CONFERENCE PROGRAM
RENTALS, SALES, PARTS AND SERVICE
Monroe, LA 877-388-9269  McDonough, GA 877-396-1500  scottpowerline.com
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Mobile App

Download the IFCEE 2018 Mobile App from the iTunes or Google Play store for up to date information about IFCEE. The app contains an agenda for all technical sessions, short courses, networking lunches and breaks, and evening social events, in addition to exhibitor and sponsor listings, exhibit hall floor plans, attendees, and more! The IFCEE app is free for all users.
Registration Information

**Full Registration:** Entrance to exhibit areas, Wednesday - Friday lunches in exhibit areas, Tuesday & Friday evening receptions, technical sessions, coffee breaks, and conference proceedings. *(Short Courses not included)*

**Technical Session Only:** Includes for selected day: Entrance to technical sessions and exhibit areas, lunch, coffee breaks, Friday Reception (for Friday Tech Session Passes only) and conference proceedings. *(Short Courses and Tuesday reception not included)*

**Exhibits Only Pass:** Entrance to exhibit areas Tuesday - Friday, coffee breaks, and Friday evening reception. NOTE: Short Courses, conference proceedings, technical sessions, Tuesday reception, and daily lunch are not included. *(Lunch may be purchased individually at the Cafe’s in the outdoor exhibit areas)*

<table>
<thead>
<tr>
<th>Exhibit Hours</th>
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<tr>
<td>Tuesday, March 6</td>
<td>1:00pm-5:00pm</td>
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<td>Wednesday, March 7</td>
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<td>Thursday, March 8</td>
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<td>Friday, March 9</td>
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Proceedings will be available two weeks post-show. All qualified attendees will be emailed a link via ASCE Publications to login and download the completed proceedings. IFCEE 2018 Proceedings are available in electronic format only.

Conference Center Wifi Passcode: IFCEE2018
Dear IFCEE 2018 Colleagues,

We wish to welcome you to this epic geo-industry event, a collaboration between ADSC: The International Association of Foundation Drilling, Deep Foundations Institute (DFI), Geo-Institute of ASCE (G-I) and the Pile Driving Contractors Association (PDCA). 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. IFCEE 2018 is the premier venue for exploration of innovations in technology and advancement in implementation practices throughout the deep foundations industry. This event holds so much opportunity. We hope each of you will make time during your week to explore everything IFCEE has to offer.

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

Lance Kitchens  
Dan Brown  
Youssef Hashash  
David R. Chapman

ADSC  
DFI  
G-I  
PDCA

President  
President  
President  
President

Conference Chairman  

Technical Program Committee
Tracy Brettmann, P.E., D.GE, A.H. Beck Foundation Co.  
Peggy Hagerty Duffy, P.E., D.GE, ADSC  
Terence Holman, Ph.D., P.E., Turner Engineering Group  
Mary Ellen Bruce Large, P.E., D.GE, DFI

Allen Cadden, P.E., D.GE, Schnabel Engineering  
Bernie Hertlein, GEI Consultants  
Mike Justason, P.Eng., McMaster University  
Anna Sellountou, Ph.D., P.E., Pile Dynamics

Proceedings Editors
Muhammad T. Suleiman, Ph.D., Lehigh University  
Anne Lemnitzer, Ph.D., P.E., University of California, Irvine  
Armin W. Stuedlein, Ph.D., P.E., Oregon State University
TUESDAY, MARCH 6
Ralph B. Peck Medal Lecture
4:00pm-6:00pm | Citron North & Center

For his innovative research on the analysis and design of urban excavations using novel modeling approaches and innovative monitoring technologies, the immediate advancement of excavation design practice and for his voluntary commitment to the geotechnical community.

Presented by this year’s recipient Richard J. Finno, Ph.D., P.E., D.GE, M.ASCE.

Sponsored by: Schnabel Foundation Co.

WEDNESDAY, MARCH 7
Keynote Address
8:45am-9:45am | Citron North & Center

Learning in Thin Air
Scott Kress is a masterful storyteller, a leadership trainer, an Executive MBA Professor and a life-long mountaineer. He is the 51st Canadian to summit Mount Everest and the 15th Canadian to climb the 7 Summits. He will share the insights gained while climbing and leading high-altitude expeditions for over 25 years.

What is it that separates success from failure? What allows some leaders and teams to achieve greatness where others stumble? Today’s business environment is more complex than ever and presents a series of mountains, which must all be scaled. While there is always a leader breaking the trail to the top, they cannot do it alone. Great success comes from the synergy of great leadership, teamwork, and personal focus.

Sponsored by: CH2M

E.A.L. Smith Lecture
10:45am-11:30am | Citron North & Center

The Pile Driving Contractors Association’s E.A.L. Smith Award Lecture will be presented triennially at the IFCEE conference. The E.A.L. Smith Award Lecture will be presented to an individual who has demonstrated creative and original work that helped the driven pile industry provide an economical, sustainable, effective and environmentally conscious foundation solution.

Up to sixty years ago, the geotechnical practice rarely performed pile tests, be they dynamic tests or static loading tests. Then, the practice changed. During 1957 -1959, the Swedish Pile Commission conducted series of dynamic tests on steel and concrete piles. In about 1964, Dr. Goble of the Case Western Reserve University commenced an extensive series of dynamic tests and developed the Pile Driving Analyzer, which concurrently with analytical development soon matured from research into engineering practice. At the First Stress-wave Conference, held in Sweden in 1980, the dynamic testing methods came-of-age. Today, the dynamic testing and analysis is indispensable to the practice of piled foundation design. In parallel to the development of dynamic testing methods for axial load response of primarily driven piles, the practice also developed low-strain dynamic integrity test methods.

The Inaugural E.A.L. Smith lecture will be presented by Dr. Bengt H. Fellenius, Dr. Tech., P.E.

Thursday, March 8
Osterberg Memorial Lecture
7:30am-8:15am | Citron North & Center

An Inconvenient Geotechnical Truth
For many people the term “inconvenient truth” refers to the facts, cause, and effects of global warming. This talk is about a different kind of “inconvenient truth” relevant in the geotechnical world where nature and natural conditions as well as human created conditions control. A true fact is that even a significant amount of advance testing with soil borings, geophysics, load testing and soil sample laboratory testing can not assure sufficient information to enable precise, accurate prediction of how the natural ground and contained foundation elements will perform under either nature forces or human engineered forces. However, by following certain rules based on the writer’s 60+ years of foundation design and construction experience, our prediction performance ability can be substantially improved.

This talk will outline the primary points learned and will be illustrated by several well known case histories ranging from Chicago to Kuala Lumpur.

Presented by: Clyde Baker, P.E., D.GE, M.ASCE, GEI Consultants

Osterberg Memorial Lecture
7:30am-8:15am | Citron North & Center

The annual Osterberg Memorial Lecture and Award was established in honor of Dr. Jorj O. Osterberg, one of the true pioneers of
geotechnical engineering, to recognize innovations in deep foundations construction related to engineering design, testing or education - all aspects of Jorj Osterberg’s lifelong contributions.

Presented by this year’s recipient John A. (Jack) Hayes, P. Eng., D.I.C., Founder and Former President, Loadtest, Inc. Hayes is being recognized for his pioneering work with Osterberg cell (O-cell) load tests. One of the founders of Loadtest, Hayes has helped to transform high-capacity load testing worldwide. He has involved himself with all aspects of O-cell load testing including administration, project development, specification, field assembly and installation, instrumentation, testing, analysis and reporting. Loadtest has carried out over 1,000 O-cell bi-directional load tests during his tenure.

Sponsored by: MARL Technologies

Ben C. Gerwick Lecture
8:15am-9:00am | Citron North & Center

The award is presented annually to an individual, team or company, and pays tribute to Ben Gerwick, recognizing his innovative spirit and his many contributions to the design and construction of marine foundations. Gerwick had a 62 year professional career as a contractor, educator and construction engineer.

Accepted by this year’s recipient Akio Kitamura. Inventor of Silent Piler, President, Giken Ltd.

Presented by: Anthony Bertrams, Executive Director, Giken Ltd.

Kitamura is being recognized for trailblazing the field of the press-in-piling technology. In 1975, Kitamura invented the Silent Piler, the first commercially available pile driving machine based on press-in-piling technology, which virtually eliminated noise and vibration associated with pile driving. For 40 years, he has been promulgating the advantages of press-in-pile technology. The effect of Kitamura’s innovation extends beyond the realm of marine foundations, affecting the entire world of civil engineering construction.

Karl Terzaghi Lecture
4:30pm-6:00pm | Citron North & Center

For his more than 30 years of continuous efforts to advance the state-of-the-practice in the design and performance assessment of waste containment systems.

Presented by this year’s recipient, Rudolph Bonaparte, Ph.D., P.E., D.GE, NAE, F.ASCE.

Friday, March 9

H. Bolton Seed Medal Lecture
3:30pm-5:00pm | Citron North & Center

For outstanding contributions to geotechnical earthquake engineering education and research, especially with respect to applications of performance-based engineering, liquefaction, seismic slope stability, and dynamic soil behavior.

Presented by: Steven L. Kramer, Ph.D., P.E., M.ASCE
SHORT COURSES

Short courses will focus on a wide range of topics and will be offered Tuesday, March 6 and Wednesday, March 7. Short courses provide an excellent opportunity to brush up on familiar subjects or to gain knowledge on new concepts from instructors who are recognized as leading experts in their fields. Professional Development Hours for participation and completion of Short Courses will be available.

TUESDAY, MARCH 6

FULL DAY SESSION – 7:30am to 4:30pm | Pindo A
Stability & Stabilization of Natural and Man-Made Slopes with Climate Change

Course Synopsis: This short course will present recent advances on landslide behavior, unsaturated soil mechanics, shear strength, two- and three-dimensional slope stability analyses, slope stabilization and analyses and the impact(s) of climate change on slope stability. These advances are contributing to a better understanding of landslide mechanisms and improved methods of analysis, hazard identification, risk assessment, and stabilization. The short course will focus on landslide triggering, stability analyses, and runout of the slide mass. This short course will first discuss the technical aspects of these topics and then illustrate the use of the technical information with a number of case histories.

Instructors: Dr. Timothy D. Stark, P.E., University of Illinois at Urbana-Champaign; Dr. Farshid Vahedifard, P.E., Mississippi State University; Dr. Daniel Pradel, P.E., G.E., D.GE, Ohio State University

HALF DAY SESSION – 7:30am to 11:30am | Pindo B
Geoprofessional Business Practices and Ethics

Course Synopsis: GBA's Executive Director will be the Master of Ceremonies for an entertaining four-part series focused on Ethics, Contract Review, Delivering the Client Experience, and Case Histories. These are the business fundamentals of professional geoprofessional consultants and topics that GBA excels in providing its members and the greater community. The key topics of the four parts of this course are: 1) the importance of engagement and culture in business conduct/ethics; 2) how thinking like a client can result in negotiating success; 3) proven methods of delivering an awesome client experience; and, 4) unique case histories summarizing the experiences of others and the most valuable lessons learned.

Instructors: Various instructors, hosted by Joel Carson, Executive Director, GBA

HALF DAY SESSION – 7:30am to 11:30am | Pindo C
Deep Foundation Design and Construction using Load and Resistance Factor Design (LRFD) “LRFD for Fun and Profit"

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.


HALF DAY SESSION – 12:30pm to 4:30pm | Pindo B
Deep Foundations QA/QC for Engineers, Contractors, and Inspectors

Course Synopsis: This course provides an overview of common methods of QA/QC for Deep Foundations, and provides some perspectives on the value of QA/QC from design and construction points-of-view. The course includes a discussion on factors to consider during the design phase of a project, during installation, and post construction as well as a short specifications overview. The course introduces the main methods for performing inspections and testing for driven piles, drilled shafts, and augercast piles, although many of the methods described also apply to other types of deep foundations. The effect of well-planned and well-executed QA/QC programs on the design and construction of more cost-effective, efficient, and reliable deep foundations will be discussed with experts in the area of deep foundations.

Instructors: Mohamad Hussein, P.E., GRL Engineers, Inc.; Mike Justason, P.Eng., McMaster University
SHORT COURSES

WEDNESDAY, MARCH 7

HALF DAY SESSION – 12:30pm to 5:00pm | Sunburst 1 & 2

Joint Society Women’s Professional Development Skills Workshop

Course Synopsis: This half day workshop — organized by DFI’s Women in Deep Foundations Committee and hosted in a partnership with ADSC, G-I, AND PDCA — will help build professional skills for women in the geotechnical engineering and foundations industry. Nancy Watt, a Second City Comedy Improv Conservatory graduate, will conduct a dynamic, camaraderie-filled, improv-based workshop on communication and negotiation skills...infused with one ton of laughter. Wendy Murphy will introduce the concept of developmental networks and conduct an interactive workshop exercise on mapping your own personal mentoring network. Industry representatives will present successful corporate initiatives in the deep foundations industry that actively support women and encourage professional development. The course will wrap up with a multidisciplinary panel of industry representatives discussing the importance of confidence as a professional woman and the significance of establishing, maintaining and growing confidence as a professional.

Instructor(s): Nancy Watt, Nancy Watt Communications; Dr. Wendy Macinkus Murphy, Babson College; industry representatives

Facilitator: Mary Ellen Bruce Large, P.E., D.GE, Deep Foundations Institute

Student Activities

TUESDAY, March 6
6:00pm-8:00pm Welcome Reception Pool/Lawn Area

WEDNESDAY, March 7
8:30am-9:45am Opening Ceremonies & Keynote Presentation Citron North & Center
4:00pm-5:30pm Michael W. O’Neill Lecture: Presentation of ADSC 2017-2018 Scholarship Recipients Citron North & Center

THURSDAY, March 8
1:00pm-1:30pm G-I Student Orientation Citron North & Center
1:30pm-3:00pm G-I Student Professional Development Workshop Citron North & Center
7:00pm-8:00pm G-I Student Program: Student Travel Grant Winners and Organizational Members Career Fair (Invitation Only) Pindo A, B & C
8:00pm-9:00pm G-I Student Program: Organizational Member and Student Reception Pindo A, B & C

FRIDAY, March 9
12:00pm-4:00pm G-I GeoChallenge: GeoWall Palm Event Center & Pindo A
Teams of students from across the country will again compete in the action-packed Geo-Challenge. 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.

12:00pm-4:00pm G-I Challenge: GeoPoster, GeoPrediction & GeoVideo Palm Event Center & Pindo A
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.

4:00pm-8:00pm Final Night Progressive Reception Exhibit Areas
MONDAY, March 5
12:00pm-5:00pm  Registration  Citron Foyer
12:00pm-5:00pm  Exhibitor Registration  Citron Foyer
8:00am-5:00pm  G-I Board of Governors  (Closed Meeting)  Pindo C
12:00pm-1:30pm  G-I Board of Governors Luncheon  Areca
1:00pm-4:00pm  ADSC Executive Committee  (Closed Meeting)  27th North
2:00pm-4:00pm  PDCA Executive Committee  (Closed Meeting)  Pindo A
4:00pm-5:00pm  Exhibitors Meeting  Pindo B

TUESDAY, March 6
7:00am-6:00pm  Registration  Citron Foyer
7:30am-11:30am  Short Course - Deep Foundation Design & Construction Using Load and Resistance Factor  Pindo C
7:30am-11:30am  Short Course - Geoprofessional Business Practices Ethics  Pindo B
7:30am-4:30pm  Short Course - Stability and Stabilization of Natural and Man-Made Slopes with Climate Change  Pindo A
8:00am-12:00pm  G-I Organizational Member Council Part 1  27th North
8:00am-12:45pm  G-I Technical Coordination Council (TCC)  Meyer 1 & 2
8:00am-5:00pm  AGP Board of Governors  (Closed Meeting)  Lake Tower 1
8:30am-9:45am  Industry-Wide Working Platforms Working Group  Sago 3 & 4
8:30am-10:00am  DFI Codes and Standards Committee  Tangerine 7
8:30am-10:30am  PDCA Board of Directors  Citron West
9:00am-10:00am  ADSC Associates Committee  Citron East
10:00am-11:30am  DFI Deep Foundations for Landslides/Slope Stabilization Committee  Sago 3 & 4
10:00am-12:00pm  G-I Awards Committee  Seville
10:30am-12:00pm  PDCA Contracts & Risk Committee  Citron East
10:30am-12:00pm  PDCA Technical Committee  Citron West
12:30pm-4:30pm  Harvey, Irma, Maria: Lessons from the 2017 Atlantic Hurricane Season  Pindo C
12:30pm-4:30pm  Short Course - Deep Foundations QA/QC for Engineers, Contractors, and Inspectors  Pindo B
1:00pm-2:00pm  ISM Steering Committee  Seville
1:00pm-2:30pm  DFI Helical Piles & Tiebacks Committee  Citron East
1:00pm-2:30pm  USUCGER Board Meeting  (Closed Meeting)  Lake Tower 3
1:00pm-3:00pm  PDCA Chapters Committee  Areca
1:00pm-4:00pm  G-I Technical Committee Chairs Workshop  Meyer 1 & 2
1:00pm-5:00pm  Exhibits Open  Blue & Green Lots & Pavilion
2:00pm-3:30pm  ADSC / DFI Micropile Committee  Sabal F & G
3:00pm-4:30pm  DFI Driven Pile Committee  Tangerine 5
3:00pm-4:30pm  PDCA Safety/Environment Committee  Citron East
4:00pm-6:00pm  AGP Diplomat Ceremony  Citron North & Center
4:00pm-6:00pm  Ralph B. Peck Medal Lecture  Citron North & Center
6:00pm-8:00pm  Welcome Reception  Pool Lawn
7:30pm-9:00pm  G-I Geosynthetics Technical Committee  Areca
8:00pm-9:30pm  G-I Journal of Geotechnical/Geoenvironmental Committee  Meyer 1
8:00pm-9:30pm  G-I Risk Assessment and Management Technical Committee  Sago 2
8:00pm-9:30pm  G-I Rock Mechanics Committee  Sago 3
DYWIDAG-SYSTEMS INTERNATIONAL

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DYWIDAG QuickEx® Anchor System

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DYNA Force® Elasto-Magnetic Sensor

Less Steel – More Strength
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### WEDNESDAY, March 7 (Cont.)

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<td>Concurrent Technical Sessions</td>
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<td>Networking Break</td>
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<td>G-I Town Hall Meeting</td>
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<td>ADSC Chapter Presidents Council</td>
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<td>DFI Manufacturers, Suppliers and Service Providers Committee</td>
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<td>PDCA Steel Sheet Pile Committee</td>
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<td>4:00pm-5:30pm</td>
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<td>5:30pm-6:30pm</td>
<td>Dr. Jean-Louis Briaud Book Signing Reception</td>
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<td>G-I Deep Foundations Technical Committee</td>
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<td>G-I Earthquake Engineering and Soil Dynamics Technical Committee</td>
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<td>G-I Embankments, Dams and Slopes Technical Committee</td>
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### THURSDAY, March 8

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<td>DFI Energy Foundations Working Group</td>
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<td>PDCA Associate Member Council</td>
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<td>11:30am-1:30pm</td>
<td>Lunch</td>
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<td>12:00pm-4:00pm</td>
<td>G-I DIGGS Advisory Board</td>
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<td>27th North</td>
<td></td>
</tr>
<tr>
<td>1:00pm-1:30pm</td>
<td>G-I Student Orientation</td>
</tr>
<tr>
<td>Citron North &amp; Center</td>
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<tr>
<td>1:00pm-2:30pm</td>
<td>ADSC Anchored Earth Retention Committee</td>
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<tr>
<td>Pindo A, B &amp; C</td>
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<tr>
<td>1:00pm-2:30pm</td>
<td>Concurrent Technical Sessions</td>
</tr>
<tr>
<td>Sabal Ballroom &amp; Citron East</td>
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<tr>
<td>1:00pm-2:30pm</td>
<td>Industry-Wide Working Group on Risk - Exploratory Meeting</td>
</tr>
<tr>
<td>Areca</td>
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<tr>
<td>1:00pm-3:00pm</td>
<td>DFI Subsurface Characterization Committee</td>
</tr>
<tr>
<td>Meyer 1 &amp; 2</td>
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<tr>
<td>1:00pm-3:00pm</td>
<td>PDCA Education Committee</td>
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<tr>
<td>Sago 1</td>
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<tr>
<td>1:30pm-2:30pm</td>
<td>G-I Outreach and Engagement Committee</td>
</tr>
<tr>
<td>Seville</td>
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<tr>
<td>1:30pm-3:00pm</td>
<td>G-I Student Professional Development Workshop</td>
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<tr>
<td>Citron North &amp; Center</td>
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### THURSDAY, March 8 (Cont.)

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<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>2:30pm-3:00pm</td>
<td>Networking Break</td>
<td>Blue &amp; Green Lots &amp; Pavilion</td>
</tr>
<tr>
<td>3:00pm-4:30pm</td>
<td>DFI Slurry Wall Committee</td>
<td>Meyer 1 &amp; 2</td>
</tr>
<tr>
<td>3:00pm-4:30pm</td>
<td>PDCA Communications Committee</td>
<td>Sago 3 &amp; 4</td>
</tr>
<tr>
<td>3:00pm-4:30pm</td>
<td>Concurrent Technical Sessions</td>
<td>Sabal Ballroom Area &amp; Citron East</td>
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<tr>
<td>3:30pm-4:30pm</td>
<td>G-I GeoWall Captains Meeting</td>
<td>Sunburst 1 &amp; 2</td>
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<tr>
<td>4:30pm-6:00pm</td>
<td>Karl Terzaghi Lecture</td>
<td>Citron North &amp; Center</td>
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<tr>
<td>7:00pm-8:00pm</td>
<td>G-I Student Program: Organizational Members and Student Travel Grant Winners Job Fair</td>
<td>Pindo A, B &amp; C</td>
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<tr>
<td>7:30pm-9:00pm</td>
<td>G-I International Activities Council</td>
<td>27th North</td>
</tr>
<tr>
<td>8:00pm-9:00pm</td>
<td>G-I Student Program: Organizational Member and Student Reception</td>
<td>Pindo A, B &amp; C</td>
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<tr>
<td>8:00pm-9:30pm</td>
<td>G-I Codes and Standards Council</td>
<td>Tangerine 3</td>
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<tr>
<td>8:00pm-9:30pm</td>
<td>G-I Computational Geotechnics Technical Committee</td>
<td>Seville</td>
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<tr>
<td>8:00pm-9:30pm</td>
<td>G-I Earth Retaining Structures Technical Committee</td>
<td>Tangerine 5</td>
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<tr>
<td>8:00pm-9:30pm</td>
<td>G-I Geophysical Engineering Technical Committee</td>
<td>Sago 4</td>
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<tr>
<td>8:00pm-9:30pm</td>
<td>G-I Shallow Foundations Technical Committee</td>
<td>Areca</td>
</tr>
<tr>
<td>8:00pm-9:30pm</td>
<td>G-I Unsaturated Soils Technical Committee</td>
<td>Meyer 1 &amp; 2</td>
</tr>
<tr>
<td>10:00pm-11:30pm</td>
<td>G-I Graduate Student Leadership Council</td>
<td>Sago 1</td>
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### FRIDAY, March 9

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<thead>
<tr>
<th>Time</th>
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<th>Location</th>
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<tbody>
<tr>
<td>7:30am-4:00pm</td>
<td>Registration</td>
<td>Citron Foyer</td>
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<tr>
<td>8:00am-9:00am</td>
<td>ADSC Industry Advancement Steering Committee</td>
<td>Pindo C</td>
</tr>
<tr>
<td>8:00am-9:00am</td>
<td>G-I Organizational Member Council Part II</td>
<td>Sago 4</td>
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### SATURDAY, March 10

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>8:00am-10:30am</td>
<td>ADSC Board of Directors</td>
<td>Pindo A, B &amp; C</td>
</tr>
<tr>
<td>8:00am-12:00pm</td>
<td>G-I Geo-Congress Organizing Committee</td>
<td>Sago 4</td>
</tr>
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Jacksonville
904 284 1779

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NY/NJ
732 528 5477

Toronto
800 760 0925

Greensboro
336 854 1220

Milwaukee
262 345 5715

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### WEDNESDAY, MARCH 7

**SABAL A – 1:00pm-2:30pm**

**SITE INVESTIGATION - CASE HISTORIES AND LESSONS LEARNED**
Moderator: Conrad Felice, Ph.D., P.E., C.W. Felice, LLC

**Establishing a Threshold Sustainability Index for a Geotechnical Construction**
Jasaswee Das, M.S., EIT, S.M.ASCE, University of Texas at Arlington; Rinu Samuel, M.S., EIT, S.M.ASCE, University of Texas at Arlington; Anu George, M.S., S.M.ASCE, University of Texas at Arlington; Sayantan Chakraborty, M.S., S.M.ASCE, University of Texas at Arlington; Tejo Bheemasetti, Ph.D., A.M.ASCE, Anand Puppala, Ph.D., P.E., FASCE, D.GE, Site Characterization with 3-D Full Seismic Waveform Tomography Khien Tran, Ph.D., Clarkson University; Trung Dung Nguyen, Clarkson University Field and Lab Characterization of the Operational Response of Wind Turbine Generator Foundation Soil Christopher Enos, M.ASCE, EIT, University of Wisconsin; James Tinjum, Ph.D., P.E., University of Wisconsin; Mehmet Yilmaz, M.S., ante Fratta, Ph.D., A.M.ASCE, P.E., Henzhong Wu, M.S.

**CPT Based Settlement Prediction Over California Soft Rock, Stiff Alluvium, and Soft Alluvial Sites**

**Field Monitoring System for the Measurement of Moisture and Temperature Profiles in Different Layers of Soil**
Ali Khosravi, Ph.D., University of California Davis - Sharif University of Technology; Farid Fazel Mojtahedi Sharif University of Technology; Ali Nazari, M.Sc, Sharif University of Technology; Azin Khatami, Sharif University of Technology; Saeed Rezvani, Sharif University of Technology; Narges Ahmadi, Sharif University of Technology

**Development of a Point-Based Index for Sinkhole Vulnerability Evaluation in Central Florida’s Karst Terrain**
Ryan Shamet, M.S., University of Central Florida; David Horhota, Ph.D., P.E., Florida Department of Transportation; Boo Hyun Nam, Ph.D., University of Central Florida

**SABAL B – 1:00pm-2:30pm**

**DESIGN AND ANALYSIS OF DEEP FOUNDATIONS I**
Moderator: Sanjeev Malhotra, P.E., G.E., D.GE

**Modeling and Simulating Load Transfer of Drilled Shafts in Shales**
Thuy Vu, University of Texas Rio Grande Valley; Erik Loehr, University of Missouri

**Inverse Method for Pile Dynamics Using a Polytope Method**
Don Warrington, BSME, Texas A&M University, MS and Ph.D., University of Tennessee at Chattanooga, P.E., University of Tennessee at Chattanooga; James Newman, III, Ph.D., Mechanical Engineering, Virginia Polytechnic Institute and State University, July 1997, M.S., Aerospace Engineering, Old Dominion University, May 1994, B.S., Mechanical Engineering, Old Dominion University, May 1993, University of Tennessee at Chattanooga

**Numerical Study of Lateral Response of Berthing Structures by Considering Soil-Structure Interaction**
Vahid Zanjani, Ph.D., P.E., McLaren engineering Services; Mehdi Soudkhah, Ph.D., P.E., AECOM; Michael Whitney, Ph.D., P.E., Bechtel Infrastructure

**Deep Foundation Analysis from Cone Penetrometers – A Reappraisal**
Fawad Niazi, Ph.D., M.ASCE, Purdue University Fort Wayne; Paul Mayne, Ph.D., P.E., M.ASCE, Georgia Institute of Technology

**A Comparison of Load Transfer Characteristics of Drilled Shafts and CFA Piles in Weak Vuggy Limestone**
James Niehoff, P.E., M.ASCE, M.DFI, BSCE, MSCE, GEI Consultants, Inc.

**Dynamic Analysis of Laterally Loaded End-Bearing Piles in Homogeneous Viscoelastic Soil using Timoshenko Beam Theory**
Bipin Gupta, Master of Technology in Civil Engineering, Univ. of Waterloo, Waterloo, ON; Dipanjan Basu, Ph.D., Univ. of Waterloo

**SABAL C – 1:00pm-2:30pm**

**STONE COLUMNS/PIERS/GROUTING I**
Moderators: Kord Wissman, Ph.D., P.E., D.GE, Geopier Foundation Company and Jie Han, Ph.D., P.E., University of Kansas

**Numerical Predictions of Deformations in Geosynthetic-Reinforced Column-Supported Embankments: Validation of Manual Dissipation of Excess Pore Pressures Approach for Undrained and Drained Analyses**
Zhanyu Huang, M.S., Virginia Tech; George Filz, Ph.D., P.E., Dist.M.ASCE, Virginia Tech; Katerina Ziotopoulou, Ph.D., M.ASCE

**Application of Reliability Analyses for Serviceability Design of Column-Supported Embankments**

**A Case Study of Settlement and Load Transfer at Depth Beneath Column-Supported Embankments**
Aaron Gallant, Ph.D., University of Maine; Tucker Jones, University of Maine; Ehab Shatnawi, Ph.D., P.E., CH2M Hill; Emad Farouz, P.E., CH2M Hill

**Effect of Seawater on the Mechanical Properties of Cement Grout Used for Formation of Micropiles in Marine Applications**
Md Ahsanuzzaman, Doctoral Student, North Carolina State University; Mohammed Gabr, Ph.D., P.E., North Carolina State University; Roy Borden, Ph.D., P.E., North Carolina State University

**Lateral Loading Test Results on Single and Groups of Soil-Cement Columns**
Dao Do, Ph.D., University of Science and Technology, the University of Danang; Hai Nguyen, Ph.D., Univ. of Texas at Arlington

**Investigative Study of Behaviour of Treated Expansive Soil Using Empirical Correlations**
Eyo Eyo, S.M.ASCE, Coventry University; Samson Ngambi, Ph.D., Coventry University; Samuel Abbey, Coventry University

**SABAL E – 1:00pm-2:30pm**

**SLOPES, DAMS, AND EMBANKMENTS I**
Moderator: Timothy Stark, Ph.D., P.E., University of Illinois | Urbana-Champaign
CONCURRENT TECHNICAL SESSIONS

Case History: The Estrondo Landslide Stabilization
Daniel Pradel, Ph.D., P.E., G.E., D.GE, FASCE, The Ohio State University

Highway Embankment on Soft Soils Case Study and Lessons Learned
Timothy Stark, Ph.D., P.E., FASCE, D.GE, University of Illinois at Urbana-Champaign; Perry Ricciardi, P.E., Ohio Department of Transportation - District 3; Ryan Sisk, M.S., P.E.

Lessons Learned: Oklahoma State Highway 99 over the Washita River

Case Study: Do Slope Protective Ordinances Protect?
Alan Esser, P.E., D.GE, M.ASCE, SME

San Luis Dam Case History: Seepage and Slope Stability Analyses and Lessons Learned
Timothy Stark, Ph.D., P.E., FASCE, D.GE., University of Illinois at Urbana-Champaign; Navid Jafari, Ph.D., M.ASCE, Louisiana State University

Effect of Microbial Induced Calcite Precipitation on Compressibility and Hydraulic Conductivity of Fly Ash
Shahin Safavizadeh, S.M.ASCE, North Carolina State University; Brina Montoya, Ph.D., P.E., FASCE, North Carolina State University; Mohammed Gabr, Ph.D., P.E., FASCE, North Carolina State University

Evaluating the Effectiveness of Soil-Native Bacteria in Precipitating Calcite to Stabilize Expansive Soils
Bhaskar Chittoori, Ph.D., P.E., M.ASCE, Boise State University; Malcolm Burbank, Ph.D., CDM Smith; Md. Touhidul Islam, Boise State University

Viscosity-Enhanced EICP Treatment of Soil
Jose Pasillas-Rodriguez, S.M.ASCE, New Mexico State University; Hamed Khodadadi T., Ph.D., Aff.M.ASCE, Arizona State University; Kimberly Martin, S.M.ASCE, Arizona State University; Paola Bandini, Ph.D., P.E., M.ASCE, New Mexico State University; Craig Newton, Ph.D., P.E., M.ASCE, New Mexico State University; Edward Kavazanjian, Jr., Ph.D., P.E., FASCE, NAE, Arizona State University

Erodibility of Microbial Induced Carbonate Precipitation-Stabilized Sand Under Submerged Impinging Jet
Brina Montoya, Ph.D., P.E., FASCE, North Carolina State University; Khodadadi T., Ph.D., Aff.M.ASCE, Arizona State University; Mohammed Gabr, Ph.D., P.E., M.ASCE, New Mexico State University; Shahin Safavizadeh, S.M.ASCE, North Carolina State University; Brina Montoya, Ph.D., P.E., M.ASCE, Boise State University; Malcolm Burbank, Ph.D., CDM Smith; Md. Touhidul Islam, Boise State University

Anisotropic Shear Behavior of Soil-Structure Interfaces: Bio-Inspiration from Snake Skin
Alejandro Martinez, Ph.D., University of California, Davis; Sophia Palumbo, University of California, Davis

THURSDAY, MARCH 8

SABAL A – 8:30am-10:00am

Driven Piles - Case Histories and Lessons Learned

Benefits of a Pile Testing Program During the Design Phase
Marco Fellin, BS and MS Civil/Geotechnical Engineering, P.E., Tetra Tech

Savings from Testing the Driven-Pile Foundation for a High-Rise Building
Van Komurka, P.E., D.GE, FASCE, GRL Engineers, Inc.; Adam Theiss, P.E., S.E., Magnusson Klemencic Associates

Pile Group Effects and Soil Dilatancy at the Fort Lauderdale International Airport
David Rancman, P.E., H2R Corp; Thai Nguyen, P.E., MS, H2R Corp; Daniel Hart, II, P.E., MBA, DBIA, H2R Corp; Yves-Stanley Delmas, P.E., H2R Corp

Failure of Pile Foundations Driven into Bedrock Through Hydrocollapsible Soils

High Strain Dynamic Testing of Spin Fin(TM) Piles
CONCURRENT TECHNICAL SESSIONS

THURSDAY, MARCH 8 (CONT)

SABAL A – 8:30am-10:00am (Cont)

Bonner Bridge Replacement Project - Pile Driving Experience
Karen Webster, BSCE, P.E., Scott Webster, MSCE, P.E., GRL Engineers, Inc.

SABAL B – 8:30am-10:00am

DESIGN AND ANALYSIS OF DEEP FOUNDATIONS II
Moderator: Elizabeth Smith, P.E., G.E., D.GE, Terracon

LRFD for Micropiles - State of Practice
Jonathan Bennett, P.E., D.GE, M.ASCE, Moretrench American Corporation

Hydrocode Modeling of Torpedo Anchor Installation in Soils
Mehdi Omidvar, Ph.D., Manhattan College; Muhammad Baksh, E.T., Manhattan College; Anirban De, Ph.D., P.E., A.M.ASCE, Manhattan College

Evaluation of Change in Design Parameters (a and β) with Time to Design Pile
Md. Nafiul Haque, Louisiana State University; Murad Abu-Farsakh, Ph.D., P.E., Louisiana State University

Effect of Pile Spacing on the Static Lateral Behavior of Vertical and Battered Pile Groups
Ahmad Souri, Louisiana State University; George Voyiadjis, Louisiana State University

An Investigation of Pile Design Utilizing Advanced Data Analytics
Nikolaos Machairas, NYU School of Engineering; Magued Iskander, Ph.D., P.E., FASCE, NYU School of Engineering

Minimum Required Length for Geotechnical Lateral Stability of Rock-Socketed Pile Shafts
Arash Khosrvafar, Ph.D., P.E., Portland State University; Zia Zafir, Ph.D., P.E., G.E.

SABAL C – 8:30am-10:00am

50 YEARS OF FHWA GEOTECHNICS!
Moderator: Silas Nichols, P.E., Federal Highway Administration

This panel session will discuss the impact of the Federal Highway Administration (FHWA) on geotechnical engineering and construction over the last half century.


SABAL E – 8:30am-10:00am

SLOPES, DAMS, AND EMBANKMENTS II
Moderator: Binod Tiwari, PhD., California State University | Fullerton

Experimental Investigation of Effects of Sliding Distance on Impact Force from Granular Sliding Mass to a Rigid Obstruction
Amir Ahmadipur, The Pennsylvania State University; Tong Qiu, The Pennsylvania State University

Buttermilk Creek Bank Stabilization: Retaining Wall Design and Construction
Andrew Brown, Ph.D., P.E., Cpesc, M.asce, Geosyntec Consultants; Marty Christman, P.E., Cpesc, M.asce, Geosyntec Consultants; Beth Gross, Ph.D., P.E., D.GE, M.asce, Geosyntec Consultants

Rock Slope Stabilization Evaluation, Design and Construction, Greater Boston, Massachusetts

A Landslide Model with the Shear Band Propagation: Modification for Unsaturated Condition
Sihyun Kim, Ph.D., Bradley University; Brian Fiedler, Bradley University; Seunghee Kim, Ph.D., University Of Nebraska-Lincoln

Effect of the Core on the Upstream Stability of Dams Under Sudden Drawdown Conditions
Salama Al-Labban, Ph.D. Candidate, University Of Central Florida; Manoj Chopra, P.h.D., University Of Central Florida

Design Optimization of I-Wall Levee System Supported by Sand Foundation
Parishad Rahbari, Ph.D., ECS Limited; Nadarajah Ravichandran, Ph.D., Clemson University

SABAL F – 8:30am-10:00am

ADVANCES IN ENERGY PILES I
Moderators: Omid Ghasemi-Fare, Ph.D., University of Louisville; John McCartney, Ph.D., P.E., University Of California San Diego

Thermal Energy Storages Below the Building Helping to Reach the 0-Energy Targets by 2020. Holistic Approach Through the Energy Simulations
Rauli Lautkankare, Turku University of Applied Sciences; Nikolas Salomaa, M.Econ, NollaE Ltd.; Teppo Arola, Ph.D., Geological Survey of Finland; Jouko Lehtonen, DSc, Turku University of Applied Sciences

Life Cycle Assessment of Drilled Shafts and Driven Piles in Sand
Mina Lee, M.ASCE, University of Waterloo; Dipanjjan Basu, Ph.D., M.ASCE, University of Waterloo

Effect of Heating and Cooling Cycles on the Skin Friction of Energy Piles in Soft Clays
Roba Houhou, American University of Beirut; Abir Awad, American University of Beirut; Salah Sadek, American University of Beirut; Shadi Najjar, American University of Beirut

Temperature-Dependent Load-Displacement Curves of Heat Exchanger Piles in Sand
Karam Jaradat, Stony Brook University; Sherif Abdelaziz, Stony Brook University

Numerical Investigation of the Thermo-Mechanical Response of single Energy Pile
Tahereh Razmkhah, Sharif University of Technology, Tehran, Iran; Fardin Jafarzadeh, Ph.D., Sharif University of Technology, Tehran, Iran; Omid Ghasemi-Fare, Ph.D. A.M.ASCE, University Of Louisville

SABAL G – 8:30am-10:00am

LIQUEFACTION AND DENSIFICATION
Moderator: Menzer Pehlivan, Ph.D., P.E., CH2M
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THURSDAY, MARCH 8 (CONT)

**SABAL G – 8:30am-10:00am (Cont)**

*The Effect of Desaturation on the Static and Cyclic Mechanical Response of Dense Sand*
Sean O’Donnell, Ph.D., Geosyntec Consultants; Edward Kavazanjian, Jr., Ph.D., P.E., Arizona State University

*Liquefaction Mitigation using Driven Displacement Piles: A Case History*
Michael Allen, P.E., Coastal Engineering & Testing Company; Armin Stuedlein, Ph.D., P.E.(WA), Oregon State University

*Suitability Line of Grain Size Distribution for Blast Densification*
Scott Ashford, Oregon State University; Ben Mason, Oregon State University

*An Update to the Great Earthquake Lateral Spread Case History Database*
Bret Lingwall, Ph.D., P.E., South Dakota School of Mines and Technology; Dan Gills, Ph.D., United States Geodetic Survey; Michael Bunn, Oregon State University

*The Comparison between Cyclic Triaxial and Cyclic Hollow Cylinder Tests for Evaluating Liquefaction Resistant of Monterey No. 0/30 Sand*
Jungang Liu, Doctoral Candidate, University of Colorado Denver

**SABAL A – 10:30am-12:00pm**

**SLOPE STABILIZATION/Earth Retention - Case Histories and Lessons Learned**

*Moderator: Timothy Stark, Ph.D., P.E., University of Illinois | Urbana-Champaign*

*Developing Smart Grouted Sand Columns for Real Time Monitoring of Earth Dams*
Cumarsamy Vipulanandan, Ph.D., P.E., M.ASCE, University of Houston; Daniel Magill, Avanti International; Ibrahim Kula, University of Houston; Frank Aguilar, Avanti International

*Effect of Microbial Induced Carbonate Precipitation on the Stability of Mine Tailings*
Atefeh Zamani, Ph.D., North Carolina State University; Qianwen Liu, North Carolina State University; Brina Montoya, Ph.D., P.E.

*Bank Stabilization Adjacent to the Missouri River Using the Dry Method of Deep Soil Mixing*
David Curran, Jr., M.S., P.E., M.ASCE, CH2M; Spring Borchardt, M.S., P.E., Hayward Baker Inc.; Mark Howe, B.S., J.D., Hayward Baker Inc.; Edwin Ayala, B.S., B.A., Hayward Baker

*The CET Method for Levee-Floodwall Erosion Evaluation*
Abdolreza Osouli, Southern Illinois University; Sina Nassiri, Southern Illinois University Edwardsville; Brent Vaughn, Southern Illinois University Edwardsville

**SABAL B – 10:30am-12:00pm**

**DESIGN AND ANALYSIS OF DEEP FOUNDATIONS III**

*Moderator: Jim Niehoff, P.E., GEI Consultants, Inc.*

*Investigations of Hybrid Mono-pile Foundations for Offshore Wind Turbines under Lateral Cyclic Loading in Sand*

Xuefei Wang, Ph.D., Case Western Reserve University; Xiangwu Zeng, Ph.D., PE., Case Western Reserve University; Xu Yang, Case Western Reserve University; Hao Yu, Ph.D., DNV GL

*Modified LRFD Method for Drilled Shafts Using the Pressuremeter*
Elliott Drumright, Ph.D., P.E., AECOM; Thomas Barnard, P.E., AECOM

*Relaxation of Displacement Driven Pile Foundations in Florida’s Granular Soils*
Rodrigo Herrera, P.E., M.E., Florida Department of Transportation; Lawrence Jones, P.E., M.S.C.E, Florida Department of Transportation; Mingu Kim, P.E., Ph.D., Terracon

*Value Engineering of Reinforcement Used in Large Diameter Drilled Shafts*
Stephen Callies, DYWIDAG Systems International USA, Inc; Lucian Bogdan, P.E., DYWIDAG Systems International, USA, Inc.; Shahid Islam, Ph.D.

*A Novel Numerical Study of Reservoir-induced Subsidence and Upheaval Effects on Bearing Capacity of Offshore Piles*
Kamelia Atefi-Monfared, Ph.D., University at Buffalo; Jakub Rybicki, M.S., University at Buffalo

**SABAL C – 10:30am-12:00pm**

**INVITED PANEL ON RISK - A RATIONAL DISCUSSION CONTINUED**

*Moderator: Dan Brown, Ph.D., P.E., D.GE, Dan Brown and Associates, PC*

This session is intended to gather engineers, contractors, equipment and material suppliers, researchers and owners together for a rational discussion about risk as related to deep foundation projects.

**Speakers:**

*Owner Perspective*
Greg Scheiss, P.E., Florida Department of Transportation

*Legal Perspective*
Rick Kalson, Esq., Benesch, Friedlander, Coplan and Aronoff LLP

*General Contractor Perspective*
Terry Holman, Ph.D., P.E., Turner Construction Company

*Large Contractor Perspective*
Steve Saye, P.E., Kiewit Engineering Group

*S specialty Contractor Perspective*
Rick Deschamps, Ph.D., P.E., Nicholson Construction Company

*Geotechnical Engineer Perspective*
Victor Donald, P.E., Terracon

**SABAL E – 10:30am-12:00pm**

**SHALLOW FOUNDATIONS**

*Moderator: Xiong Zhang, Ph.D., P.E., Missouri University of Science and Technology*

*Measured and Predicted Dynamic Vertical Response of an Embedded Footing at TAMU NGES Site*
Patrick Dunn, Ph.D., P.E., Dennis Hiltunen, Ph.D., P.E., M.ASCE, University of Florida
Design and Construction of High-Capacity Spread Footings over Post-Glacial Compressible Clay Deposits: Two Case Studies in Massachusetts

Reliability Analysis of Settlement for Shallow Bridge Foundations
Asee Ahmed, Ph.D., FYRA Engineering; Andrzej Nowak, Ph.D., Aburun University; Maria Szerszen, Ph.D., P.E., University of Nebraska-Lincoln

Geotechnical Load Factored Resistance Design (LFRD) Calculations of Settlement and Bearing Capacity for Shallow Bridge Foundations
Shehab Agaiby, S.M.ASCE, Georgia Institute of Technology; Paul Mayne, Ph.D., Georgia Institute of Technology; Ian Rish, P.E., Georgia Department of Transportation; Adeola Adelakun, P.E., MSCE, Georgia Department of Transportation

One-Dimensional Compressibility Behavior of Overconsolidated Bootlegger Cove Clays
David Zapata-Medina, Ph.D., Universidad Nacional de Colombia, Sede Medellin; Diego Galeano-Parra, Universidad Nacional de Colombia, Sede Medellin; Luis Arboleda-Monsalve, Ph.D., M.ASCE, California State University at Long Beach

Moderator: Anna Sellountou, Ph.D., P.E., Pile Dynamics, Inc.

State of Practice and Advances in Quality Control Methods for Drilled Shafts
George Piscsalko, P.E., Pile Dynamics, Inc.; Pat Hannigan, P.E., GRL Engineers, Inc.

Evaluation of Thermal Integrity Profiling (TIP) Methods – Practitioner Experiences with Probe, Embedded Wire and Wire Suspended in CSL Tubes

Monitoring While Drilling Shafts in Florida Limestone
Michael Rodgers, Ph.D., University of Florida; Michael McVay, Ph.D., University of Florida; David Horhota, P.E., P.E., FDOT State Materials Office

Assessment of Bored Pile Verticality Using an Ultrasonic Caliper
Colm O’Doherty, MSc., Jon Sinnreich, M.Eng., P.E., Zeta Geotechnics LLC; Roberto Singh, M.Eng., CEMEX Panama

Recommendations on Two Acceleration Measurements with Low Strain Dynamic Test
Liqun Liang, Ph.D., Pile Dynamics, Inc.; Scott Webster, GRL; Marty Bixler, GRL

Quantitative Assessment of Drilled Shafts Based-Cleanliness Using the Shaft Quantitative Inspection Device (Solid)

Moderator: C. Yoga Chandran, Ph.D., P.E., G.E., CH2M

Influence of Non-Plastic Fines on Laboratory Shear Wave Velocity Measurements and Cyclic Strength of Sands
Lalita Oka, Ph.D., A.M.ASCE, California State University, Fresno; Mandar Dewoolkar, Ph.D., P.E., M.ASCE, University of Vermont

Numerical Insights into Seismic Performance of Low-rise Buildings with Basements
Jaime Mercado, S.M.ASCE, California State University Long Beach; Luis Arboleda-Monsalve, Ph.D., M.ASCE, California State University Long Beach

Effect of Overburden Pressure, Mineralogical Composition, and Plasticity on Post-Cyclic Shear Strength Degradation
Binod Tiwari, Ph.D., P.E., California State University, Fullerton; Beena Ajmera, Ph.D., California State University, Fullerton; Brian Yamashiro, California State University, Fullerton; Quoc Phan

Evaluation of Post-Liquefaction Shear Strength and Shear Wave Velocity of Uniform Gravels
Jonathan Hubler, University of Michigan; Adda Athanasopoulos-Zekkos, Ph.D., University of Michigan; Dimitrios Zekkos, Ph.D., P.E., University of Michigan

Case Histories of Liquefaction-Induced Building Damage – Focusing on the 22 February 2011 Christchurch Earthquake
Mengfen Shen, Ph.D. Student, Clemson University; Qiushi Chen, Ph. D., A.M.ASCE, Clemson University; Jie Zhang, Tongji University; C. Hsein Juang, Clemson University

Comparison of Measurements and Limit State Solutions for Soil Pressures on Deep Flexible Underground Structures
Lohrasb Keyhokgospor, University of CA, Irvine; Anne Lemnitzer, Ph.D., University of CA, Irvine

Moderators: Helen Robinson, P.E., GEI Consultants, Inc. and Maysill Pascal, P.E., Menard

Finite Element Analyses of an Urban Cofferdam Using Hypoplasticity Clay Mode
A. Uribe-Henao, S.M.ASCE, California State University Long Beach; Luis Arboleda-Monsalve, M.ASCE, California State University Long Beach; Juan Garcia, California State University Long Beach; Lisa Star

Analysis of Predicted Capacity Versus Load Test Results of Ground Anchors in Multi-Geology Installation
Eric Backlund, P.E., M.ASCE, Kleinfelder; Noel Janacek, P.E., M.ASCE, Kleinfelder

Numerical Modeling of a Tiedback Wood-Lagging Wall During Excavation

Investigation of the Effects of Different Overburden Pressures, Soil and Nail Parameters on the Pullout Shear Stress of Soil-Nail Interface Using Finite Element Simulation
Ali reza Saeedi Azizkandi, Ph.D., Assistant Professor, School of Civil Engineering, Iran University of Science and Technology; Mohamad Reza Bakhsh, II, Ph.D., Professor, School of Civil Engineering, Iran University of Science and Technology; Hamed Dashtara, III, MSc. Student, School of Civil Engineering, Iran University of Science and Technology; Amirhossein Kohadouzian, IV, MSc. Student, School of Civil Engineering, Iran University of Science and Technology
**THURSDAY, MARCH 8 (CONT)**

### SABAL A – 1:00pm-2:30pm

**ACIP PILES - CASE HISTORIES AND LESSONS LEARNED**  
*Moderator: W. Morgan NeSmith, P.E., Berkel & Company Contractors, Inc.*

**Economy and Design of Augered Cast-In-Place Piles at the Fargo WTP**  
Jonathan Huff, P.E.; Richard Goettle, Inc.; L. Bryson, Ph.D., University of Kentucky

**Auger Cast-in-Place Piles Embedded in Cobbles and Boulders in Honolulu**  
Andrew Hignite, P.E.; Geolabs, Inc.; Robin Lim, P.E., Geolabs, Inc.

**Former Navy Yard Revitalized with Hollow Stem Grout-Cast-in-Place Piles**  

**Settlement Induced During CFA Pile Installation in Egyptian Nile Valley Region: Case Study**  
Mohamed Arab, Ph.D., College of Engineering, University of Sharjah; Ahmed Elgamal, Ph.D., Maher Omer, Ph.D., Waleed Zeiada, Ph.D.

### SABAL B – 1:00pm-2:30pm

**FIELD TESTING: AXIAL/LATERAL LOAD TESTS I**  
*Moderators: Gerald Verbeek, Allnamics Pile Testing Experts BV and Cassandra Rutherford, Ph.D., P.E., Iowa State University*

**Examining Auger Cast-In-Place Piles in Difficult Ground Conditions**  
Nicholas Kam, P.E., Geolabs, Inc.; Jason Seidman, P.E., Geolabs, Inc.; Robin Lim, P.E., Geolabs, Inc.

**Model Tests on Piled Rafts – Measured Settlement Compared with Predictions From Finite Element and Empirical Methods**  
Joshua Omer, BSc (Hons), MSc, Ph.D., GMICE, MDFI, Kingston University

**Extrapolation Error Analysis of O-Cell Load-Settlement Curves for LRFD Calibration of Drilled Shafts**  
Mohammad Rakib Hasan, University of Texas at Arlington; Xinbao Yu, Ph.D., M.ASCE, University of Texas at Arlington; Murad Abu-Farsakh, Ph.D., M.ASCE, University of North Texas; Quanmei Gong, Ph.D., University of Akron; Yixiang Li, University of Akron; Zhe Luo, Ph.D., P.E., M.ASCE, Univ. of Akron; Quanmei Gong, Ph.D., Universidad Nacional de Colombia; Jorge Romana-Giraldo, MS, University of Kentucky; David Zapata-Medina, PhD, University of Sharjah; Ahmed Arab, PhD, College of Engineering, University of Sharjah; Ahmed Elgamal, PhD, Maher Omer, PhD, Waleed Ziada, PhD.

### SABAL C – 1:00pm-2:30pm

**THE NUTS AND BOLTS OF BUILDING A BETTER JOB**  
*Moderator: Peggy Hagerty Duffy, P.E., D.GE., ADSC and Hagerty Engineering*

This session will cover three topics that are current in 2018: construction in heavy urban areas with restricted access; management of airborne silica dust and protection of worker safety; and execution of post-grouting for drilled shafts. Each presenter will provide information about his respective topic with added insights into how construction in each situation could be improved with some specific design considerations on future projects.

**Wynn Casino, Everett/Boston, MA**  
Tony Barila, Hub Foundation Co.

**Effective Implementation of Post-Grouting for Drilled Shafts**  
Dr. Erik Loehr, University of Missouri at Columbia

**Dealing with Respirable Crystalline Silica Monitoring**  
Blake Holton, Moretrench, Inc.

### SABAL E – 1:00pm-2:30pm

**PILE DRIVING - DESIGN AND CONSTRUCTION**  
*Moderators: Michael Wysockey, Ph.D., P.E., Thatcher Engineering Corporation, and William Walton, P.E., S.E., F.ASCE*

**Lateral Soil Movements Due to Pile Driving: A Case Study in Soft Clays**  
Antonios Vytiniotis, Ph.D., P.E., Exponent; Brendan Casey, Ph.D., P.E., Exponent; David Sykora, Ph.D., P.E., D.GE., Exponent

**Full-Scale Lateral Load Tests of Driven Piles in Bangkok Clay**  
Gong Chaissithi, M.D., Mahidol University; Pongpipat Anantanaskul, Ph.D., Mahidol University

**Development of a; Screening Tool for Impact Hammer Selection for Installation, Testing and Damage Mitigation of Steel Pipe and H-Piles**  
Gerald Verbeek, MSc, M.ASCE, Allnamics USA; David Tara, M.Sc.A., P.Eng., Thurber Engineering Ltd.

**Comparison of Axial Resistance of Driven Piles Determined using Automatic Signal Matching Software, iCAP and CAPWAP**  
Eric Steward, Ph.D., P.E., University of South Alabama; Frank Rausche, Ph.D., P.E., D.GE., Pile Dynamics, Inc.; Ronald Jones, Building Engineering Consultants, Inc.

**A Multistage Signal Matching Approach for Pile Capacity Estimation Using the Instrumented Becker Penetration Test**  
Kevin Kuei, Jason DeJong, Ph.D., University of California; Mason Ghafghazi, Ph.D., University of Toronto
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THURSDAY, MARCH 8 (CONT)

SABAL E – 1:00pm–2:30pm (Cont)

Energy Transfer and Factors of Safety with and without High Strain Dynamic Testing

SABAL F – 1:00pm–2:30pm

BRIDGES: FOUNDATION DESIGN AND CONSTRUCTION
Moderator: Sam Sternberg, III, P.E., Thompson Engineering
A Preliminary Design of Apparatus for Scour Resistance Test in Riverbed Sediments
Fayun Liang, Tongji University; Xiong (Bill) Yu, Case Western Reserve University
Experimental Investigation of Granular Bulk Density Effect on Bridge Local Scour
Junhong Li, University of Akron; Junliang Tao, Ph.D., A.M.ASCE, University of Akron
Case History: Shallow Foundation for the Gut Movable Bridge
Raymond Mankbadi, MSCE, Hardesty & Hanover, LLC; Jeffrey Bade, MSCE, Hardesty & Hanover, LLC; Aravinda Ramakrishna, MSCE, Hardesty & Hanover, LLC
Numerical Feasibility Study of an Externally Heated Geothermal Bridge Deck
Teng Li, University of Texas at Arlington; Lei Gang, inbao Yu, Ph.D., P.E., M.ASCE, University of Texas at Arlington; Nan Zhang, Ph.D., P.E., Findling, Inc.; Anand Puppala, Ph.D., P.E., F.ASCE, University of Texas at Arlington

SABAL G – 1:00pm–2:30pm

GROUND IMPROVEMENT DESIGN AND QA/QC CONSIDERATIONS: PANEL DISCUSSION
Moderator: Jose Clemente, Ph.D., P.E., D.GE., F.ASCE, Bechtel NS&E
This session will address the use of performance vs. prescriptive specifications and QA/QC programs and appropriate verification testing for ground improvement solutions.
Juan Baez, Ph.D., P.E., P.Eng., Advanced Geosolutions Inc. (AGI)
Giovanni Bonita, Ph.D., P.E., P.G., GEI Consultants, Inc.
George Filz, Ph.D., P.E., Virginia Polytechnic Institute and State University
Roberto Lopez, P.E., Malcolm Drilling Company, Inc.
Al Sehn, Ph.D., P.E., Keller/Hayward Baker, Inc.
Kord Wissmann, Ph.D., P.E., D.GE., GeoPier Foundation Company, Inc.

CITRON EAST – 1:00pm–2:30pm

TUNNELS AND BURIED STRUCTURES
Moderators: Eric Wang, P.E., HNTB Corporation and Thomas Pennington, P.E., McMillen Jacobs Associates
Design Methodology to Evaluate Hydraulic Jacking in Pressure Tunnels
Mohammad Moridzadeh, Ph.D. Candidate, Lead Geotechnical Engineer, S.M.ASCE, Montgomery Watson Harza (MWH); Peter Dickson, Ph.D., P.E., Montgomery Watson Harza (MWH)

Tunnel Foundation Remediation in an Area of Mild Squeezing Conditions
Chrysanthos Steiakakis, P.E., A.M.ASCE, Geosynta Ltd; Stamati Delmadorou, Geosynta Ltd; Lefteris Malandrakis, P.E., TERNA S.A.; Zacharias Agioutantis, Ph.D., University of Kentucky; Alexandros Athanasiou, iC consulnten ZT GmbH

Compensation Grouting Program to Mitigate Settlement of Utilities from Tunneling
James Myers, P.E., Moretrench; Jonathan Taylor, P.E., Parsons; Lucian Spiteri, P.E., Moretrench

Assessment of Dynamic Load Allowance for Buried Culverts
Kalehiwot Manahiloh, Ph.D., P.E., M.ASCE, University of Delaware; Mehdi Kadivar, University of Delaware; Harry Shenton, Ph.D., M.ASCE, University of Delaware; Victor Kaliakin, Ph.D., M.ASCE, University of Delaware

Drilled Shafts - Case Histories and Lessons Learned
Moderator: Bubba Knight, P.E., Loadtest, A Division of Fugro USA Land, Inc.
Remediation of Anomalous Drilled Shafts – A Case Study
Brannin Beeks, P.E., Kiewit-Weeks_Massman, AJV; Bobby Daita, P.E., Parsons Transportation Group; John Turner, Ph.D., P.E., D.GE, Dan Brown and Associates, PC

Drilled Shaft Foundation Design for Sarah Mildred Long Bridge Replacement Project
Aravinda Ramakrishna, MSCE, Hardesty & Hanover, LLC; Raymond Mankbadi, MSCE, Hardesty & Hanover, LLC

Innovative Approach to Repairs of Deep Anomalies in Drilled Shafts to Restore Their Structural Integrity
Alexandre Bredikhin, MSCE, P.E., USACE

Obstructed and Damaged Piles – Some Case Histories of Pile Repairs
Ali Azizian, Ph.D., P.Eng., PMP, Tetra Tech

Drilled Shaft Installation at an Abandoned Underground Mine Site
Michael Arnold, BAUER Foundation Corp.; Bob Faulhaber, P.E., M.ASCE, BAUER Foundation Corp.; Joe Nichols, P.E., BAUER Foundation Corp.; Russell Cooper, BAUER Foundation Corp.
INVITED PANEL ON DIGGS AND DATA USE IN THE GEOPROFESSION
This panel of invited speakers will briefly present the state of our practice in data collection, transmission and interpretation in the geoprofession beginning with an update on DIGGS, a look at load testing data, foundation drilling equipment, and grouting to set the background for how data will change our profession.

Scott Deaton, Ph.D., Data Forensics (DIGGS: working example of data transfer)
Nick Machairas, NYU (Load Test data scheme)
Gordian Ulrich, Equipment Corporation of America (Data in modern drill rigs)
Gabriele Eccher, SWS Global (Grouting data management Mosul dam)

SELECTED OTHER TOPICS IN GEOTECHNICAL ENGINEERING II
Moderators: Matteo Montesi, P.E., WSP USA and Curt Basnett, P.E., G.E., CH2M

Modeling of the Burrowing Mechanism by Razor Clam: Effects of Shell Expansion
Sichuan Huang, University of Akron; Junliang Tao, University of Akron

Characterization of As-constructed Aggregate Base Layer Stiffness Using Embedded Shear Wave Transducers
Yong-Hoon Byun, Ph.D., University of Illinois at Urbana-Champaign; Erol Tutumluer, Ph.D., University of Illinois at Urbana-Champaign

Large Diameter Pressure Sensors: Design, Development and Sample Application
Anne Lemnitzer, Ph.D., University of CA, Irvine; Lohrasb Keykhosropour, S.M.ASCE, University of California, Irvine; Antonio Marinucci, Ph.D., MBA, P.E., M.ASCE, V2C Strategists, LLC; Steve Keowen, Self Employed

Global Segmentation Algorithm for Partially Saturated Granular Geomaterials
Kalehiwot Manahiloh, Ph.D., P.E., M.ASCE, University of Delaware; Kokeb Abera, University of Delaware; Mohammad Motaleb Nejad, S.M.ASCE, University of Delaware
CONCURRENT TECHNICAL SESSIONS

THURSDAY, MARCH 8 (CONT)

SABAL G – 3:00pm-4:30pm (Cont)
Evaluation of Tests in Prediction of Final Solid Content in Geotextile Tube Dewatering Projects: A Case Study
Zeru Kiffle, Ph.D. Candidate, Syracuse University; Shobha Bhatia, Ph.D., Syracuse University; Gregg Lebster, WaterSolve; Ratna Ratnayesryraj, MSc

CITRON EAST – 3:00pm-4:30pm
BIO-BASED SOIL IMPROVEMENT II
Moderators: Dimitrios Zekkos, Ph.D., University of Michigan and Jason Dejong, Ph.D., University of California, Davis, and Kenichi Soga, Ph.D., University of California, Berkeley
Modeling Bio-Cemented Sands: A Strength Index for Cemented Sands
Chukwuebuka Nweke, E.I.T, University of California, Berkeley; Juan Pestana, Sc.D., P.E., University of California, Berkeley
A New Framework for Identifying Cementation Level of MICP-Treated Sands
Ashkan Nafisi, S.M.ASCE, North Carolina State University; Brina Montoya, P.E., M.ASCE, North Carolina State Univ.
Sisal Fiber Reinforcement of EICP-Treated Soil
Abdullah Almajed, Ph.D., Arizona State University; Hamed Khodadadi T, Ph.D., Aff.M.ASCE, Arizona State University; Edward Kavazanjian, Jr., Ph.D., F.ASCE, University of California, Berkeley
Develop a Multiple Treatment Laboratory Method to Enhance Microbial-Induced Soil Stabilization
Kejun Wen, Jackson State University; Lin Li, Ph.D., P.E., F.ASCE, Jackson State University; Yang Li, Jackson State University; Farshad Amini, Ph.D., P.E., F.ASCE, Jackson State University
Effects of Bacteria on the Engineering Behaviors of Soils
Yuan Guo, Case Western Reserve University; Mark Loria, Case Western Reserve University; Kurt Rhoads, Case Western Reserve University; Xiong Yu, Ph.D., P.E., F.ASCE, Case Western Reserve University
Response Characteristics of Engineered Equestrian Surfaces: A Case Study
William Hawe, Jean Benoit, Ph.D., yan van der Heijden, BSCE, University of New Hampshire

FRIDAY, MARCH 9

SABAL A – 8:00am-9:30am
GROUND IMPROVEMENT - CASE HISTORIES AND LESSONS LEARNED
Moderator: Jose Clemente, Ph.D., P.E., D.GE, F.ASCE, Bechtel NS&E
Rigid Inclusion Supported Embankments for New Jersey Turnpike Interchange 14A Improvements: A Case Study
Daniel Cacciola, P.E., aisal Ahmed, Ph.D., P.E., PMP, Shafiq Siddiqui, Ph.D., P.E., Gannett Fleming, Inc.; Sarah Ramp, Menard USA
Rigid Inclusion System Supports Multi-Story Residential and Parking Garage Structures in Organic Soil Profile
Deep Power Compaction Vibro-Compaction Testing Program at Treasure Island
Stefanos Papadopoulos, P.E. G.E., ENGEO Incorporated; Uri Eliahu, P.E, G.E, ENGEO Incorporated
Half Mile Long Ore Shed: Ground Improvement in “Low Headroom”
Allen Cadden, P.E. D.GE, F.ASCE, Schnabel Engineering; Michael Arnold, P.E., ob Faulhaber, P.E., Johanna Simon, P.E.,
Jet Grouting for Seepage Control at Lac des Iles Water Management Facility

SABAL B – 8:00am-9:30am
DEEP FOUNDATIONS & SEISMIC ISSUES
Moderator: Billy Camp, P.E., D.GE, S&ME
Lateral Resistance of Piles within Corrugated Metal Sleeves
Kyle Rollins, Ph.D., Brigham Young University; Dalin Russell, EIT, GeoEngineers, Inc.
Analysis of Post-Liquefaction Axial Capacities of Driven Pile and Drilled Shaft Foundations
Elvis Ishimwe, University of Arkansas; Coffman Richard, University of Arkansas; Kyle Rollins, Ph.D., Brigham Young University
Densification of Granular Soils by Pile Driving and Implications for Evaluation of Liquefaction
Frederick Rhyner, P.E., Mueser Rutledge Consulting Engineers
Lateral Behaviour of Pile Foundations during Partial Liquefaction
Pradeep Kumar Dammala, AM.ASCE, University of Surrey; Mehdi Rouholamin, Ph.D., University of Portsmouth; Georgios Nikitas, University of Surrey; Subhamoy Bhattacharya, Ph.D., University of Surrey; Murali Krishna Adapa, Ph.D., M.ASCE, Indian Institute of Technology Guwahati

SABAL C – 8:00am-9:30am
DRIVEN PILES: A SOLUTION FOR DIFFICULT SOIL AND SITE CONDITIONS
Moderator: Gerry McShane, MICE, Service Steel Warehouse
This session will explore how the driven pile can be an effective solution in a variety of problematic subsurface conditions.
Mohamad Hussein, P.E., GRL Engineers
Dave Chapman, P.E., Blakeslee Arpaia Chapman Inc
Gerry McShane, Service Steel Warehouse

SABAL E – 8:00am-9:30am
UNSATURATED SOILS
Moderators: Farshid Vahedifard, Ph.D., P.E., Mississippi State University and Rifat Bulut, Ph.D., Oklahoma State University
Effects of Temperature on Microstructural Properties of Unsaturated Clay
C. Clay Goodman, S.M.ASCE, Mississippi State University; Nima Latifi, M.ASCE, Mississippi State University; Farshid Vahedifard, M.ASCE, Mississippi State University

A Simplified Approach to Determine the Response of Unsaturated Soils Using Multistage Triaxial Test
Aritra Banerjee, Ph.D., AM.ASCE, University of Texas at Arlington; Anand Puppala, Ph.D., P.E., F.ASCE, D.GE., University of Texas at Arlington; Ujwalkumar Patil, Ph.D., P.E., M.ASCE, University of Texas at Arlington; Laureano Hoyos, Ph.D., P.E., M.ASCE, University of Texas at Arlington; Puneet Bhaskar, M.S., SM.ASCE, University of Texas at Arlington; Amir AghaKouchak, Ph.D., P.E., M.ASCE, Mississippi State University; Farshid Vahedifard, M.ASCE, Mississippi State University; James Physics Processes in Partially Saturated Soils

Geotechnical Engineering in the Face of Climate Change: Role of Multi-Physics Processes in Partially Saturated Soils
Farshid Vahedifard, Ph.D., P.E., M.ASCE, Mississippi State University; James Williams, Mississippi State University; Amir AghaKouchak, Ph.D., P.E., M.ASCE

Thermal Conductivity of Unsaturated Sands at Moderately Elevated Temperatures (25 to 75 °C)
Jun Yao, Ph.D. candidate, University of Wisconsin, Madison; William Likos, University of Wisconsin, Madison

A Comparison of In-Place Unit Weight and Moisture Content Measurements Made Using Nuclear Based Methods and the Drive Cylinder Method
William Baker, III, E.I.T., S.M.ASCE, University of Delaware; Christopher Meehan, Ph.D., P.E., University of Delaware

Comparison of Direct Push to Pre-Bored Pressuremeter Test Results

A Preliminary Study on Use of Lidar Data to Characterize Sinkholes in Central Florida
Amirarsalan Rajabi, University of Central Florida; YongJe Kim, University of Central Florida; Sung-Hee Kim, Ph.D.; ongSeong Kim, Ph.D.; umJoo Kim, Ph.D., oo Hyun Nam, Ph.D., University of Central Florida

Equations to Calculate the Undrained Shear Strength of Lacustrine Soil Deposit with Swedish Cone Equipment
Binod Tiwari, Ph.D., P.E., California State University, Fullerton; Daniel Pradel, Ph.D., P.E., D.GE, The Ohio State University; Beena Ajmera, Ph.D.

A Decision Tree Based Hazard Assessment of Karst Sinkholes
YongJe Kim, University of Central Florida; Boo Hyun Nam, Ph.D., University of Central Florida; Changsul Lim, Ph.D., yuk-Sang Jung, Ph.D., Joon-Shik Moon

A Case History of a Jet Grouted Wall in Saturated Course Granular Material with Boulders
Paolo Gazzarrini, P.Eng. M.ASCE, Sea To Sky Geotech Inc; Calum Buchan, P.Eng., WSP Canada Inc; Stephen Jungaro, Matcon Excavation and Shoring; Dan Hunt, Matcon Excavation and Shoring; Rob Mawe

Development and Field Verification of a New Compaction Grouting Method with Improved Upheaval Control
Koji Takenouchi, Sanshin Corporation; Shinji Sassa, Ph.D., Port and Airport Research Institute; Hiroyuji Yamazaki, Ph.D., Port and Airport Research Institute; Takeshi Konishi, Mirai Construction Co., LTD; Takashi Shinsaka, Sanshin Corporation; Yuichi Kanno, Fukken.Co., Ltd

ANIBAL SANTOS, Ph.D. Student, University of Arkansas; MICHELLE BERNHARDT, Ph.D., University of Arkansas

Compaction Grouting for Ground Improvement and Lifting of Foundations on Variable and Voided Fine Grained Organic Fill
Michael Rembold, KA Engineers; Joe Harris, Hayward Baker; Joe Amend, Hayward Baker; Jesse Friel, Hayward Baker

Remedial Grouting of Existing Embankment Dam Foundations: Lessons Learned (and Ignored)
Donald Bruce, Ph.D., D.GE, C.Eng., P.G. L.G., L.E.G., Geosystems, L.P.; Trent Dreese, Gannett Fleming; Jim Cockburn, Consultant

Effect of Columnar Sand Inclusions on the Cyclic Resistance of Anisotropically-Consolidated Clay
Ahmad Kahiel, American University of Beirut; Salah Sadek, M.ASCE, American University of Beirut; Shadi Najjar, A.M.ASCE, American University of Beirut

Compaction Grouting for Ground Improvement and Lifting of Foundations on Variable and Voided Fine Grained Organic Fill
Michael Rembold, KA Engineers; Joe Harris, Hayward Baker; Joe Amend, Hayward Baker; Jesse Friel, Hayward Baker

CITRON EAST – 8:00am-9:30am
SEISMIC ASPECTS OF EARTH RETENTION
Moderator: Ali Eliaodaran, Ph.D., P.E., PLS, South Carolina State University

Fragility Analysis of Seismic Response of Cantilever Retaining Walls with Cohesive and Cohesionless Backfill Materials
Siavash Zamiran, Southern Illinois University; Abdolreza Osooli, Southern Illinois University Edwardsville

Seismic-induced Transverse Deformation of a Geosynthetic Reinforced Soil Bridge Abutment Subjected to Longitudinal Shaking
Wenyong Rong, M.S. S.M.ASCE, University of California San Diego; Yewei Zheng, M.S., S.M.ASCE, University of California San Diego; John McCartney, Ph.D., P.E., M.ASCE, University of California San Diego; Patrick Fox, Ph.D., P.E., F.ASCE, Pennsylvania State University

Experimental and Numerical Investigation of Lateral Earth Pressures Generated from Repeated Loading
Jorge Zornberg, Ph.D., P.E., F.ASCE, The University of Texas at Austin; Amr Morsy S.M.ASCE, The University of Texas at Austin; Jakob Walter, S.M.ASCE, The University of Texas at Austin
FRIDAY, MARCH 9 (CONT)

CITRON EAST – 8:00am-9:30am (Cont)

Cyclically Induced Deformations in Lightweight Cellular Concrete Backfilled Retaining Structures  
Binod Tiwari, Ph.D., P.E., California State University, Fullerton; Beena Ajmera, California State University, Fullerton; Diego Villegas, Cell-Crete Corporation

SABAL A – 10:00am-11:30am

EXCAVATION SUPPORT - CASE HISTORIES AND LESSONS LEARNED
Moderators: Rick Valentine, P.E., Valentine Engineering Consultants and Walter Kutschke, P.E., AECOM

Cutter Soil Mixed Support of Excavation Walls and Deep Foundations for Remodeling of a Hotel Structure  
Justin Simmons, P.E., BAUER Foundation Corp.; Michael Arnold, BAUER Foundation Corp.; Bob Faulhaber, P.E., M.ASCE, BAUER Foundation Corp.

Galata Port Project in Istanbul: Rehabilitation and Restoration works of the Terminal for Cruise Ship and Historical Surrounding Area  
Marco Chiarabelli, P.E., MBA, Solimec North America; Federico Pagliacci, P.E., Solimec S.p.A.; Claudio Asioli, P.E., Trevi S.p.A.; Salvatore Miranda

Using Three Systems for Soil and Bedrock Stabilization  

Combining Secant Piles with a Grouting Program Provides a Value Engineered Alternative for a Critical Support of Excavation  
David Sposito, P.E., Posillico Civil, Inc.; Andrew Burns, P.E., Posillico; Sitotaw Fantaye, P.E., Mueser Rutledge Consulting Engineers; James Myers, P.E., Moretrench

SABAL B – 10:00am-11:30am

PAVEMENTS AND SUBGRADES II
Moderators: Boo Hyun Nam, Ph.D., University of Central Florida and S. Sonny Kim, Ph.D., P.E., F.ASCE, Associate Professor, University of Georgia

Monitoring of Moisture Fluctuations in a Roadway over Expansive Clay Subgrade  
Christian Armstrong, M.S., University of Texas at Austin; Jorge Zornberg, Ph.D., P.E., University of Texas at Austin

Compressibility of Fine Coal Refuse  
Cyrus Jedari, University of Tennessee; Angelica Palomino, Ph.D., University of Tennessee; Eric Drumm, Ph.D., P.E., University of Tennessee

A Case study and Lessons Learned "Loop 1604 Western Extension Subgrade and Pavement Testing and Evaluation"  
Hosam Salman, P.E., F.ASCE, WSP; William Martinez, P.E., WSP; Ravi Vedantham, P.E., Foundation Constructors, Inc.; Anand Puppala, Ph.D., P.E., Fellow-ASCE, Diplomate in GE, The University of Texas at Arlington

Instrumentation and Monitoring of Distress Remediation Strategies Alabama Highway 5  
Dan Jackson, Auburn University; Dylan Jones, Auburn University; J. Anderson, Ph.D., P.E., Auburn University

Utilisation of Building Derived Material for improving performance of Sand as a Foundation Material  
Jayathjea Muktinutalapati, M.Tech., Birla Institute of Technology and Science, Pilani, Hyderabad; Ashok Suluguru, M.Tech., Birla Institute of Technology and Science, Pilani, Hyderabad Campus; Anasua GuhaRay, Ph.D., A.M.ASCE, Birla Institute of Technology and Science, Pilani, Hyderabad Campus; Arkamitra Kar, Ph.D., EIT, A.M.ASCE, Birla Institute of Technology and Science, Pilani, Hyderabad Campus

SABAL C – 10:00am-11:30am

HISTORY AND FUTURE OF INDUSTRY-ACADEMIC PARTNERSHIPS
Moderators: Trish Gallagher, Ph.D., Drexel University and Helen Robinson, P.E., GEI Consultants, Inc.

This session will include a combination of brief presentations and networking activities to foster relationships between industry and academic partners that further practical research efforts.

Speakers:
Shobha Bhatia, Ph.D.: Geotechnical Women Faculty from 1989-2017: A U.S. Case Study
Debra Laefer, Ph.D., P.E. : America’s Research-Active, Geotechnical Faculty Members: A Snapshot of the Community 7 Years On
Mary Ellen Large, P.E., D.GE (DFI), Peggy Hagerty Duffy, P.E., D.GE (ADSC), and Jennifer Nicks, Ph.D., P.E (FHWA): Industry and Government Research Funding Opportunities

SABAL E – 10:00am-11:30am

CONSTITUTIVE MODELING I
Moderators: Usama El Shamy, Ph.D., P.E., Southern Methodist University | Lyle and San Seung Jae Lee, Ph.D., Florida International University

Yield Surface Mapping and Triaxial Compression Test Data Curation  
Mohammad Eslami, Ph.D. Candidate, University of California, Los Angeles; Scott Brandenberg, Ph.D., P.E, University of California, Los Angeles; Daniel Pradel, Ph.D., P.E, G.E, Ohio State University; Maria Esteva, Ph.D., Texas Advanced Computing Center

Simulation of Quasi-Static Collapse of Granular Columns using Smoothed Particle Hydrodynamics Method  
Elnaz Kermani, S.M.ASCE, Pennsylvania State University; Tong Qiu, Ph.D., P.E., M.ASCE, Pennsylvania State University

Effect of Normalization on Developing SHANSEP Based Undrained Shear Strengths of Fine-Grained Soils  
Binod Tiwari, Ph.D., P.E., California State University, Fullerton; Beena Ajmera, Ph.D., California State University, Fullerton; Mohammed Al Behadili, California State University, Fullerton
Use of Nano-Level Constitutive Model to Predict the Volume Change Behavior of the Treated Expansive Clays
Sahel Abduljauwad, Ph.D., abib-ur-Rehman Ahmed, Ph.D.,

Prediction of Particle Size Distribution in Clay Using Electrical Conductivity Measurements
Lindsey Bryson, Ph.D., P.E. M.ASCE, University of Kentucky; Majid Mahmodabadi, S.ASCE, University of Kentucky

H-Pile Driving Induced Vibrations: Reduced-Scale Laboratory Testing and Numerical Analysis
Athinia Grizi, A.MASCE, University of Michigan; Adda Athanasopoulos-Zekkos, A.M ASCE, University of Michigan; Richard Woods, Dist.M.ASCE, University of Michigan

SABAL F – 10:00am-11:30am
ROCK MECHANICS
Moderators: Ingrid Tomac, Ph.D., University of California San Diego and Ehsan Ghazanfari, Ph.D., P.E., University of Vermont

Response of Marcellus Shale Specimens to Cyclic Loading
Arash Kamali Asl, University of Vermont; Ehsan Ghazanfari, University of Vermont

New Vipulanandan Failure Model and Property Correlations for Sandstone, Shale and Limestone Rocks
Cumaraswamy Vipulanandan, Ph.D., P.E., M.ASCE, University of Houston; Ahmed Mohammed, Ph.D., University of Houston

Thermal Conductivity Measurements on Weathered Limestone
John Nuszkowski, Ph.D., University of North Florida; Nick Hudyma, Ph.D., University of North Florida; Marcus Polito, University of North Florida; Jennifer Nicks, Ph.D., P.E., Federal Highway Administration

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The Study on Island Rock-mass Mechanical Parameters in a Cross-sea Bridge
Jianli Wu, Ph.D., Southwest Jiaotong University; Xiewen Hu, Southwest Jiaotong University; Dage Song

SABAL G – 10:00am-11:30am
RETAINING AND CUTOFF WALL DESIGN AND CONSTRUCTION
Moderators: Ken Fishman, P.E., McMahon & Mann Consulting Engineers, P.C. and Nasser Massoudi, Ph.D., P.E., Bechtel

Emergency Bridge Pier Foundation Repair with Pressed-in Piles
Takefumi Takuma, A.MASCE, Giken America Corp.; Takayuki Sakai

Soil-Bentonite Slurry Trench Cutoff Wall Longevity
Daniel Ruffing, P.E., M.ASCE, Geo-Solutions, Inc.; Jeffrey Evans, Ph.D., P.E., FASCE, Bucknell University; Nathan Coughenour, Geo-Solutions, Inc.

Evaluation of Water Vapor Sorption and Electrical Conductivity Methods to Determine Bentonite Content of a Soil-Bentonite Barrier
Idil Deniz Akin, Ph.D., A.MASCE, University of Wisconsin-Madison; Jiannan Chen, Ph.D., A.MASCE, Southwest Jiaotong University; Craig Benson, Ph.D., P.E., NAE, University of Virginia; William Likos, Ph.D., M.ASCE, University of Wisconsin-Madison

Challenges on Sheeting, Shoring and Underpinning Projects
Morgan Eddy, P.E., MASCE, Steele Foundation LLC; Sharon Hartley, Steele Foundation LLC

SABAL A – 1:00pm-2:30pm
MICROPILES - CASE HISTORIES AND LESSONS LEARNED
Moderator: Steve Davidow, P.E., S.E., P.Eng., Quanta Subsurface

Micropile Bridge Substructure Replacements: Innovative Approaches to Overcoming Unique Design and Construction Challenges through the Design/Build Process
Frank DiSalvo, P.E., Moretrench American Corporation; Stephen Mascia, P.E., Ecco III Enterprises, Inc.

Design and Installation of Micropile Foundations for a Suspension Bridge
Justin Lewis, P.E., Hayward Baker Inc.

Delaware River Bridge Repair Rapid Response
Yaser Taheri, P.E., M.ASCE, Moretrench American Corporation; Michael McNicholas, P.E., M.ASCE; Tai Luu, P.E., M.ASCE

High Capacity Macropiles™ for a New 70 Story Tower in Manhattan
John Grillo, P.E., M.ASCE, Hayward Baker, Inc.
FRIDAY, MARCH 9 (CONT)

SABAL A – 1:00pm-2:30pm (Cont)

Foundations for the Bronx-Whitestone Bridge Reconstruction
Mangtao Du, P.E., WSP; Daniela Zellers, P.E., WSP

SABAL B – 1:00pm-2:30pm

PRACTICAL ASPECTS OF FOUNDATION INSTALLATION AND INVESTIGATION
Moderator: Sanjeev Malhotra, P.E., G.E., D.GE.

Small Hole Drilling: The State of Practice
Donald Bruce, Ph.D., D.GE., C.Eng., P.G. L.G., L.E.G., Geosystems, L.P.; Rudy Lyon, Center Rock Inc.

Large Diameter Drilled Shafts: Load Testing and Numerical Analysis for Bridge Foundation Design

Characterizing the Strength of Tar Sands in Los Angeles, A Case History

Scale Model Investigation of Pipe Pile Plugging
Timothy Wood, Ph.D., The Citadel; Earnest Terrell, MSCE, EIT, Fugro USA Land, Inc; Joey Johnsen, CTA Architects and Engineers

Full Scale Testing of Laterally Loaded Helical Pile Groups
Mohammed Sakr, Ph.D., P.Eng, Sakr Geotechnical Consulting Ltd

Resistance Factors for Side Friction and End Bearing of Drilled Shafts in Shales
Thuy Vu, A.M.ASCE, University of Texas Rio Grande Valley; Erik Loehr, P.E., M.ASCE, University of Missouri Columbia

SABAL C – 1:00pm-2:30pm

ELEVATING OUR GEOPROFESSION THROUGH BOARD CERTIFICATION
Moderator: Allen Marr, Ph.D., P.E., NAE, D.GE., Geocomp Corporation

The purpose of this session is to inform the audience about the role of Board Certification in advancing the profession of geotechnical engineering. Representatives of the geotechnical profession, employers of geotechnical engineers, and clients will discuss the merits and drawbacks of board certification.

W. Allen Marr, P.E., D.GE., F.ASCE, NAE, President of Academy of GeoProfessionals (2017-2018)
Don Anderson, P.E., D.GE, F.ASCE, Past President, Academy of GeoProfessionals
Robert C. Bachus, Ph.D., P. E., D.GE, M.ASCE
Elizabeth M. Smith, P.E., G.E., D.GE, M.ASCE

SABAL D – 1:00pm-2:30pm

CONCURRENT TECHNICAL SESSIONS

SABAL E – 1:00pm-2:30pm

CONSTITUTIVE MODELING II

Moderators: San Seung Jae Lee, Ph.D., Florida International University and Usama El Shamy, Ph.D., P.E., Southern Methodist University | Lyle

Preliminary Results of Modeling of Ground Surface Deformation Due to a Subsurface Pressurized Crack
Francisco Aquiniga, Ph.D., Dazhi Sun, Ph.D., Joseph Sai, Ph.D., Mohammed Faruqi, Ph.D., Soheil Razzaghi, EnTech Engineering, PC.; Jong-Won Choi, Ph.D., Texas A&M University- Kingsville

A Microstructure-Based Finite Element Model to Estimate Hydraulic Properties in Fine-Grained Soils
Shaoyang Dong, Ph.D., Case Western Reserve University; Xiong Yu, Ph.D., P.E., FASCE, Case Western Reserve University

Probabilistic Analysis of Layered Slopes with Linearly Increasing Cohesive Strength and 2D Spatial Variability of Soil Strength Parameters Using Non-Circular Riem Approach
Sina Javankhoshdel, Ph.D., Rocscience Inc.; Brigid Cami, B.Sc, Rocscience Inc.; Richard Bathurst, P.Eng., Ph.D., FEIC, FCAE, Geo-Engineering Center at Queen’s-RMC; Brent Corkum, Ph.D., Rocscience Inc.

Influence of Mesh Size, Number of Slices, And Number of Simulations in Probabilistic Analysis of Slopes Considering 2D Spatial Variability of Soil Properties
Brigid Cami, B.Eng, Rocscience Inc.; Sina Javankhoshdel, Ph.D., EIT, Rocscience Inc.; Richard Bathurst, Ph.D., GeoEngineering Centre at Queen’s-RMC; Thamer Yacoub, Ph.D., P.Eng., Rocscience Inc.

Large-scale Simulations of Foamed Glass Aggregate for Geotechnical Design Parameters
Peyman Aminpour, M.ASCE, Drexel University; Kurt Sjoblom, A.M.ASCE, Ph.D., Drexel University; Seungcheol Yeom, Drexel University; Robert Swan, Jr., Drexel University; Archie Filshill, M.ASCE, Ph.D., Aero Aggregates; Timothy Stark, ASCE, Ph.D., P.E., University of Illinois at Urbana-Champaign

SABAL F – 1:00pm-2:30pm

CHARACTERIZING THE BEHAVIOR OF SOILS

Moderators: Cumaraswamy Vipulanandan (Vipu), Ph.D., P.E., University of Houston and Yazen Khasawneh, Ph.D., P.E., NTH Consultants, Ltd.

A Comparison of Continuous Compaction Control Measurements with Localized In Situ Test Results
Daniel Cacciola, P.E., M.ASCE, Gannett Fleming Engineers and Architects, P.C.; Christopher Meehan, Ph.D., P.E., M.ASCE, University of Delaware; William Baker, III, E.I.T., S.M.ASCE, University of Delaware; Faraz Tehrani, Ph.D., Deltas

EAF Ladle Steel Slag as a Geo-material: Compaction and Shear Strength Characteristics
Irem Yildirim, Ph.D., P.E., M.ASCE, Asistant Professor, MEF University; Monica Prezzi, Ph.D., A.M.ASCE, Professor, Purdue University

Synthesizing Hydrophobic Sand and Comparison of Shear Strength Properties with Hydrophilic Sand
Md Zahidul Karim, S.M.ASCE, Kansas State University; Stacey Tucker-Kulesza, Ph.D., P.E., M.ASCE, Kansas State University; Melanie Derby, Ph.D.
Concurrent Technical Sessions

Influence of Ionic Soil Stabilizer (ISS) Dosage on Stabilization Effectiveness of Expansive Soil
Shi He, University of Texas at Arlington; Xinbao Yu, Ph.D., P.E., M.ASCE, University of Texas at Arlington; Sandesh Gautam, Laureano Hoyos, Ph.D., P.E., M.ASCE, University of Texas at Arlington

Influence of Salinity of Pore Fluid on the Undrained Shear Strength of Clays
Beena Ajmera, Ph.D., AM.ASCE, California State University, Fullerton; Binod Tiwari, Ph.D., P.E., M.ASCE, California State University, Fullerton; Florentino Ostrova, California State University, Fullerton

Limitations of Classifications for Soils that Contain Diatom Microfossils
Hend Al Shatnawi, New Mexico State University; Paola Bandini, Ph.D., P.E., M.ASCE, New Mexico State University

SABAL G – 1:00pm-2:30pm
Geosynthetic/Fiber Reinforcement
Moderators: Ben Leshchinsky, Ph.D., Oregon State University and Melissa Beauregard, Ph.D., Air Force Academy

Contaminant Transport when Crumb Rubber is Used as a Fill Material in Local Memphis Loess
Jodie Crocker, E.I., Christian Brothers University; Andrew Assadollahi, Ph.D., P.E., Christian Brothers University

Characterization of the Interface Resistance between Clays and Natural Hemp Fibers
Ashtartou Ammar, M.E., American University of Beirut; Shadi Najjar, Ph.D., American University of Beirut; Salah Sadek, Ph.D., American University of Beirut

Field Strength Properties of Cement Stabilized Soil by Pneumatic Flow Tube Mixing Method
Masaki Kitazume, Ph.D., Tokyo Institute of Technology; Ali Maher, Ph.D., Rutgers, University of New Jersey; Masoud Jambaz, Ph.D., Rutgers, University of New Jersey; Robert Miskewitz, Ph.D., Rutgers, University of New Jersey; David Yang, Ph.D., JAFEC USA Inc.

Implementation of T-Z Analysis Approach to Predict Pullout Test Results
Gholam Hossein Roodi, Ph.D., University of Texas at Austin; Amr Morsy, University of Texas at Austin; Jorge Zornberg, University of Texas at Austin

Improvement of Organic Soils at the Wood River Wetland in the Klamath Basin with Volcanic Materials from the Eruption of Mt. Mazama
Matthew Sleep, Ph.D., Oregon Institute of Technology; Justin Millar, Washington State Department of Transportation; Steven Reed, Oregon Institute of Technology

CITRON EAST– 1:00pm-2:30pm
Advances in Energy Piles II
Moderators: Omid Ghasemi-Fare, Ph.D., University of Louisville; John McCartney, Ph.D., P.E., University of California San Diego

Effects of Stratigraphy on the Response of End Bearing Heat Exchanger Pile SubJECTED to Thermal Load
Dunja Peric, Ph.D., Kansas State University; Aaron Cossel, Kansas State University; Marta Miletic, Ph.D., Auburn University

Experimental Investigation on the Effects of Temperature on Physical Properties of Sandy Soils
Mohammad Joshaghani, Ph.D. Candidate, University of Louisville; Omid Ghasemi-Fare, University of Louisville; Mohammad Ghavami, Ph.D. Candidate, University of Louisville

Axial Pull-Out Response of a Small Scale Concrete Pile Subjected to Cyclic Thermal Loading in Sand
Rehab Elzeiny, Graduate Student, Lehigh University; Mu’ath Abu Qamar, Lehigh; Suguang Xiao, Ph.D., Lehigh University; Mohammed Al Khawaja, Ph.D., Qatar University

Numerical Analysis for Mechanical Behavior of Pipe Pile Utilized for Compressed Air Energy Storage
Junyoung Ko, Ph.D., Texas Tech University; Hoyoung Seo, Ph.D., P.E., M.ASCE, Texas Tech University; Sihyun Kim, Ph.D., M.ASCE, Bradley University; Seunghee Kim, Ph.D., M.ASCE, University of Nebraska-Lincoln

Analyses of the Thermo-Hydro-Mechanical Responses of Energy Foundation
Chanjuan Han, Case Western Reserve University; Xiong (Bill) Yu, Ph.D., P.E., F. ASCE, Case Western Reserve University

Booth 155

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IFCEE 2018 Conference Program
TUESDAY, MARCH 6

Harvey, Irma, Maria: Lessons from 2017 Atlantic Hurricane Season
12:30pm-4:30pm – Pindo C

Moderator: Brad Keelor, Geo-Institute

The 2017 Atlantic hurricane season was one of the most active of the past 50 years. Hurricanes Harvey, Irma, and Maria severely impacted parts of the Southeastern United States, the Gulf of Mexico, and Caribbean Sea. In this panel, engineers from the National Science Foundation’s Geotechnical Extreme Events Reconnaissance (GEER) team will share damage assessments, areas of resilience, and mitigation strategies for future hazards. Leading local and federal officials from the affected communities will discuss pre and post-storm data collection and operational challenges.

Panelists: Holly Weyers, Southeast Region Director, United States Geological Survey (USGS); Carol Haddock, P.E., M.ASCE, Acting Director, City of Houston Department of Public Works; Nina Stark, Ph.D., M.ASCE, Assistant Professor, Department of Civil and Environmental Engineering, Virginia Tech; Francisco Silva-Tulla, P.E., M.ASCE, Consultant

Symposium Honoring Dr. Jean-Louis Briaud
12:30pm-4:00pm – Citron West
5:30pm-6:30pm – Areca

Join Dr. Jean-Louis Briaud for a celebratory aperitif after the symposium in his honor. He will be available to sign copies of the book “Innovations in Geotechnical Engineering, A Symposium in Honor of Professor Jean-Louis Briaud”

THURSDAY, MARCH 8

50 Years of FHWA Geotechnics!
8:30am-10:00am – Sabal C

Moderator: Silas Nichols, P.E.

This panel session will discuss the impact of the Federal Highway Administration (FHWA) on geotechnical engineering and construction over the last half century. The panelists will address significant innovations and developments, and advances in practice that are the result of research and implementation programs at FHWA. Topics will include foundation alternatives, quality assurance, soil reinforcement, ground improvement, and risk management. The discussion will also include a look to the future of the geotechnical discipline.

Invited Panel on Risk - A Rational Discussion (Cont.)

10:30am-12:00pm – Sabal C

Moderator: Dr. Dan Brown, P.E., D.GE, DFI President, Dan Brown and Associates, PC

This session is intended to gather engineers, contractors, equipment and material suppliers, researchers and owners together for a rational discussion about risk as related to foundation projects. The intent is to emphasize the importance of clearly identifying and allocating risk during tender phase so that risk can be mitigated by parties best positioned to manage them and risks that become realities can be addressed fairly. The format for the 90 minute session is a series of very brief presentations by panelists representing various perspectives followed by a facilitated discussion/Q&A with the audience. The session will be broadcast as a live webinar for those unable to attend the IFCEE conference in person. This session follows up the initial discussion held at the DFI Annual Conference in October 2017.

Panelists: Owner Perspective – Greg Scheiss, P.E., Florida Department of Transportation; Rick Kalson, Esq., Legal Perspective – Benesch, Friedlander, Coplan and Aronoff LLP; Terry Holman, Ph.D., P.E., General Contractor Perspective – Turner Construction Company; Steve Saye, P.E., Large Contractor Perspective – Kiewit Engineering Group; Rick Deschamps, Ph.D., P.E., Specialty Contractor Perspective – Nicholson Construction Company; Victor Donald, P.E., Geotechnical Engineer Perspective – Terracon

Ground Improvement Design and QA/QC Considerations: Panel Discussion

1:00pm-2:30pm – Sabal G

Moderator: Dr. José L. M. Clemente, P.E., D.GE, Bechtel NS&E

Ground improvement systems have now reached a state of maturity in which they can reliably be used in numerous applications including liquefaction mitigation, increase in bearing capacity and reduction of settlement of shallow foundations and road embankments, etc. Despite the progress in the design and construction of ground improvement systems, several issues remain that deserve continued attention and discussion. A lingering issue that will be discussed relates to the role of specification writing, and the use of performance (design-build) vs. prescriptive specifications. This topic continues to generate disputes between specification writers and ground improvement contractors. The other issue that will be discussed relates to the role of QA/QC programs, and the types of field tests that are appropriate for verification of adequate performance of ground improvement solutions. This will include types of load tests, their applications in design, and their interpretation. We propose to have an interactive discussion with a group of panelists composed of practitioners/academicians to address these topics. The proposed panel will consist of the following practitioners/academicians:


The Nuts and Bolts of Building a Better Job

1:00pm-2:30pm – Sabal C

Moderator: Peggy Hagerty Duffy, P.E., D.GE, ADSC

Improvement of construction, from safety to constructability to affordability, is best accomplished through iterative input from professionals at each step of the process. Design engineers, owners, construction managers, general contractors, and specialty contractors all have unique knowledge and can help to optimize the finished product, if each new project benefits from the lessons learned on preceding projects. This session will cover three topics that are current in 2018: construction in heavy urban areas with restricted access (highlighting a difficult multi-story project in Boston, Massachusetts); management of airborne silica dust and protection of worker safety; and execution of post-grouting for drilled shafts. Each presenter will provide information about his respective topic with added insights into how construction in each situation could be improved with some specific design considerations on future projects. Although none of these issues will make or break a project, each will illustrate how thoughtful refinement of the nuts and bolts of a project can mean big improvements in cost, schedule, and successful performance of the finished product.

Presenters: Tony Barila, P.E., HUB Foundations Company; Blake Holton, P.E., Moretrench, Inc.; Erik Loehr, Ph.D., P.E., University of Missouri
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THURSDAY, MARCH 8 (CONT.)

Invited Panel on DIGGS and Data Use in the GeoProfession
3:00pm-4:30pm – Sabal C

Moderator: Allen Cadden, P.E., D.GE, Principal, Schnabel Engineering

Collecting, interpreting and presenting data has always been a key to good engineering and project delivery. We now collect, store and use data in ways never before imagined. This panel of invited speakers will briefly present the state of our practice in data collection, transmission and interpretation in the geoprofession beginning with an update on DIGGS, a look at load testing data, foundation drilling equipment, and grouting to set the background for how data will change our profession. Bring your questions and challenges to this group to help define the needs and direction for data collection, exchange, and interpretation of the future.

Panelists: Scott Deaton, Ph.D., Data Forensics (DIGGS: working example of data transfer); Nick Machairas, NYU (Load Test data scheme); Gordian Ulrich, Equipment Corporation of America (Data in modern drill rigs); Gabriele Eccher, SWS Global (Grouting data management Mosul dam)

FRIDAY, MARCH 9

Driven Piles: A Solution for Difficult Soil and Site Conditions
8:00am-9:30am – Sabal C

Moderator: Gerry McShane, Service Steel Warehouse

Driven piles encompass versatile deep foundation elements that often are the most suitable solution to situations involving difficult
subsurface conditions. Their special economic and technical features provide cost-effective and efficient foundations as far as design, constructability, schedule, cost and quality control are concerned. This session will explore how the driven pile can be an effective solution in a variety of problematic subsurface conditions and including vibration sensitive soils near settlement intolerant structures. Three presentations will cover specific design aspects, how constructability issues are overcome and explore the essential synergy of advanced materials and equipment to achieve expected outcomes.

**Presenters:** Mohamad Hussein, P.E., GRL Engineers; Dave Chapman, P.E., Blakeslee Arpaia Chapman Inc; Gerry McShane, Service Steel Warehouse

### History and Future of Industry-Academic Partnerships

10:00am-11:30am – Sabal C

**Moderators:** Patricia Gallagher, Ph.D., Drexel University, and Helen Robinson, P.E., GEI Consultants, Inc

This session will include a combination of brief presentations and networking activities to foster relationships between industry and academic partners that further practical research efforts. The networking portion of this session will include an organized activity to encourage development of new research ideas and partnerships among session participants. All IFCEE attendees interested in developing new research ideas or partnerships are invited to attend, including manufacturers, suppliers, contractors, consultants, students, professors, and government employees.

**Presenters:** Shobha Bhatia, Ph.D., Geotechnical Women Faculty from 1989-2017: A U.S. Case Study; Debra Laefer, Ph.D., P.E., America's Research-Active, Geotechnical Faculty Members: A Snapshot of the Community 7 Years On; Mary Ellen Large, P.E., D.GE (DFI), Peggy Hagerty Duffy, P.E., D.GE (ADSC), and Jennifer Nicks, Ph.D., P.E (FHWA): Industry and Government Research Funding Opportunities

### Elevating our GeoProfession through Board Certification

1:00pm-2:30pm – Sabal C

**Moderator:** Allen Marr, Ph.D., P.E., NAE, D.GE, GeoComp Corporation

The purpose of this session is to inform the audience about the role of Board Certification in advancing the profession of geotechnical engineering. Representatives of the geotechnical profession, employers of geotechnical engineers, and clients will discuss the merits and drawbacks of board certification. Significant time will be provided for questions and contributions from the audience. Participants in this session should gain considerable insight on the role and future of board certification to the geotechnical professional.


### Final Night Progressive Reception

4:00pm-6:00pm – Pavilion Area

6:00pm-8:00pm – Outdoor Exhibits (Blue & Green Lots)

Don’t miss the Congress’ final event as we wrap up IFCEE 2018 in Orlando! We hope this week has been productive and educational for all and invite you join in our progressive reception. This event will launch from the Pavilion area, then make its way to the outdoor exhibit areas in the Blue and Green Lots at 6:00pm.

**Sponsors:** Equipment Corporation of America; Junttan USA; TEI Rock Drills
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ADSC - International Association of Foundation Drilling is a professional, international, 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 12 regional chapters.

AeroAggregates produces ultra-lightweight aggregates from 100% recycled glass. The aggregates have a dry unit weight of 8-15pcf and high friction angle. This material is ideal for lightweight embankments, fill over utilities, bridge abutments, retaining walls and as an insulating backfill.

AGL offers soil & rock anchoring systems applicable to soil nailing, rock bolting, and micro pile. We have large on-hand inventory of self-drilling hollow bars for soil nailing, tieback systems, drill bits, rock bits and Concrete Pumping Parts.

AGP offers a post-license credential providing professional engineers further recognition in geotechnical engineering and is dedicated to improving practice, elevating standards, and advancing the profession.

American Equipment & Fabricating Corp. (AE&F) is a full service foundation equipment company providing rental, sales and service of a large variety of SOILMEC Drilling Equipment and Pile Driving Equipment, along with detailed engineering design and equipment fabrication for the heavy construction industry.
ATI is a full-service concrete cutting firm with a wide-ranging array of concrete capabilities. With cutting-edge equipment, we will find a way to get the job done safely, efficiently, and precisely. With top-of-the-line diamond blades, wire saws, and core drills, Aggregate Technologies is prepared for any job.

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WEBSITE: WWW.APEVIBRO.COM | EMAIL: DANC@APEVIBRO.COM

APE is a world leader in foundation systems, including vibratory, diesel, and hydraulic pile drivers; drilling and wick drain systems, as well as the highly efficient HD Piling system. APE Piling produces high strength, cost effective steel piling and for countless applications. From the world’s largest piles to more conventional applications, APE drives deeper.

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4035 J LOUIS STREET | GREEN COVE SPRINGS, FL 32043 USA | PHONE: 904.284.1337
EMAIL: DROBERTSON@TESTPILE.COM | WEBSITE: TESTPILE.COM

AFT specializes in STATNAMIC and Bi-Directional Load Testing. We also offer a wide range of drilled shaft quality assurance test including: (Mini-SID), Thermal Integrity Profiling, Crosshole Sonic Logging, Crosshole Tomography, Sonic Integrity Testing and turnkey Drilled Shaft Improvement and Remediation.

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ESAT CADDESI, 35/5, CANKAYA | ANKARA 06660 TURKEY | WEBSITE: ARMADOR.COM.TR
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ATLAS COPCO MINING & CONSTRUCTION USA LLC. | GREEN LOT #510, 511, 512, 531, 532, 533
3700 EAST 68TH AVE | COMMERCE CITY, CO 80022 USA | PHONE: 610-428-4977 | EMAIL: SCOT.SIMON@US.ATLASCOPCO.COM
WEBSITE: EPIROC.COM


ATLAS TUBE | PAVILION #147
1855 E. 122ND STREET | CHICAGO, IL 60633 USA | PHONE: 816.863.3180 | FAX: 816.734.1297
EMAIL: CHRIS.RAGAN@ATLASTUBE.COM | WEBSITE: ATLASPIPEPILES.COM

Atlas Pipe Piles is a leading manufacturer of ERW straight seam A500 and A252 Pipe Piles in North America. Our resume is extensive – from DOT projects, to working with the U.S. Army Corps of Engineers, to private jobs - our piles are the strongest and most reliable in the industry.

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WEBSITE: BAROIDIDP.COM | EMAIL: IDP@BAROID.COM

Baroid Industrial Drilling Products supplies a comprehensive line of drilling, grouting, plugging, abandonment, well rehabilitation and well development products engineered to optimize performance and cost effectiveness to end-users in wide ranging and diverse markets.

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9303 NEW TRAILS DRIVE, SUITE 425 | THE WOODLANDS, TX 77381 USA | PHONE: 713.691.3000
FAX: 713.691.0089 | WEBSITE: BAUERPILECO.COM | EMAIL: INFO@BAUERPILECO.COM

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BAUER-PILECO INC. | GREEN LOT #526, 527, 528, 529
9303 NEW TRAILS DRIVE, SUITE 425 | THE WOODLANDS, TX 77381 USA | PHONE: 713.691.3000 | FAX: 713.691.0089
WEBSITE: BAUERPILECO.COM | EMAIL: INFO@BAUERPILECO.COM

BAUER-Pileco is a leading global provider of foundation equipment and service to the construction industry. Recognized for its technological advances and innovation, BAUER-Pileco and its network of dealers represent the BAUER Group across North America.
Bay Shore Systems, Inc. | Blue Lot #200, 201, 202, 203, 204, 206, 224, 226
14206 N. Ohio Street | Rathdrum, ID 83858 USA | Phone: 208.687.3311 | Fax: 208.687.4153
Website: BayShoreSystems.com | Email: Sales@BayShoreSystems.com

Founded in 1978, Bay Shore Systems is a leading manufacturer of foundation drilling and earth retention equipment serving customers nationally and internationally. Focused on building top quality custom excavator and truck mounted drilling attachments, Bay Shore is known worldwide for its LoDril, TR Series, LAD and AERA drill rigs.

Belltec Industries Inc. | Blue Lot #257
PO Box 270 | Belton, TX 76513 USA | Phone: 254.939.9404 | Fax: 254.939-9408
Website: Belltec.net | Email: Alan@Belltec.net

Belltec is a global supplier & manufacturer of Foundation, Utility & Construction Auger Tooling products: Hydraulic Auger Drives, Consumables, Conical, Dirt Teeth & Blocks, Pilots, Pockets, Subs & Kelly Boxes, Hex Hubs & Bars, Rock & Dirt Augers, Core Barrels, Mud Buckets and Adaptors.

Berkel | Pavilion #133, 135
2649 S. 142nd Street, P.O. Box 335 | Bonner Springs, KS 66012 USA | Phone: 800.536.5305 | Fax: 913.441.0402
Website: BerkelandCompany.com | Email: Info@BerkelandCompany.com

Berkel is a Geotechnical contractor offering design-build services including Auger Pressure Grouted (APG) and Displacement (APGD) Piles, Ground Improvement, Liquefaction Mitigation, Sheeting & Shoring, Underpinning, Secant/Tangent Pile Walls, Anchors, Tiebacks, Driven Piles and Drilled Shafts.

Berminghammer Foundation Equipment | Pavilion #173, 175
600 Ferguson Avenue North | Hamilton, ONT L8L 4Z9 Canada | Phone: 905.528.7924
Website: Berminghammer.com | Email: Dzanchetta@Berminghammer.com

Berminghammer is the equipment design, manufacturing and sales division of Bermingham Foundation Solutions (Founded in 1897). Berminghammer is global leader in the design and manufacturing of custom hard rock drilling and pile driving equipment. This equipment includes: diesel impact hammers, vertical travel leads, reverse circulation drills and tooling.

Bit Brokers International | Pavilion #169
5568 Logan Rd. | West Frankfort, IL 62896 USA | Phone: 618.435.5811 | Fax: 618.435.2388
Website: BitBrokers.com | Email: Chester@BitBrokers.com

Bit Brokers International is the #1 source for rock drilling tooling. Our products include but are not limited to tricones, hammers, hammer bits, PDC bits, roller cone hole openers, PDC hole openers, tricone cutters, bolt on cutters, and tricone cutter core barrels. Visit us at booth 169!
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Casagrande is a world-class manufacturer of foundation equipment. It designs and produces large diameter piling rigs, equipment for diaphragm walls, small diameter drilling rigs, machines for tunnels, geothermal drill rigs, hydraulic crawler cranes, and grouting plants.

Center Rock offers one of the most expansive lines of downhole drills & bits, LP canister drills, ROTO LOC underreamer systems, Wassara water hammers, hole-openers, and much more. Utilizing a consultative approach, we can satisfy your drilling needs by designing and manufacturing a product for you in days!

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WEBSITE: CIANCALEONI.COM | EMAIL: COPPOLA@CIANCALEONI.COM

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**CONEtec, INC. | GREEN LOT #813**
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WEBSITE: CONETEC.COM | EMAIL: SSETEINER@CONETEC.COM

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Website: ConTechSystems.com | Email: Horst@ConTechSystems.com

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Website: CMCMMI.com | Email: Efries@CMCMMI.com

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Website: CorPacSteel.com | Email: BSPencer@CorPacSteel.com


Cox Industries | Pavilion #113
P.O. Box 70 | Eutawville, SC 29048 USA | Phone: 843.991.8209
Website: CoxWood.com | Email: AEDwards@CoxWood.com

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CRM Srl | Blue Lot #254
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Website: CRMjetting.it | Email: info@CRMjetting.it

CRM is an Italian company specialized in the design and production of jet grouting and drilling equipment. We provide assistance in the designing and manufacturing of projects mainly related to soil drilling. The designing and manufacturing of drilling equipment is ISO 9001/UNI EN 9001:2008 certified.
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WEBSITE: DFI.ORG | EMAIL: TENGLER@DFI.ORG

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

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WEBSITE: WWW.4HPSI.COM  |  EMAIL: KURT@4HPSI.COM
Hydraulic Power Systems, Inc. (HPSI) designs, manufactures and services high quality, reliable and long lasting hydraulic drilling and pile driving equipment. Market through our worldwide dealer network, HPSI’s products include hydraulic augers, both standard and custom designed leads and vibratory hammers.
ICE® INTERNATIONAL CONSTRUCTION EQUIPMENT, INC. | GREEN LOT #300, 301, 410, 411, 412, 431, 432, 433

ICE® is your one-stop foundation stop. As a USA manufacturer of piledriving and drilling equipment, we provide rental, sales & service of ICE equipment, Comacchio Rigs & many tooling options. ICE® has a global distribution network with one of the most advanced and complete lines of deep foundation equipment.

IDEAL MANUFACTURING | PAVILION #120

IDEAL Foundation Systems is a leading manufacturer of large capacity Helical Pipe Piles, helical anchors, and the Internationally Patented STELCOR Drilled-in Displacement Micropile (DDM), for new foundation support and existing foundation underpinning. IDEAL has always focused on leading the industry through research and innovation and the STELCOR DDM is a result of this. Our company is ISO 9001-2008 certified and holds an ICC-ES report (ESR-3750) for our helical piles.

IFS EQUIPMENT | BLUE LOT #244, 246

IFS Equipment Inc has a new vision in multi-purpose foundation equipment. We are the home of the "Game Changer". Boom extension and rotation technology coupled with an end of boom actuator makes the GC the Swiss army knife of rigs. Built by a piling contractor for piling contractors go to the GC for results.

IHC IQIP AMERICA, INC. | BLUE LOT #239, 241, 250, 252

HC IQIP America designs, produces and supplies Hydrohammers and FUNDEX rigs for a range of foundation drilling and piling techniques. Our equipment allows you to construct every type of foundation pile: concrete or steel; precast or cast in situ; drilled or driven, and is available for either sale or rental.

INDEPENDENCE TUBE | PAVILION #101, 103

ERW Pipe Piling produced from steel that is melted & manufactured in the USA, sizes up through 16" OD x .625" wall per ASTM A252-3/A500. We ship via truck, rail and barge from Marseilles IL & Decatur AL. Some fabrication is available in Decatur. See our website for more information.
International Drilling Equipment is a prominent supplier of Foundation Drilling, Ground Improvement, and Grouting Equipment, plus Tooling. Committed to technical and after-sales support; backed with an extensive parts inventory, and reinforced by experienced and knowledgeable personnel, we can ensure the highest quality products and the best possible product support.

J D Fields is focused on delivering, comprehensive geostructural systems and solutions to the construction and deep foundation industry. The Construction Products Group continues to set the industry piling standard with high strength grades and innovative steel wall systems. With a blend of international and domestic piling products, our sales and technical professionals are positioned to provide engineering and contracting professionals with application, material procurement and delivery guidance to exceed your project demands.

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.

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MATKUKSENTIE 7 | KUPIO, 70800 FINLAND | PHONE: +35 8505540211 | FAX: +35 8172874411
WEBSITE: WWW.JUNTTAN.COM | EMAIL: MIKA.ESKELINEN@JUNTTAN.COM

Junttan Oy is the leading manufacturer of Hydraulic Pile Driving Rigs and Hydraulic Hammers. The Product range also includes Power Packs, Multipurpose Drilling Rigs, Rotary Heads, Deep stabilization rigs and RIC Rapid Impact Compaction Rigs and Hammers.

KB INTERNATIONAL | GREEN LOT #513
735 BROAD STREET, SUITE 209 | CHATTANOOGA, TN 37402 USA | PHONE: 423.266.6964
WEBSITE: WWW.KBTECH.COM | EMAIL: MWALTERS@KBTECH.COM

KB International is world leader in development of synthetic polymer slurries and synthetic formation stabilization systems for the construction of deep earth foundations. KB’s innovative technology has been utilized throughout North America, Asia, Europe, Australia, Africa, and the Middle East.

KELLER GROUP OF COMPANIES | PAVILION #126, 128
7550 TEAGUE RD., SUITE 300 | HANOVER, MD 21076 USA | PHONE: 410.551.1938
WEBSITE: WWW.KELLERFOUNDATIONS.COM | EMAIL: JDUSSIN@KELLERFOUNDATIONS.COM

Keller is the world’s leading geotechnical solutions provider. Our industry leadership is driven by our strategically connected network of outstanding companies, including Bencor, Case Foundation, Cyntech Construction, Hayward Baker, and HJ Foundation. Our combined expertise ensures that there is no other company that is more competent and capable of providing the optimal geotechnical solution.

KELLY TRACTOR COMPANY | GREEN LOT #413, 414, 415, 434, 435, 436
5460 OKECHOBEE BOULEVARD | WEST PALM BEACH, FL 33417 USA | PHONE: 561.210.4838
WEBSITE: WWW.KELLYTRACTOR.COM/FOUNDATION-GROUP | EMAIL: BRUCE_BUDD@KELLYTRACTOR.COM

Kelly Tractor Co has the largest fleet of new and used IMT hydraulic drill rigs for sale or rent. Our Sales, Service and Product Support Teams are committed to delivering superior customer service to our clients. It would be our pleasure to introduce you to the full line up of IMT’s.

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WEBSITE: WWW.KIEWIT.COM | EMAIL: SCOTT.WIMMER@KIEWIT.COM

Keeping safety at the forefront, the Kiewit Foundations Co. builds complex foundation projects across North America. We deliver creative, cost-efficient solutions that are responsive to each project’s specific site conditions. We specialize in drilled shafts, slurry / cut-off walls and ground improvements.

IFCEE 2018 EXHIBITORS
KEystone Drill Services, Inc. | Blue Lot #217
184 Alisa Street | Somerset, PA 15501 USA | Phone: 814.443.2670 | Fax: 814.443.6974
Website: www.keystonedrill.com | Email: sslater@keystonedrill.com

Servicing the Construction & Foundation, Mining & Aggregate, Oil & Gas, Exploration & Water Well Industries by providing sales, rentals, and repairs of drill rigs, high pressure air compressors, boosters, downhole drills, drill bits, cluster drills, lubricators and overburden & casing advancement systems.

Klemm Bohrtechnik GmbH | Green Lot #409, 430, 509, 530
9303 New Trails Drive, Suite 425 | The Woodlands, TX 77381 USA | Phone: 713.691.3000
Fax: 713.691.0089 | Website: www.bauerpileco.com | Email: info@bauerpileco.com

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.

LBFoster Company | Green Lot #817
Satellite Blvd., NE Suite A | Suwanee, GA 30024 USA | Phone: 678.926.5217 | Fax: 678.926.5244
Website: www.lbfoster.com | Email: PWright@lbfoster.com

L.B. Foster’s Construction Products Group is a leading supplier of steel sheet piling, pipe piling and H beams to the construction industry. The company’s products have contributed to the improvement of many landmark projects including the Panama Canal, Brooklyn Bridge and New Orleans Flood Walls.

Piling Canada Magazine is the premier national voice for the Canadian deep foundation construction industry. Each quarterly edition is read by contractors, engineers, equipment and material manufacturers and suppliers, government representatives and other industry stakeholders.

LIEBHERR USA CO. | Green Lot #417, 418, 438, 439
7075 Bennington Street | Houston, TX 77028 USA | Phone: 713.636.4050
Fax: 713.636.4051 | Website: www.liebherr.com | Email: cornelia.luhrs@liebherr.com

For 20 years the Liebherr USA Co. facility in Houston has been selling duty cycle-, lifting crawler cranes and foundation machines such as piling and drilling rigs. This service center provides maintenance & repairs, including the reconditioning of machines as well as comprehensive operator & staff training.
LIM TECHNOLOGY, INC. | PAVILION #182
3495 PIEDMONT ROAD NE | ATLANTA, GA 30305 USA | PHONE: 404.661.5299
WEBSITE: WWW.LIM.EU | EMAIL: FRANCOIS.SIMAND@LIM.EU

LIM is world specialist in instrumentation for foundation drilling. LIM is developing and manufacturing monitoring system to record any foundation methods: drilling, grouting, jet grouting, CFA, micropile. LIM is offering a complete solution from the data recording to the data management and analysis.

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2651 PALUMBO DR. | LEXINGTON, KY 40509 USA | PHONE: 859.263.5200 | FAX: 859.264.6319
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WEBSITE: WWW.LOADTEST.COM | EMAIL: BUBBAKNIGHT@LOADTEST.COM

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5001 OATES ROAD | HOUSTON, TX 77013 USA | PHONE: 800.856.6679 | FAX: 713.672.5135
WEBSITE: WWW.LODGELUMBER.COM | EMAIL: JW.LODGE@LODGELUMBER.COM

Lodge Lumber Co. is a manufacturer and distributor of forestry products geared toward the deep foundation industry. Our products include pile cushion blocks, hardwood dunnage, plyform, and form lumber. Based in Houston, Texas we have capabilities to ship nationwide.

MABEY INC. | GREEN LOT #538
6770 DORSEY ROAD | ELKRIDGE, MD 21075 USA | PHONE: 410.567.1944 | FAX: 410.379.2801
WEBSITE: WWW.MABEY.COM | EMAIL: INFO@MABEY.COM

Mabey carries a broad range of products for excavation and trench shoring, structural shoring, temporary and permanent bridges and temporary roadways. From PE certified engineered plans to on-site support, Mabey carries what you need to complete your project on time and on budget.
MacLean Civil Products, a division of MacLean Power Systems, offers a full line of solutions to your deep foundation and anchoring projects. The MacLean Dixie, MVP grouted, Duckbill, Manta Ray and Stingray product line offer and assurance of products recognized for high standards of quality and performance.

Magnum Piering is an industry leader in manufacturing high capacity, high quality steel piling products for deep foundations and foundation repair applications. Since 1981, Magnum’s products and installing contractors have withstood the most important test of all - the test of time.

For more than 60 years, MAIT has been a world leading manufacturer of drilling machinery and accessories for the foundation drilling industry. MAIT manufactures a wide range of drilling machinery from large to small diameter drilling rigs in order to meet any customers’ needs.

Malcolm has for over 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 to projects and allows for timely collaboration with owners and contractors. We provide these services nationwide through our regional offices.

Matrix Construction Products, LLC (Matrix) provides high quality polymer, Bentonite products, chemical additives and mixing equipment to the Foundation drilled shaft, slurry wall, Tunneling, and Micropile Drilling Industries. Have you seen BIG-FOOT? Superior performance, easy to mix and Caltrans approved.
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Meever USA is a division of Meever and Meever an international manufacturer and distributor of Steel piling products. MEEVER USA sells and rents a complete line of steel piling products. Rely on Meever USA for steel sheet pile, steel pipe pile, steel h-pile, steel combi-walls and a full line of accessories.

MICHELS  |  GREEN LOT #630
817 WEST MAIN STREET  |  BROWNSVILLE, WI  53006 USA  |  PHONE: 920.583.3132  |  FAX: 920.924.4320  
WEBSITE: WWW.MICHELS.US  |  EMAIL: KSCHWART@MICHELUS

Michels is a knowledgeable, reliable leader in the design and construction of foundations, civil work and earth retention. Whether your project requires extreme rock drilling, large-diameter caissons, depths beyond 175 feet or low-clearance drilling, Michels will execute the best, most cost-effective solution.

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WEBSITE: WWW.MDTI.NET  |  EMAIL: TCOMBS@MDTI.NET

Magnacore is the industry-leading rock anchor and micropiling system which serves as an economical solution for challenging soil conditions. This micropile system allows for drilling and grouting simultaneously for the installation of deep foundations including, tiebacks, soil nails, limited access, underpinning, and more.

MINCON, INC.  |  GREEN LOT #700, 701
PO BOX 13886  |  ROANOKE, VA 24038 USA  |  PHONE: 540.344.9939  |  FAX: 540.344.9942  
WEBSITE: WWW.MINCON.COM  |  EMAIL: FRANKPURCELL@MINCON.COM

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WEBSITE: WWW.MKTPILEMAN.COM  |  EMAIL: DWERTS@MKTPILEMAN.COM

MITSUBISHI MATERIALS U.S.A. CORP.  |  PAVILION #134
11250 SLATER AVE.  |  FOUNTAIN VALLEY, CA 92708 USA  |  PHONE: 704.838.8175  |  FAX: 704.838.8177
WEBSITE: HTTP://MRT.MITSUBISHICARBIDE.COM/TOP_E.HTML  |  EMAIL: GBARNETT@MMUS.COM

Mitsubishi Materials has a long history of manufacturing casing advancement systems for the Foundation, Construction Geo-technical, and Water Well industries. Our product line includes, SUPER MAX BIT (SMB), SUPER MAX BIT - G MODEL (SMB-G), Micro Casing Bit, and our newest product the ULTRA MAX BIT (UMB).

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100 STICKLE AVE  |  ROCKAWAY, NJ 07866 USA  |  PHONE: 973.627.2100  |  FAX: 973-627-3950
WEBSITE: WWW.MORETRENCH.COM  |  EMAIL: JBENNETT@MORETRENCH.COM

Moretrench specializes in design/build solutions for challenging construction requirements and subsurface conditions. Services include deep foundations, dewatering and groundwater control, grouting, ground freezing, underpinning, excavation support, environmental remediation, and specialized industrial construction. Full service offices are located in New Jersey, New York, Florida, Massachusetts, Pennsylvania, Maryland and Louisiana.

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FAX: 703.560.2392  |  WEBSITE: WWW.NCCCO.ORG

The National Commission for the Certification of Crane Operators (NCCCO) has administered over a million written and practical examinations and issued more than 350,000 ANSI/ISO-accredited and OSHA-recognized crane personnel certifications since 1996. New CCO certification programs for operators of dedicated pile drivers and foundation drill rigs will be featured.

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National Driller is the No. 1 publication for drilling and water supply professionals, and widely read across the drilling industry. We cover well drilling, drilling fluids, drilling mud and products for contractors in water wells, geothermal, foundations, mining, energy and other markets.

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WEBSITE: WWW.OCIDIVISION.COM | EMAIL: JIM@OCIDIV.COM
OCI manufactures, designs and distributes drilling equipment for the construction industry, including but not limited to: drill rods, swivels, DTH hammers & bits, tricone & drag bits, adapters, stabilizers, shock subs, oilers plus rentals and repairs. Also offered are services for project planning and consulting.

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WEBSITE: WWW.PILEDIVERS.ORG  |  EMAIL: STEVE@PILEDIVERS.ORG
The Pile Driving Contractors Association (PDCA) is an international association established to exclusively promote the use of driven pile for deep foundations and earth retention systems by effectively communicating the benefits of the driven pile through education and continuous improvement of methods, materials and equipment, while providing exceptional service and support to all PDCA members.

PILE DYNAMICS, INC.  |  PAVILION #138
30725 AURORA ROAD  |  CLEVENLAND, OH  44139  USA  |  PHONE: 216.831.613  |  FAX: 216 831-0916
WEBSITE: WWW.PILE.COM  |  EMAIL: MEDIA@PILE.COM
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WEBSITE: WWW.PINNACLEDRILLING.CA | EMAIL: SALES@PINNACLEDRILLING.CA

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5025 RAMSAY | ST. HUBERT, QC J3Y2S3 CANADA | PHONE: 888.577.7302 | FAX: 450.445.5597
WEBSITE: WWW.PIPE-PILING.COM | EMAIL: SKERT@PIPE-PILING.COM

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1604 ROSEPORT RD. | ELWOOD, KS 66024 USA | PHONE: 785.856.2661
WEBSITE: WWW.PRO-DIG-USA.COM | EMAIL: BETHN@PRO-DIG-USA.COM

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5011 VERNON ROAD | JACKSONVILLE, FL 32209 USA | PHONE: 904.765.6686 | FAX: 904.795.6333
WEBSITE: WWW.PVE-EQUIPMENT.COM | EMAIL: ERIC@PVEUSA.COM

PVE Equipment is a Dutch based, broad range manufacturer of foundation equipment. We produce dedicated piling and drilling rigs under the Woltman brand. Vibratory and Impact Hammers, Rotary Heads and Power Packs fly the PVE banner. And, included in our line are Bell Dredging Pumps.
Robit Inc focuses on rock and ground drilling consumables. We offer products for top hammer, DTH, and rotary drilling, as well as casing systems, ensuring you’ll get just the right tools, knowledge and support for your operation.

ROC Equipment; sole North American distributor of BUMA CE. We sell and rent casing oscillators, rotations, RCD machines, hammer and spherical grabs, sectional casing, chisels, tremie pipe, and airlift systems. ROC is a DBE company and provides complete drilling packages and services.
Rocscience Inc. | Pavilion #144
54 St. Patrick St. | Toronto, ON M5T 1V1 Canada | Phone: 416.698.8217
Website: www.rocscience.com | Email: jeff.lam@rocscience.com

Rocscience is an industry-leading developer of geotechnical software. We specialize in 2D and 3D modeling and analysis of rock and soil, and our programs are used widely across civil and mining applications to help engineers design safe and cost effective solutions.

RTG Rammtechnik GmbH | Green Lot #505, 506, 507, 508
9303 New Trails Drive, Suite 425 | The Woodlands, TX 77381 USA | Phone: 713.691.3000 | Fax: 713.691.0089
Website: www.bauerpileco.com | Email: info@bauerpileco.com

RTG is has developed powerful plant and equipment which today is clearly setting the high standards for the pile driving sector in specialist foundation construction. RTG is based on innovation, experience and technical know-how and is part of the BAUER Group.

Samuel Roll Form Group | Pavilion #123
Suite 100-6701 Financial Dr. | Mississauga, Ontario L5N 7J7 Canada | Phone: 905.270.5300 | Fax: 905.593.3489
Website: rollformgroup.com | Email: hal.mulveney@rollformgroup.com

With manufacturing locations in both Canada and the U.S., Samuel Roll Form Group is a leading producer and supplier of Hot Rolled Cold Formed sheet piles in North America. Additional Heavy Construction products that we sell include Hot Rolled Sheet Piles, H-pile, Pipe pile, Beams, Pile Points and Tie Rods.

SAS Stressteel Inc. | Pavilion #156
100 New Dutch Lane | Fairfield, NJ 07004 USA | Phone: 973.244.5995 | Fax: 973.244.0544
Website: www.stressteel.com | Email: dion.gray@stressteel.com

SAS Stressteel is the most trusted distributor of high strength threaded bars used for rock anchors, micropiles and soil nails. In addition to the exclusive distribution of ANP hollow bars, SAS Stressteel also manufactures strand anchors for tiebacks and tiedowns. Strategically located throughout the US.

Schnabel Foundation Company | Pavilion #141
45240 Business Court, Suite 250 | Sterling, VA 20166 USA | Phone: 703.742.0020 | Fax: 703.742.3319
Website: www.schnabel.com | Email: hank@schnabel.com

Schnabel Foundation Company is a nationwide geotechnical contractor that specializes in design-build earth retaining structures and deep foundations. Our services include soil mixing, secant pile walls, soldier piles and lagging, soil nailing, tiebacks, tiedowns, underpinning, jet grouting, and micropiles.

Scott Powerline & Utility Equipment | Pavilion #130
1030 North 9th Street | Monroe, LA 71201 USA | Phone: 877.388.9269 | Fax: 318.388.9383
Website: www.scottpowerline.com | Email: jjohnson@scottpowerline.com

Monroe, LA-based Scott Powerline & Utility Equipment rents, sells, and services a wide range of equipment to serve the drilling industry. Our product offering includes boom trucks, Mantis cranes, and both excavator & truck mounted drills. We also provide auger tooling from a number of leading manufacturers.
Service Steel is a foundation steel distributor serving customers in the US and internationally. We use our own transportation system to ship from our numerous stocking locations. State of the art sheet piling, pipe piling H-piles, combined wall systems, anchor systems and design guidance.

Skyline Steel is the one source for all your piling needs. We supply and manufacture Bearing Piles, Sheet Piles, Spiralweld, Rolled & Welded, and ERW Pipe, Anchors, Micropiles, Threaded Bars, Tie Rods, Structural, and Accessories. We also offer a state-of-the-art, highly-efficient, hot-melt extrusion process.

Soilmec North America provides the US and Canadian markets with the most innovative, safety focused, and versatile rigs for underground construction and foundation engineering. As a supplier and partner, Soilmec is deeply committed to help North American customers including unbeatable customer service, after-sales service, operator training, and support.

Specrete develops and manufactures additives specifically for underground grouting applications, including ACIP/CFA Piles, Displacement Piles, Secant/Tangent Walls, Soldier Piles, CLSM, High Mobility Grout, Micropiles, Contact Grout, Tiebacks/Soil Nails and more. Benefits include water retention, pressure filtration resistance, bleed elimination, viscosity modification, stability, pumpability, set control and water reduction.

Spiradrill continues to manufacture high quality, high efficiency drilling rigs while providing an excellent level of service that you won’t get from anyone else. Our fully-hydraulic, low cost of ownership truck, track, and excavator mounted units reach depths up to 120 feet and hole diameters up to 144 in.

Star Iron Works manufactures and supplies a wide range of products to serve the construction drilling industry. Duplex adaptors / swivels, drill rods, adaptors, threaded micropile casing, cutting shoes, reusable casing, compaction grouting casing, drive points, drop off bits, Numa super jaw bits and hammers.
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WEBSITE: WWW.STEELPIPEFAB.NET  |  EMAIL: ANDY@STEELPIPEFAB.NET

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WEBSITE: STERLINGLUMBER.COM  |  EMAIL: JOSH.WARREN@STERLINGLUMBER.COM

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