EVENT PROGRAM

GEOTECHNICAL Frontiers

Mar. 2–5, 2025
Louisville, KY USA

ORGANIZED BY

ATA GEOSYNTHETIC MATERIALS ASSOCIATION

G-I GEO-INSTITUTE ASCE

UNDER THE AUSPICES OF

igs INTERNATIONAL GEOSYNTHETICS SOCIETY

OUR DIFFERENCE GETS DOWN TO EARTH.

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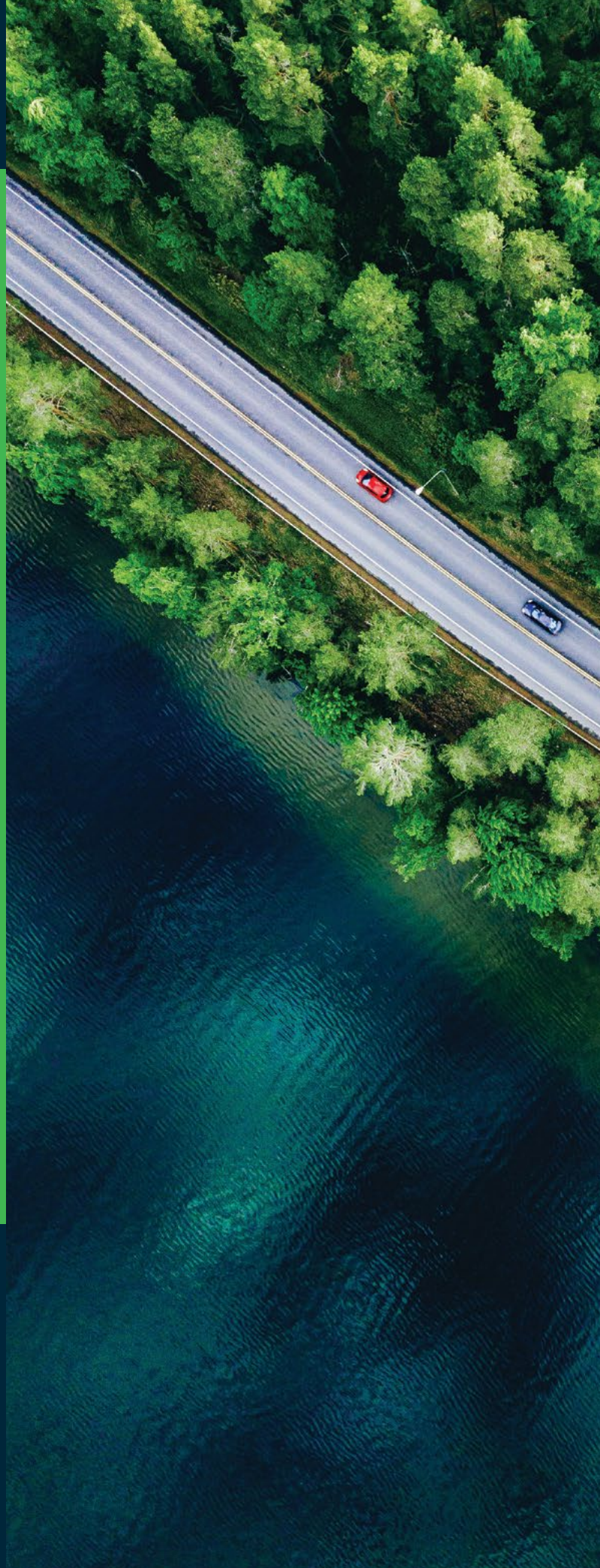

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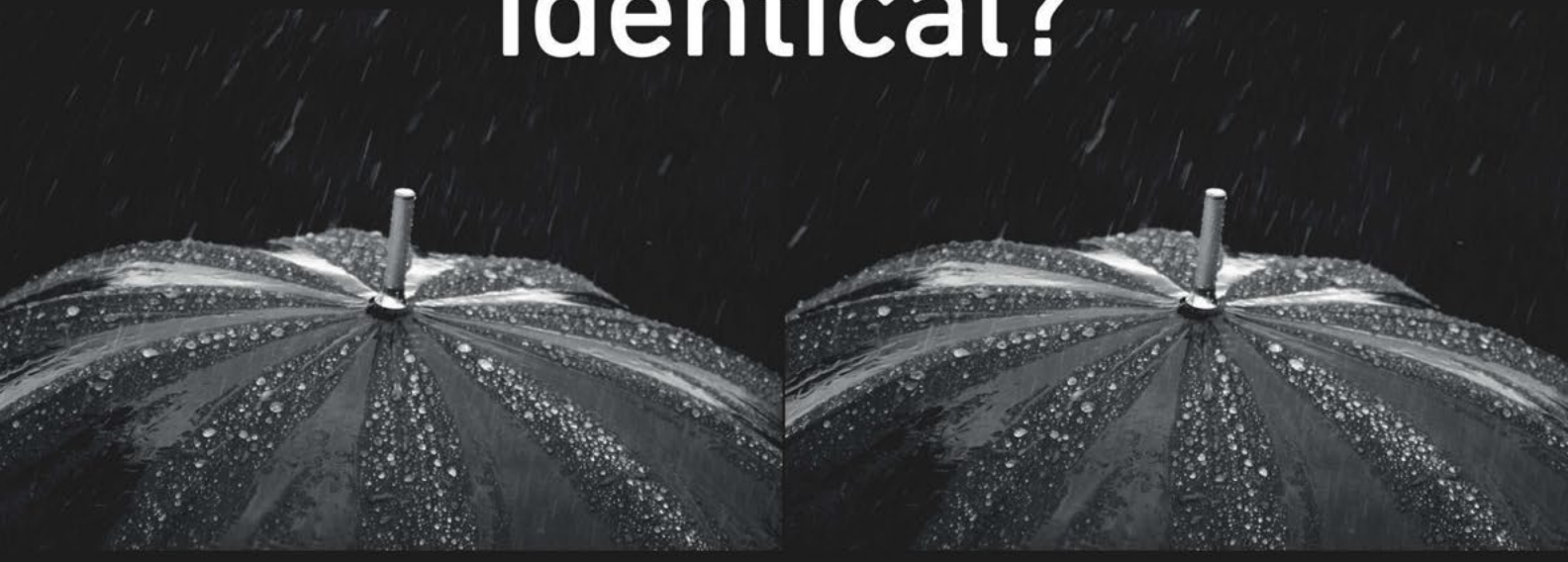
umbrella.

1. noun. A portable device used as protection against rain consisting of a circular fabric canopy on a folding frame supported by a metal rod.

Identical?



Useful life:	Days Requires replacing (entails a new expense)	Useful life:	Years Guaranteed durability (implies a saving)
Disposal:	Inmediate Generates waste	Disposal:	Not neccessary Does not generate waste

Welcome to our booth,
617 at Geotechnical Frontiers

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Salt Lake City, Utah, March 9-12, 2026

Geo Tools, Technologies, and Techniques in an Environment of Change

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For exhibit and sponsorship opportunities, please contact
Brian Hodges, bhodges@asce.org, 703-295-6349.

GEOTECHNICAL Frontiers

Mar. 2–5, 2025 | Louisville, KY USA

EVENT PROGRAM

Welcome

Programming

Download the Geotechnical Frontiers 2025 App Now!

Exhibitors

ORGANIZED BY

ATA GEOSYNTHETIC MATERIALS ASSOCIATION

G-I GEO-INSTITUTE ASCE

UNDER THE AUSPICES OF

igs INTERNATIONAL GEOSYNTHETICS SOCIETY

Welcome

Daniel Alzamora

Welcome to Geotechnical Frontiers 2025!

Dear Attendee,

It is my pleasure to welcome you to Geotechnical Frontiers 2025 in vibrant Louisville, Kentucky!

This unique event serves as the annual congress of the Geo-Institute, showcasing advancements across multiple areas of geotechnical engineering. It also serves as the biennial signature Geosynthetics Conference for the Geosynthetic Materials Association (GMA), a part of Advanced Textiles Association® (ATA). Geotechnical Frontiers brings together professionals, educators, exhibitors, and industry leaders from around the world, offering unparalleled opportunities to expand your knowledge, network, and celebrate industry achievements.

We encourage you to take full advantage of the many opportunities Geotechnical Frontiers provides to:

- Learn from leading experts and distinguished honorees through presentations, including:
  - Prakash Lecture
  - Robert M. Koerner Award and Lecture
  - H. Bolton Seed Medal Lecture
  - Karl Terzaghi Lecture
  - Ralph B. Peck Medal Lecture
- Engage in 10 tracks of concurrent technical and special sessions featuring state of art and state of the practice across the entire geotechnical spectrum, showcasing over 360 peer-reviewed papers.
- Experience cutting-edge geotechnical and geosynthetics technology, products and software displayed by more than 200 exhibitors.
- Network at a variety of events, including Sunday evening's Welcome Reception, lunches, professional gatherings, and annual meetings hosted by organizing and supporting organizations.
- Compete and cheer during exciting student programs such as the GeoWall, GeoPoster, GeoPrediction and GeoVideo competitions.
- Share your insights and expertise in Technical Committee meetings.
- Honor industry legends during the Craig Benson and Rudy Bonaparte Honorary Sessions.
- Enjoy the charm of Louisville, with opportunities to explore the city's rich culture and history in both formal and informal settings.

This conference is thoughtfully designed by your professional societies to foster innovation, collaboration and excellence in geotechnical and geosynthetics technology and practice. We hope you find the program to be technically inspiring and professionally enriching.

Thank you for joining us, and welcome to Geotechnical Frontiers 2025!

Sincerely,
Daniel Alzamora
Geotechnical Frontiers 2025 Program Committee Chair

GEOTECHNICAL Frontiers

DIRECTOR OF CONTENT & MEMBER PROGRAMS
Jonathan Sweet | jonathan.sweet@textiles.org

EDITOR
Kevin Kerfoot | kevin.kerfoot@textiles.org

CREATIVE MANAGER
Cathleen Rose

ART DIRECTOR
Megan Panitzke

SENIOR GRAPHIC DESIGNER
Beth Barron

ADVERTISING DESIGN & CLASSIFIED AD SALES
Michelle Cook | michelle.cook@textiles.org

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INTEGRATED MEDIA SALES
Michele Johnson, Brenda Olson,
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SALES COORDINATOR
Lisa Batdorf | lisa.batdorf@textiles.org

textiles.org/geosynthetics-magazine-subscription

CIRCULATION PROMOTIONS SPECIALIST
Jill Poirier | subscriptions@textiles.org

THE OFFICIAL PUBLICATION OF

ATA GEOSYNTHETIC MATERIALS ASSOCIATION

igs North America

ATA ADVANCED® TEXTILES ASSOCIATION

PRESIDENT/CEO
Steve Schiffman | steve.schiffman@textiles.org

CFO/VICE PRESIDENT OF TECHNOLOGY
Sheila A. Sumner | sheila.sumner@textiles.org

VICE PRESIDENT/EVENTS, SALES & MARKETING
Amy Collins | amy.collins@textiles.org

ATA MEMBERSHIP
textiles.org/membership

1801 County Road B W., STE 100
Roseville, MN 55113-2831, USA
+1 651 222 2508 | 800 225 4324 | Textiles.org

Conference Overview

Conference Location

Kentucky International
Convention Center (KICC)
221 S. 4th St.
Louisville, KY 40202

On-site Registration

Sunday, March 2 | 7 am–5 pm
Monday, March 3 | 7 am–5 pm
Tuesday, March 4 | 7 am–5 pm
Wednesday, March 5 | 7 am–2 pm

Exhibit Hall Welcome Reception

Sunday, March 2 | 6:30–8 pm

Exhibit Hall Hours

Sunday, March 2 | 6:30–8 pm
Monday, March 3 | 9 am–5 pm
Tuesday, March 4 | 9 am–5 pm
Wednesday, March 5 | 9 am–1 pm

Geotechnical Frontiers is a must-attend trade show for the geotechnical, civil and geo-professional communities. This specialty conference, held every six years, is where the industry unites to share developments in geotechnical engineering and technologies. The four-day event features nearly 200 exhibits and a comprehensive program of short courses, panel discussions, plenary lectures and technical papers presented by top industry experts. Geotechnical Frontiers 2025 offers opportunities to connect with your peers on the trade show floor, at receptions, luncheons and other valuable networking events.

Important Announcements

- Registration badges and/or tickets are required for all conference events.
- All sessions and speakers are subject to change.
- Check the on-site schedule and event mobile app for program updates and changes.
- Please be considerate of others and place all electronics on silent mode during sessions.
- Paging of attendees is not possible.
- Cameras and videotaping are not permitted at any event or in the exhibit hall.
- See registration staff if you require special accommodations.

Conference Proceedings

Proceedings are available as a download and are included with all Full and One-day registrations. Proceedings are not included with Short Course or Trade Show-only registrations. You will receive a link to download via email. Additional copies are available for purchase at the ASCE bookstore.

PDH

Earn professional development hours (PDH), the nationally-recognized unit of record, by attending technical sessions and short courses. Requirements for continuing education vary from state to state. PDH reporting forms are available near the session rooms and at the registration desk. Please check with your state registration board for specific license requirements.

Conference Dress

Business casual attire is appropriate for most Geotechnical Frontiers events. Also, be sure to bring good walking shoes and comfortable clothes in order to enjoy sightseeing.

Schedule-at-a-Glance

Sunday, March 2

Registration
7 am–5 pm

Short Courses
8 am–5 pm

Student Panel
2–3:30 pm

Geo-Wall Captains Meeting
3:30–4:30 pm

H. Bolton Seed Lecture
5–6:30 pm

Welcome Reception/ Exhibits Open
6:30–8 pm

Happy Hour
Presented by the Outreach and Engagement Committee and G-I Louisville Chapter
8 pm–???

Monday, March 3

Registration
7 am–5 pm

Student Competition Awards
8–8:15 am

Morning Plenary
8–10 am

Exhibits Open
9 am–5 pm

Student Competitions
10 am–3 pm

Technical and Special Sessions
10:30 am–Noon

Lunch
Noon–1:30 pm

Student Career Fair
1–5 pm

Technical and Special Sessions
1:30–3 pm

Poster Sessions
3–5 pm

Prakash Lecture
5–6:30 pm

Slugger Museum and Factory Tours and Reception
7–9 pm

Tuesday, March 4

Registration
7 am–5 pm

Robert M. Koerner Award and Lecture
8–10 am

Exhibits Open
9 am–5 pm

TabLogs Sponsored Session
10–10:30 am

Technical and Special Sessions
10:30 am–Noon

Lunch
Noon–1:30 pm

Studio Prof. Marchetti S.r.l Sponsored Session
12:30–1 pm

Technical and Special Sessions
1:30–3 pm

Poster Sessions
3–5 pm

Karl Terzaghi Lecture
5:30–7 pm

Wednesday, March 5

Registration
7 am–2 pm

Morning Plenary
8–10 am

Exhibits Open
9 am–1 pm

Technical and Special Sessions
10:30 am–Noon

Lunch
11:30 am–1 pm

Ralph B. Peck Lecture
1–2:30 pm

Supporting Organizations

Academy of Geo-Professionals (AGP)

What is the Academy? The Academy of Geo-Professionals is an elite group comprised of about 400 diplomates who have gone through many years of training and experience to become eligible for board certification. The academy is a way to recognize engineers who have a special knowledge and experience in the field of geotechnical engineering. AGP was founded in October 2008 by practicing geo-professional members of the American Society of Civil Engineers' Geo-Institute. The Academy was created primarily to offer a voluntary, post-license credential that provides professional engineers an opportunity to gain further recognition in the broad field of geotechnical engineering. Geotechnical engineering is the branch of civil engineering concerned with the engineering behavior of the materials and processes forming the earth's crust, in the context of the built environment. AGP's goal is dedicated to improving the practice, elevating the standards, and advancing the profession of geo-professional engineering. The academy has begun its challenge to try and meet these goals with the oversight of our voluntary, post-licensure, specialty certification program for geo-professional engineers. Validate your knowledge, expertise, and contributions to the field of geo-professional engineering with the Diplomate, Geotechnical Engineer (D.GE) certification.

geoprofessionals.org

Association for Mechanically Stabilized Earth (AMSE)

AMSE promotes the use of MSE retaining structures engineered and supplied through a single source of responsibility and constructed in accordance with specifications which ensure value, performance, reliability and long-term safety. AMSE members produce complete MSE wall systems that use both steel and geosynthetic soil reinforcements.

amsewalls.org

Association of GeoHazard Professionals (AGHP)

The Association of Geohazard Professionals (AGHP), established in 2013, supports geohazard professionals in enhancing public safety and infrastructure preservation by sharing best practices, providing education, and advancing the industry. As a 501(c)(3) non-profit, AGHP thrives on volunteerism and engagement, evolving from a North American initiative into a global community.

geohazardassociation.org

ASTM

ASTM International Committee D35 is responsible for drafting standards and disseminating knowledge dealing with geosynthetics, including but not limited to geotextiles, geogrids, drainage nets, drainage composites, geosynthetic clay liners, geosynthetic erosion control products and sediment retention devices, geosynthetic strips, geofoam and geomembranes.

astm.org

Canadian Geotechnical Society (CGS)

The Canadian Geotechnical Society is the leading organization for geotechnical engineering and related geoscience in Canada. The CGS is dedicated to the advancement of knowledge and the creation of opportunities to exchange information among individuals from academia (both faculty and students), consulting, government, industry, contractors, and various providers of geotechnical related products and services.

cgs.ca

Concrete Masonry and Hardscapes Association (CHMA)

CMHA is the authority for segmental concrete products and systems, which are the best value and preferred choice for resilient pavement, structures and living spaces.

masonryandhardscapes.org

Deep Foundations Institute (DFI)

Booth 121

DFI is an international association whose members are geoprofessionals involved in the design and construction of deep foundations, excavations and tunneling. These project owners, general and specialty contractors, consulting and design engineers, equipment and material manufacturers and suppliers, educators and students gather at conferences, seminars and in committee meetings to network, educate, communicate and collaborate. In these forums they work together to share knowledge and improve the design and construction of projects with complex geotechnical conditions.

dfi.org

Fabricated Geomembrane Institute (FGI)

The Fabricated Geomembrane Institute (FGI) is an industry/academic consortium interested in, and involved with, flexible and fabricated geomembranes. The FGI is located at the University of Illinois at Urbana-Champaign in the Department of Civil and Environmental Engineering. The FGI includes all geosynthetics that can be seamed and folded in a factory, transported to a site, and deployed by unfolding the fabricated panel to reduce field seaming and time.

fabricatedgeomembrane.com

Federal Highway Administration (FHWA)

fhwa.dot.gov

The Geosynthetic Institute (GSI)

The Geosynthetic Institute (GSI) is a consortium of organizations interested in, and involved with, geosynthetics (polymeric materials used in geotechnical applications). The organizations include federal and state governmental agencies, facility owners, designers, consultants, QC and QA organizations, testing laboratories, resin and additive suppliers, manufacturers, manufacturer's representatives and installation contractors. GSI's mission is to develop and transfer knowledge, assess and critique geosynthetics, and provide service to the member organizations.

Within the umbrella of GSI (Incorporated in Delaware in 1991 and obtained nonprofit 501(c) 3 status in 1993) are five separate institutes (research (GRI), information (GII), education (GEI), certification (GCI) and accreditation (GAI)) with specific tasks. It is the goal and objective of GSI to be the conscience of the industry and to provide an ongoing and sustainable center of excellence for geosynthetics. GSI is headquartered in Folsom, Penn., and has affiliated organizations to provide global outreach. To date the following have been implemented, e.g., GSI-Korea, GSI-Taiwan and GSI-India. Their mandate is to provide for technology transfer of appropriate technologies focused on their particular needs.

geosynthetic-institute.org

INDA

INDA serves companies in the nonwovens industry to achieve business growth with events, training, market insights and advocacy.

inda.org

International Association of Geosynthetic Installers (IAGI)

International Association of Geosynthetic Installers is a dynamic association of geosynthetic professionals created by and for installers. IAGI's mission is to advance installation and construction technologies as well as to provide a central clearinghouse for worldwide industry information.

iagi.org

International Geosynthetics Society (IGS)

Booth 1118

The International Geosynthetics Society (IGS) is a learned society dedicated to the scientific and engineering development of geotextiles, geomembranes, related products, and associated technologies. We are a global community of over 3,000 members including corporate, individual and student members, with a shared passion for what geosynthetics can achieve. With 45 chapters worldwide, it's easy to connect with us locally.

geosyntheticssociety.org

Kentucky Geotechnical Engineering Group

KGEG is a professional organization comprised of geotechnical professionals that focuses on researching and promoting technological advances, maintaining standards, and serving the public in the field of geotechnical engineering.

kgeg.org

Transportation Research Board (TRB)

As part of the National Academies of Sciences, Engineering, and Medicine, the Transportation Research Board (TRB) mobilizes expertise, experience, and knowledge to anticipate and solve complex transportation-related challenges. For example, committees, researchers, and staff are currently focused on advancing resilient infrastructure, exploring transformational technology, and caring for the public's health and safety.

nationalacademies.org/trb

The United States Universities Council on Geotechnical Education and Research (USUCGER)

The United States Universities Council on Geotechnical Education and Research (USUCGER) was founded in 1985 to provide advocacy for the continued development and expansion of high quality geotechnical engineering research and education by US academic institutions. This discipline has evolved to include geotechnical, geomechanical, geoenvironmental, geological, and geophysical engineering.

USUCGER's overarching objective is to enhance both the community and the economy, and, through that, the quality of life, by the development and effective implementation of geotechnical infrastructure design techniques that ensure safety, health, security, and support the integrity of the environment, both in the United States and abroad. USUCGER strives to achieve this through interaction with regulatory and funding agencies, and by promoting cooperation and discussion among geotechnical engineering faculty affiliated with U.S. member institutions.

usucger.org

Conference Organizers

Geo-Institute

The Geo-Institute (G-I) is a specialty organization focused on the geo–industry. Created by the American Society of Civil Engineers in October 1996, its 10,500+ members and 54 organizational members include scientists, engineers, technologists and organizations interested in improving the environment, mitigating natural hazards and economically constructing engineered facilities.

ASCE

The American Society of Civil Engineers (ASCE) represents more than 144,000 members of the civil engineering profession worldwide, and is America's oldest national engineering society. ASCE's mission is to provide essential value to its members and partners, advance civil engineering and serve the public good.

Geosynthetic Materials Association

GMA was founded in the 1980s to educate the user community on the technical and economic benefits of geosynthetics, with the goal of building stronger civil infrastructures in a cost-efficient manner. The association's mission is to serve as a central resource for information regarding geosynthetics, to provide a forum for consistent and accurate geosynthetic information, to increase the adoption of geosynthetics and to promote the correct and safe use of geosynthetics.

GMA achieves its mission by furnishing engineering support, educational programming and government relations expertise and provides a network to exchange information, solve common problems and develop mutually beneficial relationships that grow the industry.

Since its inception, geosynthetics use has expanded into nearly all areas of civil, geotechnical, environmental, coastal and hydraulic construction. Industry events provide networking opportunities and exposure to the industry for engineers, specifiers, contractors, government agencies and academics. Over the past two decades, GMA recognized the need for expanding their legislative efforts creating a robust government relations program that advocates for the industry at the federal and state levels. This program educates lawmakers and regulatory agencies on the benefits of geosynthetic products. It also seeks to influence legislation and regulations that affect our member companies. GMA monitors vital legislation, connects with Congress to discuss the benefits of our industry and coordinates meetings for our members. GMA is in continual contact with congressional offices, agencies and specifiers to ensure that the industry retains a strong presence in government circles and that geosynthetics continue to be the leading innovative material for infrastructure in the U.S.

Advanced Textiles Association®

Advanced Textiles Association (ATA) is a not-for-profit trade association serving 1,550 company members involved in the global specialty fabrics marketplace. ATA operates nine market groups—including GMA—and three country-specific divisions conducting targeted programs and conferences for specialty fabrics and advanced textiles end product manufacturers. ATA is headquartered in Roseville, Minn.

ATA supports and augments the geosynthetics industry with these contributions:

- Promotes Geosynthetic Materials Association (GMA), a central resource for the industry and forum for the development of specification and standardization.
- Publishes the industry-leading *Geosynthetics* magazine and other journals.
- Collaborates with International Geosynthetics Society, IGS North America and Geosynthetic Institute.

Under the Auspices of IGS

The International Geosynthetics Society (IGS) is a learned society dedicated to the scientific and engineering development of geotextiles, geomembranes, related products, and associated technologies. IGS has more than 3,000 individual members, 161 corporate members, and more than 500 student members. There are 43 national or regional chapters of the IGS worldwide.

2025 Program Committee

Program Committee Chair
Daniel Alzamora,
Federal Highway Administration

Technical Program Co-chairs
Melissa Beauregard,
U.S. Army Corps of Engineers
Aaron S. Budge,
Minnesota State, Mankato

Exhibit Chair
John Lostumbo, Solmax

Conference Advisors
Michelle L. Barry,
University of Arkansas
Stan Boyle, Shannon & Wilson, Inc.
Sara Khoshnevisan,
University of Cincinnati

Local Liaison (Academic)
L. Sebastian Bryson,
University of Kentucky

Local Liaison (Industry)
Samantha Schardein,
U.S. Army Corps of Engineers

Geo-Institute Representative
Brad Keelor, Geo-Institute

Geosynthetic Materials Association
Fred Chuck,
Geosynthetic Materials Association

Secretary General/Event Manager
Barbara Connett,
Advanced Textiles Association

Programming

Download the Geotechnical Frontiers 2025 App Now!

Special Events

STUDENT PROGRAM

Sunday, March 2

G-I Student Panel: Building Your Geotechnical Career
Ballroom A
2–3:30 pm

G-I Geo-Wall Captains Meeting
Ballroom A
3:30–4:30 pm

Monday, March 3

Student Competitions: Geo-Wall, Geo-Prediction, Geo-Poster, Geo-Video
Showfloor
10 am–3 pm

Sponsored by BGC Engineering Inc., Concrete Masonry & Hardscapes Association, Demtech Services Inc., Keller North America, The Reinforced Earth Co. and Schnabel Engineering

G-I Student Program: Organizational Members/Student Career Fair
Hall A
1–5 pm

The Career Fair is open to all students attending Geotechnical Frontiers 2025, including undergraduate and graduate students. Students are welcome to attend any time between 1 pm and 5 pm, bring their resumes and connect with participating companies.

Tuesday, March 4

Student Competition Awards
Ballroom C
8–8:15 am

Welcome Reception

Sunday, March 2 | 6:30–8:30 pm | Hall B

Network with your peers from around the world during this lively reception. Enjoy appetizers and beverages while viewing the latest offerings from vendors covering the full spectrum of the geotechnical industry.

Slugger Museum and Factory Tour and Reception

Monday, March 3 | 7–9 pm | Slugger Museum

Explore a local icon! Join us at the Slugger Museum at 800 W. Main St., just a 10 minute walk or a quick Uber from the convention center. Participants will:

- Tour the factory and museum, with a peek at what goes on behind the scenes
- Savor drinks and appetizers
- Connect with peers in a unique setting
- Step into the batting cages for a swing at fun!

**This is an add on activity and requires an extra registration for access. Stop by the registration desk to get your ticket today!

Happy Hour Presented by the Outreach and Engagement Committee and G-I Louisville Chapter

Sunday, March 2 | 8 pm–??? | Sports & Social Club

Stop by for Happy Hour at the Sports & Social Club located at 4th Street Live.

Ancillary Meetings

GMA Focus Groups
Monday, March 3
3:30–4:15 pm
Room: L022

GMA Task Forces
Monday, March 3
4:15–5:15 pm
Room: L022

GMA Executive Council
Tuesday, March 4
3:30–4:15 pm
Room: L022

GMA General Membership Mtg
Tuesday, March 4
4:15–5:15 pm
Room: L010

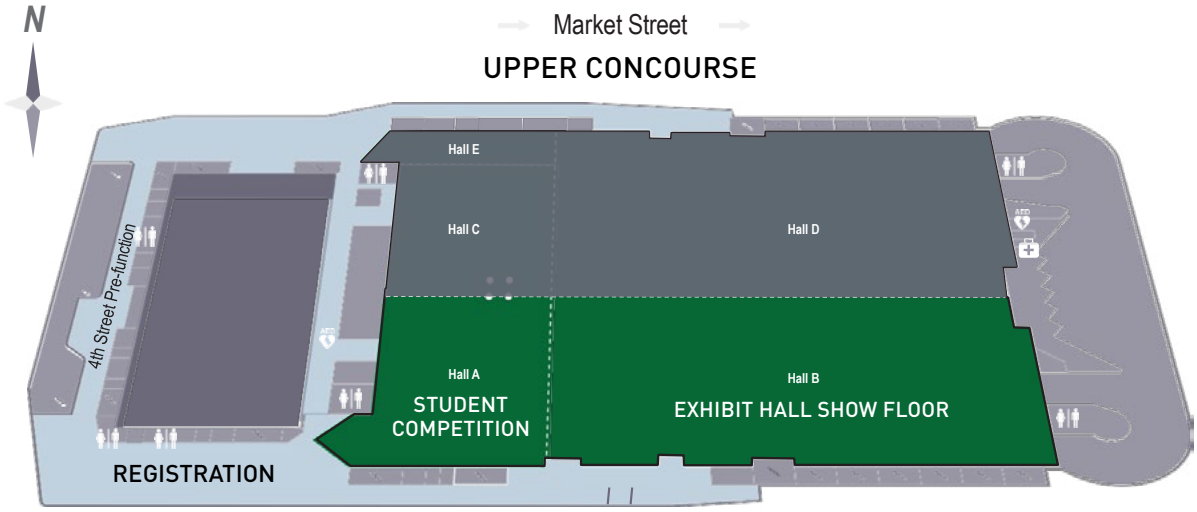
FGI Annual Meeting
Tuesday, March 4
7 pm
Room: L009

GSI Annual Meeting
Tuesday, March 4
7 pm
Room: L013

IGS North America General Assembly
Tuesday, March 4
7 pm
Room: L014

Facility Map

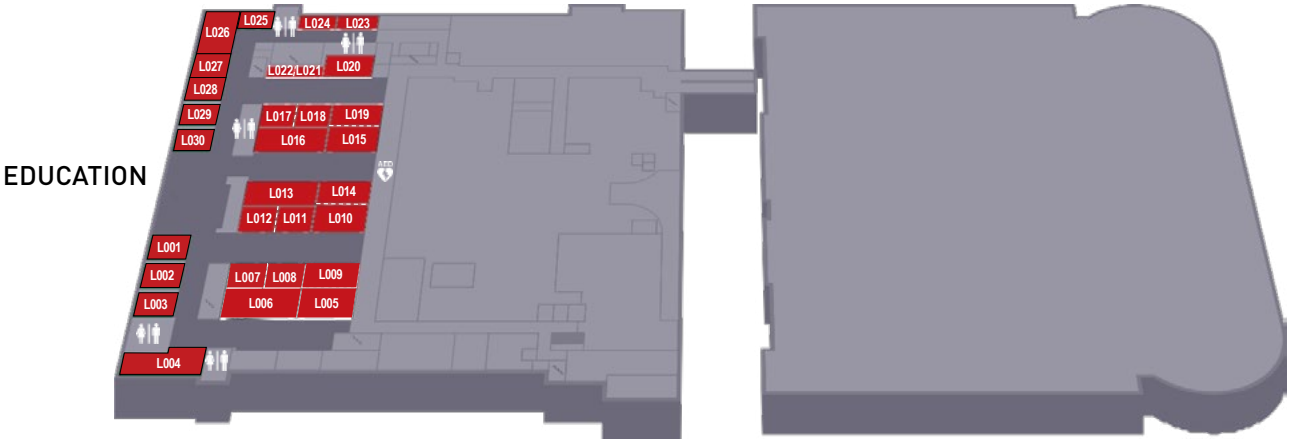
Kentucky International Convention Center (KICC)



MAIN CONCOURSE

MAIN ENTRANCE

LOWER CONCOURSE



Plenary Lectures

Plenary Lectures are held in **Ballroom C**.

H. BOLTON SEED LECTURE

Stabilization of Roadways Using Geosynthetics

Sunday, March 2 | 5–6:30 pm

Ahmed-Waeil Elgamal

The Geo-Institute has selected Dr. Elgamal to present the Seed Lecture in recognition of his extraordinary contributions to geotechnical earthquake engineering and his pioneering research in advancing soil dynamics and the understanding of soil behavior, liquefaction and seismic soil-structure interaction.

Sponsored by Jacobs

MONDAY MORNING PLENARY

How the Geology of Kentucky was Instrumental in the Rise of the Bourbon Whiskey Industry

Monday, March 3 | 8–10 am

John B. Hickman, Kentucky Geological Survey

Successful industries often rely on the local availability of natural resources and technical expertise of the workforce. In this presentation, the history of bourbon whiskey production will be discussed in terms of the local geology, the region's hydrology/water resources, and society that led to the modern bourbon industry.

PRAKASH LECTURE

Unsaturated: Soil Mechanics at the Frontiers of Geotechnical Engineering

Monday, March 3 | 5–6:30 pm

John S. McCartney

The Geo-Institute has selected Dr. McCartney in recognition for his contributions to understanding the dynamic and thermos-hydro-mechanical behavior of unsaturated soils and geosynthetic-reinforced soils in transportation and energy geotechnics applications.

Sponsored by Viaflex

ROBERT M. KOERNER AWARD AND LECTURE

From Filters to Tubes: A 30-year Exploration of Geotextiles

Tuesday, March 4 | 8–10 am

Shobha K Bhatia, Syracuse University

In 1988, Dr. Bhatia attended Dr. Koerner's short course on geotextiles, igniting her interest in using image processing to characterize geotextile properties and enhance filter performance. Since then, her research has led to the development of several filtration tests to evaluate geotextile performance as a filter for edge drains, landfills and earth dams. She has also conducted comparisons between the performance of geotextile filters and soil filters, explored different techniques to characterize geotextile pore-size distribution, and devised various tests to assess the performance of geotextile tubes in both laboratory and field settings. These tests have been applied in numerous projects, and her pioneering research on geotextile tubes has been instrumental in both small and large-scale dredging endeavors. Dr. Bhatia's extensive work has resulted in over 65 papers related to geotextile filters and geotextile tubes. Over the past 30 years, she has worked closely and collaborated with manufacturers and consultants, who have provided invaluable support to her research team. This collaboration has bridged the gap between academic research and real-world applications, benefiting her students and the broader engineering community. In her presentation, Dr. Bhatia will share insights from her three-decade journey working with geotextiles and the valuable lessons learned.

KARL TERZAGHI LECTURE

Suction, Saturation and Stability: The Impact of Rainfall, Bedrock and Vegetation on Landslide Occurrence

Tuesday, March 4 | 5:30–7 pm

Sarah Springman

Dr. Sarah Springman has been chosen by the Geo-Institute to deliver the prestigious Terzaghi Lecture for her contributions to geotechnical engineering in the areas of landslide mechanics and soil-structure interaction through the integration of physical modeling, numerical simulation, and field experiments.

Sponsored by Agru America Inc. & Solmax

WEDNESDAY MORNING PLENARY

New Spatial and Temporal Perspectives on Geo-hazards—The Hurricane Helene and Milton Story

Wednesday, March 5 | 8–10 am

Moderator: David Frost, Georgia Tech

Hurricanes Helene and Milton battered the Southeast U.S. in fall 2024, causing destruction in several states. Every hurricane brings with it unique lessons learned, and these two are no exception. Join us for a panel of Geotechnical Extreme Events Reconnaissance (GEER) members and experts outside the geotechnical field as they discuss challenges presented by these storms and paths forward toward recovery, mitigation, and adaptation.

RALPH B. PECK LECTURE

Recent Very Tall Soil Nailing Projects for Slope Repair at Teton Pass in Wyoming and Natchez National Cemetery in Mississippi

Wednesday, March 5 | 1–2:30 pm

John R. Wolosick

The Geo-Institute has selected Mr. Wolosick to present the Peck Award Lecture in recognition of his outstanding contributions to the geotechnical engineering profession through the publication of thoughtful, carefully researched case histories of micropiles or pinpiles.

Sponsored by Geosyntec Consultants

GEO PIT TALKS

Geo-PIT was established in 2019 as a way to deliver Powerful, Informative Talks to the geotechnical community. PIT talks can be on anything. They're time limited and intended to be narratives and not technical presentations. All of the 60+ talks are available on the G-I Youtube channel.

We're excited to bring PIT talks to Geotechnical Frontiers for the first time. Check them out Monday, Tuesday and Wednesday in the plenary sessions.

Visit the website for a complete schedule of Geo PIT talks.

Sessions and Short Courses

Sunday, March 2

ROOM	L005	L006	L009	L010	L013
8 am–Noon	SHORT COURSE Filter Evaluation for Dams and Levees Using the Risk Management Center Filter Evaluation (Continuation) Toolbox	SHORT COURSE Fundamentals of Geosynthetics	SHORT COURSE Vertical Barriers for Dams, Levees and Geoenviromental Applications	SHORT COURSE Design and Construction of Energy Geo-structures	SHORT COURSE Geosynthetics in Roadway Design
1–5 pm	SHORT COURSE Sustainability and Life Cycle Assessments of Geosynthetics and Geo-systems		SHORT COURSE CPT and CPTu Application for Deep Foundations Geotechnical Design; Databased Approach		

Monday, March 3

ROOM	L005	L006	L009	L010	L013
10:30 am–Noon	AI and Machine Learning	Earthquake Engineering 1	Geosynthetics 1	Climate Change	SPECIAL SESSION Geotechnical Considerations for Design of Sustainable Pavement Foundations (FHWA)
1:30–3 pm	Engineering Geology	Earth Retaining Structures	Pavements	Sustainability	Bio-inspired Geotechnics

Tuesday, March 4

ROOM	L005	L006	L009	L010	L013
10:30 am–Noon	Foundations 1	Soil Improvement	Hazard Mitigation	Younger Members Technical Session	Geosynthetics 2
1:30–3 pm	Foundations 2	Soil Properties and Modeling	Embankments, Dams and Slopes	Geotechnics for Renewable Energies	Geospatial and Non-destructive Technologies

Wednesday, March 5

ROOM	L005	L006	L009	L010	L013
10:30 am–Noon	Geotechnics of Soil Erosion	Unsaturated Soils	Earthquake Engineering 2	Computational Geotechnics	SPECIAL SESSION It's Not Just a Line on a Paper—Understanding Risk of Various Trenchless Methods

L014	L015	L016	L019	L020	BALLROOM A

L014	L015	L016	L019	L020	BALLROOM A
SPECIAL SESSION From the Grain Up: Characterization and Modeling of Particulate Materials					GEOENVIRONMEET State of the Art
SPECIAL SESSION Embracing a Digital Geotechnical Workflow (FHWA)	SPECIAL SESSION Khamis Haramy Award 1 (FHWA)	SPECIAL SESSION Measuring Sustainable Benefits of Geotechnical Solutions with Life Cycle Assessment Software (IGS)	GEOENVIRONMEET Geoenvironmental Contamination 1	GEOENVIRONMEET Innovative Developments I	GEOENVIRONMEET Session Honoring Craig Benson

L014	L015	L016	L019	L020	BALLROOM A
Geoenvironmental	SPECIAL SESSION Khamis Haramy Award 2 (FHWA)	SPECIAL SESSION Geotechnical Theater Presents: Cause and Effect (FHWA)			GEOENVIRONMEET Keynote
SPECIAL SESSION Welding of Geomembranes	SPECIAL SESSION Women in Geosynthetics Round Table	SPECIAL SESSION Toward a Resilient Future: Evolution, State of the Practice and Future of Geosynthetics in Geotechnical and MSE Design (ASME)	GEOENVIRONMEET Innovative Developments 2	GEOENVIRONMEET Sustainability and Resilience 1	GEOENVIRONMEET Session Honoring Rudy Bonaparte

L014	L015	L016	L019	L020	BALLROOM A
SPECIAL SESSION Containment Applications (FGI)		Geosynthetics 3	GEOENVIRONMEET Geoenvironmental Contamination 2	GEOENVIRONMEET Sustainability and Resilience 2	GEOENVIRONMEET Rising Stars

Short Courses

Geotechnical Frontiers features a diverse range of Short Courses on **Sunday, March 2**. These half-day or full-day classes offer a deep dive into a geotechnical topic and offer 4-8 pdh credits depending on length.

8 am–Noon ➤ Room L005

Filter Evaluation for Dams and Levees Using the Risk Management Center Filter Evaluation (Continuation) Toolbox

Adam Gohs and Timothy O'Leary, U.S. Army Corps of Engineers

Filters are critical components of dam and levee embankments designed to prevent particle movement from intergranular seepage flow where defects are present in a base soil or seepage water flows through pore spaces of a soil mass in an embankment or foundation. A properly designed filter serves two fundamental functions: the prevention of soil particle migration (particle retention) and the allowance of sufficient drainage for internal embankment zones (permeability).

The Risk Management Center (RMC) Filter Evaluation (Continuation) Toolbox provides a means for assessing the particle retention and permeability criteria for new filter design and the evaluation of existing filters for dam and levee embankments. This short course will provide background for the basic concepts of filters and hands-on experience with the RMC Filter Evaluation (Continuation) Toolbox through multiple guided examples. The course will also discuss filter considerations such as breakdown or degradation, segregation, and washout due to internal instability and how they are accounted for in the filter evaluation.

8 am–Noon ➤ Room L006

Fundamentals of Geosynthetics

Kerry Petrasic, Gannett Fleming, Inc

Geosynthetics are a relative newcomer in geotechnical engineering. Technology is developing rapidly and continues to evolve. This course is intended as a primer for those desiring a basic understanding of geosynthetics. Discussions during the one-half day course will cover the various types of geosynthetic materials, applications and functions of the materials, and the various synthetic polymers used in manufacturing geosynthetics. It will be demonstrated that geosynthetics are to be considered as another tool in the toolbox that geotechnical engineering designers and professionals have available to assist in addressing a variety of geotechnical and environmental engineering challenges. Particular emphasis will be provided on how the intended application or function and existing soil and water conditions will dictate the structure of the geosynthetic, and the specific polymer used for its manufacture. Cost constraints, constructability concerns, and short- and long-term performance requirements will also be discussed. While geosynthetics may be capable of addressing a specific situation or condition, it may not be the best solution.

8 am–Noon ➤ Room L009

Vertical Barriers for Dams, Levees and Geoenviromental Applications

Daniel Ruffing, Geo-Solutions, Inc. and Jeffrey C. Evans, PARSONS/Bucknell University

Two experienced engineers, one from the construction industry and one from academics and consulting, offer attendees a short course on vertical barriers for dams, levees and geoenvironmental applications. The course offers a balance of theory and practice in such a way as to inform attendees of the issues across the spectrum of design, construction, monitoring and performance (short and long term). The short course will first provide an overview of the vertical barriers including a discussion about the primary functions and important performance characteristics. The primary techniques currently employed will then be presented including an in-depth look into the design and construction methods and important considerations for all stages. The short course will present an overview of common field monitoring practices and procedures, including advantages and limitations of the various available methods. Finally, factors affecting costs for the various techniques along with current cost information will be presented.

8 am–5 pm ➤ Room L010

Design and Construction of Energy Geo-structures

Sherif Abdelaziz, Virginia Tech; Tony Amis, Endurant Energy; Omid Ghasemi-Fare, University of Louisville; Alessandro Rotta Loria, Northwestern University and Marcelo Sanchez, Texas. A&M University

The design and construction of energy geostructures are becoming of high interest worldwide nowadays. There is currently a knowledge gap among practicing engineers on how to design and construct these geo-structures. Thus, this short course will discuss various topics related to best practices for the design and construction of energy geo-structures, with an explicit focus on energy piles. Focusing on practicing engineers, the course will introduce participants to (1) fundamentals of energy geostructures, (2) in-situ thermal response tests used to determine the thermal properties of soils surrounding energy foundations, (3) thermo-hydro-mechanical properties of soils, (4) additional thermal stresses and strains that need to be considered in the design of energy piles, and (5) best construction practices and quality control and assurance for in-situ constructions.

8 am–5 pm ➤ Room L013

Geosynthetics in Roadway Design

Jorge Zornberg, The University of Texas at Austin and Erol Tutumluer, University of Illinois at Urbana-Champaign

Geosynthetics provide sustainable alternatives for enhanced performance, durability, and cost-effectiveness of roadways. This short course provides an integrated view of the multiple applications of geosynthetics in this transportation mode. This includes the mechanisms involved in the different applications, the identification of relevant geosynthetic properties, the available design methodologies, and case histories involving the use of geosynthetics in roadway projects.

1–5 pm ➤ Room L009

CPT and CPTu Application for Deep Foundations Geotechnical Design; Databased Approach

Abolfazi Eslami, AUT; Barmak Biron; and Masoud Nobahar, LSU-LTRC

This course will provide an in-depth understanding of Cone Penetration Test (CPT) and Piezocone (CPTu) implementations and their role in pile geotechnical design, including installation, bearing capacity, settlement, and resistance distributions. Participants will gain insights into practical applications, methodologies for pile design discussed analytically, and case histories to understand the applicability of CPT in pile design. The program includes a review of selected well-known methods that discuss the database approaches in detail. Overall, the program will also provide real-world examples of challenging conditions in pile design. A recap and Q&A sessions will allow participants to engage in discussions to solidify their professional implementation.

1–5 pm ➤ Room L005

Sustainability and Life Cycle Assessments of Geosynthetics and Geo-systems

Mina Lee, University of Windsor and Dipanjan Basu, University of Waterloo

The short course will address the growing importance of sustainable practices in geotechnical engineering by offering an overview of sustainability concepts and the application of life cycle assessment in geotechnical engineering. Topics covered include principles of sustainability, the scope of sustainable geotechnics, considerations for sustainability in geosynthetic applications, state-of-the-art methodologies for sustainability assessment in geotechnical engineering, and the principles and application of LCA to geo-systems. The course includes a practical demonstration focusing on the application of LCA to mechanically stabilized earth (MSE) walls reinforced with geosynthetics. The demonstration will guide participants through step-by-step LCA calculations and will present useful information helpful for optimizing MSE wall designs with sustainability considerations.

SPONSORED PRESENTATIONS

Tuesday, March 4
Geotechnical Frontiers Theater
Booth 603

TABLOGS SPONSORED SHOWFLOOR SESSION

Modern Borehole Logging and Geotechnical Data Management

10–10:30 am

Presented by Declan Vanderhor, geotechnical engineer, this session will explore how data management is vastly improving, and its significance in various stages of geotechnical projects from proposal and tender to investigation, pre-feasibility design, site investigation and reporting. In the geotechnical engineering sector, the management of logging data has undergone significant evolution, becoming a crucial aspect in geotechnical investigations. To fully leverage the potential of data management, it's essential that data is collected correctly and accurately databased. This presentation provides an informative overview of the key considerations in this process.

STUDIO PROF. MARCHETTI S.R.L SPONSORED SHOWFLOOR SESSION

In Situ Testing for Onshore and Offshore Soil Characterization: Flat Dilatometer (DMT), Seismic Dilatometer (SDMT) and Fully Automated DMT (Medusa)

12:30–1 pm

Presented by Eng. Diego Marchetti, this session will discuss Flat Dilatometer and its recent developments, with particular focus on the fully automated dilatometer (Medusa DMT) and seismic module (SDMT) for measuring Vs. Several case histories will be shown, with comparisons of geotechnical parameters in well documented test sites. Users will look into how the DMT is able to accurately estimate the constrained modulus and stress history parameters (ex. OCR and K0) starting from the direct in situ measurement of soil modulus and horizontal stress.

Technical and Special Sessions

Monday, March 3

10:30 am–Noon ➤ Room L005

AI and Machine Learning

Chairs: Enrique Farfan, HDR, Inc; Laith Sadik, University of Cincinnati

Advancing Landslide Susceptibility Mapping Across Heterogeneous Regions with Deep Learning-Based Domain Adaptation
Te Pei, Ryan Goldberg, Fred Moshary and Yingli Tian, The City University of New York (City College)

A New Search Algorithm for 3D LEM Analysis
Cristian Salvalaggio, Terence Ma, Sina Javankhoshdel, Brent Corkum and Thamer Yacoub, Rocscience Inc.

Effect of Database Size and Composition on Machine Learning Model Development to Estimate Shear Wave Velocity
Longde Jin and Andrew Fuggle, WSP; Haley Roberts, Georgetown University

Large Language Model for Geotechnical Engineering Applications Using Retrieval Augmented Generation
Seok Hyeon Chai, Ivan Chen, Jason Huang and Thamer Yacoub, Rocscience

Performance of ANN in Predicting Calibration Factors for Density-Based Pore Pressure Model
Peter Rey Dinoy, Hyeong-Joo Kim, Hyeong-Soo Kim, Tae-Woong Park, James Vincent Reyes, Voltaire Anthony Corsino, Jr. and Tae-Eon Kim, Kunsan National University

10:30 am–Noon ➤ Room L010

Climate Change

Chairs: Ravi Ravichandran, Clemson University

Cementing Soils via Electrodeposition
Alessandro F. Rotta Loria, Andony Landivar Macias and Yeong-Man Kwon, Northwestern University

Evaluation of Climate Resiliency of Highway Embankment Using Lidar and Electrical Resistivity Imaging
Fariha Rahman, A. Q. M. Zohuruzzaman, Sadik Khan and Tyra-Nicole Whyte, Jackson State University

Evolving Road Resilience in Cold Climates: A Comprehensive Review and Cost Comparison
Mohammad Wasif Naqvi, Md Fyaz Sadiq and Bora Cetin, Michigan State University; John Daniels, University of North Carolina at Charlotte

Hysteresis Model of Permafrost Thermal State Variation with Air Temperature in Utqiagvik, Alaska Based on Distributed Temperature Sensing
Xiaohang Ji and Ming Xiao, Pennsylvania State University; Eileen R. Martin, Colorado School of Mines

Numerical Modeling of Pavements on Expansive Soil in Extreme Climates
Ekansh Agarwal, Texas A&M University-Corpus Christi; Xiong Zhang, Missouri University of Science and Technology; Ning Luo, Texas A&M University-Corpus Christi

Tangential Heave Stress on Solar Piles in Cold Regions
Hossein Emami Ahari and Beena Ajmera, Iowa State University; Rohit Pant, Chang Huang and Yuqing Liu, RRC Power & Energy Companies

10:30 am–Noon ➤ Room L006

Earthquake Engineering 1

Chairs: Clint Wood, University of Arkansas; Renmin Pretell, University of Nevada—Reno

A New Methodology for Earthquake Ground Motion Spatial Correlation
Pengfei Wang and Busra Bocekli, Old Dominion University

Applying the Energy-Based Liquefaction Framework on a Well-graded Gravelly Soil
Satuk B. Sari and Adda Athanasopoulos-Zekkos, University of California, Berkeley

Assessing Numerical Simulations of Liquefiable Geosystems Using Time History-Based Validation Metrics
Maziar Mivehchi and Katerina Ziotopoulou, University of California, Davis

Comparison of Static and Dynamic Compressibility of Poorly Graded Gravel in Centrifuge Modeling Tests
Nampol Chaowalittrakul and Inthuorn Sasanakul, University of South Carolina

Seismic Behavior of Localized Liquefied Sand in Three Subsequent Weak Events
Roohollah Farzalizadeh, Southern Illinois University Carbondale; Abdolreza Osouli, Southern Illinois University Edwardsville; Prabir Kolay, Southern Illinois University Carbondale

Selection of Input Motions for a Series of Large-Scale Bidirectional Shake Table Tests Based on Nonlinear Site Response Analysis
Satish Manandhar and Ramin Motamed, University of Nevada, Reno

10:30 am–Noon ➤ Ballroom A

GEOENVIRONMEET

State of the Art

Autonomous Characterization of Full-scale Field Response of Municipal Solid Waste
Dimitrios Zekkos, University of California Berkley

Beyond Geophysics: Electromagnetic Waves for Geoenvironmental Applications
Arvin Farid, Boise State University

10:30 am–Noon ➤ Room L009

Geosynthetics 1

Chairs: Mohammed Shakeel Abid, University of Texas—Austin; Stephan Fourmont, Afitex-Texel Geosynthetics

3D DEM Evaluation of Aggregate Shear Bands and Geogrid Deformations in Pullout Tests
Yafei Jia, Wuhan University | University of Texas at Austin; Jorge G. Zornberg, University of Texas at Austin; Yewei Zheng, Wuhan University

A Comparative Study on Effectiveness of Geogrid and Geotextile Reinforcement in Expansive Subgrades of Flexible Pavements
Sundaram Srivastava and Umashankar Balunaini, Indian Institute of Technology

Influence of Paving Interlayer Material on Performance of Full-scale Asphalt Overlays
V. Vinay Kumar, Huesker Inc.; Gholam Hossein Roodi, HDR; Jorge G. Zornberg, The University of Texas at Austin

Investigating the Impact of Cold Weather Aging and Temperature on Tensile Strength of Geomembranes
Bret N. Lingwall, Isaac Nedved and Calvin Tohm, South Dakota School of Mines and Technology

Numerical Study of Next Generation Geogrids Inspired by Spider-Webs
Candas Oner and David J. Frost, Georgia Institute of Technology

Performance Evaluation of Unpaved Roads Stabilized with Composite Geosynthetic Made of Recycled Plastic Geogrid and Nonwoven Geotextile
Araz Hasheminezhad, Halil Ceylan and Sunghwan Kim, Department of Civil, Construction and Environmental Engineering, Program for Sustainable Pavement Engineering & Research (PROSPER), Iowa State University; Erol Tutumluer, Department of Civil & Environmental Engineering, University of Illinois at Urbana-Champaign

10:30 am–Noon ➤ Room L014

SPECIAL SESSION

From the Grain Up: Characterization and Modeling of Particulate Materials

Session Organizers: Marika Santagata (Purdue University), Tejas Murthy (II Sc Bangalore), Michelle Barry (University of Arkansas)

Panelists: Khalid Alshibli—University of Tennessee, Giuseppe Buscarnera—Northwestern University, Olivia Meng—Purdue University, Catherine O' Sullivan—Imperial College

The landscape of geotechnical data management is changing rapidly. This panel discussion will provide a variety of perspectives on the subject of geotechnical data management with information on the why the change is happening, benefits to organizations of adopting a digital workflow, and how organizations can find the resources they need to implement these changes. Participants will come away from this session with increased knowledge of how others in the industry are working with geotechnical data, the benefits of a digital workflow, and how to leverage available tools and create an improved workflow for more efficient and cost effective project delivery.

10:30 am–Noon ➤ Room L013

SPECIAL SESSION

Geotechnical Considerations for the Design of Sustainable Pavement Foundations (FHWA)

Moderator: Daniel Alzamora, FHWA-RC

Panelists: Tom Yu—FHWA-HQ; Erol Tutumluer—University of Illinois, Urbana-Champaign; Jorge Zornberg—University of Texas, Austin; Raul Velasquez—Minnesota Department of Transportation

It is recognized by FHWA that the benefits of good pavement foundations are not fully considered in pavement design today because of lack of clarity in the understanding of the benefits and difficulties in quantifying the benefits. One of FHWA strategies to address pavement longevity is to improve the performance of the pavement foundation. The principal role of pavement foundation is ensuring that adequate and uniform support is provided for the pavement structure throughout the life of the pavement. Inadequate foundation designs accelerates pavement deterioration over time leading to pavement distresses generating costly repairs. This session will be an opportunity to discuss geotechnically related causes of pavement distress, methods to improve pavement foundation design, and the impact of pavement foundations on performance.

1:30–3 pm ➤ Room L013

Bio-inspired Geotechnics

Chairs: Allen Bowers, Geopier; Leon Van Paassen, Boskalis

Benefits of Incorporating Calcium in Biopolymer-Stabilized Expansive Soil
Avishek Ghosh, Rabindra Bohara and Aritra Banerjee, South Dakota State University

Bio-Inspired Dual-Auger Vertical Self-Burrowing Robot: DEM-MBD Analysis of Downward Penetration in Granular Media
Sarina Shahhosseini and Junliang Tao, Arizona State University

Enhancement in the Water-Holding Capacity of Soils in the Central High Plains Through Biochar Amendment
Anup Lamichhane and Seunghee Kim, University of Nebraska Lincoln

Enhancing Sandy Soil Erosion Resistance with Biopolymer Treatments
Anish Lamsal, Mohammadhasan Sasar and Sherif Abdelaziz, Virginia Tech

Hydraulic Conductivity of a Sand Cemented with Enzyme Induced Carbonate Precipitation
Paola Bandini, Noah A. Madrigal and Emilia Marmolejo, New Mexico State University

Preliminary Modeling of Microbial-Induced Calcite Precipitation Injection Using Mangrove-Inspired Skirt Piles
Xiwei Li and Junliang Tao, Arizona State University; Leon Van Paassen, Boskalis

1:30–3 pm ➤ Room L006

Earth Retaining Structures

Chairs: Joel Dellaria, Keller

Assessment of External Stability of Waterfront Reinforced Soil Wall Under the Influence of Seismic and Wave Loading
Rahul Verma and Kaustav Chatterjee, Indian Institute of Technology Roorkee

Effect of Ground Improvement Construction Process on the Performance of Braced Excavations
Yuepeng Dong, Technical University of Denmark

Influence of Gravity Forces on Building Response Adjacent to Excavations in Cohesive Soils
A. Felipe Uribe-Henao, Geosyntec Consultants; Luis G. Arboleda-Monsalve and Kevin Mackie, University of Central Florida

Installation Observations of Geosynthetic and Steel Reinforced Segmental Concrete Panel MSE Walls: Lessons Learned
Robert C. Johnson, Jr., Submatrix, LLC; Robert Lozano, The Reinforced Earth Company; Robert A. Gladstone, Association for Mechanically Stabilized Earth

Numerical Modeling of Contributing Factors to Rainfall-Induced Slope Failure: New Jersey Case Study
Prabhakar Khadka and Oladoyin Kolawole, New Jersey Institute of Technology

Seismic Stability Analysis of Gravity Walls Considering Tension Cracks
Siddalingeshwara DH and Kaustav Chatterjee, Indian Institute of Technology Roorkee

Monday, March 3

1:30–3 pm ➤ Room L005

Engineering Geology

Chairs: Diane Moug, Portland State University; Hala El Fil, Geocomp

Assessing Geotechnical Variability in Geological Formations: Insights from In-Situ CPT Data Analysis in Illinois
Jiangting Liu and Scott Michael Olson, Department of Civil and Environmental Engineering, University of Illinois Urbana-Champaign; Jason F. Thomason and Andrew C. Anderson, Illinois State Geological Survey

Assessment of Spatial Variability of Ground-Motion Site Resonances for the Jackson Purchase Region in the New Madrid Seismic Zone
Yichuan Zhu, Temple University; Seth Carpenter, University of Kentucky; Alex C. Miller, Temple University; Hui Wang, University of Dayton; Zhenming Wang, University of Kentucky

Piezocone Screening Approach for Regular, Organic, and Sensitive Soft Clays
Paul W. Mayne, Georgia Institute of Technology; Ethan Cargill, ConeTec Group Richmond; Jim Greig, ConeTec Group Vancouver

Relating Beach Groundwater-Surface Water Dynamics to In-Situ Strength from Dynamic Penetrometers
Nina Stark and Stephen Adusei, University of Florida; Jonathan Hubler, Mohamad El Ahmad and Thomas Mayer, Villanova University; Tian-Jian Hsu and Jiaye Zhang, University of Delaware

Soil Moisture Estimates from Remote Sensing, In-Situ Testing, and Laboratory Testing at an Active Landslide
Treves Li and Parker Blunts, Department of Civil and Environmental Engineering, University of California Berkeley; Drew Gomberg, Department of Civil and Environmental Engineering, University of California Berkeley | The Aerospace Corporation; Dimitrios Zekkos, Department of Civil and Environmental Engineering, University of California Berkeley

Unit Weights of Glacial Soils by CPTu
Cassandra L. Champagne, University of Michigan, Ann Arbor; Erron J. Peuse, Michigan Department of Transportation; Roman D. Hryciw and Fernando Estefan Thibodeaux Garcia, University of Michigan, Ann Arbor

1:30–3 pm ➤ Room L019

GEOENVIRONMEET

Geoenvironmental Contamination I

Machine Learning Enabled Assessment of Sinkhole Collapse Susceptibility Within the Silver Springs Recharge Basin
Ryan Shamet, National Yang Ming Chiao Tung University

Fungal-mycelium Biocover: A Novel Biogeotechnology for Improving Soil Resistance to Water and Wind Erosion
Emmanuel Salifu, University of Illinois Chicago

Impact of Manufacturing Method on the Hydraulic Performance of Polymer-Enhanced Calcium Bentonite Slurries—Preliminary Analysis
Shan Tong, Kyoto University

Safeguarding Tailings Dams from Space Using L-band SAR Soil Moisture Analysis
Yonatan Rabinovitch, Shannon & Wilson, Inc.

Consequence-based Selection of Design Seismic Event for Landfills—An Approach Based on Canadian Dam Association Guidelines
Alan Chou, California State University Los Angeles

1:30–3 pm ➤ Room L020

GEOENVIRONMEET

Innovative Developments I

Use of TDR for Detection of Fluid Hydrocarbon in the Geoenvironment
Albert Yeung, University of Delaware

Real-time Management of Public Fill in Hong Kong Using Information and Communications Technology
Albert Yeung, Arizona State University

Suitability of Ureolytic Microbe in Limiting Desiccation-induced Volumetric Shrinkage Strain of Lateritic Soil for Waste Containment Purpose
Roland Etim, Rolan DG Corporation

Long Term Settlement, Lateral Deformation and Stress Behavior of a Soil-bentonite Slurry Wall
Jeff Evans, Tenessee State University

Challenges Associated with the Management of Landfilled Mined Residues: Treatment v/s Containment
Mohit Somani, Indian Institute of Technology, Bhunaeswar

1:30–3 pm ➤ Ballroom A

GEOENVIRONMEET

Session Honoring Craig Benson

Chairs: Majdi Othman, Geosyntec Consultants, Inc.

Greenhouse Gas Impacts of Harvesting Coal Ash for Cement Replacement in Concrete
Sabrina L. Bradshaw, University of Wisconsin-Madison

Hydration and Cation Exchange Behavior of Two Geosynthetic Clay Liners at an Elevated Temperature
Kendra E. Fuller, WSP

Hydraulic Conductivity Testing of Geosynthetic Clay Liners Without Back Pressure Saturation
Joseph Scalia, Colorado State University

Effect of Bentonite Granule Size Distribution on Hydraulic Conductivity of Laboratory Prepared Geosynthetic Clay Liners (GCLs)
Calvert S. Barclay, Jacobs Engineering Group

The Evaluation of Leakage Rate and Mass Transport of Florida Double Liner System
Tarek Abichou, Florida A&M University - Florida State University

1:30–3 pm ➤ Room L009

Pavements

Chairs: Md. Jobaire Bin Alum, Prairie View A&M University

Cellulose Nanocrystal Modified Bitumen Pavement Materials
Isaac L. Howard and Amanda Hufft, Mississippi State University; Gregory T. Schueneman, USDA, US Forest Service, Forest Products Laboratory

Cyclic Loading Type Effect on Performance of Base Aggregates with 12% Fines Under High Stress Ratio
Nirajan Khanal, Geosyntec Consultants; Abdolreza Osouli, Southern Illinois University Edwardsville; Gokul Khatri, Stantec; Ashish Aryal, WSP

Evaluating the Resilient Performance of Unpaved Road Materials Under Freeze-Thaw Effects
Celso M N Santos, Umar Farooq and Bora Cetin, Virginia Department of Transportation; Jeramy Ashlock, Mahsa Belalzade and Kanika Lamba, Iowa State University

Structural Evaluation of Substandard Asphalt Pavements with Falling Weight Deflectometer Data
Jeremiah Stache, Victor M. Garcia Jr., Jeremy Robinson and Brendon Quon, U.S. Army Engineer Research and Development Center

Use of Laser-based Method for Measuring Small-Strain in Geomaterials Under Repetitive Loads in Triaxial Environment
Sopharith Chou and Kyle Parr, Texas A&M University; Nripojyoti Biswas, Texas A&M University | University of Massachusetts at Lowell; Anand J. Puppala, Texas A&M University

Validation of Custom-Built Accelerometers for Monitoring the Process of Soil Compaction
William J. Baker III, Siamak Yoosefi, Mohammadreza Jebeli and Christopher L. Meehan, University of Delaware

1:30–3 pm ➤ Room L014

SPECIAL SESSION

Embracing a Digital Geotechnical Workflow (FHWA)

The landscape of geotechnical data management is changing rapidly. This panel discussion will provide a variety of perspectives on the subject of geotechnical data management with information on the why the change is happening, benefits to organizations of adopting a digital workflow, and how organizations can find the resources they need to implement these changes. Participants will come away from this session with increased knowledge of how others in the industry are working with geotechnical data, the benefits of a digital workflow, and how to leverage available tools and create an improved workflow for more efficient and cost effective project delivery.

1:30–3 pm ➤ Room L015

SPECIAL SESSION

Khamis Haramy Award 1 (FHWA)

Moderator: Silas Nichols, FHWA

The FHWA collaborates with state department's of transportation nationally in holding five annual regional geotechnical workshops (NE, SE, MW, NW, SW). These workshops have provided a venue for state agencies to share technology and present information on local practice for states in the region and local practitioners. The conferences and workshops have been an ideal environment for facilitating this exchange of information, and have been key to enhancement of the state of practice. For approximately 50 years, the visibility of the conferences and workshops has grown, and information on State Department of Transportation (DOT) projects is now of greater interest to national and international audiences. To address this interest, the Federal Highway Administration (FHWA) National Geotechnical Team established the Khamis Haramy award for State Department of Transportation and Federal Lands to deliver presentations at the annual Geo-Institute Geo-Congress, Geotechnical Frontiers in 2025. Join us for these presentations which highlights state DOT practice.

SLOPES AND STABILIZATION

Bear Cave Landslide, Denali National Park
Orion George, FHWA-WFL

Rehabilitation of Bridge No. 00793A, Route 15 NB over the Quinnipiac River, Wallingford CT
Laura McKiernan, Connecticut DOT

US 76/SR 2 (Lookout Mountain Scenic Highway) Landslide Repair in Rabun County, GA
Eugene Utasalo, Georgia DOT

Design and Construction Challenges of a Gabion Face Soil Nail Wall in El Yunque National Forest
Jonathan Herrera-Roldan, FHWA-EFL

1:30–3 pm ➤ Room L016

SPECIAL SESSION

Measuring Sustainable Benefits of Geotechnical Solutions with Life Cycle Assessment Software (IGS)

Introduction from Sam Allen on behalf of IGS Sustainability Committee in cooperation with the European Association of Geosynthetic product Manufacturers (EAGM) and the Geosynthetics Materials Association (GMA)

Measuring and comparing the sustainability of different geotechnical solutions is not trivial and requires the assessment of several aspects. According to the European committee for standardization (CTE), sustainability must include the evaluation of environmental, economic, and social aspects. Furthermore, functionality and resilience considerations should be included with or within sustainability assessments, as to provide a proper, future-proof, evaluation.

Regarding the environmental aspects, the most prevalent methodology to quantify impact is the use of the life cycle assessment (LCA) methodology. LCAs provide several environmental impact indicators based on the materials and processes involved in a geotechnical (or any other field) solution.

The focus of the session will be to provide, first, an overview of sustainability requirements and calculation methodologies, and second, a base understanding of life cycle assessments methods, including a staged demonstrations of the calculation process using a commercially available software. Scenarios will include road stabilization, landfill drainage construction, and retaining wall solutions alternatives.

1:30–3 pm ➤ Room L010

Sustainability

Chair: Doug Cortes, New Mexico State University

Does Anammox Enhance the Sustainability of Ureolytic MICP? An LCA Comparison of Effluent Treatments
Hannah F. Hiscott, Leah M. Weaver, Tarek Aziz and Brina M. Montoya, North Carolina State University

Effects of Gradation on Resilient Modulus and California Bearing Ratio Values for Recycled and Quarried Aggregates
Mahsa Belalzadeh and Jeramy C. Ashlock, Iowa State University; Umar Farooq, Celso Santos and Bora Cetin, Michigan State University; Kanika H. Lamba, Iowa State University

Engineering Characteristics and Sustainable Utilization of Mine Tailings as Cemented Paste Backfill—A Critical Review
Liet Dang, KCB Australia; Thien Tran, Virginia Polytechnic Institute and State University; Tan Manh Do, Hanoi University of Mining and Geology

Enhancing Infrastructure Resilience Through Shallow Geothermal Energy: A Novel Approach to Mitigate Extreme Weather Impact on Existing Bridges
Amin Mohammadzadeh, Omid Ghasemi-Fare and Zhihui Sun, University of Louisville

Resilient Railways Using Energy-absorbing Rubber Elements in Track Substructure
Buddhima Indraratna, Transport Research Centre, Trung Ngo, Yujie Qi, Suwan Hettiyahandi and Cholachat Rujikiatkamjorn, Transport Research Centre, University of Technology Sydney

Sustainable MSE Wall Design Using Multi-Objective Optimization
Mina Lee, University of Windsor; Dipanjan Basu, University of Waterloo

Tuesday, March 4

10:30 am–Noon ➤ Room L005

Foundations 1

Chair: Anup Lamichhane, University of Nebraska

A Comprehensive Pile Test Program for an LNG Project in Savannah, Georgia
Guoming Lin and Chao Zheng, Terracon Consultants

Behavior of Advanced Densified Wood Pile Under Lateral Loading: A Feasibility Study
Hussein Ahmad Alqrinawi, Hai Lin, Shengli Chen and Qinglin Wu, Louisiana State University

Geotechnical Challenges for High-Rise Buildings in Mumbai, India
Tanmoy Das, Ph.D. Research Scholar; Rishav Baishya, Ph.D. (PMRF) Research Scholar; K. Rakesh, Ph.D. Research Scholar; Deepankar Choudhury, Prof. T. Kant Chair Professor (HAG); Haroon Rashid, Ph.D. (PMRF) Research Scholar

Glacial Lake Sediments: A History of Supporting Major New York Structures
Tony D. Canale, Cheryl Moss, Peter Madarasz and Greg Lucking, Mueser Rutledge Consulting Engineers

Modeling Auger Cast Pile Installation Effects on Group Capacities in Florida Soils
Edgar C. Correa-Prada, Jorge E. Orozco-Herrera, Gyu-Beom Shin, Luis G. Arboleda-Monsalve and Kevin R. Mackie, University of Central Florida; Rodrigo Herrera, Florida Department of Transportation

Vertical Load Capacity of Recycled Plastic Pin Groups Subjected to Field Load Test
Sehneela Sara Aurpa, Schnabel Engineering; S M Ashik Al Aziz, The University of Texas at Arlington; Md Azijul Islam; The University of Texas at Arlington | Bangladesh University of Engineering and Engineering and Technology; Md. Sahadat Hossain, The University of Texas at Arlington

10:30 am–Noon ➤ Ballroom A

GEOENVIRONMEET

Keynote

Physical-Chemical Properties Affecting the Performance of Bentonite-Based Chemical Containment Barriers
Chuck Shackleford, Colorado School of Mines

Resilient and Sustainable Remediation of Contaminated Sites: A Case Study on Using Integrated Assessment Frameworks for Effective Decision Making
Krishna Reddy, University of Illinois Chicago

10:30 am–Noon ➤ Room L014

Geoenvironmental

Chairs: Kristin Sample-Lord, Villanova University; Gretchen Bohnhoff, Milwaukee School of Engineering; Emmanuel Salifu, Arizona State University

Compatibility of Soil-Bentonite Slurry Trench Cutoff Wall Backfill
Jefffrey C. Evans, Parsons Corporation; Daniel Ruffing, Geo-Solutions

Effect of Clogging of LCRS on the Slope Stability of Bioreactor Landfills Due to Leachate Recirculation
Lagudu S. Avinash and Anumita Mishra, Indian Institute of Technology Roorkee

Methane Oxidation in Biochar Amended Landfill Cover Soil: Effect of Biochars Produced from Different Feedstocks
Gaurav Verma and Krishna R. Reddy, University of Illinois Chicago

Numerical Prediction of the Effectiveness of Thermally Enhanced Bio-Remediation at Contaminated Sites
Omid Ghasemi-Fare, Sohail Saheb and Kiarash Jafarzadeh, University of Louisville

Pressure- and Time-Dependence of Fluid Flow in Maquoketa Shale
Roman Y. Makhnenko and Hyunbin Kim, University of Illinois at Urbana-Champaign

Upcycling Waste Plastics to Foundation Systems
Hamed Khodadadi Tirkolaei and Masum Shaikh, Arizona State University

10:30 am–Noon ➤ Room L013

Geosynthetics 2

Chairs: Reinaldo Vega-Meyer, Rock Engineering and Testing Laboratory; Hossein Bahmyari, Twining Consulting

Comprehensive Evaluation of Geogrid Stabilization Effectiveness via Varying Scale Experiments with Bender Element Sensor Technology
Han Wang and Youngdae Kim, University of Illinois Urbana-Champaign, Mingu Kang, University of St. Thomas; Erol Tutumluer, University of Illinois Urbana-Champaign; Heather Shoup, Illinois Department of Transportation

Determining the Shear Bands Between GECs and Soft Clays with the Aid of Digital Image Correlation
Abdurrahman Almikati, Texas State University; Etienne Gonzalez and Jorge Gabriel Zornberg, The University of Texas at Austin

Geogrid Stabilization of Railway Ballast Evaluated Using Bender Element Shear Wave Technology
Youngdae Kim, University of Illinois Urbana-Champaign; Mingu Kang, University of St. Thomas; Han Wang, Taeyun Kong and Erol Tutumluer, University of Illinois Urbana-Champaign

Investigating Failure Modes of Geosynthetic-Reinforced Soil (GRS) Mass
Thuy Vu and Thang Pham, University of Texas Rio Grande Valley; Thuyet Nguyen, Institute for Building and Technology; Andres Palma, Millennium Engineers Group Inc.; Tan Nguyen, Van Tuong Company

Investigation of the Geosynthetic Sliding Failure Mechanism in Geosynthetic Reinforced Slopes and MSE Walls Designed with an Efficient Back Analysis Algorithm
Liam Jacob Sy, Sina Javankhoshdel and Terence Ma, Rocscience; Carlos M.Rodriguez, HUESKER Inc.; Thamer Yacoub, Rocscience

Numerical Modelling of Geosynthetic Reinforced Fills Over Voids
Richard J. Bathurst, GeoEngineering Centre at Queen's-RMC; Fahimeh Naftchali, WSP

10:30 am–Noon ➤ Room L009

Hazard Mitigation

Chair: April Fontaine, U.S. Army Corps

Best Practice for Combining Geophysical Data and Geotechnical Exploration in Karst Geology
Matthew A. Dettman, Arnold Consulting Engineering Services

Comparison of Earthen Levee Reliability in the Face of Flooding Hazards
Lei Wang, Liang Zhang and Sara Khoshnevisan, University of Cincinnati

Design of Distributed Fiber Optic Sensing Monitoring System for Earthquake Resistant Ductile Iron Pipelines Crossing Seismic Fault
Shih-Hung Chiu, Maksymilian Jasiak, Chuao Dong, Gersena Banushi, Kenichi Soga and Michael Riemer, University of California, Berkeley; David Katzev, East Bay Municipal Utility District; Brad Wham, Center for Infrastructure, Energy, and Space Testing, University of Colorado Boulder; Blake Berger, Thornton Tomasetti; Jeff Mason, US Pipe; Thomas O'Rourke, Cornell University

Go/No-Go Drawings for Excavation of Ash Pond
Katherine G. Coco, Joseph Keller, Kirkland Broadwell and Matthew Ksanznak, Haley & Aldrich

USACE Landslide Database: Characterizing, Understanding, and Managing Risks from Unstable Soils and Rock
April L. Fontaine and Daniel Vellone, U.S. Army Corps of Engineers

10:30 am–Noon ➤ Room L006

Soil Improvement

Chairs: Armin Stuedlein, Oregon State; Aaron Gallant, University of Maine

Experimental Performance Evaluation of Geotechnical Encased Columns
Etienne Gonzalez, The University of Texas at Austin; Abdurrahman Almikati, Texas State University; Jorge Gabriel Zornberg, The University of Texas at Austin

Flexural Behavior of Rigid Inclusions and Implications for Seismic Performance
James R. Gingery and Francisco A. Humire, Keller North America

Groutability Assessment of Liquid Polymer in High Fine Content Soils
Jie Huang, Alejandro Schorsch, Drew Johnson, Jinhu Song, University of Texas at San Antonio; Fei Wang, Mississippi State University; Julian Sanchez, University of Texas at San Antonio

Innovative Vibro-Replacement Technique for the Foundation of a 22-Story Tower in West Palm Beach: A Case Study in Cost-Effective Design and Sustainability
Cyrus Jedari and Dustin J. Walkenhorst, Keller North America, Inc.; Matthew E. Meyer, Langan Engineering and Environmental Services

Micro-Mechanical Analyses to Understand the Durability of Chemically Stabilized Geomaterials Against Moisture-Induced Damage
Samridh Samridh and Sayantan Chakraborty, Birla Institute of Technology and Science; Nripojyoti Biswas, Texas A&M University | University of Massachusetts at Lowell; Anand J. Puppala and Krishneswar Ramineni, Texas A&M University; Aritra Banerjee, South Dakota State University

Polyurethane Grouting for Foundation Re-Use at the Kentucky International Convention Center
Randy Post, WSP USA, Inc.; Aaron Rogers, URETEK USA, Inc.

10:30 am–Noon ➤ Room L016

SPECIAL SESSION

Geotechnical Theater Presents: Cause and Effect (FHWA)

Have you ever wondered how a geotechnical project would have turned out if you or your team had made different decisions? If you had chosen a different path- "The Road Not Taken"? Conducted additional site characterization? Performed different analysis or modeling? Asked for a peer review? Recommended Alternative Delivery? Involved different team members? Join us for this innovative Special Session where our project team shares how they tackled the exact same project three ways and realized three very different outcomes- and then join in a Q&A with our team to explore the realities of "cause and effect" in a panel discussion following the presentation.

10:30 am–Noon ➤ Room L015

SPECIAL SESSION

Khamis Haramy Award 2 (FHWA)

Moderator: Daniel Alzamora, FHWA

The FHWA collaborates with state department's of transportation nationally in holding five annual regional geotechnical workshops (NE, SE, MW, NW, SW). These workshops have provided a venue for state agencies to share technology and present information on local practice for states in the region and local practitioners. The conferences and workshops have been an ideal environment for facilitating this exchange of information, and have been key to enhancement of the state of practice. For approximately 50 years, the visibility of the conferences and workshops has grown, and information on State Department of Transportation (DOT) projects is now of greater interest to national and international audiences. To address this interest, the Federal Highway Administration (FHWA) National Geotechnical Team established the Khamis Haramy award for State Department of Transportation and Federal Lands to deliver presentations at the annual Geo-Institute Geo-Congress, Geotechnical Frontiers in 2025. Join us for these presentations which highlights state DOT practice.

INNOVATIONS IN SITE CHARACTERIZATION

A Success Story for CPT Direct Design of Driven Piles
Alexander Dettloff, Ohio DOT

Free Fallin': Deep Dynamic Compaction on US-191 Realignment Project
Darin Sjoblom, Utah DOT

Incorporating Shallow Seismic Methods Into Your Site Investigations
James Arthurs, FHWA-CFL

Evaluating, Documenting, and Remediating Scour in Texas
Ryan Eaves, Texas DOT

Tuesday, March 4

10:30 am–Noon ➤ Room L010

Younger Members Technical Session

Chair: Melissa Beauregard, U.S. Army Corps of Engineers

Avinash Gonnabathula, TAMU; Danial Marzaiyan, Solmax; Aria Fathi, GEI; Daniel Schwicht, GeoEngineers; Sara Durr, USACE; Derek Donnelly, USACE

1:30–3 pm ➤ Room L009

Embankments, Dams, and Slopes

Chairs: Ali Khosravi; Auburn University; Ben Leshchinsky, Oregon State

A New Probabilistic-Based Approach for Rainfall-Triggered Landslide Hazard Assessment

Pengfei Wang and Sara Tahajomi Banafshehvaragh, Old Dominion University

An InSAR-Based Remote Sensing Approach for Monitoring Levee Deformation—A Case Study of Lake Tholocco, Alabama

Zahra Ghorbani and Ali Khosravi, Auburn University; Yasser Maghsoudi, University of Exeter; Ethan T. Vroman, GEGB GSL ERDC

Case Histories of Two Recent Slope Failures: Lessons Learned and Future Recommendations

Ayush Kumar, Texas A&M University; Nripojyoti Biswas, Texas A&M University | University of Massachusetts at Lowell; Anand J. Puppala, Texas A&M University

Evaluating Landslide Occurrences in North Dakota—Traditional Interpretation Versus Multivariate Logistic Regression Analysis

Yuderka Trinidad Gonzalez, Beena Ajmera, Amanda Sampaio and Benjamin Shafer, Iowa State University

Numerical Prediction of Weather-Induced Embankment Failures

Amr M. Morsy, California State University Long Beach; Peter R. Helm, Newcastle University

Reliability Analysis of Consolidation Settlement of Earthen Embankment Dams

Aseel Y. Ahmed, Andrzej S. Nowak, Bryan P. Kumm and Stephen P. Matychuk, ASCE

1:30–3 pm ➤ Room L005

Foundations 2

Chairs: Oladayo Komolafe, Berger Geosciences; Xiong Zhang, Missouri S&T

A Comparison of a Modified Schmertmann Model and the UNR Model

Gary Norris and Sherif Elfass, University of Nevada, Reno; Horng-Jyh Yang, West Virginia University Institute of Technology

Evaluation of the Feasibility and Effectiveness of the Impact Hammer Installation of Deeply Embedded Ring Anchor

Song Qin, Texas A&M University; Junho Lee, Deep Anchor Solutions Inc.; Charles P. Aubeny, Texas A&M University

Foundation Anchor Testing/Performance Evaluation in Varying Soil Environments

Phillip AnthonyMatthews, Jeremy Brian Anderson, James S. Davidson and David B. Roueche, Auburn University; Dan T. Jackson, Battelle Memorial Institute

Investigation of Interference Effect of Adjacent Strip Footings on c-ϕ Soil Using the CEL Technique

Ashesh Choudhury, Priyanka Ghosh and Sudib Kumar Mishra, Indian Institute of Technology Kanpur

Methodology to Numerically Predict Pile Driving-Induced Vibrations and Deformations

Berk Turkel, Geosyntec Consultants, Inc.; Jorge E. Orozco-Herrera and Luis G. Arboleda-Monsalve, University of Central Florida

Performance of Alumina Silo Foundation in Difficult Subsurface Conditions

Jose LM Clemente and Emre Biringen, Bechtel Corporation

1:30–3 pm ➤ Room L019

GEOENVIRONMEET

Innovative Developments II

Contaminant Removal by Chitosan-Bentonite, Chitosan-Biochar, and Chitosan-Bentonite-Biochar Composites

Krishna Reddy, North South University, Bangladesh

Practical and Safe Management of Potential PFAS Contamination for Your Project

Wendy Presler, National Yang Ming Chiao Tung University, Taiwan

Modeling the Impact Failure of Frozen Soils Using Peridynamic Theory for In-Situ Resource Utilization in the Arctic

Tugce Baser, University of North Florida

Deformation Response of Tire Derived Aggregate During Foundation Loading

John McCartney, Lamar University

Temperature Sensitivity of Three Conductivity Sensors for Measuring the Electrical Conductivity of Soil Pore Fluid

William Baker, University of Delaware

1:30–3 pm ➤ Ballroom A

GEOENVIRONMEET

Session Honoring Rudy Bonaparte

Apparatus and Technique for Measuring the Long-term Transmissivity of Geocomposite Drains

Kerry Rowe, Queen's University

Analysis for Differential Settlement of Landfill Liners in Karst Terrain

Bob Bachus, Geosyntec Consultants

Design and Performance of Waste Containment Liner Systems

Ed Kavazanjian, Arizona State University

Elevated Temperature In Municipal Solid Waste Landfills Cases

Tim Stark, University of Illinois Urbana-Champaign

Practical Implications of Soil-Bentonite Slurry Wall Research

Jeff Evans, Bucknell University

Exploration of Natural and Induced Biological Activity in Weathered and Unweathered Fly Ash

Susan Burns, Georgia Institute of Technology

1:30–3 pm ➤ Room L020

GEOENVIRONMEET

Sustainability and Resilience I

Laboratory Investigations into Effects of Heating on Clay's Mechanical and Hydraulic Changes Using Geophysics Methods
Wing Shun Kwan, University of North Florida

Soil Water Characteristics Curve (SWCC) Measurement Methods and Challenges of Mine Tailings: Application to Tailings Management
Farzad Daliri, University of Texas, Austin

Study of Mechanical Improvement of Hydrogel-Treated Construction and Demolition Fines
Beatrice Magombana, University of California San Diego

Development of Low-Carbon Building Products Using CO2 Sequestered Into Chemically Stabilized Soils
Ashish Bastola, Oregon State University, Corvalis

Assessing the Equivalency of the Florida Double Liner System and EPA Composite Liner for Coal Ash Landfills
Leslie Okine, GHD Pty Ltd, Canada

1:30–3 pm ➤ Room L013

Geospatial and Non-destructive Technologies

Chair: Rakesh Salunke, Jackson State University

Acoustic Emission Characteristics of Dense Sand in Drained and Undrained Triaxial Compression Tests
Saad Allah Solh, Seyed Morteza Zeinali and Sherif L. Abdelaziz, Virginia Tech

Comparing Acquisition and Pre-inversion Processing Strategies For 2D Full Waveform Inversion of Near-Surface Seismic Data
Sanish Bhochhibhoya and Joseph P. Vantassel, Virginia Polytechnic Institute and State University

Integrated Microtremor and GIS Analysis of Wabash Valley Fault Zone for Identifying Noisy Infrastructure: A Case Study
Mostafa Ebrahimi, Southern Illinois University; Masoud Nobahar, Louisiana State University; James A. Conder, Southern Illinois University

Integrating Multi-sensing Technology for Preemptive Detection of Highway Slope Instability
Rakesh Salunke, Rahul Biswas and Sadik Khan, Jackson State University; Ian La Cour, Mississippi Department of Transportation

Non-destructive Distributed Fiber Optic Sensing Considerations
Meghan Quinn and Anna Wagner, Adrian Doran, Constantine Coclin and Katherine Winters, U.S. Army Corps of Engineers, Engineer Research and Development Center

Regional Data-Driven Modeling of Levee Failure Due to Overtopping
Mohammed Azhar, Department of Civil and Environmental Engineering, Tufts University; Farshid Vahedifard, Professor and Louis Berger Chair, Department of Civil and Environmental Engineering, Tufts University; Amir AghaKouchak, Chancellor's Professor, Department of Civil and Environmental Engineering, University of California

1:30–3 pm ➤ Room L010

Geotechnics for Renewable Energies

Chair: Mehrdad Najafian Jazi, University of Louisville

Evaluation of an Active Control, Constant Normal Stiffness (CNS) Apparatus for Improved Evaluation of Shaft Friction in Micropiles in the Offshore Environment
Amir Babaee, Christopher D.P. Baxter and Aaron S. Bradshaw, University of Rhode Island

Evaluation of Soil-Foundation-Structure Interaction of Offshore Wind Turbines Under Realistic Loading Conditions Using Real-Time Hybrid Simulation
Qasim T. Abu-Kassab, Tareq K. Abu Agolah, Muhannad Suleiman, James Ricles and Richard Sause, Lehigh University

Feasibility of Geothermal Energy for Bridge Deicing and Deck Cooling
Grant McNamara, Syed Haider Ali Sherazi, Mohammad Khosravi, Kathryn Plymesser and Pooria Toomani, Montana State University

Investigating the Impact of Variations in Matric Suction Profile on Thermal Power Generation from Energy Piles in Unsaturated Sands
Sohail Saheb and Omid Ghasemi Fare, University of Louisville; Amir Akbari Garakani, Niroo Research Institute (NRI)

The Influence of Moisture Content Variations, Vapor and Liquid Water Movement on Effective Thermal Conductivity Near a Geothermal Pile in Unsaturated Soils
Fereydoun Najafian Jazi, Omid Ghasemi-Fare and Thomas Rockaway, University of Louisville

Thermal Response Tests in Frozen Soils: A Comparative Study of Heat Extraction Versus Heat Injection Methods
Mohammad Said Al-Tawaha and Sherif Lotfy Abdelaziz, Virginia Tech

1:30–3 pm ➤ Room L006

Soil Properties and Modeling

Chairs: Yifei Ma, Lawrence Technological University; Jackson Stewart, Georgia Tech

A Review of Apparent Yield Stress Behavior in Low Void Ratio Clays
Brendan D. Atarigiya, Seyed Ahmad Osia and Daniel R. VandenBerge, Tennessee Technological University

Analyzing the Performance of Thermally Enhanced Prefabricated Vertical Drainage System Using a THM Model
Amin Mohammadzadeh and Omid Ghasemi-Fare, University of Louisville

Atterberg Limits: A Rheological Check of Their True Indication of Clay Consistency
Mohammadhasan Sasar and Sherif L. Abdelaziz, Virginia Tech

Enhancing Liquefaction Susceptibility Assessment: Application of Cyclic Direct Simple Shear Test on Silty Alluviums
Yasser Soltanpour, Erik Newman, Lance Finnefrock and Mathew Francis, AECOM

Exploring the Relationship Between MICP and Soil Microstructural Features—A 2D DEM Study
Marlee Reed, North Carolina State University; David Potyondy, Itasca Consulting Group, Inc.; Brina Montoya, North Carolina State University

Machine Learning Enabled Modeling of C_c and C_r for Florida Soils Using Influential Parameters
Michael Morales, Embry Riddle Aeronautical University; Scott Kirts, Florida Department of Transportation; Siddharth Parida, Embry Riddle Aeronautical University; Ryan Shamet, University of North Florida

Tuesday, March 4

1:30–3 pm ➤ Room L014

SPECIAL SESSION

Welding of Geomembranes (ASTM)

Panelists: Eric Blond (moderator, for ASTM D35.10), IGS TC-Barrier representative; Kerry Rowe, Queens University; George Koerner, Geosynthetic Institute; Eddie Weiser, Leister; Dave McLaury, DM Solutions; Todd Harman, Hallaton; Eric Lamontagne, GE Environmental; Edward Zimmel, Zimmel Consulting, LLC

Seams are often the weakest locations, that determine the watertightness of a geomembrane-lined containment structure. While seam quality criteria have been around for some time, how effective are they at ensuring the quality of seams? Are all geomembrane materials equally easy, or difficult to seam? In the first part of this session, short presentations will be made to: introduce current specifications qualifying seams or assisting in controlling their quality; review field issues affecting the quality of seams; review typical situations leading to seam failure; and expose key findings of current research on the long-term performance of seams. The second part of the session will be dedicated to a discussion panel encouraging questions from the audience and sharing of experience. The goal is to identify consensual positions and potential areas of improvement.

1:30–3 pm ➤ Room L015

SPECIAL SESSION

Women in Geosynthetics Round Table

Moderator: Maya Innis, Leister

Panelists: Shobha K. Bhatia, Syracuse University; Bethany Searles, Inland Tarp & Liner; Isabel Perez, Terrafix; Patricia Zabaleta, Seamless Installation Solutions

Join us for an engaging, open discussion where panelists will share their personal experiences and insights on navigating the geosynthetics industry. Using leading questions, we'll explore key topics like career growth, overcoming challenges, and fostering inclusion. There will also be time for networking, allowing attendees to connect, share ideas, and continue the conversation.

1:30–3 pm ➤ Room L016

SPECIAL SESSION

Toward a Resilient Future: Evolution, State of the Practice and Future of Geosynthetics in Geotechnical and MSE Design (ASME)

The Association for Mechanically Stabilized Earth (AMSE) is bringing together geosynthetics experts for a panel discussion addressing the state of the practice of geosynthetics in geotechnical and Mechanically Stabilized Earth (MSE) design for resilient infrastructure. Four panelists will make 15-minute presentations about the evolution of geosynthetic materials, about the development and refining of specifications/design guidelines for geosynthetic-reinforced structures, about their durability, long-term performance and use in challenging projects, and about the future of this technology, especially considering the "brain drain" caused by the moving on of pioneers and leaders in the field. Brief case histories will illustrate speakers' presentations as appropriate.

Evolution of Geosynthetic Materials, Innovations in Geosynthetic Reinforcement for MSE Structures

Panelist: Jie Han, The University of Kansas

Evolution of AASHTO Bridge Design Specifications and FHWA Design Guidelines: Application and Experience Utilizing AASHTO and/or FHWA for Design of Geosynthetic-reinforced MSE Structures, Use in Challenging and Unique Projects

Panelist: Barry Christopher, Consultant

Long-term Performance of Geosynthetics Including Durability and Creep: Use of Geosynthetics for Challenging and Unique Projects

Panelist: George Koerner, Geosynthetic Institute (GSI)

Future of Geosynthetic Reinforcement and MSE Structures Including Consideration of "Brain Drain" of Legacy Researchers, Public Officials and Industry Practitioners

Panelist: Frederick C. Chuck, Geosynthetic Materials Association (GMA)

Moderated Panel Discussion and Q&A with Audience

Moderator: Robert C. Johnson, Jr., Submatrix, LLC

Panelists will be able to expand on their presented topics and/or engage with each other. The moderator will have some questions available to prompt discussion, as well as inviting audience questions which likely will elicit a lively discussion among panelists.

Wednesday, March 5

10:30 am–Noon ➤ Room L010

Computational Geotechnics

Chairs: Patrick Bassal, Oregon State University; Jay Wang, Louisiana Tech University

Numerical Analysis of a Group of Batter Piles Subjected to Lateral Loading for Different Batter Angle
Dinesh Kumar Verma and Nihar Ranjan Patra, Indian Institute of Technology Kanpur

Numerical Model for Thaw Consolidation of Ice-Rich Permafrost Using the Finite Volume Approach
Ziyi Wang and Ming Xiao, Pennsylvania State University

Numerical Simulation of Freeze-Thaw Depth in Pavements Using PLAXIS Thermal and Validation with Field Data
Md Fyaz Sadiq, Department of Civil and Environmental Engineering, Michigan State University | Minnesota Department of Transportation; Raul Velasquez, Minnesota Department of Transportation; Bora Cetin, Department of Civil and Environmental Engineering, Michigan State University; Bernard Izevbekhai, Minnesota Department of Transportation

Numerical Study of Trapdoor Underground Collapses Using Material Point Method
Carole Karam and Alba Yerro, Virginia Tech; Joelle Westcott, U.S. Army Engineer Research and Development Center (ERDC)

Numerical Study on Ground Vibrations and Deformations Induced by Vibratory Rollers in Central Florida
Jorge Eliecer Ballesteros Ortega, Jorge E. Orozco-Herrera, Gyu-Beom Shin and Luis G. Arboleda-Monsalve, University of Central Florida

Predicting the Pore Size Distribution of Saturated Clay at Different Temperatures Using Pore Network Analysis
Behrooz Daneshian, Reihaneh Hosseini and Sherif Abdelaziz, Virginia Polytechnic Institute and State University

10:30 am–Noon ➤ Room L009

Earthquake Engineering 2

Chair: Beena Ajmera, Iowa State University

Assessing Seismic Hazards for Engineering Design and Other Applications in Kentucky
Zhenming Wang and Seth Carpenter, University of Kentucky

Crr Evaluation for Non/Low-Plastic Silts: Comparing Recompression and Shansep Methods
Amir Barati Nia, Andrew Earl Parrott, Kayla Sorenson, Diane Moug and Arash Khosravifar, Portland State University

Evaluation of Analysis Methods for Earthquake-Induced Slope and Bridge Foundation Displacement—A Case Study on Vincent Thomas Bridge—West Tower Foundation, Port of Los Angeles, California
Amin Rahmani, Earth Mechanics, Inc.; Anoosh Shamsabadi, Caltrans: California Department of Transportation; Hubert Law and Patrick Wilson, Earth Mechanics, Inc.

Geotechnical Characterization of the Soil Along the Oregon Coast: Preparing for the Next Subduction Event
Amalesh Jana, Montana State University; Maxwell Williams and Coen Hieggelke, Oregon State University; Ali Dadashiserej, Jacobs Engineering Group; Saswati Ray, Oregon State University

Liquefaction Triggering Model for Injection-Induced Seismic Events in Oklahoma, Texas, and Kansas
Russell A. Green, Virginia Tech; Tyler Quick, U.S. Bureau of Reclamation; Ellen Rathje, University of Texas at Austin

Seismic Settlement Evaluation of the Nihal Atakas Mosque After the 2023 Kahramanmaras, Turkiye Earthquakes
Ozgun A. Numanoglu, Schnabel Engineering; Renmin Pretell, University of Nevada, Reno; Sevil Akkaya, SK Proje; Vashish Taukoor, WSP

10:30 am–Noon ➤ Room L019

GEOENVIRONMEET

Geoenvironmental Contamination II

Effects of Wet-Dry Cycling on Tensile Strength of Lightly Cemented Dune Sand from a Kangaroo Rat Habitat
Sera Tirkes, University of California, Los Angeles

Modeling of Soil Freezing Water Characteristic Curve Considering Phase Change
Ali Behdad, University of Nebraska Lincoln

Microbially Induced Calcium Carbonate Precipitation (MICP) as a Carbon Sequestration Technique for Mining Waste
Samantha Wilcox, Building, Civil, and Environmental Engineering

Breakthrough Curves of Perfluorooctane Sulfonate (Pfos) on Japanese Host Soils
Tomohiro Kato, Kyoto University

Effect of Silica Fume, Coconut Shell Ash and Egg Shell Ash Stabilizers on the Plasticity and Strength Behavior of Coastal Embankment Soil
Minhaz Mohammad Shahriar, North South University

10:30 am–Noon ➤ Ballroom A

GEOENVIRONMEET

Rising Stars

Geoenvironmental Engineering Practices in a Changing Environment: A Focus on Cold Regions
Tugce Baser, St Louis University

Predicting the Hydraulic Properties of Compacted Soil Barriers in Landfills Using Artificial Intelligence
Nick Chen, University of Centra Florida

10:30 am–Noon ➤ Room L020

GEOENVIRONMEET

Sustainability and Resilience II

Validation of An Empirical Model for Underwater Noise Due to Pile Driving Based Upon High Attenuation at Lower Frequencies in Shallow Water
Raphael Crowley, California State University Los Angeles

Evaluating the Role of pH on Bio-Catalyzed CO2 Trapping
Ahmet Kavala, St Louis University

Hydraulic Conductivity and Chemical Compatibility of Trichy Clay for Municipal Solid Waste Landfill Liner Applications
R Shanmuga Priya, University of California, Los Angeles

Spatial Assessment of Wildfire in Plumas National Forest Using Synthetic Aperture Radar (SAR) Imagery and Deep Learning Techniques
Yong Je Kim, University of Nebraska, Lincoln

Comparison of Dynamic Properties Between Treated and Untreated Bauxite Residue
Wing Shun Kwan, Bc Engineering, Athens, OH

Wednesday, March 5

10:30 am–Noon ➤ Room L016

Geosynthetics 3

Chairs: Gretchen McInness, Hanes Geo Components; Eric Blond, Eric Blond Consultants

Effect of Polymer Elution on Shear Strength of Interface Between Smooth Geomembrane and Bentonite-Polymer Geosynthetic Clay Liner
Hanrui Zhao and Kuo M. Tian, George Mason University

Geosynthetic Floating Covers for Protecting Water and Four of the World's Largest Floating Cover Projects Installed in the Past 15 years
Brian W. Fraser, Layfield Geosynthetics

Geotextile Tube Dewatering—Learning from a Large-Scale Lab Test
Zeru B. Kiffle and Shobha K. Bhatia, Water Solve LLC

Influence of the Use of High-Performance Geomembranes on the Environmental Impact of a MSW Landfill During Its Service Life
Beatriz Rodríguez López, II, Atarfil Geomembranes | University of Granada; Borja Nanton Arco, III, Atarfil Geomembranes

Structural Contribution of Dynamic Modulus of Cellular Confinement System in Pavement Stabilization
Arghya Kamal Chatterjee, Stratum Logics; Yitzchak Schary, PRS Global; Sanat Pokharel, Stratum Logics

The Role of Std-OIT vs HP-OIT Detected Antioxidants in Stabilizing Geomembrane Base Liners in Various Geoenvironmental Applications
Mohamed Salah Morsy, Structural Engineering Department, Ain Shams University; Kerry Rowe and Fady Abdelaal, GeoEngineering Centre at Queen's-RMC, Queen's University

10:30 am–Noon ➤ Room L005

Geotechnics of Soil Erosion

Chair: Adam Gohs, U.S. Army Corps

Erosion Characteristics of Select Biopolymers and Their Cross-Linking Effect on the Stability of Cohesive Slopes
M. Ashok Kumar, CVR College of Engineering; Arif Ali Baig Moghal, National Institute of Technology Warangal; Romana Mariyam Rasheed, TKM College of Engineering; Mohammad Nuruddin, National Institute of Technology Warangal

Erosion Mechanism Assessment and Scour Depth Prediction of Offshore Cemented Sand Using Erosion Function Apparatus (Efa)
Ilhan Chang, Suhyuk Park and Jinwoo Park, Ajou University

Identifying Key Factors for Initiating Soil Erosion Around Defective Buried Pipes Under Infiltration Conditions
Fei Wang, Mississippi State University; Ruth Abegaz and Jun Xu, Tarleton State University; Jie Huang, University of Texas at San Antonio

Integrating Unconfined Compressive Strength Analysis with Erosion Testing for Enhanced Soil Erosion Category Predictions
Mostafa Ebrahimi, Southern Illinois University Carbondale; Abdolreza Osouli, Southern Illinois University Edwardsville; Heather Shoup, Illinois Department of Transportation

Monitoring Pier Scour at Alabama Bridges Using Low-Cost Equipment
Murilo H. P. Tarozzo, Auburn University; Luis Fernando Castaneda, Omega Engineers Inc.; Jose G. Vasconcelos and J. Brian Anderson, Auburn University

Quantifying the Variation in Rainfall Erosivity Estimations Due to Different Regression Models and Changing Climatic Conditions
Mengting Chen, Jaime C. Schussler and Debakanta Mishra, Oklahoma State University

10:30 am–Noon ➤ Room L014

SPECIAL SESSION

Containment Applications (FGI)

This technical session will focus on the advantages and disadvantages of flexible geosynthetics, e.g., geomembranes and geotextiles for containment engineering applications, such as, pumped storage hydropower, freshwater reservoirs, and caves. Some of the advantages of flexible geosynthetics include predictable installation times, lower and non-union wages, less field seaming and testing, quicker seaming and testing in the factory than field, and better overall geosynthetics installation. This track is supported by the FGI, which is a Supporting Organization of Geotechnical Frontiers 2025.

Hinkle Reservoir Replacement Liner, Baffle, and Floating Cover
Patrick Elliott (Viaflex) & Douglas Hilts (HCG)

Over 30 Years of Leak Location Surveys: The Cliffs Notes Version
Matthew Kemnitz (LLSI)

Geomembranes Sustainability Through Longevity: Mammoth Cave
Bill Shehane (Seaman)

New Developments in Prevention and Protection of Water Resources. Why EIA-PVC Alloys Are the Best Choice for Long-Term, Improved Performance
J.P. Lens (Cooley)

Challenging Environmental Containment for Large Crude Oil Tank Storage Facility
Brian Fraser (Layfield)

10:30 am–Noon ➤ Room L013

SPECIAL SESSION

It's Not Just a Line on a Paper: Understanding Risk of Various Trenchless Methods

Dennis Doherty, Terracon

The growth and acceptance of trenchless technology as an alternative construction method is making strides. Owners and the public are demanding trenchless methods because of their many benefits, including reduced carbon footprint, reduced public impact and impact to business operations, and reduced construction and schedule cost.

Many engineers, owners, and contractors are joining the cause, especially in adopting new trenchless installation methods. Unfortunately, they often don't understand serious issues that may arise, sometimes due to a lack of technical understanding of trenchless installation methods. They may lack a technical understanding of trenchless installation methods or key knowledge of geological engineering and ground behavior, and the required surface support layout for each trenchless method.

A detailed understanding of the geology, work zone requirements, crossing length, how pipe material will behave, and how each method excavates and stabilizes the ground is required for proper and safe installation. Too often, engineers draw a line on a piece of paper without understanding its implications, believing it's "up to the contractor to figure it out." At times, owners and engineers assume a method can be used when it shouldn't be.

Trenchless crossings are "engineered products," not a directive for the contractor to build them without regard for the surface and subsurface conditions at the proposed crossing. This approach puts both the owner and contractor at risk.

This special session will explore examples and issues from past trenchless projects. It will also explore tools and procedures, including scoping an effective geotechnical exploration program, that can be used to mitigate risk and avoid common trenchless pitfalls.

10:30 am–Noon ➤ Room L006

Unsaturated Soils

Chair: Omid Ghasemifare, University of Louisville

A New Model in θ-STOCK to Numerically Model NAPL Contaminant Transport Through Unsaturated Porous Media
KiarashJafarzadeh Marandi, University of Louisville; Behrouz Gatmiri, University of Tehran; Omid Ghasemi Fare, University of Louisville; Mohammadreza Hassani, University of Tehran

Challenges in Numerical Simulation of Frost Heave
Antai Dong and Xiong Zhang, Missouri University of Science and Technology

Development of a Database for Soil Desiccation Crack Testing Results
Amirali Asadian and Farshid Vahedifard, Department of Civil and Environmental Engineering, Tufts University; Chao-Sheng Tang, School of Earth Sciences and Engineering, Nanjing University

Evaluation of Soil-Water Retention Characteristics of Fouled Ballast Using Axis Translation Technique
Shakeel Abid Mohammed and Stacey Elizabeth Kulesza, Texas State University

Liquefaction of Unsaturated Soils Through a Nonlocal Mesh-free Method with Bounding Surface Plasticity
Xiaoyu Song and Hossein Pashazad, University of Florida

Numerical Analysis of Vapor Diffusion Coefficient Influence on Thermo-Hydro-Mechanical Behavior of Expansive Soils
Fereydoun Najafian Jazi, Omid Ghasemi-Fare and Thomas Rockaway, University of Louisville

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Poster Sessions

Poster presentations are located on the **show floor**.
Poster Session Liaisons: Katherine Winters, U.S. Army Corps of Engineers; Derrick Dasenbrock, Minnesota Department of Transportation

Monday, March 3 | 3–5 pm

Geotechnical Infrastructure

3-D Numerical Analysis of the Seismic Response of a Clay-core Rockfill Dam Under Drought
Hossein Bahmyari, Twining Inc.; Mohsen Ajdari, MC Squared LLC; Mohammad Parang, Researcher

A Numerical Study on the Effectiveness of Driven Sheet Piles as Barriers to Reduce Settlement in Preexisting Structures Due to Adjacent Loading
Sukrityranjan Samanta, Alba Yerro and Reihaneh Hosseini, Virginia Polytechnic Institute and State University

Advanced Spectroscopic Analysis Technique for the Development of Aging Index Chart for Asphalt Binder
Adnan Sadiq, Saad Ullah and Debanjana Ghosh, Southern Illinois University Edwardsville

Coupled Effect of Ground Granulated Blast Slag and Bagasse Fibers to Enhance the Compressive Strength and Durability Characteristics
Mohammad Nuruddin and Arif Ali Baig Moghal, National Institute of Technology Warangal; Romana Mariyam Rasheed, TKM College of Engineering; Ghatta Geetha Krishna Sravya, Ravuri Balaramakrishna and Yebushi Vyshnavi, National Institute of Technology Warangal

Development of Novel DFOS-embedded Ground Anchor for Resilient Design and Construction
Maksymilian Jasiak, Shih-Hung Chiu, Chien-Chih Wang and Kenichi Soga, University of California; Wonjun Cha, University of Birmingham; Deh-Jeng Jang, Jinho Park and Seungwoon Han, California Department of Transportation; Keegan Arnt, Drill Tech Drilling & Shoring, Inc.; Bernhard Froemel, DYWIDAG

Effects of Pollutants on Soil Shear Strength Parameters and Slope Stability
Seyed Ahmad Osia and Daniel R. VandenBerge, Tennessee Technological University

Evaluation of Engineering Properties of Portland Limestone Cement-Based Systems and Their Application for Underground Infrastructure
Md Maruf Hasan, Felix Oppong, Matthew P. Adams and Oladoyin Kolawole, New Jersey Institute of Technology

Initial Approach to Develop Balanced Mix Design Method in New Mexico
Md Saddam Hossain, Md Mehedi Hasan, B S Pushpendue Biswas, Muhammad Tasnim Alam and Rafiqul Tarefder, University of New Mexico

In-situ Stiffness Evaluation of Full-depth Reclaimed Asphalt Pavements with Portable Field Tests
Victor M. Garcia Jr., Margarita Ordaz and Jeremy Robinson, U.S. Army Engineer Research and Development Center

Investigating the Effect of Wall Friction on the Tunnel Testing Results
Thuyet N. Nguyen, Vietnam Institute for Building Science and Technology; Jiro Kuwano, Saitama University; Thang Pham, University of Texas Rio Grande Valley; Yota Togashi, Saitama University

Laboratory Investigations on Infrared Thermography-Based Seepage Detection in Earthen Dams
Vaishnavi Bherde and Umashankar Balunaini, Indian Institute of Technology

Numerical Study of the Effect of Rainfall on the Stability of an Unsaturated Clay Slope
Rupsa Roy and Beena Ajmera, Iowa State University; Binod Tiwari, California State University, Fullerton

Pelican Creek Bridge Replacement Project, Yellowstone National Park, Wyoming
Evan Garich, FHWA; Brian Collins, BGC Engineering

Performance of Lightweight Aggregate Backfilled Geosynthetic Reinforced Soil (GRS) Piers Under Axial Load
Scott Wasman, Florida State University; Christian Matemu, University of Florida; Joshua Vincent, Florida State University; Larry Jones, Florida Department of Transportation

Probabilistic Modeling of Earthen Levees Considering Variability in Flood Hydrographs and Hydraulic Properties of Unsaturated Soils
Julio Copana, Tufts University; Meraj Sohrabi, The University of Alabama; Farshid Vahedifard, Tufts University; Hamed Moftakhari, The University of Alabama

Revisiting the Global Stability Analysis of Column-Supported Embankments
Danilo Botero Lopez and Aaron Gallant, University of Maine; Michael McGuire, Lafayette College

Seasonal Moisture Dynamics in Northeast Subgrade Soils: Insights from Central New York Instrumentation
Asif Ahmed, SUNY Polytechnic Institute; Md Azijul Islam, University of Texas at Arlington; Md Jobair Bin Alam, Prairie View A&M University; Sathvika Katikaneni, SUNY Polytechnic Institute

Site-Specific Seismic Coefficients for Slopes and Earthquake-Induced Deformations
Mahmood Seid-Karbasi, WSP

Soil Arching Efficiencies in Load Transform Platforms of Column Supported Embankments
James A. McKelvey III, Earth Engineering Incorporated; Miguel A. Pando, Drexel University; Mailei Schechterly, Lehigh University

Soil Behavior and Modeling of Soft Soil Subgrades Under Cyclic Rail Loading
Buddhima Indraratna, Bin-Hua Xu and Cholachat Rujikiatkamjorn, University of Technology Sydney

Steel Slag Utilization in Levee Drainage Trenches for Climate Resilience
Joseph W. Schulenberg, Jagadeesh Kumar Janga and Krishna R. Reddy, University of Illinois Chicago

Use of Shear Wave Velocity to Evaluate Curing of Cement-Stabilized Carbonate Quarry By-Products at Different Temperatures
Taeyun Kong, Chirayu Kothari, Youngdae Kim, Issam I.A. Qamhia, Erol Tutumluer and Nishant Garg, University of Illinois Urbana-Champaign

Foundations, Retaining Structures, and Geosynthetics

A Practical Guide to Estimating Input Parameters for Thermal Integrity Profiling Method
Saeed Mahjoubi, Cheng Lin and Min Sun, Department of Civil Engineering, University of Victoria

Applicability of Pile Driving Analyzer on Pile Seating on Rock
Tanvir Ahmed, Soonkie Nam and Xiaoming Yang, Georgia Southern University

Behavior and Capacity of Drilled Shafts in Sand Subjected to Lateral and Torsional Loading
Miguel A. Pando and Matias Frediani, Drexel University

Design and Construction of Large Diameter Drilled Shafts in Karst—A Case History
Elizabeth Fazzi Smith, Terracon Consultants, Inc.

Develop Machine Learning Models to Generate the Load-Settlement Curves of Piles from Cone Penetration Test Data
Murad Abu-Farsakh and Mohammad Moontakim Shoaib, Louisiana State University

Effect of OCR on Torsional Capacity of Single Pile and Pile Groups
Jayvardhan Kumar and Nihar Ranjan Patra, Department of Civil Engineering, Indian Institute of Technology Kanpur

Effect of Piles Position on the Behavior of Model Rafts with Disconnected Settlement Reducing Piles in Sand
Ranadheer Sagi and Nihar Ranjan Patra, Department of Civil Engineering, Indian Institute of Technology Kanpur

Environmental Design Considerations Using an Equivalency Index Between Granular Drainage and Geosynthetic Alternatives
Hajer Bannour and David Beaumier, CTT Group; Stéphane Fourmont, Afitex-Texel

Evolution in Geosynthetics Starts with Utilizing Technology
Gregory Pignataro and Evan Bao, GeoCAAB

Experimental Study of Silica Sand Crushing Around Axially Loaded Model Piles
Daniel G. Fridman, Purdue University; Ruben D. Tovar-Valencia, Fugro USA Land; Ayda C. Galvis-Castro, Norwegian Geotechnical Institute; Monica Prezzi and Rodrigo Salgado, Purdue University

Friction Piles Ultimate Capacity Using the Allowable Deformation Criteria
Evelio N. Horta, Ardaman and Associates Inc.

Influence of Anchor Type on Finite Element Modeling of a Tieback Bulkhead Wall
Yue Xu and WenJun Dong, COWI North America, Inc.

Influence of Foundation Soil on Seismic Performance of Geosynthetic Reinforced Soil Walls
Sahil Wani, Indian Institute of Technology Madras

Long-Term Performance Monitoring of Recycled Plastic Pins for Settlement Control in MSE Wall Bases
Faria Fahim Badhon, The University of Texas at Arlington; Md Azijul Islam, The University of Texas at Arlington | Bangladesh University of Engineering and Engineering and Technology; Sehneela Sara Aurpa, Schnabel Engineering; Md. Sahadat Hossain, The University of Texas at Arlington

Mechanically Stabilized Earth Walls with a Horizontal Obstruction
Md Asad Ahmad and Antonio Bobet, Purdue University

Method to Estimate the Maximum Settlement of a Cluster of Spread Footings Foundation
Erick Christian V. Cruz, Schnabel Engineering; Jean-Louis Briaud, Texas A&M University; and Mostafa Bahmani, Weaver Consultants Group

Numerical Study on the Influence of Confining Wall Friction on a Full-Scale MSE Wall Laboratory Experiment
Chukwuma Charles Okafor and J. Brian Anderson, Auburn University

Optimal Design of a Deeply Embedded Ring Anchor System in Sand
Junho Lee, Deep Anchor Solutions Inc.; Charles P. Aubeny, Texas A&M University

Soil Characterization and Improvement

Advanced Instrumented Plate to Study the Effect of Biopolymers on Soil Cracking Upon Drying
Leela Krishna Mohan Radarapu, Texas A&M University; Zachary Nick, Samantha Lucker and Lucas Walshire, Engineer Research and Development Center; Marcelo Sanchez, Texas A&M University

An Experimental Investigation on the Effect of CO2 Curing on the Strength Response of Pozzolanic-Based Alkali Activated Binder Treated Expansive Soil
Mazhar Syed, Yassir Mubarak Hussein Mustafa, II and Mohammed Ali Al-Osta, III, Interdisciplinary Research Center for Construction and Building Materials King Fahd University of Petroleum & Minerals

Analytical Solutions for Radial Large-Strain Consolidation Considering Time-Dependent Discharge Capacity
Khrawboklang Kharsyiemiong, Vishwas A. Sawant and Satyendra Mittal, Indian Institute of Technology Roorkee

Assessing Rock Slope Stability Under Dynamic Loading: A Case Study of North Sikkim, India
Amalesh Jana, Montana State University; Mithresh K. Pushpan, Arcadis; Arindam Dey and Sreedeep S., Indian Institute of Technology Guwahati

Assessing Temporal Variations in Dynamic Cone Penetration and Shear Wave Velocity on a Sandy Beach
Mohamad El Ahmad, Thomas Mayer and Jonathan Hubler, Villanova University; Nina Stark, University of Florida; Tian-Jian Hsu, University of Delaware

Assessing the Effects of Receiver Configuration on Sinkhole Characterization Using Full Waveform Inversion: A Comparative Numerical Study
Pourya Alidoust, HNTB; Joseph Coe, San Jose State University

Assessing the Undrained Shear Strength of Saline Pierre Shale
Uddav Ghimire and Tejo V. Bheemasetti, University of Arizona

Characterization of Mechanical Properties of Shale via Nanoindentation Scratch Test
Fereshteh Rahmani and Wilson Espinoza, Texas State University

Comparative Particle Analysis of Glauconite and Ottawa Sands Through X-Ray Micro-Computed Tomography
S M Shazeebur Rahman and Ryan Drake Beemer, Virginia Polytechnic Institute and State University; Matthew J. Cabral, University of Rhode Island

Determination of In-Situ Rock Density and Elastic Moduli With SH-Love Wave Tomography
Khiem Tran, Ruoyu Chen and Michael McVay, University of Florida

Monday, March 3 | 3–5 pm

Development of a Soil-Specific Calibration Model to Estimate Moisture Content Using Multi-Gene Genetic Programming for a Hybrid Nuclear-Electric Density Gauge
William J. Baker III and Christopher L. Meehan, University of Delaware

Difference of Hammer Hanging Mechanisms on Standard Penetration Test Energy Transfer Ratio (ETR)
Tyler Southam, Shahrooz Rashidi and Nick Ekman, Tetra Tech Canada

Effect of Hydrate Morphology on Geomechanical Behavior of Gas Hydrate Sediments
Mahima S. Rao, Sahil Wani and Ramesh Kannan Kandasami, Indian Institute of Technology Madras

Effect of Pore Water Salinity on the Residual Strength of Kaolinite
Mohammadreza Jebeli, Siamak Yoosefi, William J. Baker III and Christopher L. Meehan, University of Delaware

Effects of Curing Environment and Temperature on Properties of Cement Stabilized Soil with Coal-Derived Char
Hua Yu, Priyanka Joshi, Chooi Kim Lau and Kam Ng, University of Wyoming

Effects of Water Absorption Capacity of Organic-Inorganic Hybrid Modifiers for the Treatment of Surplus Soil
Alula Araya Kassa and Kimitoshi Hayano, Yokohama National University

Enhancing Geotechnical Monitoring and Asset Management Through IoT-Enabled Sensor Integration
A Q M Zohuruzzaman, Mahdi Zulfikar and Sadik Khan, Jackson State University; Thomas J. Beasley and Abby Cisko, U.S. Army Engineer Research and Development Center (ERDC)

Experimental Study of the Impact of Porosity on Bio-Induced Cementation in Clay-rich and Dolomite-rich Rocks Using MICP
Oladoyin Kolawole and Mary C. Ngoma, New Jersey Institute of Technology

Hybrid Machine Learning for Enhanced CPT Sounding Predictions at Unsampled Locations
Laith Sadik, Sara Khoshnevisan and Lei Wang, University of Cincinnati

Influence of Particle Morphology on Angle of Repose Derived from Hopper Flow Tests using 3D DEM Simulations
Sai Sandeep Chitta, Michigan Technological University; Ruimin Feng, Jesus Javier Serrano Espinoza and Michelle Lee Barry, University of Arkansas; T. Matthew Evans, Oregon State University

Investigating Seepage Through Earthen Dams Using Electrical Resistivity Tomography: Case Studies from Hindsville Lake Dam and Elmdale Lake Dam, Arkansas
Mohammadyar Rahimi, Clinton M. Wood and Kevin M. Befus, University of Arkansas

Investigation of Soil Parameters Influencing Collapsibility of Loess Through Grey Relational Analysis
Sahand Motameni, The University of Arizona; Fateme Rostami and Abbas Soroush, Amirkabir University of Technology; Mahsa Eslami, New York University

Laboratory Durability Evaluation of Sandy Soil Stabilized with Synthetic Polymer
Anand Jagadeesh Puppala, Texas A&M University; Prince Kumar, Terracon Consultants Inc.; Surya Sarat Chandra Congress, Michigan State University; Jeb S. Tingle, U.S. Army Engineer Research and Development Center

Laboratory Experiments of Water Evaporation from High Plasticity Soil to Investigate Cracking Behavior
Md Jobair Bin Alam, Prairie View A&M University; Naima Rahman, SCS Engineers; Aaliyha Fuller, Prairie View A&M University

Monotonic Behavior of Improved Soft Sediment Under Direct Simple Shear Loading
Mahdi Talebi, Tyler J. Oathes, Robert Miskewitz, Kaleb M. Arnold and Eva Pharande, Rutgers University

Partially Drained Responses of Dense Sand Under Monotonic Simple Shear
Wing Shun (Welson) Kwan, Cesar Leal, Elizabeth Nunez and Brandon De Jesus, California State University, Los Angeles

Simulation of Cpt Points and Empirical Settlement Using Simulated Cpt Points with Non-lattice Sparse Baysian Approach
Anthony Mak, Seok Hyeon Chai, Sina Javankhoshdel and Thamer Yacoub, Rocscience; Jianye Ching, National Taiwan University

Slurry Yield Stress: Rheometer vs. Flow Test
Nuzhath Fatema, Geosyntec Consultants; Shobha K. Bhatia, Syracuse University; Angel M. Palomino, University of Tennessee

Soil Suction Dynamics in Vegetated Soil: From Deterministic to Probabilistic Analysis Using Electrical Resistivity
Md Jobair Bin Alam, Prairie View A&M University; Asif Ahmed, SUNY Polytechnic Institute; Naima Rahman, SCS Engineers

Stabilization of Expansive Soil Using a New Hydrophobic Chemical Stabilizing Agent
Gang Lei, Suman Shrestha, Armin Afrasiabian, Xinbao Yu and Laureano Hoyos, The University of Texas at Arlington

Stabilization of Sandy Soil Using Synthetic Polymers with Opposite Charges
Jianxin Huang, Texas A&M Engineering Experiment Station; Sopharith Chou, Texas A&M University; Vinay Krishnan, Texas A&M Engineering Experiment Station; Anand J. Puppala, Texas A&M University

Static and Cyclic Behaviour of Phosphogypsum-stabilized Expansive Soil
Shubham Singh and Nihar Ranjan Patra, Department of Civil Engineering, Indian Institute of Technology Kanpur

Yielding Surfaces of Central Florida Sands and Silty Sands
Sergio A. Marin Savatier and Luis G. Arboleda-Monsalve, Department of Civil, Environmental, and Construction Engineering, University of Central Florida

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Tuesday, March 4 | 3–5 pm

Emerging Topics and Geotechnologies

Advancing Seawater Intrusion Monitoring Through Sensor Fusion and Machine Learning
King-James Egbe and Gabriel Venegas, University of New Hampshire; Yixuan Sun, Argonne National Laboratory; Majid Ghayoomi and Fei Han, University of New Hampshire

Analytical and Numerical Investigations on the Failure Mode of 3D Concrete Printed Gravity Anchor
Yu Lu, Haohua Chen, Ingrid Tomac and John S. McCartney, University of California San Diego

Assessing Correlations Between SAR-based Damage Proxy Maps and Geospatial Variables for Enhanced Earthquake Damage Analysis
Majid Ghayoomi and Ali Farahani, University of New Hampshire

Bayesian Uncertainty Quantification for Predicting Diameter of Jet Grout Column
Rakam Lama Tamang, Yichuwan Zhu and Joesph Coe, Temple University

Comprehensive Analysis of Ground Deformation in Beaumont, Texas: Integrating Ps-Insar, Sbas-Insar, and Geodetector Techniques to Evaluate Impact Factors and Their Interactions
Md Saffiquzzaman Chowdhury, Arip Syaripudin Nur and Yong Je Kim, Lamar University

Deep Learning Image Segmentation to Assess Field Ballast Angularity Index
Kelin Ding, Issam I. A. Qamhia, John M. Hart and Erol Tutumluer, University of Illinois Urbana-Champaign

Evaluating Machine Learning Models for Identifying At-Risk Geo-Infrastructure Assets
Rakesh Salunke and Sadik Khan, Jackson State University; Ian La Cour, Mississippi Department of Transportation

Evaluation of Large Language Models as Geotechnical Virtual Assistant
Raul Velasquez, Minnesota Department of Transportation (MnDOT); Gregory Pignataro, GeoCAAB; Akshay Suresh Babu, Md Fyaz Sadiq, Ceren Aydin and Bernard Izevbekhai, Minnesota Department of Transportation (MnDOT)

Fracturing in Frozen Soil Through a Nonlocal THM Mesh-free Paradigm
Xiaoyu Song and Hossein Pashazad, University of Florida

Interpretable Soil Liquefaction Prediction with Genetic Programming Derived Closed-Form Models
Laith Sadik and Sara Khoshnevisan, University of Cincinnati

Investigating the Effect of Cpt in Lateral Spreading Prediction Using Explainable AI
Cheng-His Hsiao, Ellen Rathje and Krishna Kumar, The University of Texas at Austin

Monitoring Sandy Beach Ridge-Runnel Dynamics from Satellite Imagery
Stephen Adusei and Nina Stark, University of Florida, Engineering School of Sustainable Infrastructure and Environment

Prediction of Ultimate Bearing Capacity of Shallow Foundations Using Monotonically Constrained Neural Networks
Te Pei, The City University of New York (City College); Ning Luo, Texas A&M University-Corpus Christi

Simulation of Laterally Impacted Piles in Dry Gravel by Adaptive FEM-SPH Method
Tewodros Y. Yosef, Chen Fang, Ronald K. Faller, Seunghee Kim, Robert W. Bielenberg and Cody S. Stolle, Department of Mechanical and Materials Engineering, Midwest Roadside Safety Facility, University of Nebraska-Lincoln

The National Geologic Map Database—Resource for Geoscience Professionals and the Public
David R. Soller, Robert S. Wardwell, Christopher P. Garrity and Nancy R. Stamm, U.S. Geological Survey

Vetiver Influence Zone Detection Using Geophysical Methods
Avipriyo Chakraborty, Saimum Hossain, Sadik Khan and Sayedul Kibria, Jackson State University

Wave-Induced Evaluation of Residual Pore Water Pressure Around Marine Structures Under Anisotropic Geostatic Stress Conditions
Amin Rafiei and Fahim Shahriar Hassan, University of Hawaii at Manoa

Geotechnics of Natural Hazards

A Numerical Validation of a Simplified Solution for Seismic Earth Pressure on a Tall Dry Dock Wall
Zhongze Xu, Emrah Yenier and Brice Exley, Haley & Aldrich, Inc.

An IoT-Based Monitoring System for Detecting Slope Movement
Md Jobair Bin Alam, Luis Salgado Manzano, Rahul Debnath, Ahmed Ahmed and Synia Williams, Prairie View A&M University

Biopolymer Impact on Grassroot Growth and Strength of Surficial Soils
Negin Mousavi, Anish Lamsal, Mohammadhasan Sasar and Sherif Abdelaziz, Virginia Polytechnic Institute and State University

Computationally Efficient Simulation of Long-Term Landslide Motion Driven by Rainfall Cycles
Fabio Rollo, Sapienza University of Rome; Giuseppe Buscarnera, Northwestern University

CPT-Based Assessment of Preliminary Soil Classification, Stress History, and Monotonic and Cyclic Strength of Transitional Silts
Susan Ortiz, Oregon Department of Transportation; Armin Stuedlein, Oregon State University

Cyclic and Post-Cyclic Shear Responses of Intact Specimens from Three Alluvial Fine-Grained Soils
Kayla Sorenson, Arash Khosravifar and Diane Moug, Portland State University

Degradation of the Shear Strength Induced by Thawing of Frozen Fine-Grained Soils
Hossein Emami Ahari and Beena Ajmera, Iowa State University

Earthquake Event Subset for Reliability Analysis of the Sacramento/San Joaquin Delta Levee System
Zehan Liu, Earth Mechanics, Inc.; Scott J. Brandenberg and Jonathan P. Stewart, University of California, Los Angeles; Pengfei Wang, Old Dominion University

Effect of Flexibility Ratio on Shallow Circular Tunnels Subjected to Love Waves
Md Asad Ahmad and Antonio Bobet, Purdue University

Effect of Pore Fluid Salinity on Isotropic Compressibility, Vertical Permeability, and Triaxial Stress-Strain Behavior of Kaolinite
Siamak Yoosefi, Mohammadreza Jebeli, William J. Baker III and Christopher L. Meehan, University of Delaware

Effect of Varying Freezing Temperatures on the Dynamic Behavior of Clays
Sherif Abdelaziz, Sepehr Akhtarshenas and Seyed Morteza Zeinali, Virginia Polytechnic Institute and State University

Effects of Loading Frequency on Liquefaction Susceptibility of a Natural Sand Using Cyclic Direct Simple Shear Tests
Reza Mohammadi, University of Nevada, Reno; Peiman Zogh, Arup US, Inc.; Ramin Motamed, University of Nevada, Reno

Evaluation of Seismic Slope Displacement Models Using Case History Data
Venkataraman Ramesh and Ellen M. Rathje, University of Texas at Austin

Evaluation of Shear-Modulus Reduction Models for Quaternary Sediment and Fill in South Carolina
Ali Sedaghat, Clemson University | Haley & Aldrich; Ronald Andrus, Andrew Russell, Hosein Golkarfard and Nadarajah Ravichandran, Clemson University; Glenn Rix and Clinton Carlson, Geosyntec Consultants

Experimental Investigation for a Novel Bio-Inspired Scour Countermeasure
Rodolfo Castillo and Stacey E. Kulesza, Texas State University; Landolf Rhode-Barbarigos, University of Miami

Investigating the Effect Size of Earthquake Catalog with Bayesian BEST Estimation: A Case Study in Ethiopia
Mohammed Al-Ajamee, Department of Civil Engineering, University of Khartoum | Department of Earthquake Engineering, IIT Roorkee; Ritesh Kumar, Department of Earthquake Engineering, IIT Roorkee

Modern Methods for Investigating Sinkhole and Subsidence Risks Relating to Abandoned Underground Coal Mines
Joshua Zimmermann, Brierley Associates

Monitoring of In-Situ Moisture Content and Bulk Electrical Conductivity of Base Course and Subgrade of a Coastal Alabama State Highway
Amy D. Diekmann, Benjamin Bowers and J. Brian Anderson, Auburn University

Multi-hazard Fragility Curves for Vulnerability Assessment of Buried Pipelines Subjected to Earthquakes and Expansive Soil Conditions
Ali Shojaeian and Kanthasamy K. Muraleetharan, University of Oklahoma

Next Generation Liquefaction Laboratory Database for Susceptibility and Cyclic Strength Assessment
Arda Sahin, University of California, Los Angeles; Amalesh Jana, Montana State University; Christine Z. Beyzaei, formerly at University of California, Berkeley; Rodolfo Sancio, Geosyntec Consultants; Kristin J. Ulmer, Southwest Research Institute; Scott J. Brandenberg, University of California, Los Angeles; Steven L. Kramer, University of Washington; Jonathan P. Stewart, University of California, Los Angeles; Armin Stuedlein, Oregon State University

Numerical Analysis of Liquefaction-Induced Deformation in Under-River HDD Crossings: A Case Study on Geotechnical Challenges and Solutions
Yasser Soltanpour, Erik Newman, Lance Finnefrock and Mathew Francis, AECOM

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Suraj Bhandari and Saad Ullah, Southern Illinois University Edwardsville

Effect of Fine Contents on the Compressibility of Liners Subjected to Freeze-Thaw Cycles
Ahmed M. Al-Mahbashi Bugshan, Muawia Dafalla, Abdullah Shaker and Mosleh Al-Shamrani, Department of Civil Engineering, College of Engineering, King Saud University Riyadh

Experimental Investigation of a Sustainable Thermal Energy Storage Sand Battery
Imad El-Chiti, Shadi Najjar, Salah Sadek, Joseph Zeaiter and Siba Haidar, American University of Beirut

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Geotechnical Characterization of Salt Marshes Using Free Fall Penetrometers
Julie Paprocki, Katie O'Brien and Julian Baldwin, University of New Hampshire

Geotechnical Resilience-Based Design: An Early Concept of Reliability-Based Design Under Non-Stationary Conditions
Ahmad A. Alhasan and Jerry DiMaggio, Applied Research Associates

Geotechnical Site Characterization of Offshore Soils from Portable Free Fall Penetrometer Testing for the Application of Offshore Systems
Emma Dennis, Julie Paprocki and Dave Fredriksson, University of New Hampshire

Impact of Game-Design Based Learning on Student Engagement, Achievement and Motivation in Undergraduate Geotechnical Engineering Classes
Cassandra J. Rutherford and Beena Ajmera, Iowa State University Department of Civil, Construction and Environmental Engineering; Alenka Poplin, Iowa State University Department of Community and Regional Planning; Alyssa Emery, Justin W. Sabrowsky and Paul Chung, Iowa State University School of Education

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Large-Scale Experimental Investigations of Tapered Pile Jacking Resistance at Varying Penetration Ratios
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Long-term Performance of Biopolymer-enhanced Soils for Beach Erosion Mitigation
Sherif Lotfy Abdelaziz and Seyed Morteza Zeinali, Virginia Tech

Middle School STEM Summer Camp for Indigenous Students in Utqiagvik, Alaska and STEM Activities in State College, Pennsylvania
Matthew John Hallissey and Isabel Rubino, The Pennsylvania State University; Andrew Ahearn, State College Area School District; Ming Xiao, The Pennsylvania State University

New Jersey Turnpike Authority Approach to Pavement Management System
Masoumeh Tavakol and Brian T. Felber, HNTB Co; Daniel De Stefano, New Jersey Turnpike Authority

Nitrate Removal from Stormwater Using Chitosan and Bentonite
Banuchandra Nagaraja and Krishna R. Reddy, University of Illinois Chicago; Angelica M. Palomino, University of Tennessee Knoxville

Optimal Geotechnical and Mineralogical Properties for 3D Printing of Clay-Rich Soils
Hope Lonsford, University of Washington; Saswati Ray, Myat Su Shin and Pavan Akula, Oregon State University

Optimizing Bridge Scour Maintenance in Flood-prone Areas: A Deep Reinforcement Learning Approach for Aging Infrastructure and Equity Enhancement
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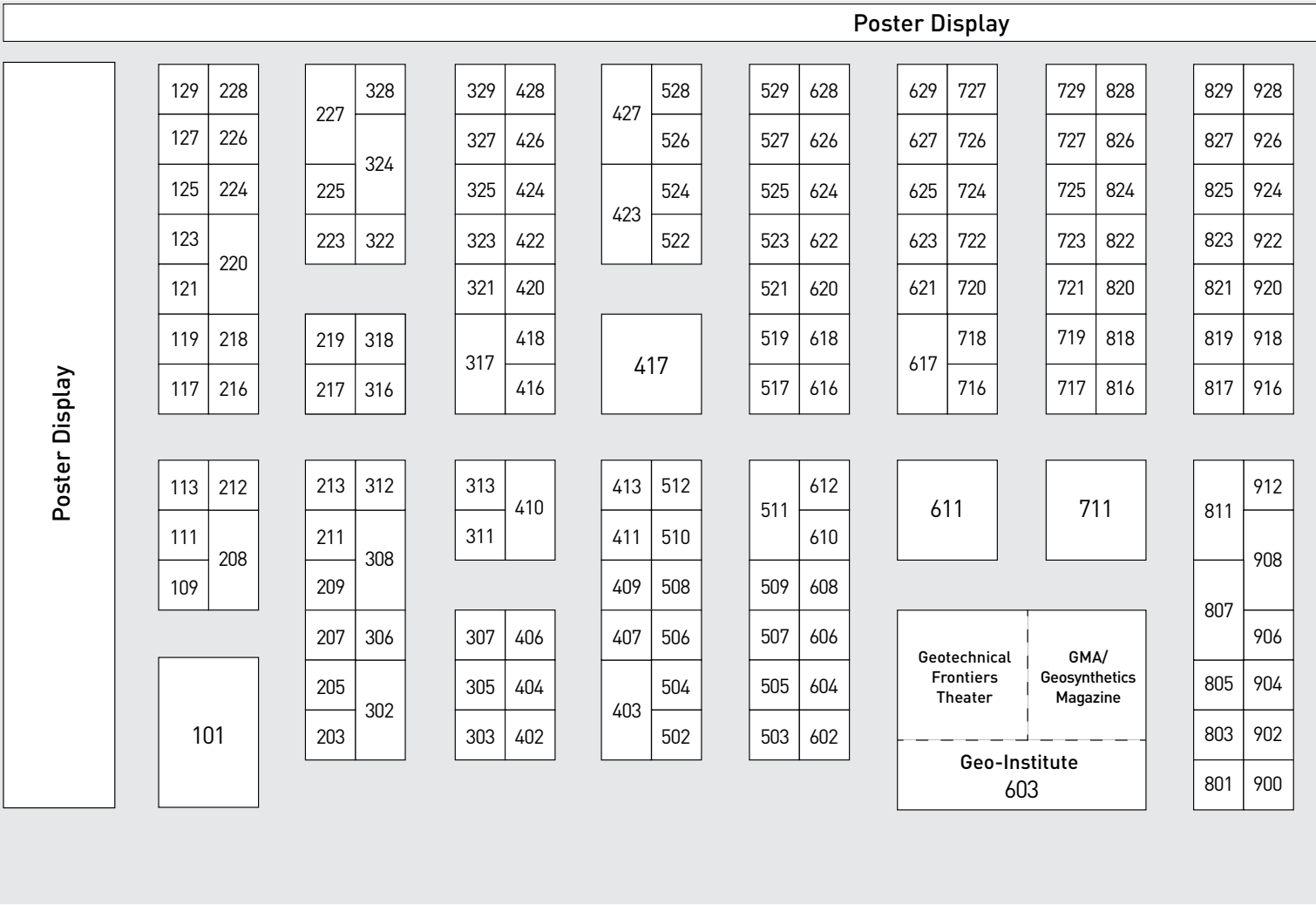

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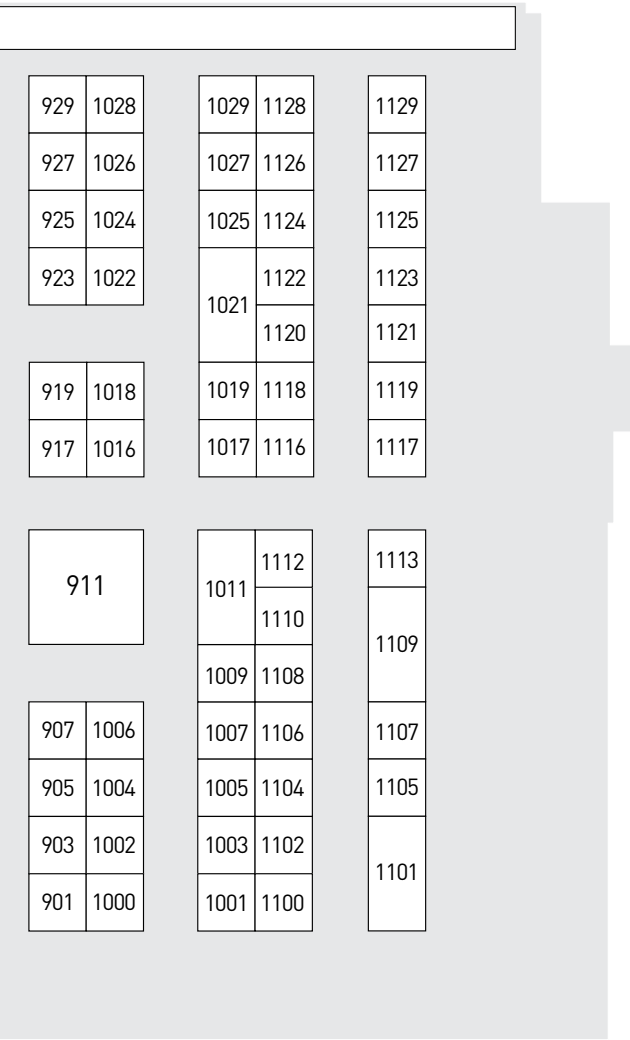

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Built on our legacy of German engineering excellence, we blend over a century of expertise with trusted products and smart technology to create resilient structures.

E Squared ✦ GMA
BOOTH 403

Hillside, NJ
United States
+1 908 558 0899
www.e2techtextiles.com

Engineered Polymer Technologies' line of XTRM PLY® Geomembranes provides supported and unsupported products in a thickness range of 1.6 mil. to 120 mil and in widths up to 120" (3.05 m). Polymer options include EIA, PVC, LLDPE (smooth and textured surface), TPU, and PP.

Earth Contact Products
BOOTH 1117

Olathe, KS
United States
+1 913 393 0007
getecp.com

Earth Contact Products manufacturers helical piles and tiebacks, helical soil nails, driven pile systems, and displacement piles. These products are used in new foundations, retrofitting old foundations, slope stabilization, and geo-mesh attachment projects.

EC Applications (Lining Division)
BOOTH 424

Anaheim, CA
United States
+1 714 921 9848
www.ecapplications.com

Elastizell Corporation of America G-I
BOOTH 217

Ann Arbor, MI
United States
+1 734 761 6900
elastizell.com

Producing lightweight cellular concrete (LCC) for quality Engineered Fill. Solving load issues for over 50 years with a national network of qualified and approved applicators. More than just a soil replacement, LCC can be installed where access, right of way or other fills are impractical.

Elastizell Systems
BOOTH 316

Dayton, OH
United States
800 777 8448
elastizell-sys.com

Light Weight Cellular Concrete Geotechnical Fills

Elevate
BOOTH 626

Nashville, TN
United States
+1 615 681 9888
www.holcimbelevate.com

Elevate's geomembranes are the durable solution for nearly any application. From decorative commercial water features to critical containment applications such as agriculture, aquaculture, mining and other water management solutions, our systems are easy to install and built to last.

ELIS Technologies Ltd.
BOOTH 325

Bratislava, Slovak Republic
www.elis.tech

ELIS Technologies offers advanced geomembrane leak location services and products. Established by a team of geomembrane leak detection professionals, we offer more than 25 years of leak location experience. We help customers with exposed as well as covered geomembrane liner leaks.

EnviroCon Systems, Inc.

BOOTH 719

Houston, TX
United States
+1 281 443 2592
www.enviroconsystems.com

EnviroCon Systems, Inc. specializes in the installation of geosynthetic liners for tanks, sumps, ponds, ringwall foundations, containment berms, pit liners and floating covers. EnviroCon offers a full service fabrication, pipe and equipment divisions for sales, rental and turnkey applications.

EPI The Liner Company ✦

BOOTH 512

Traverse City, MI
United States
800 655 4637
www.geomembrane.com

For over 35 years EPI has focused on quality products, fair prices, and commitment to service. Originally created in 1980 to serve the oil industry in Michigan, EPI is a full service geosynthetic supplier having fabricated over 500 million square feet of flexible geomembrane liners.

Exploration Instruments LLC

BOOTH 1009

Austin, TX
United States
+1 512 346 4042
www.exiusa.com

Exploration Instruments (EXI) is a leading provider of geophysical and environmental equipment solutions, serving clients across the United States. EXI specializes in the sale, rental, and support of cutting-edge geophysical instruments used for subsurface exploration and non-destructive testing.

Exponent

BOOTH 1019

Oakland, CA
United States
www.exponent.com

Exponent provides rapid response for on-site investigations, providing rigorous technical answers that enable you to assess risks, make informed decisions, and effectively remediate issues. Exponent offers a comprehensive range of engineering expertise to address challenging infrastructure problems.

Fabricated Geomembrane Institute (FGI)

BOOTH 323

Urbana, IL
United States
+1 217 333 3929
www.fabricatedgeomembrane.com

Fabricated Geomembrane Institute (FGI) is a industry/academic consortium of organizations interested in, and involved with, fabricated geomembranes. The FGI is located at the University of Illinois at Urbana-Champaign in the Department of Civil and Environmental Engineering.

Ferguson

BOOTH 624

Houston, TX
United States
+1 281 622 3853
www.fergusongss.com

As one of the nation's largest waterworks companies, Ferguson Waterworks offers contractors and municipalities a variety of products and services, including on-time delivery, unmatched support and industry-leading fill rates thanks to a coast-to-coast network of more than 250 locations.

Flexamat

BOOTH 824

Cincinnati, OH
United States
+1 513 772 6689
flexamat.com

Flexamat® is a permanent erosion control mat for slopes, channels, crossings, inlets/outlets, and shorelines. Made of concrete blocks on a high-strength geogrid, it allows flexibility and vegetation growth. Packaged in rolls, Flexamat® is easy to transport and install.

Forgen

BOOTH 822

Rocklin, CA
United States
+1 916 462 6474
forgen.com

Forgen is a national heavy civil, geotechnical, and environmental contractor focused on restoring and protecting our planet. Specializing in cutoff walls, soil mixing, and deep foundations, they advance critical water resources, restoration, and resiliency projects for the U.S. Federal Government.

Foundation Technologies Inc.

BOOTH 227

Lawrenceville, GA
United States
+1 678 407 4646
www.foundationtechnologies.com

Distributor of best-in-class deep foundation products. We are a full-service supply partner, offering project feasibility, design assistance, as well as field training.

Gale Pacific USA Inc. ✦

BOOTH 606

Charlotte, NC
United States
+1 407 772 7900
www.galecommercial.com

GCP - DE NEEF

BOOTH 919

Wilmington, MA
United States
+1 971 200 6140
www.deneef.com

Gcts Testing Systems

BOOTH 608

Tempe, AZ
United States
+1 480 456 0110
www.gcts.com

GDS Instruments

BOOTH 503

Hook, Hampshire, United Kingdom
+44 012 563 8245 0
www.gdsinstruments.com

GDS Instruments designs, develops and manufactures materials testing machines and software used for the computer-controlled testing of soils and rocks. This technology is used to evaluate the mechanical properties that are key in geotechnical and earthquake engineering design.

GEI Consultants Inc.

BOOTH 1005

Exton, PA
United States
+1 202 609 7679
www.geiconsultants.com

GEI Consultants, Inc. provides multi-disciplined engineering and environmental services from over 50 offices in the U.S. and Canada. We guide projects from concept to completion, offering asset management, design, permitting, construction, and maintenance solutions for complex underground projects.

Geo Instruments G-I

BOOTH 1107

Narragansett, RI
United States
800 477 2506
www.geo-instruments.com

GEO-Instruments provides automated solutions for monitoring the safety of buildings, bridges, tunnels, dams, and slopes. Founded in 1991, we offer global expertise in instrumentation, IT, engineering, rentals, custom solutions, and geotechnical equipment services.

Geo Products

BOOTH 207

Houston, TX
United States
+1 281 820 5493
www.geoproducts.org

Geo Products provides integrated geosynthetic solutions for soil stabilization and erosion control challenges in projects worldwide. Since 1990, Geo Products has manufactured EnviroGrid® Geocell, and supplies other geosynthetic products such as grass mesh protection, HDPE liner and pipe products.

Geo Source

BOOTH 220

Ahmedabad, GJ, India
+91-9725004460

We at Geo Source are a fully integrated geosynthetic Company majorly catering to civil and environmental engineering projects. Our main product range is nonwoven geotextile and composites. We have a production capacity of 450 MT/month. We have in house lab to test all major parameters, as per ASTM.

GeoCAAB

BOOTH 324

Plant City, FL
United States
+1 813 988 8829
geocaab.com

GeoCAAB™ was developed with the field end-user in mind. By digitizing previously hand-written data collection methods and integrating automated quality checks, GeoCAAB™ is able to save time in the field and streamlines data reporting for project submittals on the backend.

Geocomp/Geotesting Express G-I

BOOTH 303

Acton, MA
United States
+1 978 635 0012
www.geocomp.com

For more than 40 years, Geocomp has been a trusted partner in providing clients with innovative geostructural solutions. Geocomp provides cutting-edge solutions leveraging the latest technological advancements to help clients achieve their goals.

GeoDin

BOOTH 629

Leidschendam, Zuid Holland
Netherlands
geodin.com

Geokon Inc. G-I

BOOTH 211

Lebanon, NH
United States
+1 603 448 1562
www.geokon.com

Geokon Incorporated, The World Leader in Vibrating Wire Technology (TM), manufactures a complete line of high-quality geotechnical instrumentation.

Geomas Geokompozit San. Müh. Tic. A.S.

BOOTH 823

Rockville, MD
United States
+1 202 940 8026

Geomas Geocomposite has been a leading manufacturer of high-quality geosynthetic materials since 2009. We provide innovative and sustainable solutions for geotechnical applications. With advanced technology and a dedicated team, we prioritize reliability and customer satisfaction.

Geoprobe Systems

BOOTH 111

Salina, KS
United States
+1 785 404 1101
geoprobe.com

The Geoprobe®-DI product line includes systems and tools for logging soil lithology, electrical conductivity, permeability, VOC contaminant content, and various geotechnical parameters. In addition, our "slug test" systems are used for measurement of permeability at discrete intervals.

Geosense Ltd.

BOOTH 525

England, United Kingdom
USA: +1 518-920-3483
UK: +44 (0)1359 270457
www.geosense.com

Geosense is an award-winning end-to-end manufacturer of sensors for the geotechnical, civil engineering, mining and environmental industries. Used on major projects worldwide our sensors have helped unlock insights for Engineers in over 100 countries for over 30 years.

GeoSpecialties

BOOTH 113

Nicholasaville, KY
United States
geospecialties.com

Your trusted partner for design-build geotechnical solutions! We specialize in foundation installation, shoring, and geohazard mitigation, providing comprehensive engineering services from evaluation through to construction. Your one-stop source for Geohazard Engineering!

GeoStabilization International/ Access Limited G-I

BOOTH 417

Westminster, CO
United States
855 579 0536
geostabilization.com

GSI and Access Limited combine expertise to deliver cutting-edge geohazard mitigation solutions. Specializing in landslide repair, rockfall mitigation, slope stabilization, and emergency response, we protect people and infrastructure with innovative technology and unmatched experience.

Geosyntec Consultants, Inc.

SPONSOR ONLY

Boca Raton, Florida
United States
+1 561 995 0900
www.geosyntec.com

Geo-Synthetics LLC ✦ GMA

BOOTH 902

Waukesha, WI
United States
800 444 5523
www.geo-synthetics.com

As a leading distributor, fabricator, and installer of geosynthetic materials, Geo-Synthetics Systems LLC (GSI) works closely with owners, contractors, and engineers to deliver quality and cost effective solutions in municipal solid waste, mining, energy, construction, and environmental remediation.

Geotac

BOOTH 900

Houston, TX
United States
+1 713 596 9662
www.geotac.com

GEOTAC provides high quality equipment for advanced geotechnical testing including: Sigma-1™ and GeoJac™ automated load frames, DigiShear™ automated direct and simple shear systems, DigiFlow™ automated flow pumps, and TestNet™ precision data acquisition systems.

GEOVision Geophysical Services

BOOTH 329

Corona, CA
United States
+1 951 549 1234
geovision.com

GEOVision is a full service geophysical consulting organization serving clients worldwide. We specialize in supporting engineering, environmental and groundwater projects with near surface geophysical methods, borehole geophysics and utility location and marking.

Global Containment Solutions LLC

BOOTH 307

Oconomowoc, WI
United States
+1 262 354 0959
www.globalcontainmentsolutions.com

Geosynthetics Installer; Geosynthetics Supplier

Gripple Inc.

BOOTH 722

Aurora, IL
United States
+1 630 406 0600
www.gripple.com

Gripple is renowned for providing innovative, cost-effective solutions for erosion control and soil stabilization applications. The Terra-Lock® System is designed to provide immediate stabilization, requires no crimping and is accompanied by a range of installation tools.

Hallaton Environmental Linings

BOOTH 506

Sparks, MD
United States
+1 410 583 7700
www.hallaton.com

Hallaton Environmental Linings is an industry leading environmental construction geosynthetics installer, proudly celebrating 30 years in the industry, Hallaton has earned its reputation as one of the most experienced and respected geosynthetic installation companies in the country.

Hanes Geo Components

✦ GMA

BOOTH 820

Winston Salem, NC
United States
+1 336 747 1600
www.hanesgeo.com

A leading North American distributor/manufacturer of geosynthetics, erosion control, and stormwater products. With 40 stocking locations, we offer Inlet Pro bags, ScourStop mats, and silt fences. Backed by technical expertise and strong service, we aim to be your valued resource.

HMI Company

BOOTH 917

Manitowoc, WI
United States
800 626 2464
hmicompany.com/materials/soil-link-grout

A ground improvement solutions company solving ground stability issues caused by soil piping and swelling. Products include chemical grouting, ionic clay stabilizer, void fill, and dual component polyurethane and associated equipment. By contractors, for contractors.

HOCK Technology Co., Ltd.

BOOTH 426

Jining, Shandong, China
+86 537 323 8986
www.hockgrid.com

HOCK is the world leading manufacturer of high strength polyester geogrids, woven geotextiles, geotextile tube, geocomposite, asphalt paving grid, geo mattress, mining grid. Tensile strength from 30 kN/m to 1600 kN/m with uniaxial or biaxial. ISO and CE Certificate with best quality and best services.

HUESKER Inc. ✦ GMA G-I

BOOTH 410

Charlotte, NC
United States
+1 704 588 5500
www.huesker.us

HUESKER is the leading global manufacturer of geosynthetics, agricultural, and industrial textiles. Providing unique engineered solutions for earthworks and foundations, roads and pavements, environmental engineering, hydraulic engineering, industry, mining, and agriculture.

Humboldt Mfg. Co.

PAGE 5

BOOTH 510

Elgin, IL
United States
+1 708 468 6300
www.humboldtmfg.com

Humboldt Mfg. Co., located in the United States, a leading manufacturer and supplier of testing equipment used for evaluating construction and civil engineering materials. Our equipment is used throughout the world for testing soil, concrete, cement, asphalt and aggregate materials.

Hydrogeophysics, Inc.

✦ GMA

BOOTH 521

Tucson, AZ
United States
+1 520 647 3315
hgileakdetection.com

HGI has extensive experience providing leak detection and leak location technology on buried tanks, ponds, dams, and geosynthetics for municipal, mining, industrial, and nuclear facilities. We work successfully on dry or solution filled structures and in resistive or highly conductive solutions.

IEC | Industrial & Environmental Concepts, Inc. ✦

BOOTH 509

Lakeville, MN
United States
+1 952 829 0731
www.ieccovers.com

IEC is a global leader in the design, fabrication, and installation of geomembrane covers and liners for water and wastewater tanks and lagoons. We look at projects of all sizes and in multiple markets such as municipal, industrial, agricultural, and renewable energy (biogas).

Inland Tarp & Liner Inc.

✦ GMA

BOOTH 517

Moses Lake, WA
United States
800 346 7744
www.inlandtarp.com

For four decades Inland Tarp & Liner has grown to emerge as one of the largest U.S. custom fabricators, distributors, and installers of premium quality liners and products. With facilities in Washington, Ohio and Texas, ITL has over 300,000 sq. ft. of modern fabrication plant and distribution space.

Innovative Geotechnology

BOOTH 721

Houston, TX
United States
+1 281 888 6088
www.innovativegeo.com

Integrated Geotechnical Solutions, Inc.

BOOTH 918

Hainesport, NJ
United States
833 IGS CORP
www.igs-inc.com

IGS is a leader in the aggregate, construction and seismic industries, providing exceptional third-party consulting and monitoring. We offer equipment from vibration, crack, settlement, noise, dust, slope, strain, water level and well testing, to weather stations.

Intertape Polymer Group

✦ GMA

BOOTH 502

Sarasota, FL
United States
800 565 2000
www.ecp.itape.com

From agricultural irrigation, to industrial applications, AquaMaster Geomembranes are the proven choice for your site requirements. Intertape Polymer Group (IPG) provides sound solutions for water resource management and a wide range of civic and industrial applications.

Intertek

BOOTH 402

Arlington Heights, IL
United States

Ischebeck USA, Inc.

BOOTH 1101

Naples, FL
United States

Jacobs

SPONSOR ONLY

Tampa, Florida
United States
+1 214 638 0145
jacobs.com

Keller G-I

BOOTH 803

Hanover, MD
United States
+1 410 551 8200
www.keller-na.com

Keller, the world's leading geotechnical specialty contractor, develops innovative, practical, and cost-effective geotechnical solutions including ground improvement, grouting, deep foundations, earth retention, and instrumentation/monitoring.

Kessler Soils Engineering Products, Inc.

BOOTH 922

Leesburg, VA
United States
kesslerdcp.com

KSE manufactures and distributes soils, aggregates, asphalt and concrete pavement testing devices. KSE is the leading DCP manufacturer based on USACE Patent. Distributor for Zorn LWD a non-nuclear alternative for compaction testing. Distributor for the MIT dowel bar scanner and SCAN-T3 pavement thickness gauge.

Kyowa Americas Inc.

BOOTH 923

Novi, MI
United States
+1 248 348 0348
product.kyowa-ei.com/en

Contactless displacement measurement for bridge, tower, and large-sized structures. As a core competence of strain gage, Kyowa produces variety of sensors such as load-cell, pressure, displacement, acceleration, etc.

Layfield ✦ GMA

BOOTH 313

Lakeside, CA
United States
800 377 8404
www.layfieldgroup.com/geosynthetics

Over the past 45 years, Layfield has created innovative and sustainable geosynthetic solutions to protect our communities and environment. As one of the pioneering geomembrane manufacturers, fabricators, and installers in North America, time is one of the key ingredients to our success!

Leak Location Services Inc. ✦
BOOTH 311

San Antonio, TX
United States
+1 210 408 1241
www.llsi.com

Leak Location Services, Inc. (LLSI) specializes in electrical leak location surveys of Ggeomembranes for a broad spectrum of applications to include frac ponds, landfills, surface impoundments, heap leach pads, etc., for the waste management, energy, mining, and oil and gas industries worldwide.

Leister Technologies, LLC
✦ GMA
BOOTH 317

Itasca, IL
United States
+1 630 760 1000
www.leisterusa.com

Leister manufactures a full range of equipment suitable for geo installation including a line of extrusion welders, wedge welders, hot air tools and test equipment that are well-suited to the demands of geosynthetics installation and plastic fabrication. Leister's got it covered.

Maccaferri Inc. ✦ GMA
BOOTH 811

Williamsport, MD
United States
+1 301 223 6910
www.maccaferri.com/us

Maccaferri is a global leader of civil and geotechnical engineering applications that helps consultants, agencies and contractors with "Engineering a Better Solution."

Malcolm Drilling Company Inc. G-I
BOOTH 505

San Francisco, CA
United States
+1 415 901 4410
www.malcolmdrilling.com

Malcolm has for six decades been an innovator and leader in the geotechnical industry. Our services include deep foundations, retention systems, ground improvement and dewatering techniques. We provide these services nationwide through our regional offices.

MBI Global
BOOTH 1109

Rouyn-Noranda, QC
Canada

Megaplast USA ✦ GMA
📖COVER WRAP
BOOTH 816

Ridgewood, NJ
United States
+1 956 251 2037
www.megaplast.-us.com

Megaplast is a leading manufacturer of Geomembranes. We are manufacturing 8 meters wide Geomembranes adhering to the highest quality standards. We have a state of art testing facilities which is GAI-LAP certified. We have our product certified for GM13 from TRI. We manufacture black and other colors

Menard USA G-I
BOOTH 1003

Carnegie, PA
United States
+1 412 620 6000
www.menardgroupusa.com

Menard is a design-build specialty geotechnical contractor offering expertise on ground improvement and economical solutions for ground improvement that can be attractive alternatives to deep (pile) foundations.

Midwest Canvas Corp.
BOOTH 723

Chicago, IL
United States
+1 605 988 4941
www.midwestcanvas.com

Manufacture of polyester string reinforced polyethylene films and co-extruded non-reinforced films up to 20 mils.

Miller Weldmaster ✦
BOOTH 216

Navarre, OH
United States
+1 330 833 6739
www.weldmaster.com

Miller Weldmaster manufactures hot air and hot wedge welding systems that are easy to use, versatile and reliable. Our TG3600 efficiently produces any size geomembranes, geosynthetics, geotextiles, liner or cover and is designed to eliminate excessive fabric handling.

Minova USA
BOOTH 621

Georgetown, KY
United States
800 367 7620
www.minovaglobal.com

137 years of development and innovation Minova is known for high quality products, technical expertise and problem solving. Unstable and changing environments is one of the greatest challenges. Our expert technical services teams work to find the perfect solution.

MixOnSite USA Inc.
BOOTH 117

Buffalo Grove, IL
United States
+1 847 815 7866
www.mixonsite.com

MixOnSite USA, Inc. specializes in the installation of Low-Density Cellular Concrete (LDCC). We service the entire North American Continent. We use this material for multiple scopes, to include load reducing fills, void fills, pipe abandonment and annular space grouting.

Monex Canada Inc. ✦
BOOTH 209

Toronto, ON
Canada
+1 647 480 1822
www.monexcanada.com

Based in Toronto, Monex Canada Inc. is part of Monex S.A.P.I. de C.V. ("Monex"), a global investment-grade financial services institution specializing in commercial currency management. Monex works with clients around helping them mitigate market risk and develop hedging strategies.

Morris-Shea Bridge Co. Inc.
BOOTH 1007

Irondale, AL
United States
+1 205 956 9518
morrisshea.com

Morris-Shea installs deep foundation systems for critical infrastructure projects throughout the United States, Caribbean and South America. Our team of experienced geotechnical professionals has constructed foundations under many of the world's largest energy, manufacturing and industrial projects.

Multi-Flow LDVS ✦
BOOTH 416

Prinsburg, MN
United States
+1 320 978 8007
www.varicore.com

Varicore Technologies produces a variety of products utilized in the drainage, dewatering, and biogas ventilation industries. With 20+ years experience in residential to infrastructural projects, we pride ourselves on attention to detail and most importantly, to our customers and their projects.

National Jute Board
BOOTH 728

Kolkata, West Bengal, India
+91 33 2202 1150
www.jute.com

National Jute Board (NJB), under the Ministry of Textiles, Govt. of India, promotes eco-friendly Jute Diversified Products (JDPs), including Jute Geotextile (JGT). Made from 100% jute fibre, JGT is designed for geotechnical applications and is widely used worldwide.

Natural Hazards Engineering Research Infrastructure
BOOTH 1106

West Lafayette, IN
United States
+1 860 949 3331
www.designsafe-ci.org

The Natural Hazards Engineering Research Infrastructure (NHERI) is a distributed national facility that enables research discoveries that will protect human life, reduce damage, and minimize economic losses during natural hazard events.

Naue America
BOOTH 508

Cheshire, WRT
United Kingdom
+44 192 581 0280
www.NAUE.com

With 500 employees and customers worldwide, the Naue Group is one of the leading international manufacturers of geotechnical construction materials. Naue develops sustainable solutions for areas as diverse as road construction, civil engineering, flood protection and landfill engineering.

Nedia Enterprises Inc.
✦ GMA
BOOTH 628
Ashburn, VA
United States
+1 571 223 0200
www.nedia.com

Nedia Enterprises offers a complete line of erosion control, sediment control and bioengineering products made primarily from natural fibers. We provide innovative quality products and excellent service to our customers in the erosion control and bioengineering industry.

Nicholson Construction G-I
BOOTH 1002
Chicago, IL
United States
www.nicholsonconstruction.com

Nicholson is a nationally-renowned geotechnical engineering and construction firm with almost 70 years of experience. They specialize in deep foundations, support of excavation, and specialty grouting.

NIST/NEHRP
BOOTH 1108
Gaithersburg, MD
United States
+1 240 477 9841
nehrp.gov

The National Earthquake Hazards Reduction Program (NEHRP) is a four-agency (FEMA, NIST, NSF, and USGS) program established by Congress "to reduce the risks of life and property from future earthquakes and increase the resilience of communities in the U.S."

Nomis Seismographs
BOOTH 623
Irondale, AL
United States

Orica Digital Solutions G-I
BOOTH 420
Maple Ridge, BC
Canada
+1 506 449 3760
www.orica.com/Products-Services/digital-solutions

The Geosolutions group brings together six of the world's leading monitoring brands — GroundProbe, RST Instruments, Measurand, 3vGeomatics, Syscom Instruments and NavStar. We provide everything from sensors to services — a complete, end-to-end portfolio of solutions for our customers.

Ovasco Industries
BOOTH 924
Louisville, KY
United States
+1 502 584 2219
ovasco.com

Par Global Inc. ✦ GMA
BOOTH 1021
Atlanta, GA
United States
+1 770 544 7392

One stop manufacturing solution and service provider for synthetic/natural fibre textiles, industrial/retail packaging products, steel and related accessories. We help you pave the way globally.

Pile Dynamics/GRL Engineers G-I
BOOTH 907
Solon, OH
United States
+1 216 831 6131
www.pile.com

Pile Dynamics, Inc. is the world's leading developer and manufacturer of quality assurance testing systems for the deep foundations industry. GRL Engineers, Inc. provide deep foundation testing and analysis services nationwide.

Plastatech ✦ GMA
BOOTH 604
Saginaw, MI
United States
800 892 9358
www.plastatech.com

Plastatech® produces calendered and extruded PVC films, weft-inserted textiles, reinforced and non-reinforced geomembranes, and laminated vinyl fabrics that are used for tension structures, commercial roofing, temporary shelters, agricultural storage, pond liners, and other applications.

Plastika Kritis
BOOTH 819
Iraklion, Crete, Greece
+30 281 030 8500
www.plastikakritis.com

Plastika Kritis SA is one of the leading European producers of agricultural films, geomembranes and masterbatches. It has a strong international orientation with plants in France, Romania, Poland, Russia, Turkey and China and exports to 90 countries around the world.

Presto Geosystems ✦ GMA
BOOTH 1100
Appleton, WI
United States
+1 920 738 1342
www.prestogeo.com

Presto Geosystems partners with engineers and consultants to solve complex soil stabilization challenges using the genuine GEOWEB® system. Our sustainable, geosynthetic solutions support load stabilization, slope, shoreline and channel protection, and vegetated retaining walls.

Prime Resins
BOOTH 312
Conyers, GA
United States
primeresins.com

Prime Resins is a leading manufacturer of chemical grouts, foams, adhesives and coatings for infrastructure repair and protection. We provide solutions for problems in structural repair, leak sealing, coating/lining, slab lifting, and soil stabilization.

Project X Corrosion Engineering
PAGE 46
BOOTH 223
Murrieta, CA
United States
+1 213 928 7213
www.projectxcorrosion.com

Soil Corrosivity Testing averaging three-day turn around time, Corrosion Control Recommendations Reports, and Thermal Resistivity Testing laboratory managed by NACE certified corrosion engineer, licensed professional engineer, Materials Scientist & metallurgist. Customer service is our passion.

Redi-Rock International/ Gintegro GEOS
BOOTH 818
Charlevoix, MI
United States
866 222 8400
www.redi-rock.com

Redi-Rock is an engineered retaining wall solution being used to create usable land in communities around the world. Multiple block solutions allow you to design optimized solutions. To design your next Redi-Rock retaining wall, check out Redi-Rock Wall Analysis Software, developed by Fine Software!

RE-GEN ENTERPRISES

Re-Gen Enterprises ✦ GMA
BOOTH 616
Meridian, ID
United States
+1 832 292 1656
re-genenterprises.com

Re-Gen Enterprises excels in geosynthetic liner removal, recycling HDPE and LLDP geomembranes and properly disposing of non-recyclable geotextiles. Our advanced equipment removes up to 300,000 sq. ft. daily, ensuring safety and efficiency. Enjoy flat-rate pricing and sustainable solutions with us.

The Reinforced Earth Co.
✦ GMA G-I
PAGE 31
BOOTH 1001
Sterling, VA
United States
+1 703 547 8797
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.

Rembco Geotechnical Contractors Inc. G-I
BOOTH 905
Knoxville, TN
United States
+1 865 671 2925
www.rembco.com

The stabilizing force in geotechnical construction.

Renegade Plastics ✦
BOOTH 411
Golden, CO
United States
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Strata Systems is the manufacturer and worldwide distributor of advanced soil reinforcement products that deliver system solutions for MSE retaining walls, reinforced steep slopes, embankments over soft soils, and load support applications. Our technical resources ensure innovative geo-solutions.

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www.marchetti-dmt.it

Studio Prof. Marchetti is the manufacturing company of the geotechnical site investigation equipment Marchetti Dilatometer (DMT), Seismic Dilatometer (SDMT) and Medusa (S)DMT. The SDMT Pro software is designed for the acquisition of the SDMT test data. The DMT Test is standardized in the ASTM.

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www.geosynthetictesting.com

TRI Environmental, Inc. (TRI) is an independent, third party, global geosynthetics testing and research company with service centers in the United States, Brazil, Australia, Poland and India. TRI performs testing services for a wide range of materials including pipe, erosion products and polymers.

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512 806 6813
www.txdot.gov/careers

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Germany
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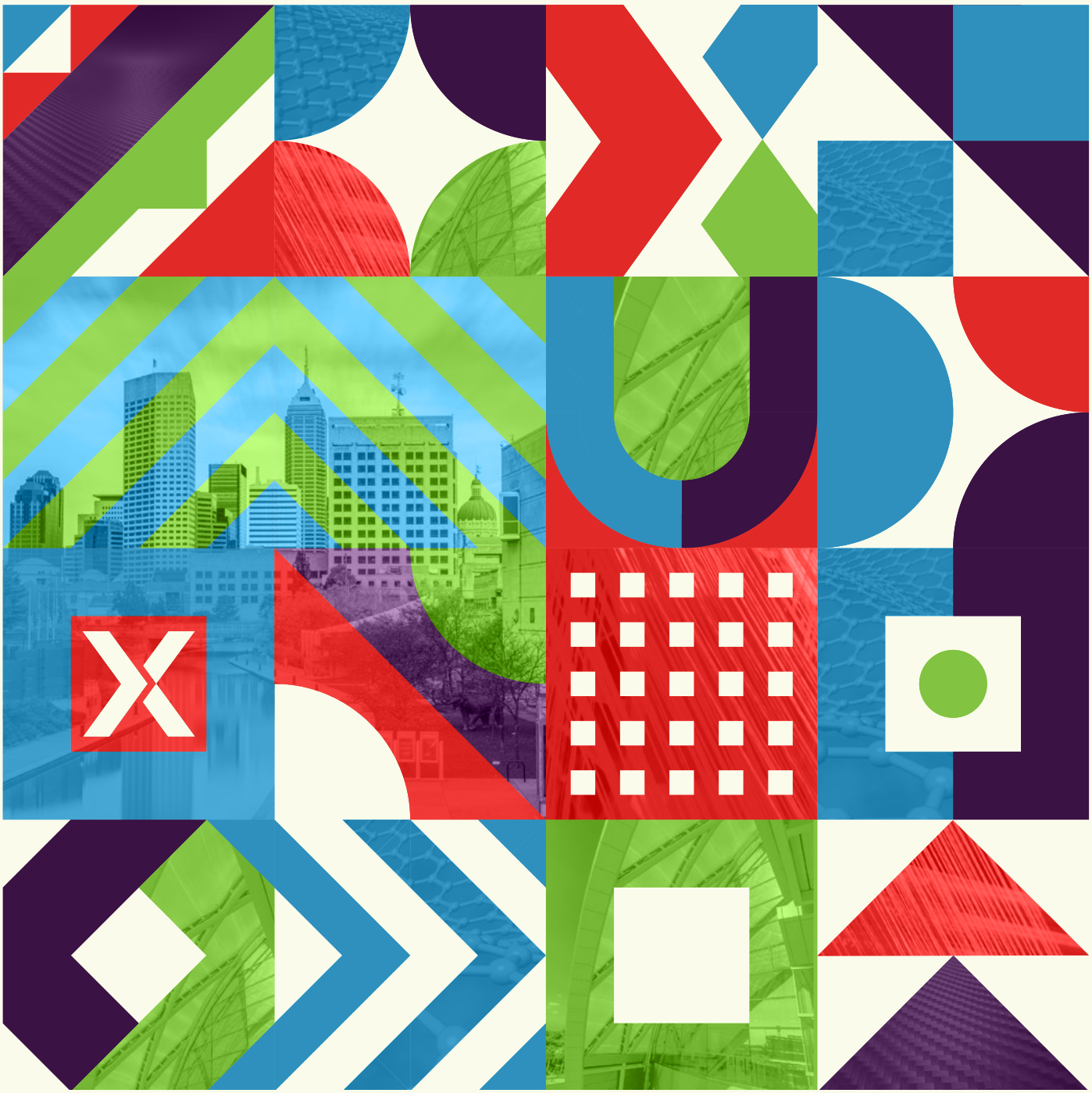

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