibo (Chris) Chen, New York University; Mehdi Omidvar, M.Sc., New York University; Magued Iskander, Ph.D., PE, New York University

**Installation and Load Capacity of Torpedo Anchors in Offshore Applications**
Anirban De, Ph.D., P.E., Manhattan College; David Pecorini, Manhattan College; Alberto Morgante, Manhattan College

**Development of Removable Load Distributive Compressive Anchor Technology**

**DESIGN AND PERFORMANCE OF EXCAVATION SUPPORT SYSTEMS**

*Grand Oaks C/D*

*Moderator:* Elizabeth M. Dwyre, P.E., D.GE, Parsons Brinckerhoff, Inc.

*Design and Construction of a Permanent Earth Retention System in Stiff Fissured Clay and Landslide Rubble*
Richard Valentine, P.E., Valentine Engineering Associates; Thomas Brandon, Ph.D., P.E., Virginia Tech

*North American Trends and Developments of Complex Support of Excavation Systems*

*Robust Design Optimization Applied to Braced Excavations in Multi-Layer Strata*
Sara Khoshnevisan, Ph.D. Student, Clemson University; Lei Wang, Ph.D., Clemson University; Wenping Gong, Clemson University; Hsein Juang, Ph.D., Clemson University

*Monitoring a Drilled Shaft Retaining Wall in Expansive Clay: Long-Term Performance in Response to Moisture Fluctuations*
Andrew Brown, Ph.D., E.I.T., Geosyntec Consultants, Inc.; Gregory Dellinger, M.S., E.I.T., The University of Texas at Austin; Ali Helwa, The University of Texas at Austin; Chadi El Mohtar, Ph.D., The University of Texas at Austin; Jorge Zornberg, Ph.D., P.E., The University of Texas at Austin; Robert Gilbert, Ph.D., P.E., D.GE, The University of Texas at Austin

**Numerical Investigation of Gravity Wall-Granular Soil Interaction**
Dimitrios Loukidis, University of Cyprus; Rodrigo Salgado, Purdue University
**Technical Sessions – Concurrent (Cont.)**

*Wednesday, March 18 – 10:30am-12:00pm (cont.)*

**ENGINEERING FOR EXTREME EVENTS, PART 1**  
Grand Oaks A/B

*Moderator: Adda Athanasopoulos-Zekkos, Ph.D., University of Michigan, Anne Lemnitzer, Ph.D., University of California, Irvine*

**Seismic Hazard Curves for the Probability of Liquefaction**  
Kristin Ulmer, Brigham Young University; Kevin Franke, Ph.D., P.E., Brigham Young University; Brian Peterson, Brigham Young University

**Analysis of Drilled Shaft Settlement Caused by Liquefaction**  
Benjamin Turner, P.E., University of California, Los Angeles; Scott Brandenberg, Ph.D., University of California, Los Angeles; Jonathan Stewart, Ph.D., P.E., University of California, Los Angeles

**Regional Geology and Seismic Site Amplification in the Washington, D.C. Metropolitan Area**  
Mark Tilashalski, E.I.T., Virginia Tech; Guney Olgun, Ph.D., Virginia Tech; Adrian Rodriguez-Marek, Ph.D., Virginia Tech; Elizabeth Godfrey, Virginia Tech; Morgan Eddy, Steele Foundation, LLC; Martin Chapman, Ph.D., Virginia Tech; Sharmin Shamasalsadati, Virginia Tech

**Performance of Skewed Bridge Abutments from Large-Scale Testing**  
Kyle Rollins, Ph.D., Brigham Young University; Katie Palmer, Kleinfelder; Amy Fredrickson, Brigham Young University

**SOIL MIXING**  
Grand Oaks N/O


**Implementation of Optimized Ground Improvement Techniques for a Prime Real Estate Location in Southern California**  

**Wet Grab Samples vs. Cored Samples as QC/QA Methods at the Rio Puerto Nuevo Project in San Juan, PR**  
Filippo Maria Leoni, Treviicos; Wesley Schmutzler, Treviicos

**Ground Improvements for a Sloped Runway Expansion**  

**SUSTAINABILITY IN GEOTECHNOLOGY, PART 1**  
Grand Oaks P/Q

*Moderator: Nazli Yesiller, Ph.D., California Polytechnic State University*

**Sustainability Assessment of Two Alternate Earth-Retaining Structures**  
Rajiv Kumar Giri, University of Illinois at Chicago; Krishna Reddy, Ph.D., P.E., D.GE, F.ASCE, University of Illinois at Chicago

**Beneficial Reuse of Waste Insulation Material in Drilling Applications**  
Madison Bertoch, The University of Texas at Austin; Nazli Yesiller, Ph.D., California Polytechnic State University; James Hanson, P.E., Ph.D., California Polytechnic State University

**Geotechnical Properties of Lightly Stabilized Recycled Demolition Materials in Base/Sub-Base Applications**  
Ariereza Mohammadinia, Swinburne University of Technology; Arul Arulrajah, Ph.D., Swinburne University of Technology; Jay Sanjayan, Swinburne University of Technology; Mahdi Disfani, Swinburne University of Technology; Myint Bo, DST Consulting Engineers Inc.; Stephen Darmawan, Geotexa Pty Ltd

**Beneficial Reuse of Fine Grained Soils for Port, River, and Shoreline Applications**  
Mohammed Bazne, Mississippi State University; Farshid Vahedifard, Ph.D., Mississippi State University; Isaac Howard, Mississippi State University

**An Overview of Sustainability Applied to Earth Structures**  

**RECYCLED MATERIALS FOR SUSTAINABLE PAVEMENTS**  
Grand Oaks R/S

*Moderator: Charles W. Schwartz, Ph.D., University of Maryland*

**Use of Fluidized Bed Combustion Ash in Full-Depth Reclamation**  
Shervin Jahangirnejad, P.E., Quality Engineering Solutions, Inc.; Dennis Morian, P.E., Quality Engineering Solutions, Inc.; Barry Scheetz, Pennsylvania State University; Mansour Solaimanian, P.E., Pennsylvania State University

**Sustainable Alternatives in Low Volume Road Base Course Applications Evaluated through Accelerated Pavement Testing**  
Hasan Kazmee, University of Illinois; Debakanta Mishra, Ph.D., University of Illinois; Erol Tutumluer, Ph.D., University of Illinois
In-Place Recycling Moisture-Density Relationships for High-Traffic Applications
Ben Cox, Mississippi State University; Isaac Howard, Ph.D., P.E., Mississippi State University; Randy Battey, Gresham, Smith and Partners

Recent Advances in p-y Formulations for Lateral Load Transfer of Deep Foundations Based on Experimental Studies
Camilla Favaretti, University of CA, Irvine; Anne Lemnitzer, Ph.D., University of CA, Irvine; Armin Stuedlein, Ph.D., Oregon State University; John Turner, Ph.D., Dan Brown and Associates

Performance of Tanks Supported on DMM Columns in Soft Clay: Hydrotest Monitoring and Settlement Analysis
Mahi Galagoda, Bechtel OG&C; Keun Rhee, Bechtel OG&C; Carlos Fuentes, Bechtel OG&C

MODELING AND SIMULATION OF FILL WALLS
Grand Oaks E/F
Moderator: Helen Robinson, P.E., Schnabel Engineering
Numerical Study of Deformation Behavior for a Geosynthetic-Reinforced Soil Bridge Abutment under Static Loading
Yewei Zheng, University of California, San Diego; Patrick Fox, University of California, San Diego; Benson Shing, University of California, San Diego
Analysis of Reinforced Soil Wall Considering Oblique Pullout of Reinforcement Resting on Two-Parameter Pasternak Subgrade
Shantanu Patra, Ph.D., NIT Rourkela, India; J.T. Shahu, Ph.D., Indian Institute of Technology Delhi, India
Effect of Single and Double Anchored Systems on the Behavior of Cellular Reinforced Fly Ash Walls
Ram Rathan Lal Birali, Indian Institute of Technology Bombay; Amit Padade, Indian Institute of Technology Bombay; Jnanendranath Mandal, Ph.D., Indian Institute of Technology Bombay
Impact of Compaction Level and Depth of Fill on the Pullout Resistance of Ribbed Strip MSE Reinforcement
Priyantha Jayawickrama, Ph.D., Texas Tech University; William Lawson, P.E., Ph.D., Texas Tech University; Timothy Wood, Texas Tech University; James Surles, Ph.D., Texas Tech University
Seismic Thrust vs Wall Inertia in Non-Yielding Retaining Walls under Earthquake Loading: Synchronous or Asynchronous Action?
Vasileios Kitsis, M.Sc., University of Patras; Vasileios Vlachakis, M.Sc., University of Patras; George Athanasopoulos, Ph.D., University of Patras; Adda Athanasopoulos-Zekkos, Ph.D., University of Michigan

EXCAVATION SUPPORT AND LATERAL EARTH PRESSURES
Grand Oaks C/D
Moderator: Augusto Lucarelli, P.E., Itasca Consulting Group
Apparent Lateral Earth Pressures below the Lowest Support Level for Multi-Level-Braced Excavations
Dimitrios Konstantakos, P.E., Deep Excavation LLC
Experimental Investigation of Applicability of Sand Tire Chip Mixtures as Retaining Wall Backfill
Pradeep Dammala, M.E., Indian Institute of Technology Guwahati;
Thursday, March 19 – 8:30am-10:00am (cont.)

Bali Sodom, Ph.D., Indian Institute of Technology Guwahati; Murali Adapa, Ph.D., Indian Institute of Technology Guwahati

Panel Discussion:
Future of Earth Retaining Structure Design and Practice – For the second part of the session, plan on joining presenters and organizers in an open and provocative panel discussion on the future of earth retention design and practice.

ENGINEERING FOR EXTREME EVENTS, PART II

Grand Oaks A/B

Moderators: Brady R. Cox, Ph.D., P.E., The University of Texas at Austin; Armin W. Stuedlein, Ph.D., P.E., Oregon State University

Liquefaction of Granular Soils at the Microscale
Usama El Shamy, Ph.D., P.E., Southern Methodist University; Yasser Abdelhamid, Southern Methodist University

Centrifuge Testing of Levees: Saturation Techniques during Model Construction
Samuel Yniesta, University of CA, Los Angeles; Riccardo Cappa, University of CA, Irvine; Anne Lemnitzer, Ph.D., University of CA, Irvine; Scott Brandenberg, Ph.D., University of CA, Los Angeles

Multiscale Modeling of Fine Particles Migration in Granular Filters
Yasser Abdelhamid, Southern Methodist University; Usama El Shamy, Ph.D., P.E., Southern Methodist University

Scour Characteristics of Saturated Levees Due to Floodwall Overtopping
Mazdak Karimpour, Southern Illinois University Edwardsville; Kyle Heinzl, Southern Illinois University Edwardsville; Emaline Stendback, Southern Illinois University Edwardsville; Kevin Galle, Southern Illinois University Edwardsville; Siavash Zamiran, Southern Illinois University Edwardsville; Abdolreza Osooli, Ph.D., P.E., Southern Illinois University Edwardsville

Soil Compressibility in Transient Unsaturated Seepage Analyses
Timothy Stark, P.E., Ph.D., D.GE., University of Illinois Urbana-Champaign; Navid Jafari, M.S., University of Illinois Urbana-Champaign; Aaron Leopold, University of Illinois Urbana-Champaign; Thomas Brandon, P.E., Ph.D., Virginia Tech

GROUND IMPROVEMENT AND GROUTING, PART I

Grand Oaks N/O

Moderators: Jose Luiz Machado Clemente, Ph.D., P.E., D.GE, F.ASCE, Bechtel Power Corporation; Ali Maher, Ph.D., Rutgers, The State University of New Jersey

Ground Improvement: Difficulties in Measuring Success
James Pegues, P.E., Southern Company; Jacob Jordan, P.E., Southern Company; Yingwu Xu, Ph.D., P.E., WorleyParsons

Characterization of Smear Zone Caused by Mandrel Action
Buddhima Indraratna, Ph.D., M.Eng., B.Eng., Centre for Geomechanics and Railway Engineering; Cholachat Rujikijakamjorn, University of Wollongong; Made Ardana, University of Wollongong

Stress-Strain Behavior of Cement-Improved Clays
Allison Quiroga, M.S., University of Oklahoma; Kanthasamy Muraleetharan, G.E., P.E., Ph.D., University of Oklahoma; Gerald Miller, P.E., Ph.D., University of Oklahoma; Amy Cerato, P.E., Ph.D., University of Oklahoma

A Numerical Study of the Installation-Induced Stresses and Excess Pore-Water Pressures around Rigid Inclusions Using a Linear Elastic Perfectly Plastic Soil Model
Alfonso Rivera, Virginia Tech; Guney Olgun, Virginia Tech; Thomas Brandon, Virginia Tech; Frederic Masse, Menard USA

Shear Wave Velocity Measurements of Stone Column Improved Ground and Effect on Site Response
Armin Stuedlein, P.E., Oregon State University; Abbas Abdollahi, Oregon State University; H. Mason, Ph.D., Oregon State University; Rowland French, Ph.D., Zonge International

GEOTECHNICAL EDUCATION FOR THE 21ST CENTURY ENGINEER

Grand Oaks P/Q

Moderator: L. Sebastian Bryson, Ph.D., P.E., University of Kentucky

Views and Concerns with Regard to Teaching Geotechnical Engineering: Viable Strategies for the Classroom Environment
Waddah Akili, Ph.D., P.E., Geotechnical Engineering

Enhancing Students’ Problem-Solving Skills through Progressive Integration of Project-Based Learning
Hudson Jackson, Ph.D., P.E., United States Coast Guard Academy; Kassim Tarhini, Ph.D., P.E., United States Coast Guard Academy

Inclusionary Instructional Methods Addressing a Diversity of Learners in Geotechnical Engineering Education
Tanya Kunberger, Ph.D., Florida Gulf Coast University

Are There Gender Differences in the Value Civil and Environmental Engineering Students Place on Service Provided through Service-Learning Projects?
John Lens, P.E., University of Vermont; Mandar Dewoolkar, Ph.D., P.E., University of Vermont
Support of Women Geotechnical Engineering Faculty; History and Initiatives  
Shobha Bhatia, Syracuse University; Beena Sukumaran, Rowan University; Sharon Alestalo, Syracuse University

**NUMERICAL METHODS APPLIED TO SOILS AND FOUNDATIONS**  
Grand Oaks R/S  
*Moderators:* Paul W. Mayne, Ph.D., P.E., Georgia Institute of Technology; Timothy C. Siegel, P.E., G.E., D.GE, Dan Brown and Associates

**Numerical Investigation of Group Anchors**  
Buse Emirler, Ph.D. Student, Çukurova University; Selçuk Bildik, Osmaniye Korkut Ata University; Mustafa Laman, Çukurova University

**Streamlining of Bridge Pier as a Scour Countermeasure: A Feasibility Study**  
Junhong Li, The University of Akron; Junliang Tao, Ph.D., The University of Akron; Xiong Yu, Ph.D., Case Western Reserve University

**Visualizing the Shallow Failure Mechanism of the T-bar Penetrometer**  
Jeff Wallace, EIT, University of Illinois at Urbana-Champaign; Christopher Chini, EIT, University of Illinois at Urbana-Champaign; Cassandra Rutherford, Ph.D., EIT, University of Illinois at Urbana-Champaign; Joshua Peschel, Ph.D., EIT, University of Illinois at Urbana-Champaign

**Soil-Structure Interactions in a Skewed Integral Abutment Bridge**  
Karrthik Kirupakaran, Ph.D., FloaTEC, LLC; Kanthasamy Muraleetharan, Ph.D., University of Oklahoma; Gerald Miller, Ph.D., University of Oklahoma

**R-LRFD: Robust Load and Resistance Factor Design Method**  
Wenping Gong, Clemson University; Sara Khoshnevisan, Clemson University; Hongwei Huang, Ph.D., Tongji University; C. Hsein Juang, Clemson University; Jie Zhang, Tongji University

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**Thursday, March 19 – 10:30am-12:00pm**

**DRIVEN PILES – BEST PRACTICES**  
Cibolo 1/2  
*Moderator:* Michael D. Justason, P.E., M.Eng., M.B.A., McMaster University/Bermingham Foundation Solutions

**LFRD Implementation**  
Derrick D. Dasenbrock, P.E., Minnesota Department of Transportation

**Load-Test Design**  

**Current Issues/FHWA**  
Silas C. Nichols, Federal Highway Administration (FHWA)

**CASE HISTORIES – FOUNDATIONS**  
Cibolo 3/4  
*Moderator:* John Jenkins, P.E., Parsons Brinckerhoff, Inc.

**Reconstruction of Route 33 Bridges at West Point, Virginia**  
Jan Hartman, P.E., Oweis Engineering, Inc.; Frank Pepe Jr., P.E., Parsons Brinckerhoff, Inc.; Ragui Fahmy, Ph.D., P.E., Parsons Brinckerhoff, Inc.

**STATNAMIC Load Test for 30-inch Precast Prestressed Square Concrete Pile: A Case History**  
Raymond Mankbadi, P.E., Hardesty & Hanover, LLC; Aravinda Ramakrishna, P.E., Hardesty & Hanover, LLC

**Case Histories of Full-Scale Comparative Load Testing of Base Grouted and Ungrouted Test Shaft Pairs**  
Jon Sinnreich, M.Eng., Loadtest; Robert Simpson, Loadtest

**Current Limitations and Challenges of Driven Piles on Rock as Demonstrated Using Three Case Studies in Wyoming**  
Kam Ng, University of Wyoming; Seyed Yashar Yasrobi, University of Wyoming; Todd Sullivan, Wyoming Department of Transportation

**A Synthesis of Pile Performance Monitoring Projects in Downdrag Environments in Minnesota**  
Aaron Budge, Ph.D., P.E., Minnesota State University, Mankato; Derrick Dasenbrock, P.E., Minnesota Department of Transportation; Dan Mattison, P.E., Minnesota Department of Transportation

**DEEP FOUNDATIONS INCLUDING MICROPILES, HELICAL PILES, AND ANCHORS**  
Grand Oaks E/F  
* Moderator: * Mark E. Bryant, MacLean Power Systems

**Numerical Modeling in Micropile Design for a Pusher Furnace**  
Timothy Siegel, P.E., G.E., D.GE, Dan Brown and Associates PC; R. Bivens, P.E., Rembco Geotechnical Contractors

**Monitoring Micropile Foundations of Bridge during Construction**  
Ronaldo Luna, P.E., Ph.D., Missouri S&T; Devin Dixon, Federal Highway Administration; Kyle Kershaw, P.E., Ph.D., Rose Hulman Institute of Technology; Timothy Siegel, P.E., G.E., D.GE, Dan Brown and Associates PC
Thursday, March 19 – 10:30am-12:00pm (cont.)

Bearing and Friction Design Capacity Software for Helical Anchors and Piles
Gary Seider, P.E., Hubbell Power Systems, Inc.

Axial Tension and Lateral Capacity of Step-Tapered Helical Piles for Transmission Pole Structures

Lateral Performance of Large-Capacity Helical Piles
Mohamed Elkasabgy, P.Eng., Ph.D., AMEC Environment and Infrastructure; M. Hesham El Naggar, P.Eng., Ph.D., Western University

**DRILLED SHAFTS/BORED PILES**

**Grand Oaks C/D**

*Moderator:* Larry L. “Lance” Kitchens, P.E., Russo Corporation

Numerical Simulation of a Drilled Shaft in an MSE Wall under Cyclic Loading
Md. Rahman, Geo-Explorers; Jie Huang, P.E., Ph.D., University of Texas at San Antonio; Sazzad Bin-Shafique, P.E., Ph.D., University of Texas at San Antonio

Seismic Site Characterization in Support of Drilled Shaft Design in Southern Nevada
Rinu Samuel, E.I.T, University of Nevada Las Vegas; Yasaman Badrzadeh, University of Nevada Las Vegas; Barbara Luke, University of Nevada Las Vegas; Andrew Lawrence, Nevada Department of Transportation; Raj Siddharthan, University of Nevada Reno; Abbas Baighi, Nevada Department of Transportation

Separating Contributions from Pre-Mobilization and Ground Improvement for Post-Grouted Drilled Shafts
Tayler Day, University of Missouri; Andrew Boeckmann, P.E., University of Missouri; J. Erik Loehr, Ph.D., P.E., University of Missouri

Case History: Margaret McDermott Bridge over I-30
Bo Walker, Texas Shafts, Inc.; Andrew Smith, P.E., Texas Shafts, Inc.

**CHANGING DEMOGRAPHICS AND GEOTECHNICAL ENGINEERING (Panel)**

**Grand Oaks A/B**

*Moderator:* Paola Bandini, Ph.D., P.E., New Mexico State University


**GROUND IMPROVEMENT AND GROUTING, PART II**

**Grand Oaks N/O**

*Moderators:* Kord J. Wissmann, Ph.D., P.E., D.GE, Geopier Foundations; Ali Maher; Ph.D., Rutgers, The State University of New Jersey

Enzyme Induced Carbonate Precipitation (EICP) Columns for Ground Improvement
Edward Kavazanjian, P.E., Ph.D., D.GE, NAE, Arizona State University; Nasser Hamdan, Arizona State University

Mitigation of Earthquake-Induced Liquefaction via Microbial Denitrification: A Two-Phase Process
Edward Kavazanjian, P.E., Ph.D., D.GE, NAE, Arizona State University; Sean O’Donnell, Arizona State University

Drained Shear Strength of MICP Sand at Varying Cementation Levels
Kai Feng, North Carolina State University; Brina Montoya, Ph.D., P.E., North Carolina State University

Contact Fatigue: A Key Mechanism in Time-Dependent Behavior of Sand after Dynamic Compaction
Radoslaw Michalowski, Ph.D., University of Michigan; Srinivasa Nadukuru, Ph.D., Geosyntec

Post-Grouting Stability of Bentonite Suspensions within Sand Pores
Chadi El Mohtar, Ph.D., University of Texas at Austin; May ElKhattab, Arup; Ritika Sangroya, University of Texas Austin

**SUSTAINABILITY IN GEOENGINEERING, PART II**

**Grand Oaks P/Q**

*Moderator:* Patricia Gallagher, Ph.D., P.E., Drexel University

Carbon Footprint of Tuttle Creek Dam Seismic Retrofit
Patricia Gallagher, Ph.D., P.E., Drexel University; Adam Cordi, Drexel University; Sabrina Spatari, Ph.D., P.Eng., Drexel University

Steel Slag: Chemistry, Mineralogy, and Morphology
Irem Zeynep Yildirim, Ph.D., Fugro Consultants, Inc.; Monica Prezzi, Ph.D., Purdue University

Recycling of Municipal Solid Waste Incineration (MSWI) Ash as Aggregate Replacement in Concrete
Baig Al Muhit, University of Central Florida; Jinwoo An, University of Central Florida; Boo Hyun Nam, Ph.D., University of Central Florida
Investigation on Clogging Potential of Recycled Concrete Aggregate in French Drain Systems
Boo Hyun Nam, Ph.D., University of Central Florida; Zachary Behring, Florida Department of Transportation; Manoj Chopra, Ph.D., University of Central Florida; John Shoucair, P.E., Florida Department of Transportation; Soonkie Nam, Ph.D., South Dakota School of Mines and Technology

Effect of pH on the Leaching of Elements from Highway Base Layers Built with Recycled Concrete Aggregates
Janile Lewis, South Dakota School of Mines and Technology; Bora Cetin, Ph.D., South Dakota School of Mines and Technology; Ahmet Aydilek, Ph.D., University of Maryland-College Park

DEEP FOUNDATION DESIGN AND ANALYSIS
Grand Oaks R/S
Moderator: Ramin Motamed, Ph.D., University of Nevada, Reno; Eric J. Steward, Ph.D., University of South Alabama

Enhanced UniCone Expressions for Axial Pile Capacity Evaluation from Piezocone Tests
Fawad Niazi, Georgia Institute of Technology; Paul Mayne, Ph.D., P.E., Georgia Institute of Technology

State of Practices in Databases for Deep Foundation Load Tests
Naser Abu-Hejleh, Ph.D., US DOT-FHWA; Murad Abu-Farsak, Ph.D., P.E., Louisiana State University; Muhammad Suleiman, Ph.D., Lehigh University; Ching Tsai, Ph.D., P.E, Louisiana Department of Transportation

Service Limit State Design for Individual Drilled Shafts in Shale Using t-z Method
Thuy Vu, Ph.D., University of Texas, Pan American; J. Eric Loehr, Ph.D., P.E., University of Missouri

Friday, March 20 – 8:30am-10:00am

LIQUEFACTION: RECENT DEVELOPMENTS
Cibolo 1/2
Moderator: Kyle M. Rollins, Ph.D., Brigham Young University

NRC Committee Report on Liquefaction Assessment
Edward Kavazanjian, Jr., Ph.D., P.E., GE, D.GE, NAE, F.ASCE, Arizona State University

Evaluation of Ground Improvement for Liquefaction Mitigation in Christchurch, New Zealand
Brady R. Cox, Ph.D., P.E., The University of Texas at Austin

CASE HISTORIES – PROBLEMATIC SOILS
Cibolo 3/4
Moderator: Sanjeev Malhotra, P.E., Ove Arup & Partners, PC

Geo-Characterization of Brownfield Site for Modernization of a Large Industrial Facility
Jose Clemente, Ph.D., P.E., D.GE, F.ASCE, Bechtel Power Corporation; Dena Morgan, P.E., Bechtel Power Corporation; Michael Lewis, P.E., F.ASCE, Bechtel Corporation

Old Technology Enhanced by Dynamic Replacement
Issa Oweis, Ph.D., P.E., Oweis Engineering, Inc.; James Malak, P.E., Oweis Engineering, Inc.; Tom Martin, New Jersey Transit

The Great Salt Lake Causeway—A Calculated Risk 50 Years Later
Lynn Salvati, Ph.D., P.E., Jacobs Associates; Stephen Guarente, Jacobs Associates; Samuel Douglas, Ph.D., P.E., Union Pacific Railroad

Design and Monitoring of a Sheet Pile Wall Installed in Soft Industrial Waste
Ming Zhu, Ph.D., P.E., Geosyntec Consultants

Electronic Thickness Gauge Measurements on a 36-Year Old Steel Bar Mat-Reinforced MSE Wall
Jennifer Nicks, Ph.D., P.E., FHWA; Michael Adams, FHWA; Matt Runion, ESC, INC.

DRIVEN PILES, PART I
Grand Oaks E/F
Moderator: Andrew C. Verity, Terracon Consultants

Evaluation of Pile Setup Using Dynamic Restrike Analysis in the State of Alabama
Ronald Jones, University of South Alabama; Eric Steward, Ph.D., University of South Alabama

Pile Setup and Axial Capacity Gain for Driven Piles Installed Using Impact Hammer versus Vibratory System
Malay Ghose Hajra, Ph.D., P.E., ENV SP, The University of New Orleans; Rebecca Jensen, Burk Kleinpeter, Inc.; Laura Hulliger, Keystone Engineering, Inc.

Using Cone Penetration Testing to Predict the Capacity and Drivability of Tapered Piles in Sands
Terrence Carroll, P.E., G.E., Arup; Shuang Hu, Arup

On Design and Installation of Driven Piles in Coral Deposits: A Case Study from the Red Sea Coast of Saudi Arabia
Waddah Akili, Ph.D., P.E., Geotechnical Engineering
Technical Sessions – Concurrent (Cont.)

Friday, March 20 – 8:30am-10:00am (cont.)

Pile Driving Formulas Revisited
Ryan Allin, Pile Dynamics, Inc.; Garland Likins, Pile Dynamics, Inc.; Jon Honeycutt, GRL Engineers, Inc.

WORKING IN DENSE URBAN ENVIRONMENTS
Grand Oaks C/D

Moderator: Robert Alperstein, P.E., D.GE, RA Consultants LLC
Foundation Design and Construction in Urban Environments
Alfred Brand, P.E, D.GE., Mueser Rutledge Consulting Engineers; Ketan Trivedi, P.E., Mueser Rutledge Consulting Engineers
Case Histories of New York City Projects with Varying Site Constraints

Foundation Features of Tall Buildings and Braced Excavations in Houston
Edward Ulrich, Jr., P.E., D.GE., Ulrich Engineers, Inc.

Design and Construction of a Sheet Pile Earth Retention System in Soft Clays
Justin Lewis, P.E., Hayward Baker Inc.; Shane Farr, S.E., P.E., Hayward Baker Inc.

Performance of Deep Excavations in Clay in the Boston Urban Environment

NEW INSTRUMENTATION TECHNIQUES, CASE STUDIES, LESSONS LEARNED, PART I
Grand Oaks A/B


Using Thermal Integrity Profiling to Confirm Structural Integrity of Foundation Applications

Initial Steps toward Characterizing Particle Mobilization Using Pore-Scale Particle Mobilization Imaging Experiments
Benjamin Adams, E.I.T., Penn State; Ming Xiao, Ph.D., P.E., Penn State

Visualizing the Fundamental Physics of Rapid Earth Penetration, Using Transparent Soils
Zhibo (Chris) Chen, M.Sc., New York University; Mehdi Omidvar, M.Sc., New York University; Magued Iskander, Ph.D., P.E., New York University; Stephan Bless, Ph.D., New York University

The Subjective Element in Dynamic Load Testing Results
Gerald Verbeek, Allnamics USA; Peter Middendorp, Allnamics; David Tara, Thurber Engineering Ltd.

Strength and Stress Estimation in Soil Bentonite Slurry Trench Cutoff Walls Using Cone Penetration Test Data
Daniel Ruffing, P.E., Geo-Solutions, Inc.; Jeffrey Evans, Ph.D., P.E., F.ASCE, Bucknell University; Christopher Ryan, P.E., Geo-Solutions, Inc.

GEOTHERMAL ENERGY FOUNDATIONS, PART I
Grand Oaks N/O

Moderator: Muhannad T. Suleiman, Ph.D., Lehigh University
Response of an Energy Foundation to Temperature Fluctuations
John McCartney, Ph.D., P.E., University of California San Diego; Kyle Murphy, M.S., E.I.T., University of Colorado Boulder; Karen Henry, Ph.D., P.E., US Air Force Academy

Thermal Stress and Displacement Response of Geothermal Energy Piles in Sand
Rajni Saggu, Indian Institute of Technology (IIT) Delhi; Tanusree Chakraborty, Ph.D., Indian Institute of Technology (IIT) Delhi; Rajni Saggu, Indian Institute of Technology; Tanusree Chakraborty, Ph.D., Indian Institute of Technology

Full-Scale Field Testing of Energy Piles
Melis Sutman, M.Sc., Virginia Tech; Guney Olgun, Ph.D., Virginia Tech; Tracy Brettmann, P.E., D.GE, A. H. Beck Foundation Co., Inc.

Effect of the Unsaturated Condition on the Thermal Efficiency of Energy Piles
G. Ghassan Akrouch, Ph.D., Texas A&M University; Marcelo Sanchez, Ph.D., Texas A&M University; Jean-Louis Briaud, Texas A&M University

Omid Ghasemi-Fare, Pennsylvania State University; Prasenjit Basu, Ph.D., Pennsylvania State University

GEOENVIRONMENTAL
Grand Oaks P/Q

Moderator: Bhaskar C. S. Chittoori, Ph.D., P.E., Boise State University
Influence of Physico-Chemical Properties of Different Biochars on Landfill Methane Adsorption
Bala Yamini Sadasivam, M.S., University of Illinois Chicago; Krishna Reddy, Ph.D., P.E., D.GE, F.ASCE, University of Illinois Chicago

Structural Effects on Effective Conductivity of Compacted Clays
Wassim Tabet, University of Oklahoma; Amy Cerato, University of Oklahoma

Laboratory Study of Electromagnetically Induced Contaminant Removal
Vahab Bolvardi, Boise State University; Arvin Farid, Boise State University; Atena Najafi, Boise State University; Jim Browning, Boise State University; Elisa Barney Smith, Boise State University

Macropore Flow Modeling Using the Root Zone Water Quality Model
Milind Khire, Ph.D., P.E., University of North Carolina, Charlotte; Saravanathiiban Durysamy, Geotech Engineering and Testing

Behaviour of Reinforced Stone Dust Model Walls under Uniformly-Distributed Loading
Sumitra Kandolkar, Ph.D. Student, Indian Institute of Technology Bombay; Jnanendra Mandal, Ph.D., Indian Institute of Technology Bombay

ADVANCED MODELING OF GEOTECHNICAL SYSTEMS
Grand Oaks R/S
Moderator: Usama Samir El Shamy, Ph.D., P.E., Southern Methodist University; Mourad Zeghal, Ph.D., Rensselaer Polytechnic Institute

Modelling Ettringite-Induced Heaving in Cement Stabilized Soils within a Chemo-Mechanical Constitutive Framework
Pawan Sigdel, The University of Toledo; Liangbo Hu, The University of Toledo

Model for Consolidation Analysis of Layered Soils under Depth-Dependent Loading
Hefu Pu, Ph.D., Missouri University of Sci. & Tech.; Patrick Fox, Ph.D., P.E., University of California San Diego

Response of Soil-Foundation-Structure Systems to Multidirectional Seismic Motion: A Micromechanical Approach
Usama El Shamy, Southern Methodist University; Natasha Zamani, Southern Methodist University

Aging in Sand: Fatigue at Grain Contacts and Modeling Using Discrete Element Method
Zhijie Wang, The University of Michigan; Radoslaw Michalowski, Ph.D., The University of Michigan

Large Scale Simulation of Granular Materials Via Impulse-Based Discrete Element Method
Seung Lee, University of Illinois At Urbana-Champaign; Youssef Hashash, Ph.D., P.E., University of Illinois at Urbana-Champaign; Eun Park, University of Illinois at Urbana-Champaign

Friday, March 20 – 10:30am-12:00pm

ENGINEERING EDUCATION
Cibolo 1/2
Moderator: Peggy Hagerty Duffy, P.E., ADSC: The International Association of Foundation Drilling
Panelists: Representatives from academia, engineering design firms, and contracting companies.

DEEP FOUNDATIONS/GROUND IMPROVEMENT (Panel)
Cibolo 3/4
Panelists:
Representing academia – Kyle M. Rollins, Ph.D., Brigham Young University
Representing West Coast foundation contractors – Francis B. Gularte, Hayward Baker. Inc.
Representing East Coast foundation contractors – Richard J. Deschamps, Ph.D., Nicholson Construction
Representing Owners – Silas C. Nichols, Federal Highway Administration (FHWA)

DRIVEN PILES, PART II
Grand Oaks C/D
Moderator: Andrew C. Verity, Terracon Consultants

Tension Tests on Driven Model H-Piles in Sand and Clay
Alan Lutenegger, Ph.D., University of Massachusetts; Jahan Khalili, GZA; Thomas Orszulak, Sanborn Head

Foundation Support Cost – Applications to Driven-Pile Design
Van Komurka, P.E., D.GE, F.ASCE, Wagner Komurka Geotechnical Group, Inc.

Kentucky Lake Pipe Pile Load Test Program
Ronald Ebelhar, P.E., D.GE, F.ASCE, F.ASTM, Terracon; Jeffrey Dunlap, P.E., Terracon; Darrin Beckett, P.E., Kentucky Transportation Cabinet; Jerry DiMaggio, P.E., Jerry A. DiMaggio Consulting LLC
Grand Oaks E/F

Moderator: Robert Alperstein, P.E., D.GE, RA Consultants LLC

NEW INSTRUMENTATION TECHNIQUES, CASE STUDIES, LESSONS LEARNED, PART II
Grand Oaks A/B

Moderator: Helen Robinson, P.E., Schnabel Engineering; Marina Li, P. Eng., Isherwood Associates

Theory on Measuring Orientation with MEMS Accelerometers in a Centrifuge
Ryan Beemer, M.S., Texas A&M University; Madhuri Murali, Texas A&M University; Giovanna Biscontin, University of Cambridge; Charles Aubeny, Texas A&M University

Field Calibration and Data Interpretation of a Settlement Cell System
Ali Ebrahimi, Geosyntec; Meena Viswanath, Geosyntec; Ming Zhu, Geosyntec; Jay Beech, Geosyntec; Robert Bachus, Geosyntec Consultant

Intelligent Compaction of Stabilized Subgrade of Flexible Pavement
Manik Barman, Ph.D., University of Oklahoma; Syed Imran, University of Oklahoma; Moeen Nazari, University of Oklahoma; Sesh Commuri, Ph.D., University of Oklahoma; Musharraf Zaman, Ph.D., University of Oklahoma

A Framework for Premature Pavement Distress Evaluation
Nazmul Chowdhury, Arkansas State University; Zahid Hossain, Ph.D., Arkansas State University; Shu Yang, University of Arkansas; Andrew Braham, Ph.D., P.E., University of Arkansas

Construction Monitoring for the Transbay Transit Center Excavation in San Francisco, California
Mohamad Jammoul, University of Illinois at Urbana Champaign; Youssef Hashash, Ph.D., University of Illinois at Urbana Champaign; Kaitlyn Fleming, University of Illinois at Urbana Champaign; Stephen McLandrich, ARUP; Andrew Yeskoo, ARUP; Nick O’Riordan, ARUP; Pierre Gouvin, Geo-Instruments; Michael Riemer, University of California Berkeley

GEOTHERMAL ENERGY FOUNDATIONS, PART II
Grand Oaks N/O

Moderators: John S. McCartney, Ph.D., P.E., University of Colorado at Boulder; Guney Olgun, PhD, Virginia Polytechnic Institute and State University

Temperature Effects on Sand-Steel Interface Shear and Quantification of Post-Shear Surface Texture Characteristics of Steel
Jim Hanson, Ph.D., P.E., California Polytechnic State University; Andrew Flores, California Polytechnic State University; Nazli Yesiller, Ph.D., California Polytechnic State University; Derek Manheim, M.S., California Polytechnic State University

Investigation of Construction Specification Effects on Energy Pile Efficiency
Robert Caulk, EIT, University of Vermont; Ehsan Ghazanfari, Ph.D., P.E., University of Vermont

Investigation of Thermo-Mechanical Load Transfer (t-z curves) Behavior of Soil-Energy Pile Interface Using Modified Borehole Shear Tests
Suguang Xiao, Graduate Student, Lehigh University; Muhannad Suleiman, Ph.D., Lehigh University

Preliminary Studies of the Use of Abandoned Mine Water for Geothermal Applications
Zhen Liu, Michigan Technological University; Jay Meldrum, Keweenaw Research Center; Pengfei Xue, Michigan Technological University; Christopher Green, Keweenaw Research Center

Development of a Full-Scale Soil-Borehole Thermal Energy Storage System
Tugce Baser, M.S., University of California San Diego; John McCartney, Ph.D., P.E., University of California San Diego

ENGINEERING GEOLOGY AND SITE CHARACTERIZATION
Grand Oaks P/Q

Moderator: Dennis R. Hiltunen, Ph.D., University of Florida

Sedimentation Characteristics of Fine-Grained Dredged Sediments Used in Coastal Restoration Projects
Malay Ghose Hajra, Ph.D., P.E., ENV SP, The University of New Orleans; Gregory Mattson, The University of New Orleans; Christine Mebust, The University of New Orleans

Creep Behavior of Shale Formations in Shale Gas Development
Rafael Villamor Lora, University of Vermont; Ehsan Ghazanfari, Ph.D., P.E., University of Vermont
An Appraisal of a New Generation of Surface Wave Techniques at a Test Site in Florida
Pengxiang Jiang, Terracon; Khiem Tran, Clarkson University; Dennis Hiltunen, Ph.D., P.E., University of Florida; Nick Hudyma, University of North Florida

A New Borehole Tool for Subsurface Seismic Imaging – A Full Waveform Inversion Approach
Pengxiang Jiang, Terracon; Dennis Hiltunen, Ph.D., P.E., University of Florida

Bender Element Testing and Discrete Element Modeling of Shear Wave in Granular Media
Asheesh Pradhan, University of Texas at Arlington; Xinbao Yu, Ph.D., P.E., University of Texas at Arlington

DESIGN AND ASSESSMENT OF GEOSTRUCTURES, PART I
Grand Oaks R/S
Moderator: Quan Gao, Case Western Reserve University

Characterization of Collapsible Soils
John Lommler, Ph.D., P.E., D.GE, AMEC; Paola Bandini, Ph.D., P.E., New Mexico State University

Predicting Immediate Settlement on Spread Footings for Highway Bridges
Aseel Ahmed, Ph.D., University of Cincinnati; Maria Szerszen, Ph.D., University of Nebraska-Lincoln; Andrzej Nowak, Ph.D., Auburn University

Updating Single Pile Capacity by Load Tests
Jinsong Huang, The University of Newcastle; Richard Kelly, Coffey Geotechnics

Large Diameter Triaxial Testing of AASHTO Open Graded Aggregates and the Effect of Relative Density on Strength
Thomas Gebrenegus, Ph.D., Engineering & Software Consultants, INC.; Jennifer Nicks, Ph.D., Turner-Fairbank Highway Research Center; Mike Adams, Turner-Fairbank Highway Research Center

Friday, March 20 – 1:00pm-2:30pm

INTERACTIVE POSTER SESSION
Learn about current research and talk with authors about their approach and findings. Only GSP-reviewed papers have been invited to participate. Divided among eight meeting rooms, authors will make brief remarks during the first part of the session, and during the second part of the session, will stand by their posters in the Grand Oaks Foyer ready to engage in discussions and address comments and questions.

CIBOLO 1/2
Evaluation of Moisture Susceptibility and Healing Properties of Nanoclay-Modified Asphalt Binders
Zahid Hossain, Ph.D., Arkansas State University; Musharraf Zaman, University of Oklahoma; Mrinal Saha, University of Oklahoma; Takumi Hawa, University of Oklahoma

Finite Element Analysis for Spatially Stochastic Soil – Anisotropic Studies
Khoi Nguyen, Ph.D., University of South Australia; Md Mizanur Rahman, University of South Australia

The ICP Design Method and Application to a North Sea Offshore Wind Farm
Richard Jardine, Imperial College London; Andrew Merritt, Ph.D., MICE, C.Eng., Geotechnical Consulting Group LLP; Felix Schroeder, Geotechnical Consulting Group LLP

Merits of Asphalt Concrete Durability and Performance Tests When Applied to Cold In-Place Recycling
Ben Cox, Mississippi State University; Isaac Howard, Ph.D., P.E., Mississippi State University

A Novel Method to Estimate the Compressibility Index for Gulf Coast Clayey Soil
Minh Le, Ph.D., Terracon Consultants, Inc.; Shailendra Endley, Ph.D., Professional Service Industries

Pavement Repairs Long-Term Performance over Expansive Soil
Samer Dessouky, Ph.D., The University of Texas at San Antonio

Preliminary Study of Pore Water Chemistry Effect on the Physical and Mechanical Behaviour of Artificial Mixed Soil
Tongwei Zhang, Ph.D., Southeast University, Institute of Geotechnical Engineering; Yongfeng Deng, Ph.D., Transportation College, Southeast University, Institute of Geotechnical Engineering; Songyu Liu, Professor, Transportation College, Southeast University, Institute of Geotechnical Engineering; Dingwen Zhang, Transportation College, Southeast University, Institute of Geotechnical Engineering

Probabilistic Seismic Design of Soil-Pile Raft-Superstructure System
Biplab Das, National Institute of Technology Agartala; Rajib Saha, Ph.D., National Institute of Technology Agartala; Sumanta Haldar, Ph.D., Indian Institute of Technology Bhubaneswar

Response of Beams on Nonlinear Foundation
Sumanta Haldar, IIT Bhubaneswar; Dipanjan Basu, Ph.D., University of Waterloo

Response of Resilient Modulus to Moisture Variation in Unsaturated Subgrade Soils
Ayan Mehrota, LSU; Murad Abu-Farsakh, Ph.D., P.E., LSU; Kevin Gaspard, LTRC
Technical Sessions – Concurrent (Cont.)

**Friday, March 20 – 1:00pm-2:30pm (cont.)**

**Undrained Behavior of Sand by DEM Study**
Khoi Nguyen, Ph.D., University of South Australia; Md Mizanur Rahman, University of South Australia; Donald Cameron, University of South Australia

**CIBOLO 3/4**

**Dynamic Centrifuge Tests on Soft Clay Reinforced by Soil-Cement Grids**
Mohammad Khosravi, Virginia Tech; Shuji Tamura, Tokyo Institute of Technology; Daniel Wilson, Ph.D., University of California, Davis; Ross Boulanger, Ph.D., University of California, Davis; Guney Olgun, Ph.D., Virginia Tech; Deepak Rayamajhi, Oregon State University; Yongzhi Wang, Key Laboratory of Earthquake and Engineering Vibration

**Investigation of Rheological Properties of Asphalt Rubber toward Sustainable Use of Scrap Tires**
Biswajit Bairgi, B.Sc., Arkansas State University; Zahid Hossain, Ph.D., Arkansas State University; Robert Hendrix, P.E., Craighead County Solid Waste Disposal Authority

**Settlement Estimations of Peat during Centrifuge Experiments**
Riccardo Cappa, University of California at Irvine; Samuel Yniesta, University of California at Los Angeles; Anne Lemnitzer, University of California at Irvine; Scott Brandenberg, University of California at Los Angeles

**Settlement of a Shallow Foundation Resting on Piedmont Residual Soils of Northern Virginia**

**Settlement of Embankment Constructed with Geofoam**
Umashankar B., Ph.D., Indian Institute of Technology Hyderabad; Sasanka Sranam, Indian Institute of Technology Hyderabad; Chennarapu Hariprasad, Indian Institute of Technology Hyderabad

**Simplified Robust Design of Drilled Shafts in Clay Considering Construction Variation**
Wenping GONG, Clemson University; Sara Khoshnevisan, Clemson University; Hongwei Huang, Ph.D., Tongji University; Hsein Juang, Clemson University; Jie Zhang, Tongji University

**Soil, Foundation, and Superstructure Interaction (I): Advanced Analyses of Shallow Foundations**
Hany Shehata, Msc., El-Shorouk Academy; Mohamed Shehata, Ph.D., EHEConsult Office

**Strain Rate Dependency of Sand Response under Uniaxial Monotonic Loading**
Mohammed Baamer, NYU Polytechnic School of Engineering; Eduardo Suescun-Florez, M.Sc., New York University; Nikolaos Machairas, NYU Polytechnic School of Engineering; Magued Iskander, Ph.D., P.E., New York University

**Tactile Pressure Sensors in Centrifuge Modeling of Rocking Foundations**
Panagiota Kokkali, Rensselaer Polytechnic Institute; Tarek Abdoun, Rensselaer Polytechnic Institute; Ioannis Anastasopoulos, University of Dundee

**Validation of a Numerical Model to Analyze Pile-Supported T-Walls**
Alex Reeb, Virginia Tech; George Filz, P.E., F.ASCE, Virginia Tech; Jehu Johnson, USACE; Richard Varuso, USACE; Panagiota Kokkali, RPI; Anthony Tessari, University at Buffalo; Tarek Abdoun, RPI

**Vertical Pressures Produced by Controlled Low Strength Material (CLSM) Poured into Pipe Trenches**
Medji Sama, Ph.D., P.E., Exponent; David Sykora, Ph.D., P.E., Exponent; Antonios Vytiniotis, Ph.D., Exponent

**GRAND OAKS A/B**

**Assessment of Old Stone Walls**
Issa Oweis, Ph.D., P.E., Oweis Engineering, Inc.; Abraham Gutman, P.E., Thornton Tomasetti; Luma Oweis, P.E., Oweis Engineering Inc.

**Axial Load Tests on Drilled Shafts Socketed in Hard Clays and Shales**
Terry Burkett, EIT, EI, Fugro Consultants, Inc.; Robert Gilbert, Ph.D., P.E., D.GE, The University of Texas at Austin

**A Case Study and Lessons Learned: Retaining Wall Design and Construction of the Maid of the Mist Winter Storage Facility**

**Development of Very Low Head Room Press-In Sheet Pile Driver**
Takefumi Takuma, Giken America Corp.; Hiroyuki Nishimura, Giken, Ltd.; Shigeru Kambe, Giken America Corp.

**Dry Soil Mix Column Shear Panels Constructed beneath Lost Lake Dredge Disposal Island**
Tyson Deklavs, Hayward Baker Inc.

**The Effects of Pile Installation on Vertical and Lateral Response**
Lusu Ni, Ph.D., Lehigh University; Muhammad Suleiman, Ph.D., Lehigh University; Anne Raich, Ph.D., Lafayette College

**Elastic Analysis of Drilled Shaft Foundations in Soil Profiles with Intermediate Caliche Layers**
Moses Karakouzian, P.E., Ph.D., University of Nevada, Las Vegas; Rouzbeh Afsharhasani, University of Nevada, Las Vegas; Brandon Kluzniak, P.E., ARUP
Experimental Study of Installation of Concrete Suction Caisson in Clay
Wei Guo, Nanyang Technological University; Jian Chu, Ph.D., Iowa State University

High-Strain Dynamic Pile Testing for the I-40/I-240 Interchange in Memphis, Tennessee
Ashraf Elsayed, Ph.D., P.E., Geotechnology, Inc; Craig Kaibel, Geotechnology, Inc.; Ian Engstrom, P.E., Smith Seckman Reid, Inc.; David Arellano, Ph.D., P.E., University of Memphis

The Importance of Interfaces in Geotechnical Foundation Systems
Alejandro Martinez, M.S., Georgia Institute of Technology; David Frost, Ph.D., P.E., P.Eng., F.ASCE, Georgia Institute of Technology; Jiaxing Su, Georgia Institute of Technology

Model Tests of Laterally Loaded Piles under a Horizontally Scoured Condition
Omar Ismael, the University of Baghdad, Baghdad, Iraq; Jie Han, Ph.D., P.E., The University of Kansas

Preliminary Design of Suction Pile for Mooring of Concrete Floating Structures
Juhyung Lee, Korea Institute of Construction Technology; Duhyun Baek, Korea Institute of Construction Technology; Chulsoo Park, Korea Institute of Construction Technology

GRAND OAKS C/D
Assessing Liquefaction-Induced Lateral Spreads Using CPT Cases from the Christchurch, New Zealand Earthquakes
Sara Khoshnevisan, Ph.D. Student, Clemson University; Hsein Juang, Ph.D., Clemson University; Yangou Zhou, Ph.D., Zhejiang University; Chih-Sheng Ku, Ph.D., I-Shou University; Lei Wang, Ph.D., Clemson University; Hai-Jun Ding, Zhejiang University

Centrifuge Modeling of Offshore Wind Turbine with Bucket Foundation under Earthquake Loading
Xuefei Wang, Case Western Reserve University; Xiangwu Zeng, Case Western Reserve University; Hao Yu, Case Western Reserve University; Haijun Wang, Ph.D., Tianjin University

Experimental Investigation of Bridge Deck Deicing Using Energy Piles
Allen Bowers, Virginia Tech; Guney Olgun, Ph.D., Virginia Tech

Experimental Modeling of Rainfall Induced Slope Failure in Compacted Clays
Santiago Caballero, California State University, Fullerton; Binod Tiwari, Ph.D., P.E., California State University, Fullerton

Liquefaction and Residential Foundations: Lessons Learned from Past Earthquakes
Levi Ekstrom, Brigham Young University; Kevin Franke, Ph.D., P.E., Brigham Young University; T. Leslie Youd, Brigham Young University; Fernando Fonseca, Brigham Young University; Mathew Francis, URS Corporation

Magnitudes of Prehistoric Earthquakes at the Hollywood, South Carolina Site
Emad Gheibi, University of South Carolina; Sarah Gassman, Ph.D., P.E., University of South Carolina

A New Approach to Measure Water Film Due to Void Redistribution in Layered Soil
Quan Gao, Ph.D. Student, Case Western Reserve University; Yang Yang, Case Western Reserve University; Xiong Yu, Ph.D., P.E., Case Western Reserve University

Numerical Modeling of Temperature-Induced Moisture Migration in Soil Surrounding Geothermal Piles
Omid Ghasemi-Fare, The Pennsylvania State University; Prasenjit Basu, Ph.D., The Pennsylvania State University

Response of a Silty Sand Centrifuge Deposit to Repeated Earthquakes
Waleed El-Sekelly, B.S., M.S. (May 2011), Rensselaer Polytechnic Institute; Tarek Abdoun, Rensselaer Polytechnic Institute; Ricardo Dobry, Rensselaer Polytechnic Institute

Seismic Soil-Pile-Structure Interaction in Improved Soft Clay: Centrifuge Tests
Amirata Taghavi, University of Oklahoma; Kanthasamy Muraleetharan, P.E., Ph.D., G.E., University of Oklahoma; Gerald Miller, Ph.D., P.E., University of Oklahoma; Amy Cerato, P.E., Ph.D., University of Oklahoma

Sensitivity Study on Factors Affecting the Heat Exchange in Geothermal Heat Pump System
Chanjuan Han, Ph.D. Student, Case Western Reserve University; Xiong Yu, Ph.D., P.E., Case Western Reserve University

GRAND OAKS E/F
Compressive Strength Variations of Lime-Treated Expansive Soils
Muawia Dafalla, Ph.D., King Saud University; E. Mutaz, King Saud University; Mosleh Al-Shamrani, King Saud University

Durability of Lightly Stabilized Granular Material Subjected to Freeze-Thaw and Wet-Dry Cycles
Mathanraj Theivakularatnam, Ph.D. Student, University of New South Wales Canberra@ADFA; Gnanendran Carthigesu, Ph.D., University of New South Wales@Canberra

Interface Properties of Metal-Grid and Geogrid Reinforcements with Sand
Umashankar Balunaini, Indian Institute of Technology Hyderabad; Chennarapu Prasad, Ph.D., Indian Institute of Technology Hyderabad; Sasanka Mouli, B.Tech, Indian Institute of Technology Hyderabad
**Friday, March 20 – 1:00pm-2:30pm (cont.)**

**Numerical Simulation of a Geosynthetic Reinforced Soil Integrated Bridge System during Construction and Operation Using Parametric Studies**
Majid Talebi, University of Delaware; Christopher Meehan, Ph.D., P.E., University of Delaware

**Reconstruction of Tsunami-ravaged Levees by the Press-in Piling Method in Japan’s Northeast**
Takefumi Takuma, Giken America Corp.; Hiroyuki Nishimura, Japan Press-in Association; Shigeru Kambe, Giken America Corp.

**Removable Compressive Load Distributive Strand Anchors: Case History and Lessons Learned**
Jason Hertz, Langan Engineering & Environmental Services, Inc.; Michael Paquette, P.E., Langan Engineering & Environmental Services, Inc.; Saul Shapiro, P.E., Langan Engineering & Environmental Services, Inc.; Marc Gallagher, P.E., Langan Engineering & Environmental Services, Inc.; Greg Moorman, FNA Associates

**Seismic Performance of Cantilever Retaining Walls with Clayey Backfills**
Siavash Zamiran, Southern Illinois University Edwardsville; Abdolreza Osooli, Ph.D., P.E., Southern Illinois University Edwardsville

**Stability Analysis of Embankments Supported by Geosynthetic-Encased Stone Columns**
Shaymaa Kadhim, the University of Kansas; Robert Parsons, Ph.D., P.E., The University of Kansas; Jie Han, Ph.D., P.E., The University of Kansas

**Three Dimensional Effects of Vertical Stiffeners on Infinitely-Long Sheet-Piles in Cohesionless Soil**
Khaled Lotfy, Cairo University; Rami El-Sherbiny, Cairo University; Abdelsalam Salem, Cairo University

**GRAND OAKS N/O**

**Alternative Method of Flow-Back Water Treatment in Shale Gas Development for Environmental Protection**
Maria Peraki, University of Vermont; Ehsan Ghazanfari, University of Vermont

**Centrifuge Modeling the Influence of Soil Anisotropy on Seismic Response of Foundations**
Jin Qin, Case Western Reserve University; Xiangwu Zeng, Ph.D., Case Western Reserve University; Haiyan Min, Shenzhen University

**Comparison of Image Analyses Algorithms for Video-Based Remote Structure Vibration Monitoring System**
Yang Yang, Case Western Reserve University; Nathan Zimmer, UIUC; Xiong Yu, Ph.D., P.E., Case Western Reserve University

**Effect of Different Parameters on Steady State and Monotonic Liquefaction of Gravelly Soils**
Meghdad Payan, University of New South Wales; Peyman Ayoubi, Sharif University of Technology; Mohamad Mirmoazen, Guilan University

**Evolution of Interphase Contact Angle in Partially Saturated Granular Soils Using Digital Analysis of X-ray Computed Tomography Images**
Kalehiwot Manahiloh, Ph.D., University of Delaware; Christopher Meehan, Ph.D., University of Delaware

**Impact of Proof Load Test Programs on the Reliability of Foundations**
Younna Abdallah, AUB; Shadi Najjar, Ph.D., American University of Beirut; George Saad, American University of Beirut

**Laboratory Determination of the Time-Dependent Interface Frictional Behavior between Soil and Construction Materials**
Eric Steward, Ph.D., University of South Alabama; Marcus Shekouh, University of South Alabama

**A Methodology for Axially Loaded Drilled Shaft Performance Predictions Using DFSAP**
Ramin Motamed, Ph.D., P.E., University of Nevada, Reno; Kevin Stanton, University of Nevada, Reno; Mahdi Nasimifar, University of Nevada, Reno; Nelson Pearson, University of Nevada, Reno; Brandon Kluzniak, P.E., Arup

**Probabilistic Settlement Analysis of Shallow Foundations on Heterogeneous Soil Stratum with Anisotropic Correlation Structure**
Amaneh Kenarsari, Ph.D. Student, Michigan Technological University; Reza Jamshidi Chenari, Ph.D., University of Guilan

**Unconfined Compressive Strength and Deformation Modulus Relationship for Two Carbonate Rock Formations**
Hazem Sarhan, Ph.D., P.E., ARTELIA Gulf; Mohamed Askar, ARTELIA Gulf; Hazem Sarhan, Ph.D., P.E., SOGREAH Gulf

**GRAND OAKS P/Q**

**Assessment of Shear Failure Parameters for Sand-Clay Liners**
Muawia Dafalla, Ph.D., King Saud University; Mosleh Al-Shamrani, King Saud University

** Constitutive Modeling of Unsaturated Soils Using Results from One Dimensional Undrained Tests**
Xiong Zhang, Dr., University of Alaska Fairbanks

**Dual Tip Penetrometer—A New In-Situ Approach to Identify Cemented Sand**
Zhihong Hu, Ph.D., Madrid Engineering Group, Inc.; Michael Mcvay, Ph.D., University of Florida; David Bloomquist, Ph.D., University of Florida; David Horhota, Ph.D., Florida Department of Transportation
Effect of Container Wall Friction on the Consolidation of Clay Specimen
Owais Mir, Indian Institute of Technology Bombay; Yashwant Kolekar, Indian Institute of Technology Bombay; Dasaka Murty, Ph.D., Indian Institute of Technology Bombay; B.V.S. Viswanadham, Ph.D., Indian Institute of Technology Bombay

Exposure of Deep Foundations for the Kentucky Lock Addition Project
Thomas Weinmann, Geocomp

Geomechanical Properties of Coal Mine Roof Rocks in Illinois
Abdolreza Osooli, Ph.D., P.E., Southern Illinois University Edwardsville; Behrooz Moradi Bajestani, Southern Illinois University Edwardsville

Numerical Analysis of Vertical Moisture Barriers for Stabilizing Moisture Variations in Presence of Soil Cracks
Rifat Bulut, Ph.D., Oklahoma State University; Lizhou Chen, Oklahoma State University

Reliability of Coal Mine Roof Rating in Mining Applications
Iman Shafii, Southern Illinois University Edwardsville; Abdolreza Osooli, Ph.D., P.E., Southern Illinois University Edwardsville

Shrinkage Induced Pressure Measurement to Address Desiccation Cracking in Expansive Soils
Raju Acharya, The University of Texas at Arlington; Aravind Pedarla, The University of Texas at Arlington; Tejo Bheemasetti, The University of Texas at Arlington; Anand Puppala, P.E., The University of Texas at Arlington; Nan Zhang, The University of Texas at Arlington

Thermal Interaction Geosynthetic Reinforced Soil (GRS) Piers Supporting Concrete I-Girders
Michael Adams, FHWA; Jennifer Nicks, FHWA; Thomas Stabile, Engineering Software & Consultants, Inc.

GRAND OAKS R/S
Characterization and Surface Analysis of Commercially Available Biochars for Geoenvironmental Applications
Erin Yargicoglu, University of Illinois at Chicago; Krishna Reddy, Ph.D., P.E., D.GE, F.ASCE, University of Illinois at Chicago

Development of a Flexible Mold for Bio-Mediated Soil Materials
Lin Li, Ph.D., Jackson State University; Farshad Amini, Ph.D., P.E., F. ASCE, Jackson State University; Qian Zhao, Jackson State University; Chi Li, Ph.D., Jackson State University; Kejun Wen, Jackson State University; Mingdong Li, Huaihai institute of Technology; Ubani Ogbonnaya, Jackson State University

Disciplinary Diversity in the Development of Geotechnical Engineering Undergraduate Education Materials
Sandra Houston, Ph.D., P.E., D.GE, Arizona State University

Effect of Compost Soil Treatment on Surficial Slope Stability in Fully Softened Condition
Minh Le, Ph.D., Terracon Consultants, Inc.; Aravind Pedarla, Ph.D., The University of Texas at Arlington; Anand Puppala, Ph.D., P.E., D.GE, F.ASCE, University of Texas at Arlington

Field Investigation on Compaction and Strength Performance of Two Coal Wash-BOS Slag Mixtures
Ali Tasalloti, School of Civil, Mining and Environmental Engineering, University of Wollongong; Buddhima Indraratna, Ph.D., MEng, BEng, Centre for Geomechanics and Railway Engineering; Gabriele Chiaro, University of Wollongong; Ana Heitor, University of Wollongong

Ground Improvement of Marine Clay for Highway Construction at Mumbai, India

Improving the Shear Strength of Soils by Adding Agricultural By-Products
Karen Schaefer, South Dakota School of Mines and Technology; Soonkie Nam, Ph.D., South Dakota School of Mines and Technology

Optimum Dimensions of Reinforced Soil Berm for Vertical Expansion of Municipal Solid Waste (MSW) Landfills
Munwar Basha B, Sr., Ph.D., Indian Institute of Technology, Hyderabad; Mahapatra Shilpi, M.Tech, IIT Delhi; Bappaditya Manna, Ph.D., IIT Delhi

Phytoremediation of Mixed Contaminated Soils: Enhancement with Biochar and Compost Amendments
Reshma Chirakkara, University of Illinois at Chicago; Krishna Reddy, P.E., Ph.D., University of Illinois at Chicago

Soil Crust Development Throughout a Two-Dimensional Profile by Discrete Element Method
Seungcheol Yeom, Drexel University; Kurt Sjoblom, Ph.D., Drexel University

Stormwater Sediment Filtration Using Sand versus Synthetic Filters
Milind Khire, Ph.D., P.E., University of North Carolina, Charlotte; Duraisamy Saravanathiiban, Ph.D., Geotech Engineering and Testing

Saturday, March 21 – 10:30am-12:00pm

LESSONS LEARNED FROM NATURAL DISASTER RECONNAISSANCE AND LITIGATION ANALYSIS
Cibolo 1/2

Moderator: Mary Ellen (Bruce) Large, P.E., Deep Foundations Institute
Saturday, March 21 – 10:30am-12:00pm (cont.)

Lessons Learned from the Geotechnical Extreme Events Reconnaissance (GEER)
Scott A. Anderson, P.E., Federal Highway Administration

Hurricane Katrina Rulings
Timothy D. Stark, Ph.D., P.E., D.GE, F.ASCE, University of Illinois at Urbana-Champaign

ADVANCED ANALYSIS AND SOIL STRUCTURE INTERACTION FOR SHALLOW FOUNDATIONS
Cibolo 3/4

Moderators: Ömer Bilgin, Ph.D., P.E., University of Dayton; Daniel J. Rich, Ph.D., P.E., Rich Engineering

Allowable Bearing Capacity of Strip Footings on Jointed Rock Masses: A Reliability Based Approach
Munwar Basha B, Sr., Ph.D., Indian Institute of Technology, Hyderabad; Chandrakanth K, M.Tech, Indian Institute of Technology, Delhi; Arif Ali Moghal, Ph.D., King Saud University, Riyadh

On Foundations over Salt Encrusted Desert Flats (Sabkha): Properties, Challenges and Guidelines
Waddah Akili, Ph.D., P.E., Geotechnical Engineering

Numerical Simulation of Earthquake Induced Soil Liquefaction: Validation against Centrifuge Experimental Results
Zana Karimi, Ph.D., Candidate, University of Colorado Boulder; Shideh Dashti, Ph.D., University of Colorado Boulder

Soil, Foundation, and Superstructure Interaction (II): Superstructure and Foundation’s Tie Beams Analyses
Hany Shehata, M.Sc., El-Shorouk Academy; Mohamed Shehata, Ph.D., EHEConsult Office

Soil-Structure Interaction Effects on Seismically Isolated Nuclear Power Plants
Vasileios Drosos, University of California Berkeley; Nicholas Sitar, University of California Berkeley

DRIVEN PILES, PART III
Grand Oaks E/F

Moderator: Michael D. Justason, P.E., M.Eng., M.B.A., McMaster University/Bermingham Foundation Solutions

Corrosion Study of Existing Steel H-Pile Installed through Cinder-Ash Fill
Lei Gu, P.E., Gannett Fleming, Inc.; Sarah McInnes, P.E., Pennsylvania Department of Transportation; Jean Hervey Fenton, P.E., Gannett Fleming, Inc.; Stephen Welsh, Gannett Fleming, Inc.; Ara Mouradian, P.E., Gannett Fleming, Inc.

Uplift Resistance of Coated Driven Steel Pile
Alan Lutenegger, Ph.D., University of Massachusetts; Jahan Khalili, GZA

Elastic Analysis of Rock-Socketed Pile
Hoyoung Seo, Ph.D., P.E., Texas Tech University; Monica Prezzi, Ph.D., Purdue University; Rodrigo Salgado, Ph.D., P.E., Purdue University

Soil Plugging Mechanism on Large Diameter Pipe Piles: Insight from Discrete Element Simulations
Yuan Guo, Ph.D. Student, Case Western Reserve University; Xiong Yu, Ph.D., P.E., Case Western Reserve University

NUMERICAL METHODS WITH PERFORMANCE OBSERVATIONS FOR DEEP FOUNDATIONS
Grand Oaks C/D

Moderator: Gerald Verbeek, Allnamics USA

Group Effects on Piles Behavior under Lateral Loading
Pooya Allahverdizadeh, Colorado School of Mines

Numerical Simulation of Pile Installation and Setup for Bayou Lacassine Site
Firouz Rosti, Louisiana State University; Murad Abu-Farsakh, Ph.D., P.E., LSU

Experimental p-y Curves for a Laterally Loaded Single Pile in Cement-Improved Soft Clay
Hoda Soltani, University of Oklahoma; Kanthasamy Muraleetharan, P.E., G.E., F. ASCE, University of Oklahoma

Full Scale Crash Test on a Group of Piles in Clay
Mojdeh Asadollahi Pajouh, Texas A&M University; Jean-Louis Briaud, Ph.D., P.E., Texas A&M University; Dean Alberson, Ph.D., P.E., Texas A&M University System (TTI); Dusty Arrington, Texas A&M Transportation Institute; Alireza Mirdamadi, Texas A&M University

Effects of Demolishing the Deep Excavation Support System Used for Tall Building Construction on Adjacent Metro Line: Modeling and Field Comparison
Bo Liu, Ph.D., China University of Mining and Technology, Beijing; Wei Xu, China University of Mining and Technology, Beijing; Krishna Reddy, Ph.D., P.E., D.GE, F.ASCE, University of Illinois at Chicago
DESIGN AND ASSESSMENT OF GEOSTRUCTURES
Grand Oaks A/B

Moderator: Jesús Goméz, Ph.D., P.E., D.GE, GEI Consultants, Inc.

The Measurement of Suction Stress Characteristic Curve for a Highly Collapsible Loessial Soil
S. Mohsen Haeri, Ph.D., Sharif University of Technology; Ali Khosravi, Ph.D., Sharif University of Technology; Shahin Ghazizadeh, Sharif University of Technology

Application and Accuracy of Structure from Motion Computer Vision Models with Full-Scale Geotechnical Field Tests
Logan Palmer, Brigham Young University; Kevin Franke, Ph.D., P.E., Brigham Young University; Abraham Martin, Brigham Young University; Brendan Sines, Brigham Young University; Kyle Rollins, Brigham Young University; John Hedengren, Ph.D., P.E., Brigham Young University

Failure Mechanism of Earthen Levee Strengthened by Vegetated HPTRM System and Design Guideline for Hurricane Overtopping Conditions
Yi Pan, Ph.D., Jackson State University; Farshad Amini, Ph.D., P.E., F. ASCE, Jackson State University; Lin Li, Ph.D., Jackson State University

Improved Calibration Procedures for the Electrical Density Gauge
Lindsey Bryson, Ph.D., P.E., University of Kentucky; Bryan Embry, EIT, Geotek Engineering Co.; Kirk Jenkins, EIT, Stantec, Inc.

Full-Scale Crash Test of a 36-Ton Truck against a Barrier on Top of an MSE Wall
Deeyvid Saez, Ph.D., Technological University of Panama

WIND ENERGY FOUNDATIONS
Grand Oaks N/O

Moderator: Roderic A. Ellman, Jr., P.E., Mueser Rutledge Consulting Engineers

Simulation of Dynamic Response of Offshore Wind Turbine with Group-Pile Foundation Using Centrifuge Tests
Xuefei Wang, Case Western Reserve University; Xiangwu Zeng, Case Western Reserve University; Hao Yu, Case Western Reserve University; Jijian Lian, Tianjin University

Cyclic Performance of Single and Group Micropiles on Loose Sand
Rui Pinto de Matos, ISISE - UC; Paulo Pinto, Ph.D., DEC - UC; Carlos Rebele, ISISE - UC; Luis Silva, ISISE - UC; Milan Veljkovic, LTU

Mass Soil Mixing for Wind Tower Turbine Foundations
Tyson Deklavs, Hayward Baker Inc.; Bret Zitny, Hayward Baker Inc.

UNSATURATED SOILS
Grand Oaks P/Q

Moderator: Sai K. Vanapalli, Ph.D., P.Eng., University of Ottawa; Laureano R. Hoyos, Ph.D., P.E., University of Texas at Arlington

Prediction of the Resilient Modulus of Unsaturated Base-Course Materials
Zhong Han, University of Ottawa; Sai Vanapalli, Ph.D., P.E., University of Ottawa

Simplified Equivalent Linear and Nonlinear Site Response Analysis of Partially Saturated Soil Layers
Morteza Mirshekari, University of New Hampshire; Majid Ghayoomi, University of New Hampshire

Deformation Non-Uniformity of an Unsaturated Soil during Triaxial Testing
Lin Li, University of Alaska Fairbanks; Xiong Zhang, University of Alaska Fairbanks

Suitable Shearing Rate for Triaxial Testing of Intermediate Soils under Vapor Controlled Medium to High Suction Range
Ujwalkumar Patil, Ph.D. Student, University of Texas at Arlington; Laureano Hoyos, Ph.D., P.E., University of Texas at Arlington; Anand Puppala, Ph.D., P.E., The University of Texas at Arlington

DESIGN AND ASSESSMENT OF GEOSTRUCTURES, PART II
Grand Oaks R/S

Moderator: Jianying Hu, Case Western Reserve University; Xiong (Bill) Yu, Ph.D., P.E., Case Western Reserve University

Allowable Design Strength of Geosynthetic Reinforcement for Veneer Stability of MSW Landfills: A Reliability Based Approach
Munwar Basha B, Sr., Ph.D., Indian Institute of Technology, Hyderabad; Mahapatra Shilpi, M.Tech., Indian Institute of Technology, Delhi; Bappaditya Manna, Ph.D., Indian Institute of Technology, Delhi

Quantitative Comparison of Direct Monte Carlo Simulation to Simplified Reliability Approaches for Evaluating the Stability of Unreinforced Slopes
Matthew Sleep, Ph.D., Oregon Tech; Michael McGuire, Ph.D., P.E., Lafayette College
Technical Sessions – Concurrent (Cont.)

Saturday, March 21 – 10:30am-12:00pm (cont.)

Risk Analysis on Bridge Scour Failure
Congpu Yao, Ph.D., Parsons Brinckerhoff, Inc.; Jean-Louis Briaud, Ph.D., P.E., Texas A&M University; Paolo Gardoni, Ph.D., University of Illinois at Urbana-Champaign

Probabilistic Methodology for Developing Regional and Site-Class Dependent Seismic Site Amplification Factors
Elizabeth Godfrey, Virginia Tech; Adrian Rodriguez-Marek, Virginia Tech; Guney Olgun, Virginia Tech

Student Activities

Tuesday, March 17
1:00pm-1:30pm          G-I Student Orientation
1:30pm-3:30pm          G-I Student Professional Development Workshop
6:30pm-8:00pm          Welcome Reception (ticket required)

Wednesday, March 18
7:15am-8:00am          5k Fun Run/Walk
8:45am-10:00am         Welcome & Keynote Presentation
12:00pm-4:00pm         GeoChallenge – GeoPoster, GeoPrediction and GeoVideo

The GeoPrediction competition asks students to develop an accurate prediction of geotechnical behavior given detailed information regarding subsurface, boundary, and initial conditions, as well as the geotechnical/structural loading. This year, competing teams will estimate the ultimate resistance and the subsequent displacement of two drilled shaft pile at the working load and the ultimate load by static load testing. Students competing in the GeoPoster competition are challenged to present their research on foundations (e.g., shallow, drilled, driven, new types, observed performance) for judging on content and professionalism. GeoVideo is a new competition challenging students to prepare short videos describing geotechnical principles for students (K-college) or the general public.

The GeoVideo competition includes short videos explaining various geotechnical concepts that could be used in classrooms at various levels (elementary school through college) and by the lay person to understand geotechnical principles. The competing teams have created videos around the theme “A Strong Foundation in Geotechnical Engineering.” There will be six videos playing during the competition and attendees will vote for the best video.

The 2015 GeoPoster competition posters will be on Foundations (e.g., shallow, drilled, driven, new types, observed performance).

12:00pm-4:00pm         G-I GeoChallenge (GeoWall)

Teams of students from across the country will again compete in the action-packed MSE GeoChallenge. The competition involves constructing a scaled-down model of a mechanically stabilized wall in which dry sand reinforced with paper is retained behind a paper wall that has been constructed in a plywood form. The event is judged on the wall’s capacity to support a design load, the amount of reinforcement used, and the quality of the design report. Congress attendees are encouraged to attend this exciting event to cheer on the contestants.

6:00pm-8:00pm         Reception (ticket required)

Thursday, March 19
7:30pm-8:30pm         G-I Student Travel Grant Winners & Organizational Member Career Fair (invitation only)
8:30pm-9:30pm         G-I Organizational Member & Student Reception (invitation only)

Friday, March 20
6:15pm-10:00pm        Final Night Reception & Dinner
         Attire: Black Tie Optional (ticket required)
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DIAMOND

PLATINUM

GOLD

BRONZE
Exhibitor Listing

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Outdoor Exhibitors
Throughout the following pages you will find listings for each company participating in IFCEE 2015*. Companies exhibiting at this show manufacture and distribute the most technologically advanced products in the marketplace. Hundreds of thousands of hours of research, design and testing go into the creation of the products you will see displayed at IFCEE 2015. Don’t miss this chance to see the very best that the deep foundations industry has to offer.

*Exhibitor list at the time of publication

3M Corrosion Protection Products
Indoor Booth #824
6801 River Place Blvd. Bldg. 130-4N
Austin, TX 78726 USA
Phone: 800.722.6721 / Fax: 877.601.1306
Website: www.em.com/corrosion
Email: samattaguile@mmm.com

ADSC
Indoor Booth #318
ADSC: The International Association of Foundation Drilling is a professional trade association representing the anchored earth retention, drilled shaft, micropile, and other heavy civil construction / design industries. Our members include specialty subcontractors, manufacturers and suppliers, academicians and design engineers in the private and public sectors. The ADSC-IAFD is served by a national staff and 11 regional chapters.
8445 Freeport Parkway, Suite 325 / Irving, TX 75063 USA
Phone: 469.359.6000 / Fax: 469.359.6007
Website: www.adsc-iafd.com / Email: adsc@adsc-iafd.com

AGL Manufacturing Ltd.
Indoor Booth #706
AGL offers soil & rock anchoring systems applicable to soil nailing, rock bolting, and micropiles. Our company is ISO9001 certified. Contact us for a catalogue of our hollow bars, thread bars, shotcrete hose & clamps, DCP accessories, and drill bits.
8378 Prince Edward St.
Vancouver, BC V5X 3R9 Canada
Phone: 604.267.1716 / Fax: 604.267.1719
Website: www.aglmfg.com
Email: hollowbar@aglmfg.com

AGP / American Society of Civil Engineers
Indoor Booth #302
Founded by ASCE, the Academy of Geo-Professionals (AGP) was created to offer geotechnical engineers an opportunity to gain recognition through its Diplomate, Geotechnical Engineering (D.GE) credential. D.GEs’ technical expertise helps clients achieve project success. The D.GE certification recognizes geotechnical engineers who possess specialty education, extensive education, integrity and sound judgment.
1801 Alexander Bell Drive / Reston, VA 20191
Phone: 703.295.314 / Fax: 703-295-6415
Website: www.asce.org/certification

ALLU Group, Inc.
Outdoor Booth #8037
ALLU Group offers a complete line of technologically advanced screening, crushing, soil stabilization and compacting equipment and attachments for the asphalt, compost, environmental, recycling, green waste, demolition, mining and pipeline industries.
700 Huylor St. / Teterboro, NJ 07608 USA
Phone: 800.939.2558 / FAX: 201.288.4479
Website: www.allu.net / Email: Jesse@allu.net.com

American Equipment & Fabrication
Outdoor Booth #4036 / 4037 / 4045 / 4060
American Equipment & Fabricating Corp. (AE&F) is a full-service foundation equipment company providing rental, company providing rental, sales, and service of a large variety of drilling equipment and pile driving equipment, along with detailed engineering design and equipment fabrication for the heavy construction industry. AE&F is the authorized Soilmec dealer for eastern and central U.S. customers.
100 Water Street / East Providence, RI 02914 USA
Phone: 401.438.2626 / Fax: 401.438.0754
Website: www.american-equipment.com
Email: j.zito@american-equipment.com

American Hose Company
Indoor Booth #94
Custom setups to standard replacement hose, our cost effective private label is gaining recognition as one of the best quality hydraulic hoses in the market. We are distributors for the products you know and trust from NRP Jones, Dixon Industrial & Quick Coupling, Brenna Ind., World Wide Fittings, Fittings Unlimited, ZSI, Anchor Fluid Power, Midland Metal, Flex-Tech Hose & Tubing & many others.
301 Warehouse Drive / Matthews, NC 28104 USA
Phone: 704.821.8200
Website: www.hydraulichose.com
Email: bwaller@hydraulichose.com

American Piledriving Equipment, Inc.
Outdoor Booth #5008 / 5014
APE provides all types of foundation equipment, including APE and J&M vibratory hammers, hammers, rotary drills & augers, wick drain installers, drill rigs, pile rigs, leader systems and HD Driver equipment for fast installation of high strength piles in all ground conditions.
7032 South 196th St. / Kent, WA 98032 USA
Phone: 800.248.8498 / Fax: 253.872.8710
Website: www.apevibro.com / Email: danc@apevibro.com
Applied Foundations Testing, Inc.

**Indoor Booth #410**

Applied Foundation Testing, Inc. (AFT) is a Specialty Geotechnical Testing firm. AFT provide a full range of foundation testing and analysis services including STATNAMIC®Load Testing, Pile Driving Analyzers (PDA), SynchroPile®Post Grouted Drilled Shafts, Static Load Testing, Crosshole Sonic Logging, Sonic Integrity Testing, Drilled Shaft Inspection and Vibration Monitoring.

4035 J Louis St. / Green Cove Springs, FL 32043 USA
Phone: 904.284.1337 / Fax: 904.284.1339
Website: www.testpile.com
Email: drobertson@testpile.com

Atlas Copco Mining, Rock Excavation and Construction LLC

**Outdoor Booth #7018 / 7022**

Atlas Copco will showcase top-notch foundation products along with our equally important expertise and support. Whether you want a Hütte drill, Symmetrix casing advancement system, down-the-hole tools or more, your firm foundation starts with us. And we’ll be there for you along the way.

3700 E. 68th Ave. / Commerce City, CO 80022 USA
Phone: 520.240.4463 / Fax: 520.834.0444
Website: www.atlascopco.us
Email: Michelle.Pettit@us.atlascopco.com

Bauer Foundation Corp.

**Indoor Booth #406**

BAUER Foundation Corp. is the U.S. subsidiary of Bauer Spezialtiefbau GmbH, one of the leading deep foundation companies in the world. BAUER provides Drilled Shafts, Drilled Piles, Micropiles, Diaphragm Walls, Secant Walls, Soil Mixing, Jet Grouting, Tiebacks, Ground Stabilization, Ground Freezing and Grouting for industrial, power, transportation and commercial markets.

13203 Byrd Legg Drive / Odessa, FL 33556 USA
Phone: 727.531.2577 / Fax: 727.530.1571
Website: www.bauerfoundations.com
Email: aneumann@bauerfoundations.com

BAUER Maschinen GmbH

**Outdoor Booth #1026 / 1027 / 1032**

The most advanced modular system in rotary drilling. BAUER reflects more than 30 years of jobsite experience, advancement in design and manufacturing methods. BG Rigs range in operating weights and torque capacity to offer the right solution for any drilling challenge and are backed by top notch customer service.

100 N. FM 3083 East / Conroe, TX 77303 USA
Phone: 713.691.3000 / Fax: 713.691.0089
Website: www.bauerpileco.com
Email: info@bauerpileco.com

BAUER-Pileco, Inc.

**Outdoor Booth #1031 / 1035 / 1038**

BAUER-Pileco, Inc. brings over 45 years of experience with exceptional service, rentals and technical support for a superior fleet of products including pile driving equipment, piling tool manufacturing, diesel hammers, vibratory hammers, hydraulic hammers and lead systems. “Follow Our Lead To A Solid Foundation!”

100 N. FM 3083 East / Conroe, TX 77303 USA
Phone: 713.691.3000 / Fax: 713.691.0089
Website: www.bauerpileco.com
Email: info@bauerpileco.com

Bay Shore Systems, Inc.

**Outdoor Booth #2025 / 2029 / 2030 / 2036 / 2037 / 2041**

Since 1978 Bay Shore Systems has been a leading innovator in foundation drilling equipment. Precision engineering and quality manufacturing results in drilling equipment that just keeps on working. Year after year. Shaft after shaft. Of all the rigs sold since introducing the LoDril in 1991, 98.1% are still working today.

14206 N Ohio Street / Rathdrum, ID 83858 USA
Phone: 208.687.3311 / Fax: 208.687.4153
Website: www.bayshoresystems.com
Email: tellis@bayshoresystems.com

Beretta Alfredo S.r.l.

**Outdoor Booth #3025**

Beretta is a leading company in the small and medium sized drilling world. Over thousands rigs are operating worldwide. Various applications used in geotechnical, anchoring, micropiles, soil investigations and geothermal.

Via Vignareto, 10 / Besana In Brianza 20842 ITALY
Phone + 39 0362 995380
Website: www.berettaalfredo.it
Email: international@berettaalfredo.it

Berkel & Company Contractors, Inc.

**Indoor Booth #806**

Berkel & Co., is a design-build geotechnical contractor offering Auger Pressure Grouted (APG), Displacement (APG-D) and Driven piles; Sheetung, Shoring & Underpinning; Secant / Tangent Pile Walls; Anchors / Tiebacks; Ground Improvement and Liquefaction Mitigation, Pressure Grouting; and Drilled Shafts - with full design and installation capability.

2647 S. 142nd Street / Bonner Springs, KS 66012 USA
Phone: 913.422.5125
Website: www.berkelandcompany.com
Email: mnesmith@berkelapg.com
**Bermingham Foundation Solutions Limited**  
*Indoor Booth #800 / 802*

Bermingham Foundation Solutions is a leading manufacturer of diesel pile driving reverse-circulation drills, leads, and a wide variety of custom foundation equipment. Established in 1897, Bermingham is also Canada's most experienced foundation contractor. Bermingham's unique blend of manufacturing & contracting operations allows for the ability to constantly experiment with new equipment.

600 Ferguson Avenue North  
Hamilton, ON L8L 4Z9 Canada  
Phone: 905.528.7924 / Fax: 905.528.6187  
Website: www.berminghammer.com  
Email: Lmacqueen@berminghammer.com

**Bit Brokers International**  
*Indoor Booth #812*

Bit Brokers International has serviced all drilling industries for over 25 years. We have built a reputation of keeping our clients ahead of schedule and under budget by providing the highest quality tools at the best possible prices. We supply the industry with quality tools such as, Hole Openers, Bolt on Cutters, PDC Reamers*, Tricones, Tricone Cutters, Hammers & Hammer Bits, PDC Bits, etc..

5568 Logan Rd. / West Frankfort, IL 62896 USA  
Phone: 618.435.5811 / Fax: 618.435.2388  
Website: www.bitbrokers.com  
Email: chester@bitbrokers.com

**Blaze Equipment**  
*Outdoor Booth #7007*

Blaze services most popular brands of Drill Rig Manufacturers. Our Service Technicians have been trained by some of the Manufacturers themselves. Blaze also provides OEM Parts, and after-market sourced parts that are up to OEM specifications to save you time and money. One of our main specialties is the Kelly Bar division; where we sell, repair, rent, and manufacture OEM Spec. bars in-house.

5500 Nafex Way Suite 1 / Ft. Worth, TX 7613 USA  
Phone: 817.439.4600  
Website: www.blaze-equipment.com  
Email: matt@blaze-equip.com

**Boulderscape, Inc.**  
*Indoor Booth #818*

For over 25 years, Boulderscape has installed structural and architectural shotcrete for the drilling industry. They have installed more than 12 million square feet of wall facing to date, and pride themselves on efficient installation and precise finishes. Finishes include geological, masonry, muralling and class 1 steel trowel.

34249 Camino Capistrano, Ste 216  
Capistrano Beach, CA 92624 USA  
Phone: 949.661.5087 / Fax: 949.661.3397  
Website: www.boulderscape.com  
Email: steve@boulderscape.com

**Carandina America**  
*Outdoor Booth #8013*

Drilling tools for vertical, horizontal, CFA and Jet grouting. Big foundations and special foundations tools, anchoring, micropiling, consolidation, Augers, Bucket, Core Barrel, CFA System, Casing piles, Friction welded drill rods, Jet Grouting, Spare parts, teeth. Sale and Rental of equipment from MDT McDrill and GEAX.

A-4080 Belgreen Dr.  
Ottawa, ON K1G 3N2 Canada  
Phone: 613.859.7403 / Fax: 613.736.1075  
Website: www.selix.ca / Email: rgosselin@selix.ca

**Casagrande USA Inc.**  
*Outdoor Booth #2042 / 2048 / 2054*

Casagrande USA is a company owned store and supplier of a full line of Foundation Drilling Equipment. Providing sales, rentals, parts, service, and technical assistance for any project.

93 Stickles Pond Road / Newton, NJ 07656 USA  
Phone: 973.579.1906 / Fax: 973.579.1907  
Website: www.casagrande-usa.com  
Email: b.birch@casagrande-usa.com

**Case Foundation Company**  
*Outdoor Booth #714*

Case Foundation Company has evolved over 60 years from a local Chicago drilled shaft contractor into one of the industry’s most widely respected and successful full-service deep foundation specialists in the United States. Case specializes in drilled shafts, structural diaphragm walls, secant pile walls, and large diameter CFA piles.

1325 W. Lake St. / PO Box 40 / Roselle, IL 60172  
Phone: 630.529.2911 / Fax: 630.529.4802  
Web: www.casefoundation.com  
Email: ejrisberg@casefoundation.com

**Center Rock Inc.**  
*Outdoor Booth #3053*

Center Rock manufactures and distributes a full line of pneumatically operated rock drilling tools and accessories including a complete line of DTH hammers and bits from 4” to 20” class hammers. Larger diameters are drilled with CRI multi hammer LP Canister rock drills from 24” to 120”.

118 Schlock Drive, P.O. Box 307 / Berlin, PA 15530 USA  
Phone: 814.267.7100 / Fax: 814.267.6382  
Website: www.centerrock.com / Email: ejrisberg@casefoundation.com

**CETCO**  
*Indoor Booth #524*

CETCO offers a complete line of bentonite-based drilling fluids, polymer based drilling fluids such as SHORE PAC®, additives, testing equipment, as well as excellent on-site service. Excellent service and support is a priority at CETCO!

2870 Forbs Avenue / Hoffman Estates, IL 60192 USA  
Phone: 800.527.9948 / Fax: 847.851.1332  
Website: www.cetco.com / Email: drillingproducts@cetco.com
Champion Equipment Co.
Outdoor Booth #4025
Champion Equipment Company (CEC) is a full-service provider of strong, highly engineered drilling tools, accessories, and equipment solutions for all foundation drilling conditions. CEC designs and fabricates its tools for high productivity, drilling efficiency, and long service life. Ask us about custom-engineered and tailored tools for your machines.
8140 East Rosecrans Ave. / Paramount, CA 90723 USA
Phone: 562.634.8180 / Fax: 562.634.1350
Website: www.champion-equipment.com
Email: vjue@champion-equipment.com

Champion Equipment Sales, LLC
Outdoor Booth #4042 / 4049 / 4059 / 4060
Champion Equipment Sales, LLC is the western U.S. and Canada agent for specialized foundation construction industry equipment including Soilmec, Leffer, and TEI Rock Drills. Offices in the U.S. and Canada.
701 North Green Valley Parkway, #200
Henderson, NV 89014 USA
Phone: 877.375.5575 / Fax: 866.764.5632
Website: www.championsales.net / Email: sew@championsales.net

ChemGrout, Inc.
Outdoor Booth #4013
ChemGrout manufactures the world’s largest selection of grouting equipment. From high capacity colloidal systems to hand grout pumps. Production rates to 75 GPM and pressures to 2000 PSI. Their patented pumps are industry standards offering reliability and durability along with unique disassembly features that simplifies clean up and maintenance.
805 E. 31st Street / LaGrange Park, IL 60526 USA
Phone: 708.354.7112 / Fax: 708.354.3881
Website: www.chemgrout.com / Email: info@chemgrout.com

Con-Tech Systems, Ltd.
Outdoor Booth #4009
CTS®: your preferred supplier of geo-support solutions and products in North America, including Ischebeck Titan-IBO hollow bar, US Domestic hot rolled threadbar, strand anchors. Products used for various geotechnical applications such as micropiles, anchors, and soil nails. Testing equipment, including hydraulic jacks up to 2,200 tons, for rent and sale.
8150 River Road Delta, BC V4G 1B5 Canada
Phone: 604.946.5571 / Fax: 604.946.5548
Website: www.contechsystems.com / Email: dan@contechsystems.com

ConeTec, Inc.
Indoor Booth #704
ConeTec is an international site investigation company specializing in designing, building and operating the most advanced in-situ testing equipment worldwide including a wide range of cone penetration testing (CPT) probes, sampling systems, seismic equipment, geophysical tools and a fleet of purpose built in-situ testing vehicles, drill rigs, and offshore systems.
PO BOX 22082 / Salt Lake City, UT 84122 USA
Phone: 801.973.3801 / Fax: 801.973.3802
Website: www.conetec.com
Email: saltlakecity@conetec.com

Consolidated Pipe & Supply
Indoor Booth #429
Steel Piling Pipe, Fabrication to AWS D1.1 and D1.5, Conical Points, Drive Shoes, End Plates, Coal Tar Epoxy Coating. Specialty Coatings.
PO Box 2472 / Birmingham, AL 35201 USA
Phone: 205.323.7261 / Fax: 205.251.7838
Website: www.consolidatedpipe.com
Email: broges@consolidatedpipe.com

ConstructionImages.com
Indoor Booth #814
Specialized Industrial/Commercial HD Photography/HD Film Production Services for the Foundation Drilling Industry. Assisting companies in showcasing and marketing their unique capabilities and specialized expertise in the Foundation Drilling Business.
PO Box 99224 / Seattle, WA 98139
Phone: 206.402.5803
Website: www.ConstructionImages.com
Email: bill@constructionimages.com

Corpac Steel Products, Corp.
Indoor Booth #530
Corpac is a global supplier and trader of pipe and steel products and services, specializing in line pipe, standard pipe, OCTG and structural products. Corpac is the best source for distributors and end-users in immediate need of steel products. Corpac’s services include manufacturing, coating, end-threading, fabrication, finance and logistics.
20803 Biscayne Blvd., Ste 502 / Aventura, FL 33180 USA
Phone: 305.918.0444 / Fax: 305.918.0570
Website: www.corpacsteel.com
Email: grace.montealegre@corpacsteel.com

Cox Industries
Indoor Booth #122
Since 1954, Cox Industries has been a leading innovator, manufacturer and distributor of treated outdoor wood products for the residential, commercial, industrial, marine and utility markets. The company produces a variety of quality wood products-from decks, fences and pilings to utility poles, docks, retaining walls and other specialty items.
**Cox Industries** (cont.)

PO Box 1124 / Orangeburg, SC 29116 USA
Phone: 803.928.5096 Ext: 1278 / Fax: 803.534.1410
Website: www.coxwood.com
Email: aedwards@coxwood.com

**Crux Subsurface, Inc.**  
**Indoor Booth #424**
A geotechnical exploration and construction firm providing contract drilling and related services to the industry. Crux provides innovative technology, access methods, and experienced in-house engineering to provide specialty foundation design-build for projects featuring difficult access, environmental sensitivity, and challenging subsurface conditions.

4308 N. Barker Rd. / Spokane Valley, WA 99027 USA
Phone: 509.892.9409 / Fax: 509.892.9408
Website: www.cruxsub.com / Email: crux@cruxsub.com

**Cyntech Canada**  
**Indoor Booth #606**
Cyntech’s helical piling systems and pipeline anchoring systems have provided innovative and cost effective solutions to the energy and construction industries since 1981. Cyntech has built a solid reputation as an industry leader in engineering, design and manufacturing for our clients worldwide.

23506 Wrangler Link SE / Calgary, AB T1X 0K3 Canada
Phone: 403.228.1767 / Fax: 403.245.6632
Website: www.cyntech.com
Email: pfulawka@cyntech.com

**CZM Foundation Equipment**  
**Outdoor Booth #3002 / 3008 / 3014**
CZM offers a comprehensive line of high performance drilling machines and foundation equipment, including Kelly Bar, CFA and other foundation applications. Our highly skilled engineers build the finest products made in the USA, recognized for their innovative design, high quality, and superior after-sales service. Our customer-oriented philosophy is backed by qualified professionals providing services which include corrective and preventative maintenance, commissioning, parts, tools, accessories, and more.

145 East Industrial Boulevard / Pembroke, GA 31321 USA
Phone: 912.200.7661 / Fax: 912.653.5211
Website: www.czm-us.com
Email: dmyers@daveykent.com

**Dataforensics**  
**Indoor Booth #91**
Dataforensics is a leader in geotechnical and environmental data management software. Our software helps geologists, geotechnical and environmental engineers accomplish field/office work in less time, with greater accuracy and data quality. Visit booth #91 to see how pLog, RAPID CPT and pLog Enterprise can simplify your data management processes.

6825 Jimmy Carter Blvd. #1210
Norcross, GA 30071 USA
Phone: 678.406.0106 / Fax: 678.367.0870
Website: www.dataforensics.net

**Datgel**  
**Indoor Booth #526**
Datgel are experts in gINT with a 9-year track record for delivering gINT Add-in software like the Datgel CPT Tool and high-quality geotechnical data management solutions. The company provides a complete range of services for gINT, including expert advice, database and report design, training, support, and software development.

Suite 73, Level 4, The Hub, 89-97 Jones Street
Ultimo NSW Australia
Phone: +61 2 8202 8600 / Fax: +61 2 8079 5855
Website: www.datgel.com
Email: phil.wade@datgel.com

**Davey Drill**  
**Outdoor Booth #8002**
Davey Drill features a range of drill rigs built to solve any and all small to mid-diameter drilling requirements. Ranging in size and type Davey Drills have proven ability and durability to meet and exceed the expectations of every contractor. Built in America and trusted around the world.

200 W. Williams St. / Kent, OH 44240 USA
Phone: 330.673.5400 / Fax: 330.673.9178
Website: www.daveykent.com
Email: dmyers@daveykent.com

**DBM Contractors, Inc.**  
**Indoor Booth #510**
DBM Contractors, Inc., is an industry leading design-build contractor in heavy civil and specialty geotechnical construction. Our primary services and product categories include temporary / permanent excavation support, foundation support, slope stabilization, and ground improvement. DBM is headquartered in Federal Way, WA, with regional offices in Portland, OR, and Salt Lake City, UT.

1220 S. 356th St. / Federal Way, WA 98003 USA
Phone: 253.838.1402 / Fax: 253.874.6574
Website: www.dbmcontractors.com
Email: tom.armour@dbmcontractors.com

**Decagon Devices, Inc.**  
**Indoor Booth #828 / 830**
Decagon Devices manufactures instrumentation with applications in soil science, hydrology, and geotechnical engineering with focuses on measuring water, light and heat in soil-plant-atmosphere continuum.

2365 NE Hopkins Court / Pullman, WA 99163 USA
Phone: 509.332.2756 / Fax: 509.332.5158
Website: www.decagon.com / Email: leo@decagon.com
Deep Excavation LLC
Indoor Booth #124
Deep Excavation LLC in involved in the development of powerful, user friendly and unique geo engineering software products that became highly estimated professional tools among thousands of engineers worldwide. Software perform both geotechnical and structural design for many wall types, slope stability analysis with soil nailing and is delivered with all structural and geotechnical design codes.

1122 E. Pike St, #794 / Seattle, WA 98122 USA
Phone: 206.279.3300 / Fax: 206.279.3062
Website: www.deepexcavation.com
Email: deepexcavation@deepexcavation.com

Deep Foundations Institute
Indoor Booth #322
DFI is an international association of contractors, engineers, suppliers, academics and owners in the deep foundations industry. We bring together professionals for networking, education, communication and collaboration. Our multi-disciplinary membership helps create a consensus voice and common vision for continual improvement in the planning, design and construction of deep foundations.

326 Lafayette Avenue / Hawthorn, NJ 07506 USA
Phone: 973.423.4030 / Fax: 973.423.4031
Website: www.dfi.org / Email: tengler@dfi.org

Densification, Inc.
Indoor Booth #114
Densification, Inc., is a nation-wide geotechnical contracting firm, specializing in dynamic compaction. Founded in 1994, our mission is to provide property owners and developers with an attractive construction alternative when poor soils or questionable fills are encountered. At the same time, we aim to provide geotechnical consultants with a personal and practical link to project owners.

40650 Hurley Lane / Paeonian Springs, VA 20129 USA
Phone: 540.882.4404 / Fax: 540.882.4190
Website: www.densification.com / Email: chris@densification.com

Drill Pipe Inc.
Indoor Booth #136
Down-Hole Consumables for Civil Construction; Inertia Welded Drill Pipe, Large Diameter Drill Pipe, Casing, Bits, Subs and Stabilizers.

550 South 3rd Street / Winsted, MN 55395 USA
Phone: 763.592.8670 / Fax: 763.59.8661
Website: www.drillpipeinc.com
Email: deepexcavation@deepexcavation.com

DrillingWorld
Indoor Booth #210 / 212
The Driller’s Toy Store – Manufacturer of drilling and trenching tools. Augers available for handheld, fencing, utility, foundation, hexcor and hollow stem applications. Carbide cutterheads, replacement wear parts, extensions, Baroid products, Eskridge drill motors and much, much more! Visit our booth at 210 & 212.

1458 Mariani Court / Tracy, CA 95376 USA
Phone: 800.331.9988 / Fax: 209.839.9897
Website: www.drillingworld.com
Email: sales@drillingworld.com

DRILLTOOLS
Outdoor Booth #3005 / 3009 / 3013
A leading manufacturer of all types Foundation Drilling Tools ranging from Progressive Rock Augers and Drilling Buckets to Conventional Earth Excavating and Reaming Tools. CFA Tolls and HEX Connectors. API Drill String Connectors. DRILLTOOLS own full line brand of Carbide Teeth, Holders, Pilot Points and other Wear Prevention Products all manufactured in the USA.

4001 Enterprise Street / Kilgore, TX 75662 USA
Phone: 903.986.3745 / Fax: 903.986.3743
Website: www.drilltoolsinc.com
Email: bsteding@drilltoolsinc.com

DuroTerra LLC
Outdoor Booth #9036
DuroTerra is the exclusive distributor of Ductile Iron Micropiles throughout North America. Designed to resist both compression and tension loads, Ductile Iron Micropiles are an economical and versatile solution to support foundation loads in a variety of problematic soil conditions across multiple applications including foundations, floor slabs, tension, tanks, solar and wind.

639 Granite Street / Braintree, MA 02184 USA
Phone: 781.817 .6053 / FAX: 781.849.2065
Website: www.duroterra.com / Email: info@duroterra.com

DYWIDAG Systems International (DSI)
Outdoor Booth #4001
DSI supplies earth retaining/deep foundation support worldwide including; DYWIDAG Threadbar, Strand Anchors, Soil Nails, DYWI Drill Hollow Bars, Micropiles, Tie Rods, Ductile Iron Pipe Piles. DSI also offers; **DYNA Force Load Anchor Monitoring System instrumentation used during
anchor testing or anchor service life. Local Presence - Global Competence. Rely on DSI.

320 Marmon Drive / Bolingbrook, IL 60440 USA
Phone: 630.739.1100 / Fax: 630.739.5517
Website: www.dsiamerica.com
Email: dsiamerica@dsiamerica.com

Edgen Murray
Indoor Booth #126
Edgen Murray is a leading provider of specialty steel products and services to select industrial markets and the energy sector. We manage procurement, value added services and delivery of high performance pipe, fittings, flanges, valves, high-yield heavy plate, and related components through a global distribution platform.

10370 Richmond Ave. Suite 900 / Houston, TX 77042 USA
Phone: 713.947.7979
Website: www.edgenmurray.com
Email: Chad.vogt@edgenmurray.com

Ensoft, Inc.
Indoor Booth #232
Ensoft is a developer of engineering software for the design and analysis of deep foundations. The popular programs developed and marketed by Ensoft include LPILE, SHAFT, GROUP, APILE, and PYWALL. Ensoft software is used by over 6,500 engineering companies, government agencies, and universities in over 100 countries.

3003 West Howard Lane / Austin, TX 78278 USA
Phone: 512.244.6464 / Fax: 512.244.6067
Website: www.ensoftinc.com / Email: sales@ensoftinc.com

Equipment Corporation of America
Outdoor Booth #1001 / 1002 / 1005 / 1008 / 1014 / 1020
ECA is a leading supplier of Foundation Construction Equipment in the Eastern United States and Eastern Canada. We are exclusive distributors for Bauer Drills, Klemm Anchor & Micropile Drills, RTG Piling Rigs, Pileco Diesel Pile Hammers, HPSI Vibratory Pile Hammers, Word International Drill Attachments and Dawson Construction Products. We offer Sales, Rentals, Parts, Service in five facilities.

PO Box 837 / Aldan, PA 19018 USA
Phone: 610.626.2200 / Fax: 610.626.2245
Website: www.ecanet.com / Email: bdutton@ecanet.com

ESC Steel Inc.
Indoor Booth #529
ESC Steel Inc. is a premier manufacturer and supplier offering a wide variety of steel sheet piles, steel pipe piles and piling accessories. Although new to the North American market, ESC has been supplying steel piling across the globe for 30 years.

18 Augusta Pines Dr. / Spring, TX 77389 USA
Phone: 281.205.7261 / Fax: 281.205.7263
Website: www.escsteelinc.com
Email: andy@escsteelinc.com

Eskridge
Outdoor Booth #9032
Eskridge is the industry leader in drives. As construction equipment attachments, Eskridge drives are the most versatile and cost effective solution. Eskridge offers drives from 1,500 to 375,000 FT-Lbs. capacity. Suitable for mounting on a variety of equipment, Eskridge drive heads offer increased mobility and efficiency over traditional methods.

1900 Kansas City Road / Olathe, KS 66061 USA
Phone: 913.782.1238 / FAX: 913.782.4206
Website: www.eskridgeinc.com
Email: esksales@eskridgeinc.com

Expanded Shale, Clay and Slate Institute (ESCSI)
Indoor Booth #138
ESCSI is the international trade association for manufacturers of rotary kiln-produced expanded shale, expanded clay and expanded slate lightweight aggregate. ESCSI promotes the extensive use of rotary kiln-produced lightweight aggregate in the lightweight concrete masonry and structural lightweight concrete markets, as well as use in asphalt, geotechnical and other applications.

35 E Wacker Drive, Suite 850 / Chicago, IL 60601 USA
Phone: 801.272.7070 / Fax: 312.644.8557
Website: www.escsi.org
Email: info@escsi.org

Favor Steel and Fabrication Co.
Indoor Booth #622
Favor Steel & Fabricating, Inc., is a manufacturer of large diameter rolled & welded steel pipe for the heavy civil and utility industry. Applications include: jack & bore, microtunneling, drilled shafts, pipe piling, & sign structures. Products include: Domestic rolled & welded steel casing in 30 - 180” diameters up to 1” thick walls; Pipe manufactured to ASTM A252, A 139, or DOT specs.

1110 Industrial Blvd. / Bessemer, AL 35022 USA
Phone: 205.426.3288 / Fax: 205.426.3278
Website: www.favorsteel.com
Email: brayburn@aol.com

Federal Highway Administration
Office of Bridges and Structures
Indoor Booth #336
The Federal Highway Administration (FHWA) provides stewardship over the construction, maintenance and preservation of the Nation’s highways, bridges and tunnels. FHWA also conducts research and provides technical assistance to state and local agencies in an effort to improve safety, mobility, and livability, and to encourage innovation.
FES (China) Ltd
Outdoor Booth #3028 / 3034
Chinese-based Supplier specialized in Piling rigs and parts. Distributors established in WA, PA of USA and ON of Canada with short lead time for delivery. Products including high quality Chinese-assembled rotary drill rigs, casing rotators, casing extractors, pile crushers, etc., and drill rig parts & accessories including Kelly bars, casing, drilling tools and wear teeth interchangeable with European ones.
1-403, No. 71 Wenzhou Road
Hangzhou 310015 P.R.China
Phone: 86.571.28027060 / Fax: 86.571.28993137
Website: www.fes-cn.com
Email: robinymao@fes-cn.com

Foremost Industries
Outdoor Booth #8008
Excelling in large diameter construction and industrial water well applications, the Foremost DR40 is the largest model in the DR line-up and can handle casing up to 40” (1,000mm). Standard configurations include tracked undercarriage or crane carrier with deck engine and an on-board air compressor.
1225 64th avenue NE / Calgary, AB, T2E 8P9 Canada
Phone: 403.295.5800 / Fax: 403.295.5810
Website: www.foremost.ca
Email: rick.finney@foremost.ca

Foundation Technologies Inc.
Indoor Booth #620
PO BOX 491718 / Lawrenceville, GA 30049 USA
Phone: 800.773.2368 / Fax: 678.407.4645
Website: www.foundationtechnologies.com
Email: sanford@foundationtechnologies.com

Foundationdrilling.com
Indoor Booth #134
foundationdrilling.com offers new and used drilling equipment for the foundation drilling and earth retention.
PO Box 2010 / Canyon Lake, TX 78133 USA
Phone: 830.935.3344
Website: www.foundationdrilling.com
Email: rv@foundationdrilling.com

Fudo Construction Inc.
Indoor Booth #504
Fudo Construction is a geotechnical contractor specializing in ground improvement and alternative foundation systems utilizing deep soil improvement techniques developed by our parent company, Fudo-Tetra Corporation of Tokyo, Japan. As the U.S. subsidiary of Fudo-Tetra, we benefit by our direct access to the vast resources of one of the world leaders in ground improvement.
951 Mariners Island Blvd., Suite 300
San Mateo, CA 94404 USA
Phone: 650.350.1120 / Fax: 650.378.1399
Website: www.fudo-const.com
Email: masaru@fudo-const.com

Gannett Fleming, Inc.
Indoor Booth #506
Gannett Fleming, an international planning, design, and construction management firm, provides clients with quality, full service multi-disciplinary engineering services and technical innovation. One of only 27 ENR Top 100 Firms to be ISO 9001:2008 certified, Gannett Fleming has more than 60 offices worldwide.
P.O. Box 67100 / Harrisburg, PA 17106-7100 USA
Phone: 717.763.7212 x2371 / Fax: 717.763.8150
Website: www.gannettfleming.com
Email: plewis@gfnet.com

GDS Instruments
Indoor Booth #93
GDS Instruments designs, develops and manufactures materials testing machines and software used for the computer-controlled testing of soils and rocks. This technology is used to evaluate the mechanical properties that are key in geotechnical and earthquake engineering design. Equipment includes, Static & Dynamic Triaxial, Rock, Shear & Consolidation.
Unit 32 Murrell Green Business Park,
London Rd. / Hook, Hampshire RG27 9GR UK
Phone: 44 (0) 1256 382450 / Fax: 44 (0) 1256 382451
Website: www.gdsinstruments.com
Email: james@gdsinstruments.com

GEI Consultants, Inc.
Indoor Booth #350 / 352
GEI’s multi-disciplined team of engineers & scientists deliver integrated geotechnical, environmental, water resources & ecological solutions to diverse clientele nationwide. Our Experience includes foundation & excavation support design, ground improvement, non-destructive integrity testing, management of risk associated with ground movement, & environmental contamination.
400 Unicorn Park Drive / Woburn, MA 01801 USA
Phone: 781.721.4000 / Fax: 781.721.4076
Website: www.geiconsultants.com
Email: kcohane@geiconsultants.com

Geo-Institute of ASCE
Indoor Booth #302
The Geo-Institute is an organization individual of and organizational members, and affiliated local Chapters and graduate student organizations serving the
The membership we serve includes engineers, scientists, engineering geologists, contractors, and technologists who do work in the geotechnical and geoprofessional arenas.

1801 Alexandria Bell Dr. / Reston, VA 20191 USA
Phone: 703.295.6015 / Fax: 703.295.6351
Website: www.asce.org/geotechnical-engineering/geo-institute/
Email: rschweinfurth@asce.org

Geo-Solutions Inc.
Indoor Booth #428
Geo-Solutions Inc. is a national leader providing full service environmental remediation and geotechnical contracting, working nationwide in the areas of subsurface stabilization, remedial actions, groundwater control and subgrade improvement. Specialties include slurry cut-off walls, in-situ stabilization, biopolymer drains, permeable reactive barriers, ground improvement and soil stabilization.
1250 Fifth Avenue / New Kensington, PA 15068 USA
Phone: 724.335.7273 / Fax: 724.335.7271
Website: www.geo-solutions.com
Email: ken@geo-solutions.com

Geocomp Corporation/GeoTesting Express
Indoor Booth #96
125 Nagog Park / Acton, MA 01720 USA
Phone: 978.635.0012 / Website: www.geocomp.com
Email: gtt@geotesting.com

Geokon, Inc.
Indoor Booth #624
Geokon, Inc. manufactures a full range of high quality geotechnical instrumentation suitable for monitoring the safety and stability of a variety of civil and mining structures including dams, tunnels, foundations, mine openings, piles, etc. Geokon’s sensors exhibit excellent long-term stability, accuracy and reliability even in the most adverse conditions.
48 Spencer Street / NH 03766 USA
Phone: 603.448.1562 / Fax: 603.448.3216
Website: www.geokon.com / Email: chuck@geokon.com

Geopier Foundation Company
Indoor Booth #100 / 102
Geopier provides efficient and cost-effective Intermediate Foundation® solutions for the support of settlement sensitive structures. Thousands of structures worldwide are currently supported by Geopier technologies – Geopier GP3®, Impact® Densipact®, Armorpact®, and SRT™ systems – proven experience ensuring high levels of performance and reliability.
130 Harbour Place Drive, Suite 280
Davidson, NC 28036 USA
Phone: 704.439.1790
Website: www.geopier.com / Email: info@geopier.com

Geoprobe Systems
Outdoor Booth #9012
Geoprobe Systems manufactures compact Direct Push, Rotary...
Baroid polymers and drilling mud. Givens is a certified Woman Owned Small Business.
8288 Pritchett Crooks Road / Corydon, KY 42406 USA
Phone: 270.533.6378 / Fax: 270.533.6379
Website: www.givensinternational.com
Email: laurie@givensinternational.com

GRL Engineers, Inc.
Indoor Booth #626
30725 Aurora Road / Cleveland, OH 44139 USA
Phone: 216.831.6131 / Fax: 216.831.0916
Website: www.GRLengineers.com
Email: info@GRLengineers.com

Hammer & Steel, Inc.
Outdoor Booth #2002 / 2008
Hammer & Steel provides economical solutions to deep foundation contractors across North America. We are the authorized dealer for the ABI Mobilram & GeoDrill, DELMAG hydraulic drill rigs, COMACCHIO earth retention & micropile drilling machines, Scheltzke mixers and SoilTek drill rigs. Our capabilities include service, sales, rental and parts from St. Louis, CA, NJ, Houston and Jacksonville.
11916 Missouri Bottom Rd. / Hazelwood, MO 63042 USA
Phone: 314.895.4600 / Fax: 314 895.4070
Website: www.hammersteel.com
Email: mcolvin@hammersteel.com

Hayward Baker Inc.
Indoor Booth #712
Hayward Baker Inc. is North America’s leader in geotechnical construction, annually ranked by Engineering News-Record (ENR) magazine #1 in the profession. Project applications include foundation support, settlement control, site improvement, slope stabilization, underpinning, excavation shoring, earth retention, seismic/liquefaction mitigation, ground water control, and environmental remediation.
7550 Teague Road / Suite 300 / Hanover, MD 21076
Phone: 410.551.8200 / Fax: 410.799.3786
Web: www.haywardbaker.com
Email: jdhussein@haywardbaker.com

Hans Leffer GmbH
Outdoor Booth #4021
Leffer designs and manufactures specialized equipment for foundation construction, including casing oscillators and rotators, grabs, and other tools. Come see our 1.5-m hydraulic casing rotator for secant pile wall construction. The casing rotator provides the ultimate control of torque, push-down, and lifting forces, and verticality control with 360-degree capability.
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Phone: 562.634.8180 / Fax: 562.634.1350
Website: www.championsales.net/leffer.html
Email: vjue@championsales.net

Hennessy International
Outdoor Booth #5019 / 5020 / 5023 / 5027 / 5031
Hennessy International distributes drill rigs, tooling and supplies with focus on supplying foundation, tieback, earth retention, caisson, and jet grouting contractors. They offer a highly-specialized yet complete section of new and used equipment, complimented by a rental fleet with locations in CA and WA. Drill tooling and accessories available as well.
1623 Mission Drive Unit 14 / Solvang, CA 93463 USA
Phone: 805.693.8880 / Fax: 805.693.8870
Website: www.hennessyinternational.com
Email: dane@hennessyinternational.com

Hercules Machinery Corp.
Outdoor Booth #8014 / 8020
You’ll never look at your current foundation drilling equipment the same way again. HMC has partnered with the preeminent drill designer in the world and owner of HPM, Giuseppe Cartechini, to bring the most robust, highest quality foundation drills in the world to North America assembled on Caterpillar bases using high strength materials.
5025 New Haven Ave. / Ft. Wayne, IN 46803 USA
Phone: 800.348.1890 / Fax: 260.422.2040
Website: www.hmc-us.com / Email: tdame@hmc-us.com

Hong Xiang Technologies
Indoor Booth #614
Hong Xiang Technologies has been a leader in design, manufacturing and selling of all types of quality interlocking and friction kelly bars for the foundation rotary drilling rigs available on the market over 14 years. We have advance automatic welding equipment and many years experienced steel material experts, designers and welders in which makes our products highly tailored to your needs.
RM1606, Building JinYanLong, HuiLongGuan ChangPing District / Beijing CHINA
Phone: 8610 64812760 / Fax: 8610 64892389
Website: www.drillpipe.cn
Email: ryli2011@gmail.com

HUESKER
Indoor Booth #528
HUESKER manufactures eco-friendly geosynthetics known for their long term design strength and durability. HUESKER offers the most complete product line of
geogrids, geocomposites and geotextiles that deliver cost effective
geotechnical engineering solutions.

P.O. Box 411529 / Charlotte, NC 28241 USA
Phone: 704.588.5500 / Fax: 704.588.5988
Website: www.HUESKER.com
Email: marketing@hueskerinc.com

Humboldt Mfg Co.
Indoor Booth #628
Humboldt Mfg Co is a US manufacturer
of construction materials testing equipment
with a range of geotechnical testing products for field and
laboratory use. Products include the EDG*, NDG and Geogauge
for field use and triaxial, direct shear and consolidation for
laboratory testing, all supported by the latest Humboldt software
reporting packages.
875 Tollgate Road / Elgin, IL 60123 USA
Phone: 708.468.6300 / Fax: 708.456.0137
Website: www.humboldtmfg.com
Email: jmlamond@humboldtmfg.com

Hydro-Ram
Outdoor Booth #9016 / 9020
206 Cummings Road
Broussard, LA 70518 USA
Phone: 337.837.9224 / Fax: 337.837.9958
Website: www.hydro-ram.com
Email: jp.brakman@hydro-ram.com

International Construction Equipment, Inc. (ICE)
Outdoor Booth #9000 / 9001 / 9004 / 9007 / 9013
As the World’s One-Stop Foundation Shop, ICE
is the leading USA manufacturer and international
distributor of vibratory drivers and extractors,
diesel hammers, hydraulic hammers, excavator-
mounted rotary heads and hammers, large and
small-bore drill tooling (including EDME Kelly Bars
& BETEK), limited access drills, Comacchio Drills and other deep
foundation equipment.
301 Warehouse Drive / Matthews, NC 28104 USA
Phone: 704.821.8200
Website: www.iceusa.com
Email: pcunningham@iceusa.com

Independence Tube
Indoor Booth #118
Since 1972, Independence Tube Corporation has been
dedicated to delivering steel tubing of the highest value to our
customers through continual improvement of our products,
service, processes and quality system. Visit out website at www.
independencetube.com or call us to see how we can help you.
6226 W. 74th St. / Chicago, IL 60638 USA
Phone: 708.496.0380 / Fax: 708.563.1950
Website: www.independencetube.com
Email: joshea@independencetube.com

International Drilling Equipment
Outdoor Booth #2045 / 2049
IDE is the premier supplier &
servicer of Geotechnical &
Foundation equipment in the
Eastern United States and Canada. IDE is proud to represent the
leading geotechnical and foundation equipment manufacturers
in the world, including Casagrande, Metax, and PTC, offering
a wide variety of tools and products to help with most any
application.
645 Angus St. / Rural Hall, NC 27045 USA
Phone: 877.207.6062 / Fax: 866.710.3842
Website: www.idedrills.com

ITASCA
Indoor Booth #334
Itasca is a global, employee-owned, engineering consulting
and software firm, working primarily with the geomechanics,
hydrogeological and microseismics communities. We solve
problems in many industries including mining, civil engineering,
oil & gas, manufacturing and power generation.
111 Third Ave S, Suite 450 / Minneapolis, MN 55401 USA
Phone: 612.371.4711 / Fax: 612.371.4717
Website: www.itascainternational.com
Email: dwatkins@itascacg.com

JD Fields & Company Inc.
Indoor Booth #8026
JD Fields is a full service international supplier of
API line pipe and geostructural piling products to
North & South America, Canada, Mexico, and the
Caribbean. With exclusive material partnerships, they carry over
200,000 tons of steel pipe and piling to meet the service demands
of their engineering and contracting partners.
55 Waugh Dr. / Houston, TX 77007 USA
Phone: 281.558.7199
Website: jdfields.com / Email: da@jdfields.com

Jean Lutz North America
Indoor Booth #502
In 2015 JEAN LUTZ will celebrate
40 years of designing and manufacturing high quality
instrumentation for Special Foundations. Along with our
successful DIALOG, we will be presenting our latest products,
the DEFI* a efficient compact device and CINTAC 15*, entirely
designed for grout injection with a beautiful but robust 15” touch
screen.
4370 Boardman-Canfield Road / Canfield, OH 44406 USA
Phone: 330.702.1476 / Fax: 330.702.1486
Website: www.jeanlutzna.com
Email: michel@jeanlutzna.com

Jeffrey Machine, Inc.
Outdoor Booth #4018
Rock Drilling Augers, Earth Augers, C.F.A. Tools,
Rock Core Barrels, Drilling/Clean-out Buckets,
Custom Tools, Sectional Flighting, Hard Surface Protection and Replacement Wear Products, Teeth and Bits, Anchoring Tools.

Jimco – Home of the John Henry Rock Drill
Outdoor Booth #9037
John Henry Rock Drill Model JH20 with Single Rod Changer for Soil Nail & Anchor Applications. John Henry drills vertically, horizontally or virtually at any angle. Combined with the excavator’s 360 degree swing, the working range is without equal.

Jinnings Equipment LLC
Outdoor Booth #3064
All forms of Deep Foundation Equipment

Junttan Oy
Outdoor Booth #9019
Junttan specializes in the design, manufacture and marketing of hydraulic piling equipment. For nearly 40 years Junttan has actively developed new products and taken the entire industry forward. Our product range comprises pile driving rigs, multipurpose piling and drilling rigs as well as hydraulic impact hammers and power packs.

KB International
Outdoor Booth #9008
KB International is a leader in the development of polymer slurries and stabilization systems for the construction of deep foundations, such as drilled shafts, bored piles, diaphragm walls, tie-backs, jet grouting and tunnels. KB products have been utilized throughout North and South America, Asia, Europe, Africa, and the Middle East.

Kiewit Foundations Group
Indoor Booth #218

KLEMM Bohrtechnik GmbH
Outdoor Booth #1039 / 1043 / 1044
KLEMM develops and manufactures hydraulic drill rigs and drilling accessories for all types of drilling jobs in special foundation. Numerous patents are proof of the highly developed innovative drive and technical competence. KLEMM rigs carry out all types of drilling jobs for anchoring, micro piles, injections, ground investigation, and more.

Kemaico USA Corporation
Indoor Booth #612
Kemaico is a fast growing manufacturer of high quality drilling tools including hollow core bar anchors, drill bits and related accessories. We also have a DTH hammer line and casing system line for various geo-technical projects. We maintain consistent quality and support for our customers.

Kennametal, Inc.
Indoor Booth #412
Kennametal delivers productivity to customers seeking peak performance in demanding environments by providing innovative custom and standard wear-resistant solutions. This proven productivity is enabled through our advanced materials and application knowledge. New products: DSDR & DSDR X Series; FD X Series’ KF Series.

L.B. Foster Company
Indoor Booth #816
L.B. Foster Construction Products is a supplier of sheet piling, pipe piling, H-beams and piling accessories to the construction
industry for over 80 years. The Company’s full line of piling and accessories are available for sale for construction projects throughout North and South America, Central America and the Caribbean.

130 Satellite Boulevard NE Ste A
Suwanee, GA 30024 USA
Phone: 678.926.5217 / Fax: 678.926.5244
Website: www.lbfoster.com / Email: pwright@lbfoster.com

**Liebherr Nenzening Crane Co.**
Outdoor Booth #5034 / 5040 / 5046
The LB 28-320 is powered by a 530-HP Tier-4i Liebherr diesel engine. The machine is designed for drilling diameters to 7.5ft standard, 12ft with the short leader foot, and drilling depths to 230ft. The new BAT-320 rotary drive features automatic torque adjustment, continuous speed regulation and a maximum torque of 236,000 lbs.

7075 Bennington Street / Houston, TX 77028 USA
Phone: 713.636.4050 / Fax: 713.636.4051
Website: www.liebherr.com
Email: gordana.marquez@liebherr.com

**Link-Belt Construction Equipment Company**
Outdoor Booth #2014
Link-Belt Construction Equipment Company is a leader in the design & manufacture of telescopic boom and lattice boom cranes. Highly successful for 140 year, Link-Belt offers a strong distributor network for crane owners in the construction industry worldwide.

2651 Palumbo Dr. / Lexington, KY 40509 USA
Phone: 859.264.6401 / Fax: 859.264.6156
Website: www.linkbelt.com
Email: rhavlicek@linkbelt.com

**LOADTEST**
Indoor Booth #224
Loadtest, world leader in deep foundation risk Management: establishing confidence, reliability, efficiency, economy through managing foundation risk by applying state-of-the-art deep foundation analysis, quality control and testing with SoniCaliper confirmed excavation quality, Osterberg Cell design calibration, and RIM-Cell Reliability Improvement Method production foundation verification.

2631 NW 41st Street, D-1 / Gainesville, FL 32606 USA
Phone: 850.260.5528 / 352.378.3717 / Fax: 352.378.3934
Website: www.loadtest.com
Email: bubbaknight@loadtest.com

**Lodge Lumber Company, Inc.**
Indoor Booth #608
Lodge Lumber Company is a wholesale distributor of forestry products that caters to the deep foundation client with the manufacturing, packaging and job-site delivery of pile cushions. We maintain one of the largest pine, hardwood and plywood inventories in the country. We can ship one pallet or multiple truckloads of cushions and top-load any other forestry items to meet your construction needs.

5001 Oates Road / Houston, TX 77013 USA
Phone: 800.856.6679 / Fax: 713.672.5135
Website: www.lodgelumber.com
Email: daren@lodgelumber.com

**Maccaferri, Inc.**
Outdoor Booth #9024
Maccaferri has locations in over 100 countries around the world. Traditionally, Maccaferri was known for their double twist wire mesh products, like Gabions but has expanded its product range to include Erosion Control, Retaining Walls, Reinforced Soil Slopes, Roads & Pavement, Rockfall Mitigation, Marine & Coastal Protection and Mining Solutions.

10303 Governor Lane Boulevard
Williamsport, MD 21795 USA
Phone: 800.638.7444 / Fax: 301.223.4590
Website: www.maccaferri-usa.com
Email: info@maccaferri-usa.com

**Magnum Piering, Inc.**
Indoor Booth #230

6082 Schumacher Park Drive
West Chester, OH 45069 USA
Phone: 800.822.7437 / Fax: 513.777.5374
Website: www.magnumpiering.com
Email: info@magnumpiering.com

**MAIT USA Corporation**
Outdoor Booth #3052 / 3058
MAIT USA supplies MAIT Foundation Drilling Machinery and provides first class technical assistance and after-sales service. MAIT manufactures the most complete line of drilling rigs for specialized applications for Drilled Shafts, CFA, Low headroom, Limited Access, Diaphragm Walls, Hydraulic Hammers, Cranes, Casing Oscillators, & Drilling Tools and Segmental Casing.

2405a S Houston Ave, Suite 101 / Humble, TX 77396 USA
Phone: 281.913.7773 / Fax: 281.913.7774
Website: WWW.MAITUSA.COM / Email: INFO@MAITUSA.COM

**Malcolm Drilling Company Inc.**
Indoor Booth #520 / 522
Malcolm has for 5 decades been an innovator and leader in the deep foundation industry. Our services include deep foundations, retention systems and various ground improvement techniques.
Our experience facilitates a Design/Build approach and allows for timely collaboration with owners and contractors. We provide these services nationwide through our regional offices.

92 Natoma St. / San Francisco, CA 94545 USA
Phone: 415.901.4400
Website: www.malcolmdrilling.com
Email: pfaust@malcolmdrilling.com

Matrix Construction Products
Indoor Booth #216
Matrix Construction Products, provides high quality polymer and Bentonite products and additives to the Construction Drilling Industries. Our mission today is the same as it was in the beginning to provide quality slurry products backed by competent technical support to improve the efficiency of the drilling and excavation processes in the Foundation drilling industry.

3075 Book Road, Ste. 103 / Naperville, IL 60567 USA
Phone: 630.791.0893 / Fax: 630.791.345
Website: www.matrixcp.com / Email: john.berry@matrixcp.com

Mayland Metallic Materials Ltd.
Indoor Booth #610
Self-drilling anchor combines drilling, grouting and anchoring into a one-step procedure, assuring maximum rock strengthening under complex and diverse strata with high reliability, efficiency and simplicity. Mayland’s T anchors utilize a trapezoidal thread pattern for stronger clutch against grout and rocks. Their Type R anchors utilize a wave like thread to increase anchor’s retention strength.

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Website: www.maylandmetallics.ca
Email: info@maylandmetallics.ca

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Indoor Booth # 716
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7550 Teague Road Suite 300 / Hanover, MD 21076
Phone: 410.874.1235 / Fax: 410.799.4382
Web: www.mckinneydrilling.com
Email: bmaher@mckinneydrilling.com

Measurand Inc.
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Phone: 506.462.9119 / Fax: 506.462.9095
Website: www.measurandgeotechnical.com
Email: melissa@measurand.com

Michels Foundations
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Website: www.michels.us
Email: jclaeys@michels.us

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Phone: 703.560.2391 / Fax: 703.560.2392
Website: www.nccco.org

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Fax: 814.849.6288
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Email: jim@ocidiv.com

**PennDrill Manufacturing**

**Outdoor Booth #5041 / 5045**

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Email: dhamilton@penndrill.com

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Email: wendy.bouchy@numahammers.com

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Website: www.obermann.com
Email: info@obermann.com

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Phone: 866.573.0708
Website: www.pilebuck.com
Email: info@pilebuck.com

Pile Driving Contractors Association
Indoor Booth #306
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33 Knight Boxx Road, Suite 1
Orange Park, FL 32065 USA
Phone: 888.311.PDCA (7322) / Fax: 904.215.2977
Website: www.piledrivers.org
Email: steve@piledrivers.org

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Phone: 216.831.6131
Website: www.pile.com
Email: nicole@pile.com

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Email: gmcshane@servicesteel.org

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Phone: 800.456.7473 (ext. 181) / Fax: 636.639.6258
Website: www.trinityinc.com / Email: ajgriggs@trinityinc.com

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UniSoft GS is the publisher of UniSettle 4.0 and UniPile 5.0 software. UniSettle 4.0: To assist engineers in performing stress and settlement calculations involving complex load combinations and site conditions. UniPile 5.0: For the analysis of piles according to various design methods.
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