FINAL PROGRAM

GEO-CONGRESS 2024

Vancouver, British Columbia, February 25–28, 2024

Bridging Government, Industry, and Academia for Resilient Mega-Communities

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Schedule at a Glance *(Subject to change)*

**Items in bold take place in the exhibit hall*
All events take place in the East Building of the Vancouver Convention Centre (VCC), unless otherwise noted.

Sunday, February 25

6:30 a.m. – 8:30 p.m.	Coat Check, *Lobby*
7:00 – 11:00 a.m.	Registration Open, *Lobby*
8:00 a.m. – 11:00 p.m.	Committee Meetings, *See page 19*
8:00 a.m. – 5:00 p.m.	**Short Course:** Characterization and Dynamic Performance of Gravelly Soils, *EM7*
8:00 a.m. – 5:00 p.m.	**Short Course:** Introduction to Coastal Geotechnics, *EM15*
8:00 a.m. – 12:00 p.m.	**Short Course:** Best Practices for Characterizing Cyclic Response of Silts, *EM16*
11:00 a.m. – 12:30 p.m.	Registration Closed for Lunch, *Lobby*
12:30 – 7:00 p.m.	Registration Open, *Lobby*
1:00 – 5:00 p.m.	**Short Course:** Design of Ground Improvement in Seismic Areas, *EM9*
1:00 - 5:00 p.m.	**Short Course:** Numerical Modeling of Dams and Seismic Responses with Emphasis on Liquefaction, *EM16*
1:00 – 6:00 p.m.	**Exhibitor Setup,** *Exhibit Halls ABC*
2:00 – 2:30 p.m.	GI Student Orientation, *EM8*
2:30 – 3:30 p.m.	GI Student Professional Development Workshop, *EM8*
3:30 – 4:00 p.m.	GI Geo-Wall Captains Meeting, *EM14*
4:00 – 5:00 p.m.	AGP Induction Ceremony, *Ballrooms AB*
5:00 – 6:30 p.m.	Opening Remarks & H. Bolton Seed Award Lecture, *Ballrooms AB*
6:30 – 8:00 p.m.	**Exhibit Hours,** *Exhibit Halls ABC*
6:30 – 8:00 p.m.	**Opening Reception,** *Exhibit Halls ABC*
8:00 – 9:30 p.m.	**Happy Hour** presented by the Outreach and Engagement Committee and GI Vancouver Chapter, *Offsite*

Monday, February 26

6:00 – 7:00 a.m.	Yoga – Pacific Rim II, *Pan Pacific Hotel*
6:30 a.m. – 7:00 p.m.	Coat Check, *Lobby*
7:00 a.m. – 12:00 p.m.	Registration Open, *Lobby*
8:00 – 10:00 a.m.	Welcome, Conference Opening and Geo-PIT, *Ballrooms AB*
9:00 a.m. – 5:00 p.m.	**Exhibit Hours,** *Exhibit Halls ABC*
10:00 a.m. – 10:30 a.m.	**Morning Networking Break,** *Exhibit Halls ABC*
10:00 a.m. – 3:00 p.m.	Student Competitions, *Exhibit Halls ABC*
10:00 a.m. – 9:00 p.m.	Committee Meetings, *See page 19*
10:30 a.m. – 12:00 p.m.	Technical and Special Sessions, *See pages 10-11*
12:00 – 1:00 p.m.	**Lunch,** *Exhibit Halls ABC*
12:00 – 1:00 p.m.	Registration Closed for Lunch, *Lobby*
12:15 – 12:45 p.m.	**Vendor Demo – ASCE Foundation**, *Exhibit Halls ABC, Geo-Institute Theatre, Booth 600*
1:00 – 5:00 p.m.	GI Student Program: Organizational Members/ Student Career Fair, *Exhibit Halls ABC*
1:00 – 2:30 p.m.	Technical and Special Sessions, *See pages 10-11*
1:00 – 7:00 p.m.	Registration Open, *Lobby*
2:30 – 4:30 p.m.	**Poster Session & Happy Hour,** *Exhibit Halls ABC*
2:45 – 3:15 p.m.	**Vendor Demo – Geosetta,** *Exhibit Halls ABC, Geo-Institute Theatre, Booth 600*
5:00 – 6:30 p.m.	Shamsher Prakash Lecture, *Ballrooms AB*
6:30 – 9:00 p.m.	Offsite Event, *Vancouver Aquarium*

Tuesday, February 27

6:00 – 7:00 a.m.	Yoga – Pacific Rim II, *Pan Pacific Hotel*
6:30 a.m. – 7:30 p.m.	Coat Check, *Lobby*
7:00 a.m. – 12:00 p.m.	Registration Open, *Lobby*
8:00 – 10:00 a.m.	Plenary Session, *Geo-PIT* Student Competition Awards, *Ballrooms AB*
9:00 a.m. – 5:00 p.m.	**Exhibit Hours**, *Exhibit Halls ABC*
10:00 – 10:30 a.m.	**Morning Networking Break,** *Exhibit Halls ABC*
10:00 – 10:30 a.m.	**Vendor Demo – GeoTechTools/IDEA**, *Exhibit Halls ABC, Geo-Institute Theatre, Booth 600*
10:00 a.m. – 9:00 p.m.	Committee Meetings, *See page 19*
10:30 a.m. – 12:00 p.m.	Technical and Special Sessions, *See pages 14-15*
12:00 – 1:00 p.m.	**Lunch,** *Exhibit Halls ABC*
12:00 – 1:00 p.m.	Registration Closed for Lunch, *Lobby*
12:15 – 12:45 p.m.	**Vendor Demo – Campbell Scientific,** *Exhibit Halls ABC, Geo–Institute Theatre, Booth 600*
1:00 – 2:30 p.m.	Technical and Special Sessions, *See pages 14-15*
1:00 – 6:00 p.m.	Registration Open, *Lobby*
2:30 – 4:30 p.m.	**Poster Session and Happy Hour,** *Exhibit Halls ABC*
2:45 – 3:15 p.m.	**Vendor Demo – TabLogs.,** *Exhibit Halls ABC, Geo-Institute Theatre, Booth 600*
3:30 – 4:00 p.m.	**Vendor Demo – BGC Engineering /Cambio Earth.**, *Exhibit Halls ABC, Geo-Institute Theatre, Booth 600*
5:30 – 7:00 p.m.	Awards Presentation & Karl Terzaghi Award Lecture, *Ballrooms AB*

Wednesday, February 28

6:00 – 7:00 a.m.	Yoga – Pacific Rim II, *Pan Pacific Hotel*
6:30 a.m. – 3:30 p.m.	Coat Check, *Lobby*
7:00 a.m. – 12:00 p.m.	Registration Open, *Lobby*
8:00 – 10:00 a.m.	Plenary Session and Geo-PIT, *Ballrooms AB*
9:00 a.m. – 1:00 p.m.	**Exhibit Hours,** *Exhibit Halls ABC*
10:00 – 10:30 a.m.	**Morning Networking Break,** *West Exhibit Hall B*
10:00 – 10:30 a.m.	**Vendor Demo: Get Involved with Geo-Institute Technical Committees!** *Exhibit Halls ABC, Geo–Institute Theatre, Booth 600*
10:00 a.m., - 12:00 p.m.	Committee Meetings, *See page 9*
10:30 a.m. – 12:00 p.m.	Technical and Special Sessions, *See pages 18-19*
12:00 – 1:00 p.m.	**Lunch,** *Exhibit Halls ABC*
1:00 – 2:30 p.m.	Ralph B. Peck Award Lecture, *Ballrooms AB*
1:00 – 6:00 p.m.	Exhibitor Move Out, *Exhibit Halls ABC*
2:30 – 3:00 p.m.	Closing Ceremony, *Ballrooms AB*

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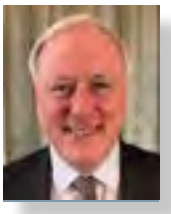

Karl Terzaghi Lecture

Andrew J. Whittle, Sc.D., P.E., P.Eng., NAE, M.ASCE

"Soil Models in Prediction, Design and Geotechnical Problem Solving"

Dr. Andrew Whittle has been chosen by the Geo-Institute to deliver the prestigious Terzaghi Lecture for his pioneering work in soil mechanics. His research focuses on advanced constitutive models and numerical analysis techniques, revolutionizing predictions for foundation and underground projects. Whittle's contributions redefine geo-technical engineering, setting new standards in the field.

H. Bolton Seed Award Lecture

Kyle M. Rollins, Ph.D., M.ASCE

"Insights on Seismic Soil-Structure Interaction for Bridges from Large-Scale Field Tests"

The Geo-Institute has selected Dr. Rollins to present the Seed Lecture in recognition of his creative, unique and implementable contributions to geotechnical earthquake engineering, which include, but are not limited to, liquefaction testing and analysis and ground and pile response analysis.

Ralph B. Peck Lecture

Jorge G. Zornberg, Ph.D., P.E., F.ASCE

"Roadways on Expansive Clays: Characterizing the Problem and Solving it with Geosynthetics"

The Geo-Institute has selected Dr. Zornberg to present the Peck Award Lecture in recognition of his unique insight through carefully researched case histories that significantly widen the portfolio of options to remediate an old, yet persistent problem in geotechnical engineering: The distress in roadways associated with the presence of expansive clays.

Shamsher Prakash Lecture

Brady R. Cox, PhD, P.E.

"What Spatial Area Influence Seismic Site Response"

The Geo-Institute has selected Dr. Cox in recognition for his significant contributions to soil dynamics and geotechnical earthquake engineering, including: development of dynamic in-situ tests for advanced soil liquefaction evaluations, efforts to quantify uncertainty in surface wave methods, and investigating the spatial area that influences seismic site response.

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Monday, February 26, 2024

Track A | EM8	Track B | EM10	Track C | EM11	Track D | EM12	Track E | EM1	Track F | Ballroom C	Track G | EM2/3
10:30 a.m. – 12:00 p.m.	**Technical Sessions**					
Soil & Site Characterization **Moderators:** Ethan Cargill, Diane Moug	**Ground Improvement I** **Moderators:** Chris Woods, Jim Gingery	**Embankments, Dams, & Slopes** **Moderators:** Ben Leshchinsky, King Sampaco	**Off- & Near-Shore Structures** **Moderator:** TBD	**Innovations in Natural and Nature-Based Features & Hybrid Infrastructure for Increased Resiliency** **Moderators:** Brian Harris, Navid Jafari	**Changing Climate, Changing GeoChallenges** **Moderators:** Kaleigh Yost, Tugce Baser	**AI and ML in the Service of Geoprofessionals: from Proof-of-Concept to Production** **Moderator:** Nick Machairas
Fully Grouted Piezometer Performance at a Dredged Material Management Site: *Katherine Winters, John Murphy, Margarita Ordaz, Rebekah Lee, Lucas Walshire, Vanessa Bateman, Colby Brown* **Plant Root-Inspired Soil Penetration in Sands Using Circumnutations for Geotechnical Site Characterization:** *Riya Anilkumar, Yuyan Chen, Alejandro Martinez* **New Case Studies to Validate GT Direct CPT Method for Footings on Sand:** *Paul Mayne, Jim Greig* **Developing an Experimental Testbed for Drilling into Lunar Regolith Simulants:** *Liang Zhang, Sara Khoshnevisan, Deshawn Adams, Lirane Kertesse Mandjoupa, Lei Wang* **Use of High-Resolution Multispectral Imagery to Assess the Role of Sand and Gravel Shoals for Flood-Infrastructure Interaction in the Yellowstone River, Montana:** *Fred Falcone, Nina Stark, Michael Gardner, Anne Lemnitzer, Nicola Brilli, Rodrigo Sarlo, Jonathan Hubler, Mohammad Khosravi* **Leveraging Digital Tools for Efficient and Reliable Ground Characterization:** *Angelo Tran, Ronak Mehrabi, Francisco Ciruela-Ochoa, Marzieh Shahraki, Wylie Tsang*	**Use of Bio-Slurry for Stabilization of Florida Soils:** *Saeed Booshi, Pete Schmillen, Joanna Macias, Amar Kosovak, Raphael Crowley, Terri Ellis, Brian Wingender* **Stiffness Performance of Chemically Treated Sulfate-Rich Clay via Resonant Column Testing:** *Azadeh Asghariastaneh, Roya Davoodi-Bilesavar, Laureano R. Hoyos* **Mitigation of Liquefaction-Induced Foundation Settlements using Sheet Piling and Lowering Groundwater Level:** *Md Kausar Anik, Ramin Motamed, Atsou Komla Agbemenou* **Centrifuge Modeling of Soil Structure Interaction with MICP Improved Soil:** *Soo-Min Ham, Alex San Pablo, JoseLuis Caisapanta, Jason DeJong* **Influence of Dense Granular Columns and Liquefiable Soil Stratigraphic Variations on the Performance of Overlying Structures:** *Caroline Bessette, Lianne Brito, Shideh Dashti, Abbie Liel* **Influence of Ground-Borne Vibrations From the Installation of Rockfill Columns on a Buried Structure:** *Silvia Nobre, Marolo Alfaro, James Blatz*	**USSD Guidelines on Analysis of Seismic Deformations of Embankment Dams:** *Lelio Mejia, Jack Montgomery, Michael Beaty, Richard Armstrong, Sam Abbaszadeh* **Limit Equilibrium Global Stability Analysis of Column-Supported Embankments:** *Michael McGuire, Elise Hummel, James Collin* **Simulation of Weather-Driven Deterioration of Clay Embankments:** *Amr Morsy, Peter Helm, Ashraf El-Hamalawi, Alister Smith, Ross Stirling* **A Heuristic Search Method for Critical Slip Surfaces with Weak Layers:** *Ivan Chen, Terence Ma, Brigid Cami, Sina Javankhoshdel, Brent Corkum* **Sliding Mass Period for Seismic Displacements of Spatially Variable Slopes:** *Patrick Bassal, Tyler Oathes* **Numerical Modeling of Deformation Response of Embankment Subjected to Rainfall Infiltration Considering the Hydro-Mechanical Coupled Behavior of Unsaturated Soils:** *Hao Wu, John McCartney, Yewei Zheng*	**Redevelopment of the New London State Pier into the First Operational United States-Based Offshore Wind Farm Terminal:** *John DiGenova, Katrina Perez Mejia* **Optimal Anchor Design and Its Corresponding Material for Floating Offshore Wind Turbines:** *Junho Lee, Jungrak Son, Ahmed Radwan, Charles Aubeny* **Construction of a Real-Time Hybrid Simulation Testing Facility and Validation for Offshore Wind Turbine System Behavior under Realistic Wind and Wave Loading Conditions:** *Qasim Abu-Kassab, Safwan Al-Subaihawi, Muhannad Suleiman, James Ricles, Thomas Marullo, Richard Sause, Kevin Wyckoff, Liam Magargal, Arindam Banerjee, Justin Jaworski, Mohamed Mekkawy* **Influence of Pulse-Like Motions and Combined Loadings on the Seismic Response of Offshore Wind Turbines on Layered Liquefiable Soils:** *Yu-Wei Hwang, Juan Carlos Tiznado, Louis Ge, Shih-Hao Cheng* **Dynamic Response of the Shore Connection of Submerged Floating Tunnel Considering Ground Nonlinearity:** *Seok-Jun Kang, Hyun-Joong Hwang, Jin Kim, Joohyun Park, Gye-Chun Cho* **Sediment Characterization Based on Portable Free Fall Penetrometer Measurements Using a Deep Neural Network:** *Md Rejwanur Rahman, Eric Hunstein, Adrian Rodriguez-Marek, Nina Stark, Grace Massey, Carl Friedrichs, Kelly Dorgan, Chesna Cox*	Natural and nature-based features (NNBF) and hybrid infrastructure have emerged as innovative and sustainable solutions geotechnical engineers can implement for coastal and inland hazard risk reduction. NNBF are landscape features that are used to provide engineering functions relevant to risk management, while producing additional economic, environmental, and/or social benefits. In this session, attendees will learn about the latest innovations in NNBF and hybrid infrastructure, the geotechnical and geological phenomena that control their stability and effectiveness, and how they can be implemented for hazard reduction scenarios. Experts will share their experiences and insights on how these methods can be implemented across a variety of environments in response to various environmental and anthropogenic hazards. **Dam Removal:** *Jennifer Bountry USBR* **Riverine/Reservoir NNBF:** *David Biedenharn, USACE CHL* **Debris Flow:** *TBD, USGS* **Coastal Dunes:** *Justin Shawler, USACE CHL* **Backbay/Inlets/Scour:** *Monica Chasten, USACE North Atlantic Division*	**Presentations followed by panel discussion** The effects of climate change are becoming increasingly difficult to overlook. Extreme weather events fueled by the changing climate cost the US an estimated $165 billion in 2022 (NOAA). From a geotechnical perspective, climate change presents many interesting challenges, for example, increased coastal and riverine erosion, extreme scour, slope stability under extreme precipitation events, permafrost degradation, and impacts of changing groundwater levels. **Coastal and Riverine Erosion and Scour in the Context of Climate Change:** *Nina Stark, University of Florida* **Toward Operationalizing Equitable Climate Adaptation Strategies for Levees:** *Farshid Vahedifard, Tufts University* **Warming Wild West – Geotechnical Design in Permafrost Regions, Accounting for Climate Change Impacts:** *John Thornley, WSP* **Assessing the Impacts of Sea-Level Rise on Regional-Scale Liquefaction Hazard Forecasting:** *Andrew Makdisi, USGS* **Cascading Hazards Accelerated by Climate Change:** *The Kahramanmaras Earthquake Sequence Example: Tugce Baser, University of Illinois*	**Presentations followed by panel discussion** Artificial Intelligence (AI) and Machine Learning (ML) are now commonplace with countless impressive applications. The rapid evolution of language models, notably generative pretrained transformer (GPT) models, have catalyzed the wide adoption of AI/ML in many industries but not the Geoprofession. Due to the inherent challenges and risks involved in our profession, AI/ML are hot topics but have yet to cross the line from proof-of-concept to production. This session will host experts in Geotechnical Engineering and Computer Science who will present the state-of-the-art/practice of AI/ML adoption in the Geoprofession and discuss how we can break the proof-of-concept cycle; the possible ethical implications of AI/ML; and how we can put AI/ML in the service of geoprofessionals in a practical and positive way. **AI-Powered Civil Engineering:** *Krishna Kumar, University of Texas at Austin* **Use of Large Language Models:** *Bailey Uy, Keller North America* **ML for Subsurface Interpretation and Design:** *Lorenzo Peve, Haley & Aldrich, Inc.*
1:30 – 3:00 p.m.	**Technical Sessions**					
Soil Properties: Experimental **Moderator:** Bernardo Castellanos	**Climate Change, Sea Level Rise, & Hurricanes** **Moderators:** Nina Stark, Askar Zhussupbekov	**Soil Dynamics & Earthquake Engineering** **Moderators:** Trevor Carey, Renmin Pretell	**Earth Retaining Structures** **Moderators:** Brice Exley, Michael McGuire	**Tailings & Dams** **Moderator:** Andrea Lougheed	**Best Practices and Challenges in Site-Specific Seismic Hazard Analysis** **Moderators:** Ramin Motamed, Zia Zafir, Bret Lingwall	**Innovations in Remote Sensing for Geotechnical Site Characterization & Infrastructure Monitoring** **Moderators:** Anand Puppala, Surya S. C. Congress
Experimental Assessment of Undrained Soil Behavior Along Generalized Strain Paths: *Rousseau Prasanna, Selvarajah Premnath, Mehdi Pouragha, Siva Sivathayalan* **Laboratory Assessment on the Thermal Conductivity Behavior of Biopolymer Hydrogel Containing Sand:** *Hwijae Lee, Gi-Yun Kim, Haejin Lee, Sojeong Lee, Ilhan Chang* **The Used System for Soil Particle Size Distribution Determination:** *Lei Zhang, Roman Hryciw, Andrea Ventola* **Sample Size Effect on Shear Strength of Mine Waste Rock Using the Scalping Method:** *Gilbert Girumugisha, Carlos Ovalle* **Breakage and Permeability Reduction of Tailings Sand under High-Pressure Oedometric Compression and Creep:** *Yida Zhang, Shubjot Singh, Yuxuan Wen* **Comparison between the Erosion Function Apparatus and the Ex-Situ Scour Testing Device:** *Preliminary Findings: Jennifer Nicks, Ismaail Ghaaowd, James Pagenkopf, Haoyin Shan, Otto Wiblishauser*	**Investigation of Geotechnical Impacts in Response to 2022 Hurricane Ian:** *Elliot Nichols, Aaron Gallant, Saba Molaei, Danrong Zhang, Tugce Baser, David Frost* **Climate Adaptive Predictive Approaches for Geotechnical Infrastructure Components In Mississippi:** *Masoud Nobahar, Grant Worsley, Amber Spears, Sadik Khan, Avipriyo Chakraborty* **Coastal Wetland Surface Elevation Post Construction: Application of Observational Method to Calibrate Consolidation Models:** *Brian Harris, Aleksandra Ostojic, Susan Bailey, Jack Cadigan, Justin Shawler, Monica Chasten* **Understanding the Impact of Land Subsidence on Flooding in the Southeast Texas Coastal Region Using PS-InSAR:** *Arip Nur, Boo Hyun Nam, Jinwoo An, Yong Je Kim* **Sea Level Rise: Vulnerability Assessment of Coastal Roadway Subgrades in North Carolina:** *Sophia Andanje, Brina Montoya* **Large-Scale Laboratory Direct Shear Testing for Wetland Root Strength:** *Mohamed Hassan, Navid Jafari, Robert Twilley, Andre Rovai*	**Capturing the Path Dependency of Site Response in Basin and Non-Basin Southern California Locations:** *Rashid Shams, Chukwuebuka Nweke* **Constraining Cascadia Subduction Zone Ground Motions via Paleoliquefaction Evidence: A Case Study from Kellogg Island, Washington, with Regional Implications:** *Ryan Rasanen, Clinton Wood, Brett Maurer* **A Probabilistic Framework for Coseismic Tsunami Design:** *Jeremy Butkovich, Ali Shahbazian, Hong-Kie Thio, Chris Stearns* **Strain-Dependent Cyclic Strength Ratio Model for Transitional Silts:** *Ali Dadashiserej, Amalesh Jana, Armin Stuedlein, T. Evans* **Seismic Ground Deformation Analyses for the Design of a Large Outfitting Pier in North Vancouver, BC:** *Viet Tran, Uthaya Uthayakumar, Nigel Denby, Lance Menzies, John Wyder, Joe Comeau* **Development of Synthetic Ground-Motion Records through Generative Adversarial Neural Operators:** *Yaozhong Shi, Grigorios Lavrentiadis, Zachary Ross, Domniki Asimaki, Kamyar Azizzadenesheli*	**Effect of Partial Drainage on Optimized Parameters Based on Deformations of a Deep Supported Excavation:** *Sangrae Kim, Richard Finno* **Experience with Recent Soil Nail Construction in California:** *Mazen Adib, Farid Motamed, Medji Sama* **Geometric Limits of Foamed Glass Aggregate Fill Behind Cantilever Walls and Abutments:** *Michael McGuire, Theresa Andrejack Loux, Archie Filshill* **Soil Rocking and Seismic Design Implications for Retaining Walls:** *Numerical Modeling Considerations from Analyzing a Centrifuge Test: Kamyar Sadeghi, Joelle Westcott, Srikanth Madabhushi* **Foundation Design for Crowchild Trail Short-Term Improvements:** *Iain Gidley, Chris Workman* **Geotechnical Asset Management Inspection for Mechanically Stabilized Earth Walls:** *Stacey Kulesza, Robert Parsons, Jie Han*	**Panel Discussion** This special session will discuss recent advancements in tailings characterization in site investigation methods, laboratory testing, and property assessment. **Chang-Gyun Jeong, BGC** **Tom Sully, Knight Piésold** **Arcesio Lizcano, SRK** **Rick Friedel, Klohn Crippen Berger** **Mavi Sanin Blair, WSP**	**Panel Discussion** The ASCE 7 and AASHTO LRFD Bridge Design Specifications require a site-specific seismic hazard analysis to be carried out for certain conditions. The main objective of this special session is to bring together practicing engineers and researchers to discuss the best practices and challenges they face in performing such analyses. **Zia Zafir, Kleinfelder** **Neven Matasovic, Geo-Logic Associates** **Andrew Makdisi, USGS** **Russell Green, Virginia Tech**	**Panel Discussion** This session highlights the significance of remote sensing technology in geotechnical engineering for data collection, mapping, and infrastructure monitoring. The panel will discuss the latest innovations, diverse sensor applications, and the integration of cloud computing and machine/deep learning for more accurate and efficient data analysis in geotechnical engineering decision-making. **Julie Paprocki, University of New Hampshire** **Pooneh Maghoul, Polytechnique Montréal** **Amit Gajurel, Texas A&M University** **Megan van Veen, BGC Engineering** **Thomas Oommen, University of Mississippi**

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Technical Program *(continued)*

Tuesday, February 27, 2024

Track A | EM8	Track B | EM10	Track C | EM11	Track D | EM12	Track E | EM1	Track F | Ballroom C	Track G | EM2/3
10:00 – 11:30 a.m.	**Technical Sessions**					
Transportation Infrastructure **Moderator:** Liz Smith	**Landslides** **Moderator:** Tyler Oathes	**Geophysics & Remote Sensing** **Moderators:** Clint Wood, Sean Ahdi	**Ground Improvement II** **Moderator:** TBD	**Sustainability & Geoenvironmental** **Moderator:** Xenia Wirth	**Celebration of 150th Volume of the Journal of Geotechnical and Geoenvironmental Engineering** **Moderator:** Catherine O'Sullivan	**Energy Geotechnics** **Moderators:** Tugce Baser, Marcelo Sanchez
Feasibility of a Ground-Source Bridge Deck De-Icing System to Mitigate Concrete Deterioration from Temperature Fluctuation: *Ethan Turner, Mohammad Khosravi, Kirsten Matteson, Kathryn Plymesser, Ladean McKittrick, Pooria Toomani* **Accelerated Bridge Construction in Challenging Geology: The Geotechnical Aspects of the Veranda Street Bridge Replacement:** *Joseph Juzwin, Joseph Zwetchkenbaum, Laura Krusinski* **Evaluating the Effectiveness of Asphalt Layer in Improving Railway Track Stiffness through 3-D Numerical Simulations:** *Omid Ghasemi-Fare, Thammapot Wattanapanalai, Alireza Roghani* **Estimating Critical Velocity for High-Speed Rail:** *Alberto Jaen-Toribio, Alice Duley, Jun Wang, Donald Anderson, Paul Murphy* **DEM Simulations of the Seismic Response of Tunnels Embedded in Granular Deposits:** *Usama El Shamy, Ahmed Khamiss* **Stabilization of Coastal Soils to Improve Resiliency of Transportation Infrastructure after Storm Surge Events:** *Sopharith Chou, Nripojyoti Biswas, Anand Puppala, Navid Jafari*	**Proactive Landslide Risk Management Using Regional Lidar Change Detection:** *Matthew Lato, Megan van Veen, Luke Weidner, Alex Graham, Vicky Hsiao, Corey Scheip, Julia Frazier, Michael Porter, Scott Anderson* **Coastal Erosion Induced Landslide in South Orange County:** *Katie Farrington, Gregory Silver, Ashley Varni* **Integrating Precipitation and Soil Moisture Measurements to Understand Landslide Movements along Alabama Highways:** *Leila Rahimikhameneh, Abraham Alvarez Reyna, Jack Montgomery, Frances O'Donnell* **Geologic Deposit Strength Inversion from Landslide Inventories:** *Michael Greenfield, Christopher Hitchock, Ben Leshchinsky, Joseph Wartman, Adam Wade, Albert Kottke, Michael Boone* **Pseudo-Three-Dimensional Back-Analysis of Rainfall-Induced Landslides in Utuado, Puerto Rico:** *Mirna Kassem, Weibing Gong, Dimitrios Zekkos, Marin Clark, Stephen Hughes* **Integration of Physical and Statistical Knowledge in Landslide Susceptibility Characterization:** *Sahand Khabiri, Yichuan Zhu*	**Electromagnetic Induction Based Regional Subsurface Characterization of Mountainous Environments: Examples from Puerto Rico:** *Parker Blunts, Dimitrios Zekkos, Marin Clark* **Application of 3D Ambient Noise Tomography for Void Detection:** *Khiem Tran, Yao Wang* **Identifying High-Water Marks in Post-Disaster Reconnaissance using Multispectral Imagery:** *Michael H. Gardner, Elliot Nichols, Nina Stark, Anne Lemnitzer, J. David Frost* **Sinkhole Evaluation Using Full Waveform Tomography:** *A Comparative Numerical Study of Objective Functions: Pourya Alidoust, Joseph Coe, Yang Yang* **Estimation of Sediment Depth for a Dam Removal Project Using Combined Underwater and Land Electrical Resistivity Tomography (ERT) Measurements:** *Mohammadyar Rahimi, Clinton Wood, Kevin Befus* **Exploration of Feature Engineering Techniques and Unsupervised Machine Learning Clustering Algorithms for Geophysical Data on Levees:** *Brittany Russo, Adda Athanasopoulos-Zekkos*	**Bioinspired Biopolymer Hydrogel Application to Improve Installation Efficiency and Load Carrying Capacity of Piles:** *Suhyuk Park, Jun-Hyeok Yum, Minhyeong Lee, Gye-Chun Cho, Ilhan Chang, Sojeong Lee* **Effect of Bio-Cementation on Wave-Induced Pore Water Pressure in Sand:** *Ehsan Yazdani, Brina Montoya, Meagan Wengrove, Matt Evans* **Microbially-Induced Calcite Precipitation via Microbial Organic Acid Oxidation:** *Trent Shepherd, Michael Gomez* **Liquefaction Triggering Surface for Ottawa F65 Sand:** *Cyclic DSS Results and PM4Sand Calibration: Laura Luna, Minyong Lee, Mitchell deJager, Jason DeJong, Michael Gomez, Katerina Ziotopoulou* **The Effect of Biopolymer Pore Fluids on Soil Properties Using Molecular Dynamics Simulations:** *Shoumik Saha, Dilip Gersappe, Sherif Abdelaziz* **Preliminary Evaluation of Effect of Curing Time on Unconfined Compressive Strength and Microstructure of Colloidal Silica Grouted Soil:** *Anupam Bhattarai, Jonathan Hubler, Kristin Sample-Lord, Patricia Gallagher*	**Role of EPS Geofoams in Reducing Thermal Losses from Slab-On-Grade Foundations under Freezing Conditions:** *Hiramani Chimauriya, Clay Caldwell, Anand Puppala, Nripojyoti Biswas, Surya Sarat Chandra Congress* **Preliminary Examination of Hydraulic and Environmental Properties of Ultra-Lightweight Foamed Glass Aggregate:** *Thomas Mayer, Jonathan Hubler, Kristin Sample-Lord, Theresa Andrejack Loux* **Reducing the Cement Content During Deep Soil Mixing and Improving Compressive Strength by Means of Special Additives:** *John Allen, Giovanni Spagnoli* **High Temperature Treatment to Improve Hydrolytic Stability of Mine Tailing-Based Geopolymer Bricks:** *Cara Clements, Isabelle Goetz, Lori Tunstall, Ahmadreza Hedayat* **Influence of Chitosan and Bentonite Characteristics on Phosphate Removal from Stormwater:** *Gaurav Verma, Jagadeesh Kumar Janga, Krishna Reddy, Angelica Palomino* **Geotechnical Characterization of Landfilled Oilfield Exploration and Production Waste:** *Thierno Kane, Sid Nadukuru, Scott Graves*	**Presentations followed by panel discussion** Presentations recognizing the importance and impact of the Journal of Geotechnical and Geoenvironmental Engineering from 1956 to today. **History of the JGGE,** *Mohammed Gabr, NCSU* **Contributions to Foundation Engineering,** *Rod Salgado, Purdue* **Contributions to Geoenvironmental Engineering,** *Rudy Bonaparte, Geosyntec* **Contributions to Geotechnical Earthquake Engineering,** *Thaleia Travasarou, Fugro* **Contributions to Soil Behavior and Characterisation,** *Anand Puppala,TAMU*	**Panel Discussion** Energy Geotechnics is playing a fundamental role due to the continuous increase in energy demands associated with economic development and population growth worldwide. Geotechnical engineering is often at the core of the energy challenge. In this context, the Energy Geotechnics panel will bring together colleagues from the industry, government, and academia to discuss current challenges and opportunities in this relevant and emerging area. **Carlos Santamarina,** *Georgia Institute of Technology, USA* **Tony Amis,** *Senior Vice President Endurant Energy* **Xinabo Yu,** *University of Texas at Arlington*
1:00 – 2:30 p.m.	**Technical Sessions**					
Deep Foundations **Moderators:** Tony Canale, Francisco Ciruela-Ochoa	**Soil Properties: Imaging, Monitoring, & Simulations** **Moderators:** Michelle Barry, Jennifer Nicks	**Pavement Geotechnics** **Moderator:** TBD	**Liquefaction** **Moderators:** Andres Reyes Parra, Saman Zarnani	**Computational Geotechnics** **Moderators:** Krishna Kumar, Kirk Ellison	**From Seismic Hazard Models to Earthquake Policy** **Moderator:** Sean Ahdi	**Recent Developments in Soft Soil Improvement Methods** **Moderator:** José L. M. Clemente
Downdrag Analysis on Piles by Cyclic Hyperbolic t-z Curves: *Roman Hryciw, Ries Plescher* **Centrifuge Testing on Helical Piles in Sand Subjected to Pseudostatic Monotonic and Cyclic Loads:** *Naveel Islam, Lijun Deng, Rick Chalaturnyk, Luke Penner* **Load Transfer of Steel Pipe Piles in Warming Permafrost:** *Seyed Amirhossein Tabatabaei, Abdulghader Aldaeef, Mohammad Rayhani* **Revisiting Old Sill Structure and Lock and Dam 4 of 1956 and 1964:** *Bengt Fellenius* **Evaluation of Pile Capacities under Local Scoured Conditions:** *Cheng Lin, Owen (Wenyu) Jiang, Yunjie Lin* **Challenges with Pile Design and Construction on the Coquihalla Highway:** *James Williams, Stuart Childs, Gurpreet Bala, Brent McAfee*	**Automatic Calibration Tool for Efficient Parameter Optimization of SANISAND Models under Cyclic Loading:** *Sheng Zeng, Jan Machaček, Mahdi Taiebat* **Long-Term Stress and Consolidation Behavior of a Soil-Bentonite Slurry Trench Cutoff Wall:** *Jeffrey Evans, Daniel Ruffing, Landon Barlow, Nathaniel Coughenour* **Grain Portraits: Quantifying Heterogeneity of Aggregate Layers through Image Analysis:** *Luis Enrique Garzon-Sabogal, Philippe Bourdeau, Marika Santagata* **A New Paradigm Integrating the Concepts of Particle Abrasion and Breakage:** *Priya Tripathi, Seung Jae Lee, Moochul Shin, Chang Hoon Lee* **Multi-Scale Study of Specimen Size Effect on Shear Strength of Polydisperse Granular Materials Using DEM:** *David Cantor, Carlos Ovalle* **Differentiable Programming for Inverse Estimate of Soil Permeability and Design of Ductbanks:** *Anusha Vajapeyajula, Krishna Kumar*	**Large-Scale Bio-Cementation Test to Improve Sub-Structures of Existing Asphalt and Concrete Roadways:** *Mohammad Khosravi, Adrienne Phillips, Hudson Dorian, Olayinka Durojaye, Alfred Cunningham, Maneesh Gupta, Emmanuel Parushev* **Deformation of Unbound Granular Materials in the Three-Dimensional Stress State:** *Sajjad Vaseghi, Daichao Sheng* **Use of Artificial Neural Network to Determine the Pavement Layer Properties Based on Automated Plate Load Test:** *Md Ashrafuzzaman Khan, Krishneswar Ramineni, Aditya Deshmukh, Aritra Banerjee, Anand J. Puppala* **Initial Evaluation and Structural Contribution from Full Depth Reclamation Technique for Rehabilitation of Airfield Asphalt Pavements:** *Victor García, Jeremy Robinson, Ester Tseng, Jeb Tingle* **Study on Hydraulic Conductivity of Cement-Treated Pavement Base Course Made of Recycled Plastic and Concrete Aggregates:** *Md Shams Razi Shopnil, Sabrina Mahjabin, MD Sahadat Hossain* **Multiphysics Simulation of the Effects of Wicking Geotextile on Mitigating Frost Effects on Cold Region Pavement:** *Yusheng Jiang, Zaid Alajlan, Claudia Zapata, Xiong Yu*	**Liquefaction Timing and Post-Triggering Seismic Energy: A Comparison of Crustal and Subduction Zone Earthquakes:** *Trevor Carey, Atira Naik, Andrew Makdisi, H. Benjamin Mason* **Liquefaction Potential of Christchurch Silty Soil:** *Zorana Mijic, Jonathan Bray, Michael Riemer, Misko Cubrinovski, Sean Rees* **A Framework for Probabilistic Assessment of Liquefaction Manifestation:** *Kenneth Hudson, Kristin Ulmer, Scott Brandenberg, Paola Zimmaro, Steven Kramer, Jonathan Stewart* **Cyclic Strength Evaluation Criteria for Sand-Like, Clay-Like, and Intermediate Soils:** *Ross Boulanger, Izzat Idriss* **A Case History in the Fraser River Basin on Different Liquefaction Triggering Assessments and Considerations for Their Use:** *Tyler Southam, Gordon Fung, Lothar Chan* **Earthquake-Induced Liquefaction Manifestation Multiclass Prediction Utilizing Random Forests for the Canterbury Earthquake Sequence:** *Katherine Cheng, Pablo Busch, Katerina Ziotopoulou*	**Effects of Landslide Sliding Surface Characteristics on the Impact Force on Rigid Structures:** *Aditaya Roshan, Alba Yerro* **Advances in Imposing Nonconforming Neumann Boundary Conditions in the Material Point Method:** *Joel Given, Yong Liang, Kenichi Soga* **Discrete Element Analysis of Strike-Slip Fault Rupture:** *Fernando Garcia* **Determination of Mechanical Properties of Roots for Understanding the Load Transfer Mechanism Trees Using Finite Element Method:** *Kaleb Boland, Nadarajah Ravichandran* **Characterization of Energy Dissipation during Cyclic Loading of a Sand Damper:** *Usama El Shamy, Ehab Sabi, Nicos Makris* **Validating the Use of Material Point Method and SANISAND Model for Relating the State Parameter with Cone Tip Resistance:** *Sara Moshfeghi, Mahdi Taiebat, Arcesio Lizcano*	**Panel Discussion** Panelists will discuss: • How advances in earthquake science make their way into national-scale seismic hazard models • When new science is or isn't considered "mature enough" for SHM implementation, and how significant changes are phased in • The delineation between SHM development and the use of SHM data to develop seismic provisions and risk assessments • How the needs of downstream users may affect SHM development and updates • Delivery of SHM data for different end-users **Andrew Makdisi,** *U.S. Geological Survey* **Trevor Carey,** *University of British Columbia* **Tiegan Hobbs,** *Geological Survey of Canada* **Michal Kolaj,** *Geological Survey of Canada* **Debra Murphy,** *Slate Geotechnical*	**Presentations** Soft soil sites are found throughout the world and throughout the US, most notably around the Gulf Coast states of Louisiana and Texas. These soils present unique challenges to site development (e.g., equipment mobility issues) as well as design and construction. Several soil improvement methods can be used to eliminate and/or mitigate risks associated with soft soils. This special session will include presentations dealing with selected soft soil improvement methods with an emphasis on recent developments. **When Soft Soils Give Way – An Aggregate Pier Story,** *Sam Warren, Farrell Design-Build, Inc.* **Consolidating the Softest of Soils – Wick Drains and Vacuum Consolidation,** *Martin Taube, Menard Group USA* **Electro-Osmosis Dewatering and Consolidation - G-I China Scan Tour Overview,** *Lisheng Shao, Malcom Drilling* **Accelerated Carbonation to Stabilize Subgrade Materials,** *Aaron Gallant, University of Maine* **Improvement of Soft Soil to Increase Pile Lateral Capacity,** *Juan Baez, Advanced Geosolutions, Inc.*

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- Slope stabilization
- Support of excavation
- Underpinning
- Design-build

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Technical Program *(continued)*

Wednesday, February 28, 2024

Track A | EM8	Track B | EM10	Track C | EM11	Track D | EM12	Track E | EM1	Track F | Ballroom C
10:30 a.m. – 12:00 p.m.	**Technical Sessions**				
Foundations **Moderators:** Wendy Mathieson, Sanjeev Malhotra	**Risk Assessment & Resilience** **Moderators:** Roberto Olivera, Michael Greenfield	**Geosynthetics** **Moderators:** Melissa Beauregard, Hossein Bahmyari	**Cold Regions** **Moderators:** Derrick Dasenbrock, John Tornley	**Next Generation Liquefaction (NGL) Model Development** **Moderator:** Kristin Ulmer	**Earthquake Early Warning in the US and Canada** **Moderator:** Gabriel Lotto
Cyclic Lateral Load Testing of Model Pile Segments in Sand: *Equipment Development and Early Results: Sanjeev Malhotra, Byron Byrne* **Viaduct Foundation Design for Geohazards in Kicking Horse Canyon:** *Bruce Hamersley, Paul Wilson, James Williams, Warren Wunderlick* **Resistance of Shallow Footings to Moment Loads during Seismic Events:** *Yeon Sam Kim, Radoslaw Michalowski* **Case Study on Ground Deformations and Vibrations Induced by Impact Pile Driving in Central Florida:** *Jorge E. Orozco-Herrera, Berk Turkel, Luis G. Arboleda-Monsalve, Larry Jones* **CPT-Based Assessment of Soils Surrounding Drilled Displacement Piles Installed in Cohesionless Soils:** *Genesis Figueroa Palacios, Anne Lemnitzer, Tim Siegel, Morgan NeSmith* **Effect of Feature Selection Technique on the Pile Capacity Predicted using Machine Learning:** *Baturalp Ozturk, Antonio Kodsy, Magued Iskander*	**Risk Assessment of Seismic Slope Stability Considering Soil Spatial Variability using Subset Simulation:** *Ning Luo* **Overview of the Risk Assessment of Mechanically Stabilized Earth Walls:** *Sepehr Chalajour, James Blatz* **Quantification of Resilience in Geotechnical Asset Management Applications:** *Ahmad Alhasan, Jerry DiMaggio* **Resilience Index Evaluated for Urban Excavations:** *Yuli Delgado Gonzalez, Jorge Pineda Jaimes, Gabriel Colorado* **Evaluating Settlement Risk Due to Fill Placement:** *Updating Consolidation Settlement Parameters Using Bayesian Method: Ehssan Hooman, Martin Hudson, Gregory Cuttell* **The Significance of Seismic Hazard Analysis in Building Resilience to Earthquakes:** *Aarohi Bhadiyadra, Tejaskumar Thaker*	**A Numerical Study of Drainage Characteristics of Nonwoven Geotextile on the Performance of a Reinforced Soil Wall Comprising Unsaturated Marginal Backfill:** *Amalesh Jana, Arindam Dey* **Performance of Encased Stone Column Aggregates Using Large Scale Triaxial Testing:** *Upendra Modalavalasa, Ayothiraman Ramanathan* **Characterization of the Long-Term Tensile Stiffness of Geogrids at the Serviceability Limit of Strain:** *Michael McGuire, Evaline Bearce, Elise Hummel, Laura Spencer* **Vertical Deformation Analyses for Multi-Axial Geogrid Stabilized Platform Using Conventional Techniques and Back-Analyses with Composite Approach:** *Lois Schwarz, Mark Wayne* **Variability in Membrane Behavior of Geosynthetic Clay Liners:** *Fatih Polat, Sayed Rahman, Kristin Sample-Lord, Nazli Yesiller, James Hanson, Michael Malusis* **Design of Geosynthetic MSE Walls Supporting Bridge Abutment Footings Using the Stiffness Method:** *Richard Bathurst, Reza Jamshidi-Chenari*	**Characterization of Adfreeze Shear Behavior at the Interface of Frozen Clay Till and Steel Piles:** *Joosh Bryan Adajar, Marolo Alfaro, Lukas Arenson* **The Effects of Fiber Amendment on the Surface Crack Evolution on Clayey Soil under Freeze-Thaw Cycles:** *Shaini Aluthgun Hewage, Kaniz Roksana, Chao Sheng Tang, Cheng Zhu* **Distributed Fiber Optic Sensing in Cold Regions:** *Meghan Quinn, Anna Wagner, Chandler Engel, Katherine Winters, Constantine Coclin, Jennifer Picucci* **Influence of Freeze-Thaw Cycles and Soil State on Erodibility of Soils in Cold Regions:** *Calvin Thom, Bret Lingwall, Tejo Bheemasetti* **Prediction of Permafrost Extent along the Hudson Bay Railway Corridor using Freezing and Thawing Indices:** *Khatereh Raghangar, Jocelyn Hayley* **Laboratory Tests Investigating the Influence of Moisture Availability on Frost Heave:** *Caroline Silins, Greg Siemens, Andy Take*	**Panel Discussion** Modeling teams in the Next Generation Liquefaction (NGL) project are using a common database of liquefaction case histories to develop new liquefaction models. Members of the modeling teams will present progress updates and participate in a panel discussion to solicit community feedback. **Armin Stuedlein,** *Oregon State University* **Russell Green,** *Virginia Tech* **Scott Brandenberg,** *UCLA* **Makbule Ilgac,** *UC Berkeley* **Renmin Pretell,** *University of Nevada, Reno*	**Presentations followed by panel discussion** Earthquake early warning (EEW) systems are gaining in popularity throughout the world, as more and more countries leverage new technologies to rapidly detect earthquake ground motion and distribute alerts to the public and to technical users. This session will focus on several aspects of EEW, which is now active on the US West Coast (under the name ShakeAlert) and will be coming soon to parts of Canada. Science and technology behind EEW in North America will be discussed, and the methods through which alerts are delivered to the public. A series of case studies will be presented, exploring practical ways through which EEW can be used to trigger automated actions across a range of sectors **Bill Steele,** *Pacific Northwest Seismic Network, University of Washington* **Gabriel Lotto,** *Pacific Northwest Seismic Network, University of Washington* **Alison Bird,** *Natural Resources Canada*

Plenary Sessions and Geo-PIT

Monday, February 26

8:00 – 10:00 a.m.

Keynote
Darrell Fox, Terry Fox Research Institute

"I want to Try the Impossible"
Discover the enduring legacy of Terry Fox's Marathon of Hope through the eyes of his brother, Darrell Fox. Join us for an unforgettable journey back to the summer of 1980, as Darrell shares firsthand insights into Terry's inspiring quest. From their remarkable journey to the ongoing fight against cancer, explore why Terry's story remains as vital today as it was over 40 years ago.

Geo-PIT
Being a Leader in your Geoprofessional Life
Rudy Bonaparte, Geosyntec
Terzaghi Meets Darwin – How Animals and Plants Inspire Solutions for Engineering Challenges
Alejandro Martinez, University of California Davis
Thawing Tales & Permafrost Predicaments
Jocelyn Hayley, University of Calgary

5:00 – 6:30 p.m.
Geo-PIT
Nurturing the Soul of a Nerd: Hacking Your Way to Success Through Innovation
Matthew Lato, BGC Engineering
We Are Built for This
Jewels Stover, Bauer Equipment America

Tuesday, February 27

8:00 - 10:00 a.m.
Panel Discussion – The Role of Geotechnical Engineers in Responding to Climate Change
Join our interdisciplinary panel as they offer insight from the public, private, and academic sectors about the geo-profession's place in the climate change puzzle.
Panelists:
Shawn Wilson, WSP; Sarah Gaib, British Columbia Ministry of Transportation and Infrastructure; Carlos Santamarina, Georgia Tech
Geo-PIT
Deployable Anchors: Origami is for Geotechnical Engineers
Ann Sychterz, University of Illinois
Moving Toward a More Sustainable Future Using Reinforced Soil
Stan Boyle, Shannon & Wilson
The Grain Size Distribution of Photos: How Soil and Rock are a Foundation for Landscape Photography
Ben Leschchinsky, Oregon State University
Up Close and Personal with Flood Protection Systems: What Does the Future Hold?
Adda Athanasopoulos-Zekkos, University of California Berkeley

Wednesday, February 28

8:00 – 10:00 a.m.
Geo-Legends Live with Ed Kavazanjian
Dive into the captivating world of geotechnical engineering with Geo-Legends! Join Matt Evans as he interviews renowned expert Ed Kavazanjian from Arizona State University. Delve into Kavazanjian's groundbreaking career, from waste containment systems to biogeotechnical engineering. Discover the mind behind prestigious awards and a National Academy of Engineering induction. Don't miss this exclusive peek into the forefront of geotechnical innovation!

1:00 - 2:30 p.m.
Geo-PIT
A Geotech in Avalanche Terrain
Erik Jensen, University of Colorado at Boulder
Statistics Cannot Create Data: A Call for More Raw Field Data Collection in the Geohazards Community
Scott McDougall, University of British Columbia

Committee Meetings

Sunday, *February 25*
ALL SUNDAY MEETINGS BY INVITATION ONLY

8:00 AM – 12:00 PM	Technical Coordination Committee	EM19
1:00 – 5:00 PM	Technical Committee Chairs Workshop	EM19
2:00 – 3:30 PM	JGGE Editorial Board	EM10
3:30 – 5:00 PM	Technical Publicatios Committee	EM10

Monday, *February 26*

10:00 AM – 12:00 PM	Deep Foundations	EM19
	Computational Geotechnics	EM20
	Outreach and Engagement	EM18
	Sustainability in Geotechnical Engineering	EM17
	Unsaturated Soils	EM13
1:00 PM – 3:00 PM	Geoenvironmental Engineering	EM19
	Local Involvement Committee (by invitation only)	EM20
	Shallow Foundations	EM13
3:00 – 5:00 PM	Earthquake Engineering & Soil Dynamics	EM16
	Engineering Geology & Site Characterization	EM18
	Grouting	EM13
	Pavements	EM17
	Student Leadership Council	EM19

Tuesday, *February 27*

10:00 AM – 12:00 PM	Earth Retaining Structures	EM17
	Geosynthetics	EM13
	INNC	EM18
	International Activities Council	EM20
	Organizational Member Council	EM19
1:00 PM – 3:00 PM	Continuing Education	EM19
	Geotechnics of Soil Erosion	EM13
	Embankments, Dams, and Slopes	EM18
	Professional Practice Council	EM20
	Risk Assessment and Management	EM17
3:00 – 5:00 PM	Geophysical Engineering	EM13
	Soil Improvement	EM19
	Soil Properties & Modeling	EM17
	Underground Engineering	EM18
	USUCGER	EM20

Wednesday, *February 28*

10:00 AM – 12:00 PM	Rock Mechanics	EM20
	Student Participation Committee	EM17

Poster Session 1

A Comparison of In-Situ Unit Weight and Moisture Content Measurements Made Using a Traditional Nuclear Density Gauge and a Hybrid Nuclear-Electric Density Gauge: *Christopher Meehan, William Baker*

A Discrete Element Method-Based Simulation of a Block Toppling Failure on an Inclined Surface: Hooman Dabirmanesh, Attila Zsaki

A Laboratory Examination of the Undrained Cyclic Shear Behavior of Pyroclastic Sands: Kyle Law, Bret Lingwall

A Proper Methodology to Characterize the Associated Variability of UCS Data for the Metamorphic Rocks Based on Outlier Detection Methods: Behzad Dastjerdy, Ali Saeidi, Shahriyar Heidarzadeh

A Review of the NorSand Constitutive Model's Capabilities in Representing Common Loading Modes in Soil Mechanics: Wyatt Handspiker, Mason Ghafghazi

A Semi-Analytical Framework to Simulate the Motion of Creeping Landslides: Xiang Li, Giuseppe Buscarnera

A study of laterally loaded piles after failure: Rabie Farrag, Anne Lemnitzer

An Analytical Approach to Determine Point-of-Fixity of Deep Foundation Utilizing Nonlinear Response from p-y Analysis: Fahim Bhuiyan, Ramin Motamed, Raj Siddharthan

An Automated Image-Based Approach to Derive Beach Grain Size Characteristics: Julie Paprocki

An Investigation of Sources of Asymmetric Thermal Expansion Behavior in Semi-integral Bridges: Behdad Mofarraj, Jorge Zornberg

Analysis of the Load-Sharing Behavior of Disconnected Piled Raft Foundation Using Non-linear Soil-Structure Interaction: Vincent Zanjani, Satheeshkumar M, Rob Smith

Application of Deep Reinforcement Learning to Control Drainage in a Lab-Scale Geosystem: Aynaz Biniyaz, Zhen Liu

Assessment of Seismic Ground Response Analysis Modeling Uncertainty at Christchurch Hospital, New Zealand: James Dismuke

Assessment of Soil Classification from Synthetic Aperture Radar: Tess Priest, Julie Paprocki

Atterberg Limits of Two Crushed and Uncrushed Glauconitic Soils: Danilo Zeppilli, Emma Dennis, Zachary Westgate, Guoping Zhang, Don Degroot, Kenneth Miller, James Browning, Ryan Beemer

Bayesian Model Updating for Soil-Structure System Identification Using Forced-Vibration Test Measurements: Abdelrahman Taha, Hamed Ebrahimian, Farid Ghahari

Bearing Capacity of a Stone Column Constructed using the Vibro-Replacement Method: Experimental and Numerical Investigations: Siamak Yoosefi, Christopher Meehan, Amir Akbari Garakani, Ali Mosalmanzadeh

Case Study: Correlation between Becker and SPT Blow Counts: Ali Jahanfar, Viet Tran, Nigel Denby, Uthaya Uthayakumar, Tyler Trudel, Daniel Brignac, Ryan Porter, Felix Pei

Climate-Induced Multimodality of Soil Moisture Distribution of Water Balance Cover: Md Jobair Bin Alam, Naima Rahman

Comparison of DEM Software with Polyhedral Particle Shapes: Travis Shoemaker, Carine Tanissa, Youssef Hashash

Comparison of Soil-Water Mechanisms in Hydration of Kaolinite and Montmorillonite through Molecular Dynamics Simulation: Jackson Stewart, Vance Jaeger, Omid Ghasemi-Fare

Considerations for Augmented Flood Control Infrastructure Inspection Using Convolutional Neural Networks: Zachary Nick, Joe Tom, Linbin Zhang

Consistent framework for PGA estimation at liquefaction case history sites: Application to the 1989 M6.9 Loma Prieta Earthquake: Renmin Pretell, Scott Brandenberg, Jonathan Stewart

Delayed Slope Instabilities in Earth Fill Dams Due to Creep: A Proposed Application of the Time-Dependent Model for Structured Soils (TMS): Marvin Renzo Malonzo, Marolo Alfaro

Design of Drilled Shaft with Environmental Impact Considerations: A Parametric Study: Mina Lee, Dipanjan Basu

Disaster Response in Port Areas Based on the Measured Data from Seismic Accelerometers: Jihye Seo, Deohee Won, Woo-Sun Park

Drilled Shaft Load Tests to Investigate Side Friction Development Along Drilled Shafts in Very Weak Porous Limestone: Miguel Pando, Matias Frediani, Jose Ramirez

Durability of Natural Hemp Fibers Embedded in a Soil Matrix: Mohamad El Ahmad, Shadi Najjar, Salah Sadek

Effect of Jarosite Waste and Red Mud on Strength and Compressibility Behavior of Clayey Soil: Rakesh Bhatt, Nihar Ranjan Patra

Effect of Pile Modeling Options on the Short-Term Stability Analysis of a Clay Slope Stabilized with Piles: Emre Tekdemir, Irem Yildirim

Effect of Pre-seismic History on Liquefaction Resistance of Soils Using Shaking Table Tests: Roohollah Farzalizadeh, Abdolreza Osouli

Effect of Temperature on the Shear Strength of Fine-Grained Permafrost Soils: Hossein Emami Ahari, Beena Ajmera

Effects of Jointed Plain Concrete Pavement's Design Inputs on Performance Indicators: Megan McIntosh, Gauhar Sabih, Clarke Summers, Tara Cavalline, Brett Tempest

Efficacy of Dual Barrier Systems in Mitigating Ground-Borne Vibrations Induced by Impact Loading: Nitish Jauhari, Abhinav Raj, Amarnath Hegde

Engineering Characterization and Cyclic Failure of a Diatomaceous Earth: Carter Willson, Jintai Wang

Estimating In-Situ Shear Wave Velocity Using Machine Learning Techniques: Longde Jin, Andrew Fuggle, Haley Roberts, Christian Armstrong, Lina-Maria Pua

Estimating Shear Strength of Residual Soil and Saprolite in South Carolina for Evaluation of Shear Modulus Reduction Models: Ali Sedaghat, Ronald Andrus, Hosein Golkarfard, Nadarajah Ravichandran, Glenn Rix, Clinton Carlson

Estimating Thaw-Settlement of Highly Organic Permafrost: Zakieh Mohammadi, Jocelyn L. Hayley

Evaluating Slope Stability of an Embankment Dam using Three-Dimensional Limit Equilibrium Analysis: Tyler Quick

Evaluating the In Situ Elastic Modulus of Foamed Glass Aggregate using Static Plate Load Tests: Michael McGuire, Theresa Andrejack Loux, Archie Filshill

Evaluation of Biochar as a soil improvement additive to mid-Atlantic expansive clay: Kalehiwot Manahiloh, Victor Kaliakin, Kyle Verdi

Evaluation of crushing resistance and hydraulic conductivity of proppants under high closure stress: Hebatalla Ghoneim, Majid Ghayoomi

Evaluation of Dynamic Properties of Sand Treated with Natural Rubber Latex for Seismic Isolation: Veena U, Naveen James

Evaluation of Time History-based Metrics for Validating Nonlinear Deformation Analyses of Liquefiable Geosystems: Maziar Mivehchi, Katerina Ziotopoulou

Experimental Evaluation of Additional Shear Strength for Vetiver Root-Reinforced Soil: Faria Fahim Badhon, Md Azijul Islam, Mohammad Shariful Islam

Experimental Setup for Complex Electrical Resistivity Measurements on Unsaturated Soils: Ballast Fouling Materials: Kyle Parr, Stacey Kulesza

Exploring the Use of Geothermal piles as an Environmental Sustainable Method to De-ice Bridge Decks through Field-Scale Experiment: Amin Mohammadzadeh, Omid Ghasemi-Fare, Zhihui Sun, Mark McGinley

Field trial of EICP reinforced beach slope against coastal erosion: Shifan Wu, Wenhao Wang, Zheng Zhang, Jian Chu, Kok Pang Lam

Geocell-reinforced capping layer in rail tracks subjected to cyclic loading: Laboratory and Numerical Modelling Study: Trung Ngo

High Strain Rate Effects on a Clayey Sand Mixture: Abdelaziz Ads, Magued Iskander, Stephan Bless, Mehdi Omidvar

Impact of Multiple Cyclic Loads on the Cyclic and Post-Cyclic Behavior of Fine-Grained Soils: Veronica Kiuna, Beena Ajmera, Binod Tiwari

Implementation of a Thermomechanical Clay Constitutive Model in Finite Element Analysis Framework: Irfan Shah, Prasenjit Basu, Santiram Chatterjee

Importance of Product Specific Testing in Determining Durability Reduction Factor for Polyester Geogrid in High pH Conditions: Laura Spencer

Improved Estimation of California Bearing Ratio value from Dynamic Cone Penetrometer Test Data Using Hierarchical Bayesian Modeling: Laith Sadik, Sara Khoshnevisan, Lei Wang

Improved Predictions of Liquefaction-Induced Lateral Spreading with SANISAND-MSf: Incorporating Effects of Static Shear Stress: Andrés Reyes, Masoumeh Asgarpoor, Mahdi Taiebat

Improving Student Engagement, Achievement and Motivation using Game-Design Based Learning in Undergraduate Geotechnical Engineering Classes: Justin Sabrowsky, Beena Ajmera, Cassandra Rutherford, Alenka Poplin, Alyssa Emery

Indirect Assessment of Mechanical Behaviour of Varved Clays under Freezing-Thawing Cycles using SWCC and SFCC of Constituent Laminae: Deepali Anand, Arindam Dey, Ravi K

Infiltration Testing, Design and Mounding Analysis for Effective Stormwater Management for a New Link Light Rail Extension Project in Washington State.: Roy Jensen, Blake Lytle-Goldstein, William Hickey, Madan Karkee, Garry Horvitz

InSAR-based Assessment of Seasonal Ground Heave and Settlement: Yusheng Jiang, Zaid Alajlan, Xiong Yu

Investigating Student Perceptions of Engineering Judgment through Experiential Learning: Ryan Carkin, Victoria Bennett, Yevgeniya Zastavker, Abigail Snyder, Alyssa Richtarek, Casper Harteveld, Tarek Abdoun

Investigating the Impact of Particle Migration Phenomena on Drilling Mud Filtrates during Injection through Porous Media: Jithin S Kumar, Ramesh Kannan Kandasami

Investigating the Influence of Water Salinity Concentrations on Thermal Conductivity of Soils for Buried Infrastructure Systems Reliant on Heat Transfer: Saad Rehmatullah, Oladoyin Kolawole, Vatsal Shah

Investigating the Potential of the Material Point Method to Model the Run-out Behavior Observed in Centrifuge Experiments: Mengchen Wang, Yidong Zhao, Srikanth Madabhushi, Jinhyun Choo

Investigation of the Effect of Geosynthetics on Climate-Induced Changes in Unsaturated Soil Behavior Using Non-Parametric Measure: Md Jobair Bin Alam, Maalvika Aggarwal, Naima Rahman

Investigation of Warming Effects on Creep Behavior of Pile Foundations in a Frozen Sandy Soil Using Laboratory-scale Tests: Mohammad Abweny, Suguang Xiao

Laboratory Assessment for Utilizing Eggshell Waste on Iowa Soil Stabilization: Bo Yang, Zexi Yin, Halil Ceylan, Sunghwan Kim

Laboratory Measurements of Hydraulic and Compressibility Characteristics of Fertilizer Treated Sandy Soils: Haya Qutob, Lalita Oka

Large-Deformation Simulation of the 1971 Lower San Fernando Dam Flow Slide Using the Material Point Method: Lauren Talbot, Joel Given, Yong Liang, Ezra Tjung, Khaled Chowdhury, Raymond Seed, Kenichi Soga

Liquefaction Resistance of Fiber Reinforced Pond Ash: Sujay Teli, Ajanta Sachan

Mass Loss Measurement in Triaxial Permeameter Testing: Sara Ataii

Mechanical and Deformation Behaviors of Wyoming Shales: Kam Ng, Lokendra Khatri, Esraa Alomari

Models for Predicting the Maximum and Minimum Index Void Ratios for Sand-Gravel Mixtures: Carmine Polito, Jay Grossman, Tyler Skinner

MPM Coseismic Slope Runout Prediction Using the Intergranular Strain Anisotropy Hypoplastic Model: Abdelrahman Alsardi, Alba Yerro

Nano-assisted Enzyme Induced Calcium Precipitates (EICP) For Acidic Soil Improvement: Emran Alotaibi, Mohamed Arab, Maher Omar, Omar Mostafa, Marawan Naeem

Near Surface Soil Moisture Estimation through Fusion of UAV-Enabled Thermal, Optical, and Multispectral Hyperspatial Imagery at the Oak Ridge Earthflow: Drew Gomberg, Dimitrios Zekkos

Numerical analysis of Two-Dimensional Tank Experiment of Microbial Induced Desaturation (MID) in Layered Silts and Sands: Patrick Kwon, Deepesh Karmacharya, Leon Van Paassen, Edward Kavazanjian

Numerical Modelling of NATM Tunnels Pre-supported with Umbrella Arch Method: Comparison with Field Measurements: Erman Ergincan, Tolga Ozudogru, Irem Yildirim

Numerical Simulation of High-Speed Penetration of Munitions in Clay: Boules Morkos, Rachel White, Mehdi Omidvar, Magued Iskander, Stephan Bless

Parametric Study of the Effect of Slope Geometry, Soil Properties, and Rainfall Characteristics on the Stability and Deformation of Slope Failures: Rupsa Roy, Binod Tiwari, Beena Ajmera

Partial hydrate dissociation; Impact of Thermal stimulation and Depressurization: Derrick Ayebazibwe

Phosphate Containment by Bentonite-Amended Flyash Liner: Raviteja Kvns, Jagadeesh Kumar Janga, Krishna Reddy

Pile Capacity Reduction Due to Wetting in Saharan Deserts and its Effect on The Serviceability of Cairo Monorail: Ahmed Abd Elmageed, Mohamed Hassan, Ahmed Nader, Omar Alawneh

Pile length estimation based on guided waves and periodic analysis: Shihao Cui, Pooneh Maghoul, Hamed Layssi

Potentials of Mitigating Pavement Frost-Heave with Fungi: Xijin Zhang, Yusheng Jiang, Xudong Fan, Xiong Yu

Predicting frost action susceptibility in soils with grading entropy coordinates: the PSD problem revisited: James Leak, Daniel Barreto, Jaun Bernal-Sanchez, Emoke Imre

Primary and Secondary Consolidation Characteristics of Chitosan-Treated Low Organic Clay: Romana Mariyam Rasheed, Arif Ali Baig Moghal

Pseudo-static stability analysis of ring foundation: Pratik Goel, Kaustav Chatterjee

Random-field Characterization of Fissuring in Clay: Jiangting Liu, Scott Olson, Jason Thomason, Andrew Anderson

Reinforced Concrete Pile Response during Liquefaction Induced Lateral Spreading: Experimental Insights: Ahmed Ebeido, Athul Prabhakaran, Ahmed Elgamal

Relationships between Diffusion Properties and Index Tests for Bentonite-Polymer Composites: Daniel Adeleke, Sayed Rahman, Kristin Sample-Lord, Gretchen Bohnhoff, Jonathan Hubler

Renovating Amsterdam's historic canal bulkheads with pressed-in pipe piles: Takefumi Takuma, Masaaki Katami, Yuta Kitano

Response of Sandy Bluffs to Random Wave Actions: Tao Xiang, Ali Farhadzadeh, Ali Khosravi, Mohammad Khosravi

Rockfall in Himalayan Region: Trajectory Simulation, Design, and Analysis of Protective Embankment: Shreya Maheshwari, Saroj Kundu, Riya Bhowmik

Shared Anchoring of Marine Renewable Energy Devices Utilizing Monopiles: Neda Jamaleddin, Mohammed Gabr, Roy Borden

Simplicity vs Complexity in Machine Learning Models – Focusing on Soil Resilient Modulus Prediction: Laith Sadik, Sara Khoshnevisan

Simulation of the Seismic Response of a Man-Made Well-Graded Gravel as Recorded by a Vertical Instrumented Array: Anna Chiaradonna, Rayka Mohammadi, Paola Monaco

Site Investigation Database for geophysical and geotechnical data collected on a specific soil type: Katrina Burch, Wade Lein, Dan Glaser

Slope Stability Assessments of Reservoir Embankments using Uncrewed Aerial Vehicle (UAV) Datasets: Surya Sarat Chandra Congress, Raja Jaladurgam, Prince Kumar, Louie Verreault, Anand Puppala, Ujwalkumar Patil

Soil-structure interface resistance changes due to rigid awns: Ryan Beemer, Joe Tom, Kaylee Tucker, Ann Sychterz, Isabella Bernardi

Stability Prediction of Highway Slope on Highly Plastic Clay using Particle Swarm Optimization (PSO) based Neural Network: Masoud Nobahar, Fei Han, Abolfazl Eslami, Sadik Khan, Farshad Amini

Stress Diffusion in Granular Materials: The Role of Anisotropy: Bianka Pajo, Marika Santagata, Philippe Bourdeau

The Effects of Liquefaction Criteria on the Results of Cyclic Triaxial Tests: Carmine Polito

The Thermo-Hydro-Mechanical Analysis of Soil-Pile Interaction in Expansive Unsaturated Clays During Natural Evaporation and Infiltration: Kourosh Tamizdoust, Amr Helal, Yasser Abdelhamid, Kabir Hossain, John Bryant

The Volumetric Response of Remolded Expansive Soils due to the Simultaneous Application of Suction and Net Normal Stresses: Mohammad Mosawi, Austin Olaiz, Claudia Zapata

Thermo-Hydro-Mechanical Modeling of Opalinus Clay in a Hollow Cylinder Triaxial Cell: Amin Mohammadzadeh, Omid Ghasemi-Fare

Three-dimensional coupled stress and fluid flow analysis and design provisions for Lake Mead Intake No. 3 Low Level Pumping Station in fractured rock mass: Mohammad Moridzadeh

Undrained Cylindrical Cavity Expansion Analysis In Mohr-Coulomb Soil Based On Graphical Method: Xu Wang, Shengli Chen, Thomas Lin

Unified Slip Line Solution for Seismic Slope Stability in Cohesive-Frictional Soils Considering the Intermediate Principal Stress Effect: Shibsankar Nandi, Priyanka Ghosh

Utilization of Quarry Fines as a Sustainable Admixture for Suppressing Ettringite-Induced Heaving: Ajeyo Mukherjee, Anitta Justin, Sayantan Chakraborty, Nripojyoti Biswas, Anand Puppala, Suman Roy

Vertical Load Capacity of Recycled Plastic Pin in Clay Subjected to Field Load Test: Sehneela Sara Aurpa, Niloy Gupta, Zobair Ahmed, Md. Sahadat Hossain

Zein Biopolymer for Enhancing Erosion Resistance of Sand: Quadri Babatunde, Dong Geon Son, Dong-Ju Kim, Yoon-Geom Heo, Samuel Aregbesola, Yong-Hoon Byun

Poster Session 2

3D Slope Stability Analysis by Finite Element Methods: Edward Wei Hua Gu

A Case Study on a New Collaboration Model for Producing a Visually Appealing OER Laboratory Textbook: Ivan Guzman, Sara Gomez Woolley

A Coupled Finite Element Method in Slope Stability Analysis: Edward Wei Hua Gu

A deep learning model to evaluate cracks in the underground structure of the new domains: Jin Kim, Seungbo Shim, Hyun-Joong Hwang, Joo-Hyun Seong, Gye-Chun Cho

A Field Observation Framework for Concurrent Measurement of Surf Zone Hydrodynamics, Morphodynamics, and Geotechnical Properties: Elise Hummel, Nina Stark, Tian-Jian Hsu, Jiaye Zhang, Jonathan Hubler

An Agent-based Modeling Perspective of Bio-mediated Ureolysis: Marlee Reed, Emily Berglund, Brina Montoya

An Experimental Study of the Saturation Effect on Soil Erodibility using Rotating Testing Apparatus: Yunjie Lin, Cheng Lin

An integrated framework for the probabilistic evaluation and multiscale mapping of liquefaction-induced settlement exceedance rate: Qiushi Chen, Chaofeng Wang

Analysis of abrasive reusabiltiy performed with different energy parameters in rock drilling using waterjet: Hyun-Jong Cha, Jun-Sik Park, Eun-Soo Hong, Tae-Min Oh

Analysis of Laterally Loaded Large Diameter Rigid Piles Considering Vertical and Horizontal Soil Displacements: Abhisek Paul, Dipanjan Basu

Anisotropic Dynamic Loading Effects on Unsaturated Sand Shear Modulus Prepared at Different Compaction Water Contents: Shahriar Khorami, Adel Ahmadinezhad, Fardin Jafarzadeh, Ali Khosravi, Mohammad Khosravi

Applicability Of Mcc And Casm Based Structured Soil Models: Balaji Bandaru, Ramesh Kannan, Robinson Retnamony G

Application of Machine Learning within an Asset Management Framework for Realizing the Impact of Trenching in Urban Environments: Aryan Hojjati, Reza Movahedifar, Mehran Eskandari Torbaghan

Application of Metakaolin-Based Geopolymer for Eco-Friendly Stabilization of Coastal Soils: Jungyeon Jang, Nripojyoti Biswas, Anand Puppala, Surya Sarat Chandra Congress, Miladin Radovic, Oscar Huang

Assessment of Sinkhole Vulnerability Indices using a Probabilistic Approach of Cover Collapse and Solution Type Sinkholes in Florida: Sylvia Pesha, Ryan Shamet, Timothy Copeland, Jiannan Chen, Jinwoo An

Assessment of the Relationship Between Undrained Shear Strength and Geotechnical Parameters for Sensitive Clays of Eastern Canada: Sarah Jacob, Ali Saeidi, Rama Vara Prasad Chavali, Abouzar Sadrekarimi

Axial Analysis of Small Capacity Helical Piles in Saemangeum based on the Load Transfer Method: Hyeong-Joo Kim, Peter Rey Dinoy, Hyeong-Soo Kim, Tae-Woong Park, James Vincent Reyes, Yeong-Seong Jeong, Jun-Young Park, Voltaire Anthony Corsino, Kevin Bagas Mawuntu

Bio-Cementation via Microbially Induced Calcium Carbonate Precipitation for Surface Applications: The Effects of Sand Particle Size on Uniformity and Strength: Sabine Olds, Hudson Dorian, Adrienne Phillips, Mohammed Khosravi, Catherine Kirkland, Alfred Cunningham, Lauren Arbaugh, Randy Hiebert

Centrifuge Modeling of Cone Penetration Testing and Dewatering of Coal Combustion Product Deposits: Jiarui Chen, Brahian Roman, Alejandro Martinez, Benjamin Gallagher

Characterization of Vetiver Root Cohesion for Improvement in Stability of Tropical Hill Slopes: Ujwalkumar Patil, Myeong-Ho Yeo, Thuy Nguyen, Aritra Banerjee, Surya Sarat Chandra Congress

Comparative Investigation of Different Plant Species for the Heavy Metal Removal through Phytoremediation: Dhritilekha Deka, Ravi K, Archana Nair

Comparison of Shear stress in Erosion Function Apparatus (EFA) and Portable Scouring Testing Device (PSTD): Mostafa Ebrahimi, Abdolreza Osouli, Heather Shoup, Hamed Malakoutikhah, Roohollah Farzalizadeh

Continuum-Based Modeling of Earthquake Fault Rupture Propagation through Layered Soils: Julio Copana, Fernando Garcia

Correlation Between Resilient Modulus, Permanent Strain, and Damping Coefficients for Undisturbed Subgrade Soils: Md Mostaqur Rahman, Kazi Moinul Islam, Sarah L. Gassman

Co-seismic Landslide Mobility Assessment Using Machine Learning Models: Jhih-Rou Huang, Dimitrios Zekkos, Marin Clark

CPT-based liquefaction probabilistic triggering using a new Adaptive Kernel Density Estimation method: Javad Sadoghi Yazdi, Robb Eric S Moss, Javad Jafari, Hadi Sadoghi Yazdi

Damping Response of Cohesive Soils from Thermo-Controlled Resonant Column Testing: Roya Davoodi Bilesavar, Laureno Hoyos

Deep Excavation in Clayey Soils for a Sanitary Sewer Pump Station in Maple Ridge, British Columbia: Adam McIntyre, Uthaya Uthayakumar, Reno Fiorante, Negar Zakipour

Determination of Elongated Aggregates through Computer Vision Based Technique: Prabal Singh, Aali Pant

Developing a Correlation Method to Determine Grout Intake Volume of Raveled Soil: Timothy Copeland, Ryan Shamet, Jinwoo An, Jiannan Chen, Boo Hyun Nam

Development and Preliminary Field Testing of Cyclic Borehole Shear Soil Test Device: Hasung Kim, Jeramy Ashlock, Roger Failmezger

Development of a Highway Slope Failure Warning System using Field Instrumentation: Fariha Rahman, Audrika Nahian, Sadik Khan, Masoud Nobahar

Development of a Soil-Borehole Heat Exchanger Deicing System for An In-Service Bridge: Gang Lei, Aditya Deshmukh, Omid Habibzadeh-Bigdarvish, Md Ashrafuzzaman Khan, Xinbao Yu, Anand Puppala

Development of ground motion input in 2-D finite difference analysis of the case history of CentrePort, Wellington, in the Kaikoura 2016 Mw7.8 Earthquake: Bofei Xu, Adda Athanasopoulos-Zekkos

Durability of sodium alginate modified Enzyme Induced Calcium Precipitates (EICP) treated sand: Mohamed Arab, Emran Alotaibi, Mohamed Refaei, Maher Omar

Effect of anisotropic consolidation on shakedown behaviour of granular sub-bases: Asha N, Lekshmi Suku, Sivakumar Babu L

Effect of EICP Treatment on the Unconfined Compressive Strength and Soil Water Characteristics Curve of a Clayey Sand Material: Shivangi Jain, Saleh Alothman, Claudia Zapata, Edward Kavazanjian

Effect of fines on thermal conductivity of dry sand-kaolin mixture: Arjun Sivaprasad, Prasenjit Basu

Effect of Inherent Fabric on Cyclic Resistance of Granular Materials with Static Shear: a 3D-DEM Study: Ali Salehi, Ming Yang, Mahdi Taiebat

Effect of Initial Osmotic Suction on the Volume Change Behavior of Saturated Soil: Siamak Yoosefi, Mohammadreza Jebeli, William Baker, Christopher Meehan

Effect of Specimen Size and Boundaries on the Results of Direct Simple Shear Tests: Mohammad Zeraati Shamsabadi, Abouzar Sadrekarimi

Effects of Constitutive Models on the Results of Nonlinear Seismic Site Response Analysis for Blue Ridge and Piedmont Region, SC: Hossein Golkarfard, Nadarajah Ravichandran, Ali Sedaghat, Vishnu Saketh Jella, Ronald Andrus

Effects of creep and pore pressure diffusion on shear strength of saturated clay: Tyler Oathes, Ross Boulanger

Effects of Salts on Thickness of Diffused Double Layer around Clay Particles Using Molecular Dynamics: Shijun Wei, Sherif Abdelaziz

Element and System Level Impact of Strength Loss on Cyclic Performance of Sensitive Clays: Tyler Oathes, Trevor Carey

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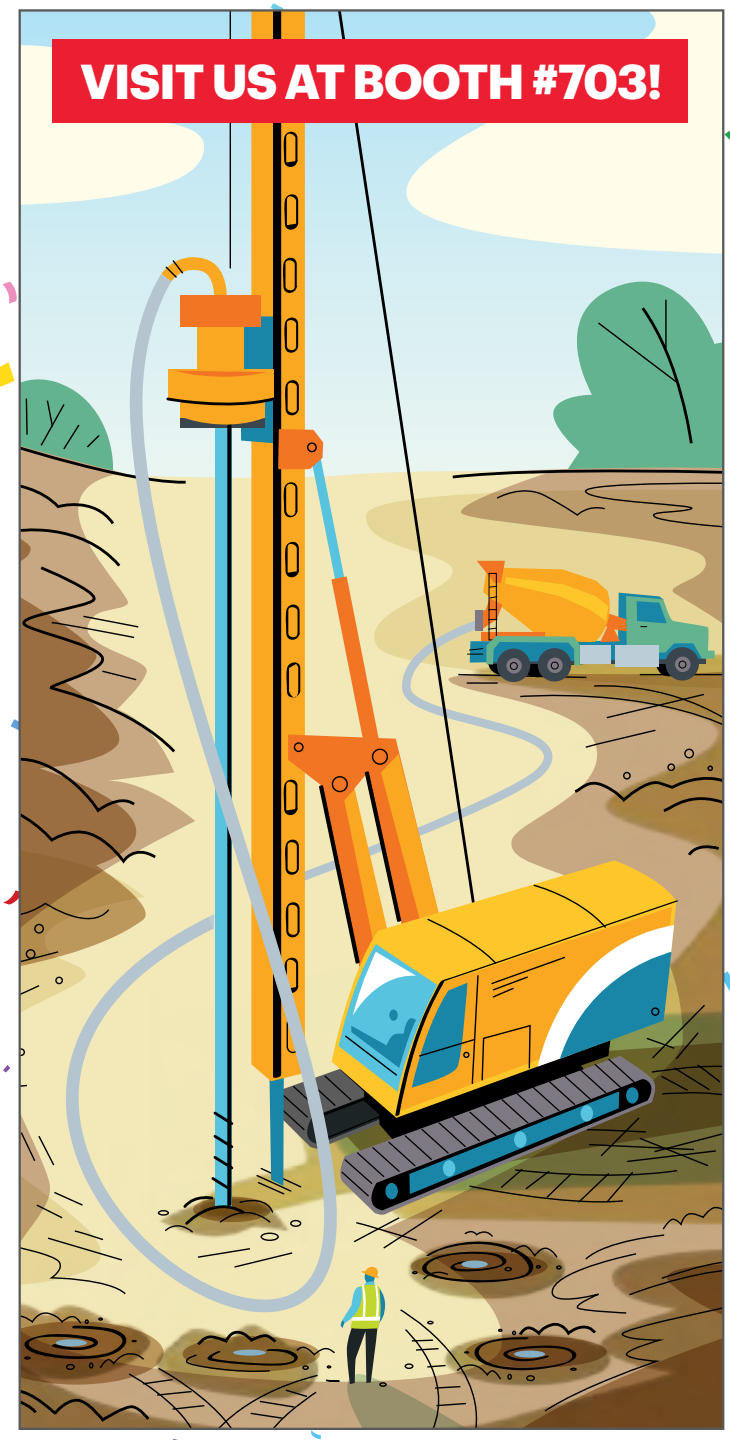

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Enhanced Analysis of Pervious Oyster Shells Habitats (POSH) Units Performance for Reducing Bed Stress and Mitigating Shoreline Erosion: Lauren Cope, Hunter Matthews, Makaya Shemu, Michael Roster, Kelly Smith, Raphael Crowley, Chris Baynard, Robert Richardson

Environmental and Financial Benefits of Foamed Bitumen Stabilisation as a Sustainable and Resilient Airport Pavement Rehabilitation Technology: Greg White

Evaluating the Temperature Sensitivity of a Capacitance Sensor for Measuring Soil Volumetric Water Content and Electrical Conductivity: Siamak Yoosefi, Mohammadreza Jebeli, William Baker, Christopher Meehan

Evaluation of Ground Improvement with Dynamic Replacement and Rapid Impact Compaction of an Artificial Island in the UAE- A Case Study.: Ahmed Khalil, Zahid Khan, Mousa Attom, Omer Khalafalla

Evaluation of the Response of Piled Raft Systems in Soft Soil Undergoing Consolidation and Pore Pressure Drawdown: Indraneel Sengupta, Nihar Ranjan Patra, Sathiyamoorthy Rajesh

Evolution of Seismic Fragility Curves (SFC): Configuration and Application for Underground Infrastructure Projects Subjected to Earthquake Hazard: Abdullah Ansari, K. Seshagiri Rao

Experimental Measurements of Degradation of Cementation in Contact Bound and Void Bound Cemented Sands: Bhupendra Chand, Manasa Bhat K I, Ashish Agrawal, Tejas Murthy

Exploring the Importance of Natural Convection Mechanism on Heat Transfer Response of Soil Medium in the Presence of an Unconfined Groundwater Flow: Fereydoun Najafian Jazi, Omid Ghasemi-Fare, Thomas Rockaway

Exploring the Use of Rock Flour for Sustainable Peat Stabilisation: Juan Bernal-Sanchez, Jamie Coll, James Leak, Daniel Barreto

Extraction-induced deformation in the gas hydrate reservoir using a multiphase-coupled THMC solver: Sahil Wani, Rahul Samala, Ramesh Kadasami, Abhijit Chaudhuri

Feasibility of Biocementation as a Potential Method for Mitigation of Landslides: Shilpi Gupta, Suman Roy, Saswati Datta

Four-Point Bending Tests on Micropile Threaded Connections: Sebastian Montoya-Vargas, Aaron Gallant, William Davids

Fractile-based Mean Spectral Matching with Dispersion Control: Long Chen, Michael Chamberlain, Doug Lindquist, Brice Exley

Full-Flow Penetrometer Rate Effects on the Strength Measurement of Peat: Akeem Amuda, Alsidqi Hasan, Fauzan Sahdi, Siti Noor Linda Taib, Ishaya Nuhu

Further Examination of a New Empirical Model for Predicting Underwater Noise Due to Pile Driving: Raphael Crowley, Amanda Schaaf, Consolatha Mushi, Mariam Makoleo, Emily Sapp, James Gelsleichter, Brian Kopp

Geofoam Bridge Approaches for 1100-Tonne Module: Rollins Brown

Geo-Polymerization of Kaolin Amended Black Cotton Soil: Sahil Kumar, Himanshu Yadav, Tv Bharat

Geotechnical Engineering Curriculum Modules for High School Math and Science Classes: Beena Ajmera, Sarah Crary, Ryan Wenaas, Jill Wold, Matthew Stone, Thomas Jorgenson

Geotechnical Properties of Mud-Capped Dredge Pits: Comparison of In-Filled Sediment Across the Northern Gulf of Mexico: Omar Alawneh, Navid Jafari, Jack Cadigan, Wenqiang Zhang, Kehui Xu

Hydraulic Conductivity's Impact on Seismic-Induced Excess Pore-water Pressure Rise: Holly Gunderson, Arivn Farid

Implementation of a New Strain Softening Constitutive Model in the Material Point Method for the Simulation of Retrogressive Failure in Sensitive Clays: Zinan Urmi, Ali Saeidi, Alba Yerro, Rama Chavali

Influence of Bidirectional Horizontal Shaking on Seismic Response of Structures on Liquefiable Soils: Yu-Wei Hwang, Shideh Dashti, Wenyang Zhang

Influence of Fly-ash Leachate on the Hydraulic and Mechanical Behaviour of Bentonites: Saswati Ray, Siddhant Dash, Amalesh Jana, Anil Mishra, Ajay Kalamdhad

Influence of stratigraphic variability and layering on liquefiable soils near and away from structures: Lianne Brito, Caroline Bessette, Shideh Dashti, Abbie Liel, Brad Wham

InSAR Measurements for Landslide-Induced Damage Assessment on Part of North Alabama Highway (Morgan County): Zahra Ghorbani, Ali Khosravi, Yasser Maghsoudi, Behzad Voosoghi

Instability Behaviour of Kutch Soil under Plane Strain Conditions: Sukrit Sharma, Viswanath Parol, Amit Prashant

Instrumentation of a Natural Terrestrial Site to Assess Seasonal Variations in Temperature, Water Level, Pore Pressure, and Salinity: William Baker, Christopher Meehan, Siamak Sigari, Mohammadreza Jebeli

Interface Shear Strength of Sand with 3D Printed Geocells: Aarya Krishna, Gali Madhavi Latha

Investigating Moisture Distribution Characteristics of Different Landfill Cover Soil at Shallow Depths Using Gaussian Distribution Analysis: Md Jobair Bin Alam, Maalvika Aggarwal, Ram Ray, Naima Rahman

Investigating the Influence of Sand Particle Morphology on Post-liquefaction Volumetric Strain of Two Uniform Sands: Mohamad El Ahmad, Jonathan Hubler

Investigation of Polyacrylamide Additives with Cement and Fly Ash for the Stabilization of Coastal Earth Embankment Material: Minhaz Mohammad Shahriar, Berjees Anisa Ikra, Romana Yasmeen

Investigations on Fully-Softened Strength of Lime-Treated Slopes Built with Expansive Soils Under Future Extreme Precipitation: Ayush Kumar, Nripojyoti Biswas, Anand Puppala, Md Ashrafuzzaman Khan

Lateral Load Deflection Behavior of Recycled Plastic Pin Subjected to Field Load Test: Sehneela Sara Aurpa, Niloy Gupta, Zobair Ahmed, Md. Sahadat Hossain

Liquefiable Interlayer Effects in a Liquefactoin-suscpetible Site: Pourya Kargar, Abdolreza Osouli

Long-term Behavior of Pile Groups Resting on Multi-layered Deposits Subjected to Combined Compressive and Lateral Loads: Venkata Balaiah Kami, Anumita Mishra

Multi-step-ahead Prediction of Freezing Thawing Depth via Deep Learning with Long Short-Term Memory: Aynaz Biniyaz, Zhen Liu

Nanoparticle Guided Soil Conditioning and Stability Enhancement: A Review of the Impacts on Hydro-Physico-Mechanical Characteristics: Najibullah Zulfeqar, Ali Khosravi, Shiqiang Zou

Numerical investigations on stability analysis of buried pipelines with varying cross-sectional shapes to blast loading: Tapobrata Lodh, Kaustav Chatterjee

Numerical Modeling the Thermal Effect on the Wildfire-Burnt Quasi-brittle Rocks: Yifei Ma, Fahd Mujahid

On The Underutilization of Artificial Intelligence Models in Geotechnical Practice: Brett Maurer, Morgan Sanger

Optimum Fly Ash Content to Improve the Geotechnical Properties of Expansive Soil: M. Makhdoom Ali, Ashray Saxena, M. Sahriq, M. Anwer Khan

Performance Evaluation Of Compacted Lateritic Soil Bio-Cemented With Bacillus Megaterium For Use As Liners And Covers In Municipal Solid Waste Containment: Kolawole Osinubi, Roland Etim, Adrian Eberemu, Thomas Ijimdiya

Performance of Machine Learning Algorithms for Predicting Jet Grout Column Diameter: Rakam Lama Tamang, Joseph Coe

Permanent deformation response of coal ash under long term cyclic loading: Aparna Shrivastava, Ajanta Sachan

Permeability, Compaction, and Corrosion Characteristics of Volumetrically- Stable BOF Steel Slag-Fly Ash Mixture: Burak Ozturk, Irem Yildirim

Pile Setup in Glacial Soils of Northern Missouri: Brent Rosenblad, Ruaa Al-Forati, Andrew Boeckmann

Predicting Soil Liquefaction Potential Using XGBoost Algorithm with Bayesian Hyperparameters Optimization: Laith Sadik, Sara Khoshnevisan

Predicting Standard Penetration Test (SPT) N-Values Using Drilling Response Measurements Collected During the Installation of Rigid Inclusions: Venkata Prashanth Muppana, Venkata Phani Satti Raju Balusu, John Myers, Sonia Swift

Prediction for lateral response of monopiles: deep learning model on small datasets using transfer learning: Mohammed Al-Duais, Amir Taherkhani, Qipei Mei, Fei Han

Prediction of Elastic Wave Velocities for Shale in Earthquake-prone Regions of Korea Using Machine Learning: Kim Min-Ji, Oh Tae-Min, Ryu Dong-Woo

Probabilistic Analysis of In-Situ Soil Water Characteristic Curve Using Kernel Density Estimation: Md Jobair Bin Alam, Maalvika Aggarwal, Naima Rahman

Quantification of Swelling Pressure of Expansive Soils: A Critical Review: Abitha Babu, Ramanathan Ayothiraman, Alexander Scheuermann

Reconciling Bias in Moderate Magnitude Earthquake Ground Motions Predicted by Numerical Simulations: Sajan K C, Chukwuebuka Nweke, Jonathan Stewart, Robert Graves

Rehabilitation Design of railway Tracks Using High-Strength Polymeric Geocell: Arghya Chatterjee, Sanat Pokharel, Marc Breault

Resilient Modulus Prediction from Regression and Machine Learning Algorithms: Kanika Gupta, Sungsoo Park, Antonio Bobet

Sedimentation Characteristics and Retention Ratio Calculation of Dredged Soil: Yong-Eun Roh, Gi-Yun Kim, Min Ku You, Ilhan Chang

Seepage Control in Sand Using Bio-Gelation Method: Kangda Wang, Jian Chu, Shifan Wu, Kok Pang Lam

Seismic Soil Liquefaction Triggering Assessment of Gravelly Soil Case Histories: Arda Sahin, Kemal Cetin

Shearing Behavior of Calcinated Kaolin Clay in Ring Shear Apparatus: Ankti Srivastava, Tadikonda Venkata Bharat

Some rehabilitation schemes for geosynthetic reinforced soil abutments on soft soil foundations: Pouya Pishgah Gilani, Reza Jamshidi Chenari

Spring-based Trapdoor Tests Investigating the Performance of Lightweight Aggregate Load Transfer Platforms: Yuqiu Ye, Jie Han, Rui Rui

Static Liquefaction Triggering and Post-liquefaction Strengths of a Coarse Oil Sand Tailings: Abouzar Sadrekarimi, Farshad Zehforoosh

Study of Boundary Effect on the Electrical Resistivity Measurements of Cement-Bentonite Mix: Kai En Low, Sathya Subramanian, Soon Hoe Chew, Yeow Chong Tan, Pei Ling Goh, Angelina Theng, Kai Yang Toh

Susceptibility to Mass Movements in the Metropolitan Region of Natal, Rio Grande Do Norte, Brazil.: Pedro De Miranda, Matheus De Matos, Ludmila Moura, Eduardo Botero

Thermal Response Test of Geothermal Boreholes using Distributed Fiber Optic Sensing: Sumeet Sinha, Jiahui Yang, Yaobin Yang, Asha Nigh, Kenichi Soga

THM Model of Saturated Partially Frozen Soils: From Pore-Scale Ice Morphology to Macroscopic Behaviors: Weiling Cai, Cheng Zhu

Three-Dimensional Granular Flow Simulation Using Graph Neural Network-Based Learned Simulator: Yongjin Choi, Krishna Kumar

Two Decades worth of Lessons Learned from the use of Distributed Fiber Optics for Ground Characterization and with Tunnelling Support: Nicholas Vlachopoulos

Updated Group Reduction Factors for Large Pile Groups under Lateral Loads: Farnyuh Meng, Daqing Xu, Luis Vasquez, Shin-Tower Wang

Use of Bias Reduced L3SMP_E Surface Moisture Estimates in Slope Stability Analyses: Daniel Francis, L. Sebastian Bryson

Use of Log Mill Residuals as a Geotechnical Amendment to Mitigate Slope Erosion: Calvin Thom, Bret Lingwall

Use of Orbital Synthetic Aperture Radar Data in Monitoring Geotechnical and Transportation Infrastructure Assets: Amit Gajurel, Anand Puppala, Nripojyoti Biswas, Hiramani Chimauriya

Using Machine Learning to Predict Consolidation Parameters from Index Testing: Patrick Thurmond, H. Worley

Utilization of Post-Consumer Plastic Water Bottles As An Admixture For Improving The Soil Subgrade: Alka Shah, Tejas Thaker

Vertical Settlement of Spread Footings on Top of Geosynthetic-Reinforced Retaining Abutment Walls: S. Mustapha Rahmaninezhad, Jie Han

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Returning for 2024 – it's the Geo-Institute Theatre! Stop by the ASCE/G-I booth during the week to hear from our sponsors and get the latest on ASCE/G-I products and services!

Monday, February 26

12:15 p.m.

ASCE Foundation

"Building Together: Empowering the Geo Institute through Fundraising with the ASCE Foundation."

Discover the ASCE Foundation's recent achievements and initiatives in supporting civil engineers. Learn how your support can help create lasting impact and join us in building a stronger tomorrow for the geo-industry through innovation, collaboration, and investment.

Monday, February 26

2:45 p.m.

Geosetta

"Advancing Your Practice, Education, and Profession with Open and Shared Geotechnical Data"

Presented by Ross Cutts, P.E., M.ASCE, of Geosetta, and Allen Cadden, P.E., D.GE, M.ASCE of Schnabel Engineering

Discover Geosetta, a groundbreaking platform that utilizes over 200,000 historic data points from more than 22 DOTs, revolutionizing the use of public geotechnical data in geotechnical projects. Geosetta leverages the DIGGS standard, an open and interchangeable format for geotechnical data transfer, ensuring seamless integration and broad accessibility. In this demo, we'll showcase how easy access to this comprehensive data, enriched with advanced machine learning models, significantly enhances project planning and accurately predicts subsurface conditions. Join us to see how Geosetta's open APIs and commitment to the DIGGS standard are driving a new era of efficiency and reliability in geotechnical investigations, enabling more informed and data-driven decision-making in the industry.

Tuesday, February 27

10:00 am

GeoTechTools/IDEA

Geo-Institute web tools for earth retention and ground improvement: IDEA and GeoTechTools.

Presented by Krystina Scott, Geo-Institute; Michael McGuire, PhD., P.E., Lafayette College; and Jeffrey Greenwald, P.E., Geo-Institute Project Manager

GeoTechTools is a web-based, interactive selection system that focuses on ground improvement technologies. The G-I technical committees have collaborated over the years to provide new technologies to the website. Dr. McGuire will discuss the new addition of geosynthetics to GTT, which is column-supported for embankments. At the same time, Jeffrey Greenwald will discuss how you can participate in the IDEA Program. IDEA (Innovations, Developments, Enhancements, and Advancements) is a protocol for Earth Retention Systems (ERS) evaluations by professional geotechnical engineers. The emphasis of the IDEA program is on innovation and is designed to check ERS compliance with the standard of practice and evaluate aspects of the system that advance the state of the practice.

Tuesday, February 27

12:15 p.m.

Campbell Scientific

"Campbell Scientific: Static and Dynamic Vibrating Wire Measurements"

Presented by Kevin Randall, a Technical Sales Manager at Campbell Scientific. He has a bachelor's degree in Geological Engineering and a Master's degree in Hydrogeology, both from Utah State University.

Campbell Scientific, a leading innovator in measurement and control solutions, will provide attendees with an overview of the company's expertise and commitment to cutting-edge technology. They will provide a hands-on demonstration with instrumentation, offering a comprehensive exploration of field zero procedures for vibrating wire piezometers and an interactive demonstration showcasing static and dynamic vibrating wire measurements of strain gages embedded in concrete. This segment concludes with insights into best practices in automated instrumentation design. They will then present a real-world application with a case study on the Rend Lake Dam. This case study details troubleshooting experiences related to noisy vibrating wire piezometers and introduces the audience to the innovative VSPECT solution. This presentation promises a valuable blend of theoretical knowledge and practical applications, making it a must-attend event for industry professionals seeking insights into advanced instrumentation technologies and its real-world implementation.

Tuesday, February 27

2:45 p.m.

TabLogs

"Modern Borehole Logging and Geotechnical Data Management"

Presented by Declan Vanderhor, B.E Geotechnical and Mining Engineering, Director/Founder of TabLogs

Join Declan Vanderhor, Director of TabLogs, at Geo-Congress 2024 for an enlightening presentation on their groundbreaking SaaS product designed for geotechnical and environmental engineers. In this presentation, explore how TabLogs tackles the pervasive issue of inconsistent data logging practices within the industry. TabLogs' seamless integration into both field and office workflows will be shown as well, breaking down silos and empowering geotechnical professionals to harness the full potential of their data. For those eager to revolutionize their approach to geotechnical data management, learn how TabLogs not only streamlines operations but also transforms data into a powerful asset, opening up new avenues for analysis, reporting, and decision-making. Join us at this must-attend event and position yourself at the forefront of the next era in geotechnical engineering.

Tuesday, February 27

3:30 p.m.

BGC Engineering/Cambio Earth

"Leveraging Cambio to Transform Geotechnical Asset Management" presented by Katie Burkell, Civil Engineer, Senior Product Manager

This presentation will discuss the growing challenges faced by the Pipeline, Transportation and Mining sectors in geotechnical asset management. These challenges include managing the exponential increase in data from various sources, adapting to changing climate conditions, engaging stakeholders more effectively, and conforming to heightened regulatory oversight and industry standards. Cambio is an Earth Science platform offering tools to address these challenges and enhance safety and productivity. Key benefits of deploying Cambio include the establishment of a digital knowledge base accessible to all stakeholders, facilitating collaborative decision-making. Additionally, Cambio provides advanced capabilities such as remote sensing analytics, instrumentation monitoring, a centralized report repository, real-time weather monitoring, and visualization tools for improved communication and understanding. This presentation will showcase the benefits derived from the deployment of Cambio in addressing these challenges.

Wednesday, February 28

10:00 am

Get Involved with Geo-Institute Technical Committees!

Presented by Matt Evans and Brina Montoya.

The Geo-Institute has 20 technical committees in areas from Computational Geotechnics to Soil Properties and everything in between. Find out how you can get involved, contribute to your professional society, and make your career more complete!"

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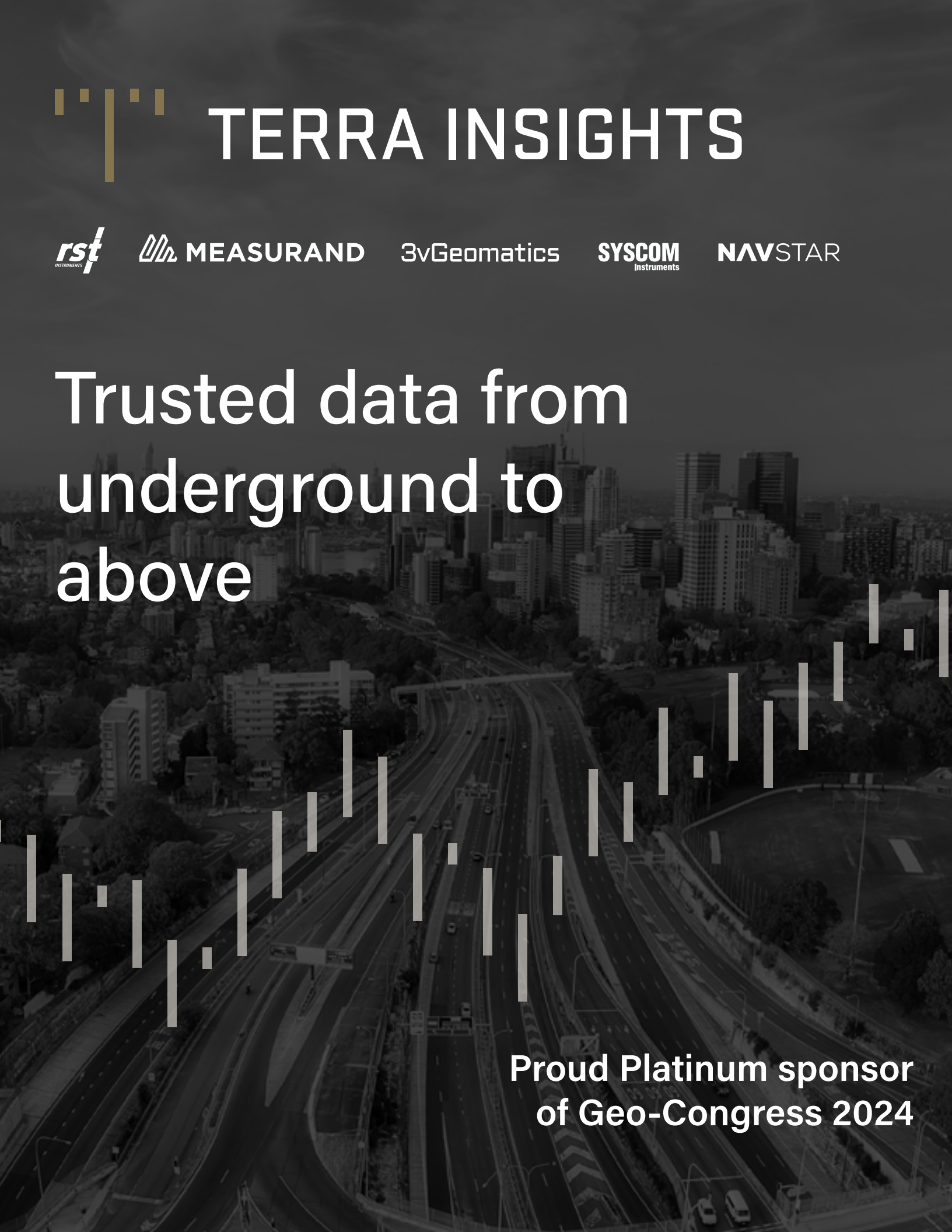

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Exhibit Floor Plan

Booth #	Exhibitor
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800	Aero Aggregates*
201	AGAT Laboratories
523	ARA/Vertek
823	ARGO-E Group P.C.
109	ATA/Geosynthetics Magazine
923	Berminghammer Foundation Solutions
409	BGC Engineering /Cambio Earth
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701	Campbell Scientific
103	Career Connections
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713	Dataforensics*
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107	Deep Foundations Institute
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307	DYWIDAG
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920	Ensoft, Inc.
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614	Exponent, Inc.*
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618	MARL Technologies
1000	MBI Global
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519	Minova USA
322	National Institute of Standards and Technology (NIST)
318	Nucor Skyline
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101	Piling Canada
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918	Powertech Labs Inc.
814	Project X Corrosion Engineering
619	Rocscience Inc.*
419	Roctest Ltd.
314	Seequent (Bentley Systems, Inc.)
123	Seismic Source Company
801	Senceive
521	Sigicom Inc
208	Society of Exploration Geophysicists (SEG)
125	Soil Instruments Ltd
709	Solmax*
220	Sonitus Systems
517	Superior North America, Inc
719	TabLogs
506	Tensar, A Division of CMC
901	Terra Insights*
722	Terra Sonic International
802	The Reinforced Earth Co.*
320	Trumer Schutzbauten Canada Ltd.
612	VJ Tech Ltd
200	West Light Media
311	Western Equipment Solutions
323	Wille Geotechnik
803	Williams Form Hardware & Rockbolt Ltd.
900	WSP*

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- **Arizona State University**
- **Iowa State University**
- **Texas A&M University**
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The Matt Evans Hot Sauce Challenge in Booth 600!

Watch competitors try to win a free registration to Geotechnical Frontiers 2025 in the Matt Evans Hot Sauce Challenge! Matt has lovingly made batches of hot sauce with varying degrees of spice. Whoever can handle the hottest saves some money on their trip to Louisville next spring. In the Geo-Institute Theatre, Tuesday at 4:15 p.m.

Aquarium

Spend an evening with us at the largest aquarium in Canada! Stop by the registration desk and claim your ticket for a night under the sea. Food, drink, and all the sea life you can handle at the Vancouver Aquarium.

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Booth #201
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Booth #103
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Booth #109
ATA/Geosynthetics Magazine
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Geosynthetics magazine is publication for civil engineers, contractors, academics and government agencies. It is the official publication of Geosynthetics Materials Association (GMA) and one of the two magazines for the Geotechnical Frontiers Conference. geosyntheticsmagazine.com | geosynthetics.ifai.com | geotechnicalfrontiers.org

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www.junttan.com
Junttan designs and manufactures hydraulic pile driving equipment. The Junttan product range is comprised of the world's leading hydraulic impact hammers and power packs, purpose built pile driving rigs, Rapid Impact Compaction (RIC), vibratory hammers, and drilling machines

Booth #613
Keller*
www.keller-na.com
Keller, the world's largest geotechnical specialty contractor, develops innovative, practical, and cost-effective geotechnical solutions including ground improvement, grouting, deep foundations, earth retention, and instrumentation/monitoring.

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Exhibitors *(continued)*

Booth #417
KEMROC Spezialmaschinen GmbH
www.kemsolid.com
KEMROC milling attachments are leading edge technology; used where conventional methods are not capable or not cost effective. KEMSOLID is the name of KEMROC's new division dedicated to soil stabilization and ground improvement.

Booth #624
Kubota Corporation
www.kubota.com
Kubota operates in the areas of food, water, and the environment around the world. We will bring innovations to the U.S. deep foundation industry with its state-of-the-art mechanical joint ("Laqnican Joint") for steel pipe piles.

Booth #515
Kyowa Americas Inc.
www.kyowa-ei.us
Providing reliable and robust sensors and DAQ solution based on Strain gage technology in the industry such as tunnels, dams, bridges, buildings and landslides.

Booth #406
Malcolm Drilling Co., Inc.*
www.malcolmdrilling.com
Malcolm has for 6 decades been an innovator and leader in the industry. Our services include deep foundations, retention systems, ground improvement, and dewatering techniques.

Booth #618
MARL Technologies
www.marltechnologies.com
MARL Technologies delivers industry-leading equipment and technology solutions for the geotechnical drilling industry and beyond. Our CPT trucks set the bar for functionality, quality and reliability.

Booth #1000
MBI Global
www.mbiglobal.ca
MBI Global offers you the best solutions for optimizing your drilling operations. Our products are designed by and for drillers so they can meet our customers' most demanding quality criteria.

Booth #703
Menard USA & Menard Canada
www.menard-group.com/contact-us/
Menard is a design-build specialty ground improvement contractor offering expertise in ground improvement for sites with poor soil. Combining creative design and innovative techniques, Menard delivers attractive alternatives to deep foundations.

Booth #519
Minova USA
www.minovaglobal.com
Minova offers a range of bolting systems, injection chemicals, grouts, resin capsules, sprayable membranes, coatings, and services for mining, tunnelling and surface ground engineering projects.

Booth #322
National Institute of Standards and Technology (NIST)
www.nist.gov/el/materials-and-structural-systems-division-73100/earthquake-engineering-group-73105
NIST, the nation's premier science and measurement agency, is enhancing performance of the built environment to seismic hazards by developing knowledge to advance design practice in ways that improve safety, community resilience, and economic security.

Booth #318
Nucor Skyline
www.nucorskyline.com
Nucor Skyline supplies and manufactures an unparalleled assortment of Bearing Piles, Sheet Piles, Pipe, Accessories, Anchors, Micropiles, Tie Rods and Structurals.

Booth #512
Pile Dynamics, Inc. and GRL Engineers, Inc.
www.pile.com and www.grlengineers.com
Pile & GRL provide QA products and services for the Deep Foundations Industry, including Dynamic Load Testing; Foundation Integrity Testing; Pile Driving Monitoring; Wave Equation Analysis; Shaft Verticality and Cleanliness Assessment, Remote Data Analysis, and more.

Booth #101
Piling Canada
www.pilingcanada.ca
Published six times each year, Piling Canada is the national voice for the Canadian deep foundation construction industry. Each issue provides readers with thorough project stories, company profiles, technological advancements, safety news, environmental information, HR advice, legal issues affecting specialty subcontractors and more.

Booth #421
Plasti-Fab Ltd
www.plastifab.com
Plasti-Fab manufactures moulded expanded polystyrene (EPS) products that have been used successfully in a wide variety of geotechnical applications for more than 55 years.

Booth #918
Powertech Labs Inc.
www.powertechlabs.com
World leading expertise in performance/type testing, modelling and studies, asset inspection/assessment, and consulting services for the electric utility, OEM, industrial, and clean energy industries.

Booth #814
Project X Corrosion Engineering
www.projectxcorrosion.com
Our Caltrans accredited, NACE certified, licensed professional engineers & metallurgists offer soil corrosivity & thermal resistivity testing services with 3 day turn-around. We also offer corrosion control recommendations.

Booth #619
Rocscience Inc.*
www.rocscience.com
Founded in 1996, Rocscience is a global leader in developing innovative 2D & 3D software for civil, mining, and geotechnical engineers.

Booth #419
Roctest Ltd.
www.roctest.com
Roctest is a world leading developer and manufacturer of monitoring and testing equipment including vibrating wire and fiber optic sensors as well as soil pressuremeters and rock dilatometers.

Booth #314
Seequent (Bentley Systems, Inc.)
www.seequent.com
Seequent, a Bentley company, is a world leader in the development of powerful geoscience analysis, modelling, and collaborative software to understand the subsurface for better engineering.

Booth #123
Seismic Source Company
www.seismicsource.com
Offering hardware/software for seismic acquisition and event monitoring. Hardware: DAQlink4, Sigma 3/4, and DX-6 seismographs; Force 3, BB3, RTM3 controllers. Software: Vscope3 and EM System.

Booth #801
Senceive
www.senceive.com
Leaders in wireless remote condition monitoring technology. Smart sensors monitor ground and structural movement, landslides, rail track movement and provide real-time, automated alerts.

Booth #521
Sigicom Inc
www.sigicom.com
Sigicom is the leading supplier and manufacture for autonomous and innovative measuring instrumentation for vibration, noise and Geotech with accompanying cloud software for presentation and reporting.

Booth #208
Society of Exploration Geophysicists (SEG)
www.seg.org
The Society of Exploration Geophysicists (SEG) is a global not-for-profit organization with a mission of connecting the world of applied geophysics.

Booth #125
Soil Instruments Ltd
www.soilinstruments.com
Soil Instruments have been continuously developing ground breaking, innovative products that are able to meet the challenge of the demanding Geotechnical environment since 1962. www.soilinstruments.com

Booth #709
Solmax*
www.solmax.com
Solmax is a leader in sustainable construction solutions for civil and environmental infrastructure. Its products separate, contain, filter and drain essential applications. Founded in 1981, Solmax has grown through acquisition into the world's largest geosynthetics company, with more than 2,000 employees.

Booth #220
Sonitus Systems
www.sonitussystems.com
Creating better environments for people to live and work. Sonitus Systems protect people and property in their living and working environments. We enable customers to make better decisions through insightful analytics, deep understanding and trustworthy products.

Booth #517
Superior North America, Inc
www.superiorna.ca
Superior Foundation Equipment, a division of Superior North America, is the top distributor for Eskridge Hydraulic Drive Heads and CMI TORQ-Spool/Hub. They offer tooling, attachments, and exceptional customer service for utility, construction, and helical pile installation.

Booth #719
TabLogs
www.tablogs.com
TabLogs software provides geotechnical and environmental consultancies with digital field data collection, reporting and geodatabase management and links this with all modelling and design packages.

Booth #506
Tensar, A Division of CMC
www.tensarcorp.com
At Tensar, we love solving earthwork problems with innovative, resilient solutions and sharing that passion with others. We're here to support you with proven technology, proven project successes, and greater total value that delivers proven savings.

Booth #901
Terra Insights*
www.terrainsights.com
Terra Insights is powered by the trusted and globally experienced brands RST Instruments, Measurand, 3vGeomatics, and Syscom Instruments. By Combining the unique strengths of each brand, Terra Insights has built a comprehensive platform of geotechnical, structural, and geospatial monitoring technology, along with purpose-built data delivery solutions.

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Booth #722
Terra Sonic International
www.terrasonicinternational.com
Terra Sonic International is the only sonic drill rig manufacturer in the world that is committed exclusively to sonic drilling technology—Sonic Rigs, Sonic Heads, and Terra Sonic Tooling.

Booth #802
The Reinforced Earth Co.*
www.reinforcedearth.com
The Reinforced Earth Company (RECo) provides civil infrastructure solutions to the transportation and other markets for heavy civil projects throughout the entire U.S. We are engineers, manufacturers, project managers, and team players.

Booth #320
Trumer Schutzbauten Canada Ltd.
www.trumer.cc
TRUMER SCHUTZBAUTEN is a world leader in the design and manufacturing of geohazard mitigation structures that protect against rockfall, debris flow, avalanche and unstable slopes. From slope mesh to massive barriers, we protect life, buildings and infrastructure where failure is not an option.

Booth #612
VJ Tech Ltd
www.vjtech.co.uk
Since 1991, UK based VJ Tech Ltd. has supplied high-quality soil testing instruments to civil engineering companies & research institutions located in over 85 countries.

Booth #311
Western Equipment Solutions
www.westernequipmentsolutions.com
We offer a full line of foundation drilling equipment from top manufacturers. We provide expertise and support for your jobsite logistics; onsite technical support and service; and operator training. Our team is dedicated to getting you the right equipment for the job!

Booth #200
West Light Media
www.westlightmedia.com
West Light Media transforms corporate visual identity through creative content solutions, from captivating photos to strategic storytelling, illuminating brands with impact and creativity. Drop by our booth for a complimentary headshot.

Booth #323
Wille Geotechnik
www.wille-geotechnik.com
APS Antriebs- Pref- und Steuertechnik GmbH (Wille Geotechnik) is a highly regarded German enterprise due to its soil, rock, asphalt and material testing machines.

Booth #803
Williams Form Hardware & Rockbolt Ltd.
www.williamsform.com
Williams Form Engineering Corporation has been offering Ground Anchors, Concrete Anchors, Post Tensioning Systems, and Concrete Forming Hardware to the construction industry for over 100 years.

Booth #900
WSP*
www.wsp.com
WSP is a leader in tunneling and underground construction, from New York City to Istanbul. The firm has participated in the design and construction of some of the longest, largest, and most complicated bridges & tunnels in the world.

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SAVE THE DATE

GeoenvironMeet 2024

Portland, Oregon, September 8-11, 2024

Geoenvironmental Impacts of Climate Change, Sustainability, and Resilience

www.geoenvironmeet.org

Assumption of Risk

All ASCE/G-I events and activities are purely voluntary activities, and attendees are fully responsible for their own conduct and well-being, including, and without limitation, determining their level of fitness to take part in any such event or activity. In participating in any event or activity, attendees shall be deemed to understand and accept all risk of possible physical injury that might occur as a result of such participation. Children under the age of 18 are not allowed in the exhibit hall. ASCE/G-I hopes that your visit to Geo-Congress 2024 will be free from illness or injury, but in case you or a family member needs medical attention during your time at the event, contact the the front desk or your hotel or emergency medical technician at the Vancouver Convention Centre.

Badge Policy

Your name badge is your admission to the congress. Please wear your badge at all times while in the Vancouver Convention Centre. We do suggest removing it upon exiting the building.

Diversity and Inclusion

The ASCE/G-I policy of Diversity and Inclusion fosters a culture that encourages the free expression and exchange of engineering ideas by all members, regardless of gender, race, ethnic origin, religion, age, marital status, sexual orientation, disabilities, or any other reason not related to scientific or technical merit.

Health & Safety

ASCE strongly encourages you to be fully vaccinated against COVID-19, wear masks if desired or immunocompromised, and take safety precautions to protect yourself and fellow attendees.

Any attendee who is experiencing COVID-19 symptoms or any concerns they have been infected may not attend in-person activities, but instead should isolate in accordance with CDC protocols. ASCE will continue to monitor the CDC COVID-19 Community Levels and adjust protocols as necessary.

COVID-19 Attendance Policy

Please be aware that an inherent risk of exposure to COVID-19 exists anywhere other people are present. Any person who chooses to travel to and/or participate in this conference:

- acknowledges that they are aware of the inherent risk of exposure to the COVID-19 virus while attending the conference;
- recognizes that COVID-19 is a highly contagious disease that can lead to severe illness and death;
- assumes all risks arising from their decision to attend, including but not limited to infection from other vaccinated or unvaccinated participants, hotel staff, hotel guests, or other persons; and waives liability against ASCE, its officers, directors, employees, agenda, contacts and volunteers for any loss, damages, or suffering related to exposure to COVID-19.

By virtue of their attendance, all attendees agree to comply with all safety procedures established by ASCE as well as any other protocols put in place by the host sites, travel facilities, or any other applicable authorities.

Meeting Room Overcrowding

ASCE/G-I will make every effort to schedule popular events in rooms large enough to accommodate anticipated attendance. Since many events are extremely popular, it is wise to select alternative events as you plan your conference schedule. ASCE/G-I and the Vancouver Convention Centre are REQUIRED to follow local fire regulations and may ask participants in rooms filled to capacity to choose another event.

No Smoking Policy

Smoking is not allowed at any ASCE/G-I event

Yoga

6:00 - 7:00 a.m., *Pacific Rim II, Pan Pacific Hotel*

Join fellow early risers to take charge of your day with a clear, thoughtful, and activated intention. Feel fit and strong for whatever the day holds!

SAVE THE DATE

GEO-STRUCTURES 2024

Pittsburgh, Pennsylvania, November 17–20, 2024

Geotechnical Engineering and Construction of Earth Retaining and Underground Structures

https://geo-structures.asce.org

GEO-CONGRESS 2024

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The Reinforced Earth Company
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