

REGISTER BY DECEMBER 3, 2004
AND SAVE UP TO \$150

Geo-Frontiers 2005



***Explore the future.
Uncover the possibilities.
Experience the journey.***

Austin, Texas USA
January 23–26, 2005
Hilton Austin Convention Center Hotel

***Geo-Frontiers 2005 is a MUST attend event for the
geotechnical, civil and geo-environmental communities.
Geo-Frontiers 2005 combines three key industry events in one –
Geosynthetics 2005, Geo-Institute 2005 Congress and GRI-18.***



www.geofrontiers05.org

WHAT IS GEO-FRONTIERS 2005?

The Geosynthetic Materials Association (GMA), a division of the Industrial Fabrics Association International (IFAI); the Geo-Institute (G-I) of the American Society of Civil Engineers (ASCE); and the Geosynthetic Research Institute (GRI) have joined to create Geo-Frontiers 2005, a broad-based congress that will combine Geosynthetics 2005, the G-I Annual Congress and GRI-18.

ATTEND GEO-FRONTIERS 2005 FOR:

- Diverse hands-on workshops
- Relevant technical tracks
- Plenary speaker, astronaut and geologist James F. Reilly II, Ph.D.
- Guest Lecturer and best-selling author, Dan McNichol, of *The Big Dig* and his new book *The Roads that Built America*.
- Innovative field demonstrations
- An array of informative workshops covering relevant technical topics
- Your choice of nine full-day short courses
- Your opportunity to explore the latest products and exciting new technologies and services on the exhibit hall floor
- Panel discussions that will bring professionals together to discuss and debate technical and non-technical subjects and industry issues
- Challenging student “design and build” competition
- Numerous networking opportunities



ATTEND IF YOU ARE INVOLVED IN ONE OR MORE THESE AREAS:

Agriculture
Construction Quality Assurance
Earthquake Engineering
Erosion Control
Field and Laboratory Testing
Foundations and Slope Stability
Geophysics
Golf Course Construction and Maintenance
Ground Improvement
Grounds Keeping
Geotechnical, Civil and Environmental Engineering
Horticulture
Hydraulics
Irrigation
Landscaping
Nondestructive and Geophysical Evaluation
Pit, Pond and Reservoir Construction
Retaining Walls
Risk Assessment
Roofing
Road, Rail and Runway Construction
Seepage and Drainage
Solid/Liquid Waste Containment
Spill Containment
Transportation
Waste Management



GEO-FRONTIERS 2005 STEERING COMMITTEE

Robert B. Gilbert, Ph.D., P.E.
Conference Co-Chair
University of Texas at Austin

Stephen G. Wright, Ph.D., P.E.
Technical Program Coordinator
University of Texas at Austin

Laurie Honnigford
Exhibits
The Honnigford Group

Susan B. Larson, CEM
V.P. Conference Management, IFAI

Sam R. Allen
Conference Co-Chair
TRL/Geosynthetics Services

Ron Bell
Technical Program
ENW Services - Geophysics & GIS

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Exhibits
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GMA Conference Oversight

Ellen Rathje, Ph.D.
Conference Vice Chair
University of Texas at Austin

George R. Koerner, P.E.
Technical Program
Geosynthetic Institute

Cindy Burton
Field Demonstrations
Exploration Instruments

Carol Bowers, P.G.
Director, Geo-Institute

L. David Suits
Conference Vice Chair
NYSDOT-Geotechnical Engineering Bureau

Beth A. Gross, P.E.
Technical Program
GeoSyntec Consultants

Robert D. Holtz, Ph.D., P.E.
Advisor
University of Washington in Seattle

Leonore Jordan, CMP
Senior Manager, Conferences, ASCE

Jorge G. Zornberg, Ph.D.
Conference Secretary
University of Texas at Austin

John A. Wooley, P.E.
Technical Program
Fugro Inc.

Dr. R. Kerry Rowe, P.Eng.
Advisor
Queen's University, Ontario, Canada

COOPERATING ORGANIZATIONS (AS OF 9/27/04)

ADSC-The International Association of Foundation Drilling
American Rock Mechanics Association (ARMA)
ASFE-The Best People on Earth
Association of Engineering Geologists (AEG)
Deep Foundations Institute (DFI)
Environmental And Engineering Geophysical Society (EEGS)
Erosion Control Technology Council (ECTC)
Geo-Council
The International Association of Foundation Drilling (ADSC)
International Association of Geosynthetic Installers (IAGI)
International Geosynthetic Society (IGS)
International Society of Soil Mechanics and Foundation Engineering (ISSMGE)
North American Geosynthetic Society (NAGS)
Pile Driving Contractors Association (PDCA)
PVC Geomembrane Institute (PGI)

SUPPORTING PUBLICATIONS (AS OF 9/27/04)

Erosion Control
Geo-Strata
geosynthetica.net (gsa)
GFR's Engineering Solutions
Grading & Excavation Contractor
Land and Water
MSW Management
Pollution Equipment News
Stormwater



PROGRAM OVERVIEW (As of 9/27/04; subject to change.)

SUNDAY, JANUARY 23, 2005	
7:30 a.m.– 7:00 p.m.	Registration Open
Short Courses 8:30 a.m.–5:00 p.m.	Soil Erosion—Problems, Regulations and Solutions
	Static and Seismic Stability of Solid Waste Landfills
	QC/QA of Geosynthetics
	Professional Practice 101: The Essentials of Risk Management and Profitability for Project Managers
	Practical Geophysics for Geotechnical Investigations
	Introduction to Waste Containment
	Construction Monitoring and Acceptance of Deep Foundations
	Reinforced Soil Structures: Design, Methods, Issues and Innovations
	Innovation in Grouting: The Developments 2000-2005
5:30–7:00 p.m.	Terzaghi Lecture: Delwyn G. Fredlund, Ph.D., P.E.
7:00–8:00 p.m.	International Reception (by invitation only)

MONDAY, JANUARY 24, 2005	
7:00 a.m.– 7:00 p.m.	Registration Open
8:30–10:00 a.m.	Opening Session: Featuring NASA Astronaut James F. Reilly, II, Ph.D.
10:00–10:30 a.m.	Coffee Break
Technical Tracks 10:30 a.m.–12:00 p.m.	Waste Containment and Remediation: Long-Term Performance of Geosynthetic Clay Liners
	Earthquake Engineering and Soil Dynamics: Liquefaction Evaluation for Performance-Based Engineering
	Foundations Mike O'Neill Memorial Symposium on Advances in Deep Foundations: Driven Piles
	Slopes, Soil Reinforcement and Retaining Structures: Advances in Soil Reinforcement Applications I
	Erosion Control: Scour of Foundations and Dams
	Professional Issues: Issues in Geotechnical Engineering Education (Panel Discussion)
10:00 a.m.–12:00 p.m.	Field Demonstrations
12:00–2:00 p.m.	Heroes Lunch & The Wallace Hayward Baker Award
Technical Tracks 2:00–3:30 p.m.	Waste Containment and Remediation: Performance of Geosynthetic Drainage Systems
	Earthquake Engineering and Soil Dynamics: Advances in Earthquake Engineering through the Experimental Capabilities of the George E. Brown, Jr. Network for Earthquake Engineering Simulation
	Foundations: LRFD and Reliability-Based Design for Deep Foundations
	Slopes, Soil Reinforcement and Retaining Structures: Geosynthetics in Harsh Environments
	Erosion Control: Advances in Erosion Mitigation: Processes, Geosynthetic Products and Applications
	Professional Issues: Issues in Geotechnical Engineering Research (Panel Discussion)
2:00–3:30 p.m.	Field Demonstrations
3:00–4:00 p.m.	Geo-Challenge Student Competition
3:30–4:00 p.m.	Coffee Break
Technical Tracks 4:00–5:30 p.m.	Waste Containment and Remediation: Innovative Barriers and Barrier Materials
	Earthquake Engineering and Soil Dynamics: Where Do We Go with Geophysics?
	Foundations: Geosynthetic-Reinforced, Pile-Supported Embankments
	Slopes, Soil Reinforcement and Retaining Structures
	Stability of Slopes Under Rainfall Infiltration and Reservoir Level Changes
	Erosion Control: Unknown Bridge Foundations – What Next? (Panel Discussion)
	Professional Issues: Legal and Liability Issues in Geotechnical Engineering
5:30–6:30 p.m.	Geo-Institute Annual Meeting
5:30–6:30 p.m.	GMA General Assembly
6:30–8:30 p.m.	Exhibits Grand Opening—Networking Reception

PROGRAM OVERVIEW (As of 9/27/04; subject to change.)

TUESDAY, JANUARY 25, 2005	
7:00 a.m.– 7:00 p.m.	Registration Open
Technical Tracks 8:30–10:00 a.m.	Waste Containment and Remediation: Smart Geosynthetics and New Applications for Geosynthetics Earthquake Engineering and Soil Dynamics: Seismic Analysis and Design of MSE Walls (Panel Discussion) Foundations: Mike O’Neill Memorial Symposium on Advances in Deep Foundations: ACIP Slopes, Soil Reinforcement and Retaining Structures: Advances in Soil Reinforcement Applications II Site Characterization and Modeling: Remote Sensing in Geotechnical Engineering Soil Improvement and Grouting: Case Histories in Grouting and Soil Improvement Pavements: Advances in Testing Methods for Pavement Materials I
10:00–10:30 a.m.	Coffee Break
10:30 a.m.–12:00 p.m.	Guest Lecture: Best-Selling Author Dan McNichol
12:00–5:30 p.m.	Exhibits Open
Technical Tracks 1:30–3:00 p.m.	Waste Containment and Remediation: The Power of Risk Assessment and Its Impact on the Success of Geomembrane Waste Containment Systems (Panel Discussion) Earthquake Engineering and Soil Dynamics: Soil Dynamics Symposium to Honor Professor Richard D. Woods Foundations: Mike O’Neill Memorial Symposium on Advances in Deep Foundations: Drilled Shafts Slopes, Soil Reinforcement and Retaining Structures: Soil/Geosynthetic Properties for Reinforcement in Geotechnical Engineering Site Characterization and Modeling: Advances in Laboratory Testing for Soil Property Characterization Soil Improvement and Grouting: Non-Destructive Quality Control Methods in Grouting and Soil Improvement Pavements: Applications in Geosynthetics in Pavements
3:00–3:30 p.m.	Coffee Break
Technical Tracks 3:30–5:00 p.m.	Waste Containment and Remediation: Construction over Waste Containment and Remediation Sites – Case Histories Earthquake Engineering and Soil Dynamics: Soil Dynamics Symposium to Honor Professor Richard D. Woods Foundations: Understanding Mat Foundations (Panel Discussion) Slopes, Soil Reinforcement and Retaining Structures: Advances in Soil Reinforcement Applications – International Perspectives Site Characterization and Modeling: Field Methods for Detection of Stratigraphic Interfaces and Thin Layers Soil Improvement and Grouting: Recent Innovations in Grouting, Deep Mixing and Soil Improvement Pavements: Advances in Testing Methods for Pavement Materials II
5:00–5:30 p.m.	Coffee Break
5:30–7:00 p.m.	Peck Lecture
7:00–9:00 p.m.	Geo-Frontiers 2005 Barbecue Bash

WEDNESDAY, JANUARY 26, 2005	
7:00 a.m.–4:00 p.m.	Registration Open
8:30 a.m.–5:00 p.m.	GRI-18 Geosynthetics in Transportation and Geotechnical Engineering Geosynthetics in Geoenvironmental and Hydraulic Engineering
Technical Tracks 8:30–10:00 a.m.	Waste Containment and Remediation: In Situ Remediation of Contaminated Soils
	Earthquake Engineering and Soil Dynamics: Where Do We Go with Geophysics?
	Foundations: Mike O’Neill Memorial Symposium on Advances in Deep Foundations: Special Topics
	Site Characterization and Modeling: Calibration of Constitutive Models (Panel Discussion)
	Soil Improvement and Grouting: Quality in Grouting, Deep Mixing, and Soil Improvement
10:00–10:30 a.m.	Break
10:00 a.m.–1:30 p.m.	Exhibits Open
Technical Tracks 1:30–3:00 p.m.	Waste Containment and Remediation: BioReactor Landfill Technology Update
	Earthquake Engineering and Soil Dynamics: Recent Findings in Soil Liquefaction
	Foundations: Problems and Improvements with the SPT (Panel Discussion)
	Site Characterization and Modeling: Tomographic Techniques in Geotechnical and Geoenvironmental Engineering
	Soil Improvement and Grouting: Integration of QC/QA and Design in Grouting and Soil Improvement Applications
3:00–3:30 p.m.	Coffee Break
Technical Tracks 3:30–5:00 p.m.	Waste Containment and Remediation: Engineering Properties of Vertical Barriers
	Earthquake Engineering and Soil Dynamics: Impact of Liquefaction on Stability of Geo-Structures
	Foundations: Practical Considerations for the Design of Foundations
	Site Characterization and Modeling: 3D Visualization in Geotechnical Engineering
	Soil Improvement and Grouting: Current QC/QA Practices in Grouting and Soil Improvement (Panel)

Geo-Frontiers 2005 Schedule Information (As of 9/27/04; subject to change.)

REGISTRATION

Sunday, Jan. 23	7:30 a.m.–7:00 p.m.
Monday, Jan. 24	7:00 a.m.–7:00 p.m.
Tuesday, Jan. 25	7:00 a.m.–7:00 p.m.
Wednesday, Jan. 26	7:00 a.m.–4:00 p.m.

FIELD DEMONSTRATION HOURS

Monday, Jan. 24	10:00 a.m.–12:00 p.m.
Monday, Jan. 24	2:00–3:30 p.m.
Tuesday, Jan. 25	8:00–10:30 a.m.

EXHIBITS

Monday, Jan. 24	6:30–8:30 p.m.
Tuesday, Jan. 25	12:00–5:30 p.m.
Wednesday, Jan. 26	10:00 a.m.–1:30 p.m.

TECHNICAL TRACKS

Waste Containment and Remediation

This track will include sessions on new and novel containment barriers, smart geosynthetics, and geosynthetic drainage systems. Sessions on traditional and bioreactor landfills, as well as in situ remediation, are planned. A panel discussion will address the issue of risk assessment and its use in waste containment.

Foundations

Prominent engineers from industry and academia will present sessions and panels discussing LFRD issues, pile supported embankments, standard penetration testing, and mat foundations. Four sessions will be dedicated to the Mike O'Neill Memorial Symposium on Advances in Deep Foundations.

Slopes, Soil Reinforcement, and Retaining Structures

Field and laboratory performance of walls and slopes under seismic and static conditions will premier. National and international experts will present their perspectives regarding performance of reinforced soil structures in a state-of-the-art session (reinforcements in pavements, foundations, landfills, walls and slopes). The program also will highlight sessions on slopes and retaining structures in harsh environments and under severe saturation conditions.

Earthquake Engineering and Soil Dynamics

Recent advances in soil liquefaction, the use of geophysics in geotechnical engineering, and NEES will be explored during this track. Two sessions are dedicated to a Soil Dynamics Symposium to honor Professor Richard D. Woods, P.E.

Erosion Control

Probe scour issues and advances in erosion mitigation as part of this information-packed track. A panel discussion will address the problem of unknown foundation and the plan of action to ensure these foundations perform adequately during the design flood.

Geotechnical Professional Issues

This track includes a session discussing legal and liability issues in geotechnical engineering and two panel discussions sponsored by the U.S. Universities Council on Geotechnical Education and Research (USUGER). The panel discussions will bring together prominent members from academia and industry to discuss issues related to geotechnical education and research.

Site Characterization and Modeling

Examine state-of-the-art characterization methods, including lab and field characterization, remote sensing, tomography, and 3D visualization to enhance your knowledge base. A panel discussion will bring together international researchers to discuss the calibration of constitutive models.

Soil Improvement and Grouting

Be a part of this exciting track that will include sessions on recent innovations, case histories, non-destructive testing, and QC/QA practices for soil improvement, deep soil mixing, and grouting. A panel discussion is planned to address the current practice of QC/QA for soil improvement and grouting.

Advances in Pavement Engineering

Recent advances in the testing and evaluation of pavement systems, as well as the use of geosynthetics, will be discussed.

SHORT COURSES

SPECIAL for Full Conference Registrants! Choose any Short Course and pay only \$50!

Short Course Fee for all others: \$300

Sunday, Jan. 23, 2004, 8:30 a.m.-5:00 p.m. (all courses are full-day courses)

Additional details on Short Courses are available on the conference Web site.

Included with Short Course: Refreshments, Lunch, Course Handouts. 7 PDH's available.

Soil Erosion – Problems, Regulations and Solutions

Presenters:

- Sam Allen (TRI/Geosynthetic Services)
- Shobha Bhatia, Ph.D., P.E. (Syracuse University)
- Jean-Louis Briaud, Ph.D. (Texas A&M University)
- Don Lake (New York State Soil and Water Conservation Committee)
- Harlow Landphair, Ming-Han Li, Jett McFalls (Texas Transportation Institute)
- Ming-Han Li (Texas Transportation Institute)
- Jett McFalls (Texas Transportation Institute)
- Marc Theisen (Profile Products)

Sponsoring Organizations:

- North American Geosynthetics Society (NAGS)
- Geotechnics of Soil Erosion Committee of the Geo-Institute of ASCE

Description:

Over the last several years, there has been an increase in the level of awareness of soil erosion and its impact on water quality, flooding, and degradation of the environment. This awareness, along with a growing number of regulatory requirements, such as the recent authorization of Phase II of the National Pollutant Discharge Elimination System (NPDES), has been forcing states, municipalities, and developers to meet public approval and new requirements while still meeting budget constraints. As a result, it is becoming increasingly important to find cost-effective solutions to soil erosion problems.

Traditionally, the solutions to many soil erosion problems in channels and slopes have been hard-armor alternatives, such as riprap. However, with growing concerns about water quality, aesthetics, and cost, soft-armor alternatives, such as soil bioengineering and geosynthetic rolled erosion control

products (RECPs) are becoming viable alternatives. With these new alternatives, designers and engineers are faced with many questions regarding product selection, performance evaluation, and cost.

This course will provide designers and engineers with an overview of soil erosion, the latest regulations, new products and techniques, and the state-of-the-art in testing and case histories, while presenting a wealth of knowledge from experts in soil erosion, regulations, testing, manufacturing, installation and research.

Static and Seismic Stability of Solid-Waste Landfills

Presenters:

Jonathan D. Bray, Ph.D., P.E. (University of California at Berkeley)
Edward Kavazanjian, Jr., Ph.D., P.E. (University of Southern California)
Ellen M. Rathje, Ph.D. (University of Texas at Austin)

Sponsoring Organization:

Geo-Institute (G-I) of ASCE

Description:

This short course will focus on the analyses required to evaluate the static and seismic stability of municipal solid-waste landfills. Landfills are complex engineered systems with a multitude of components. Municipal waste is extremely heterogeneous and its properties involve significant uncertainties. Waste fills are built with sophisticated liner systems that involve compacted clay, geosynthetics, and drainage layers. The interfaces between these materials can create slip surfaces that jeopardize static or seismic slope stability. In this course, the regulatory framework that drives some aspects of design will be reviewed, and emphasis placed on developing sound estimates of the static and dynamic properties of waste and landfill containment materials. Static analytical procedures will be discussed. Critical aspects of a seismic hazard assessment will be reviewed, and analytical procedures for evaluating the seismic stability of a solid-waste landfill will be presented. A design example will be presented to illustrate the primary issues involved in evaluating the stability of landfills. A question and answer session will follow.

QC/QA of Geosynthetics

Presenters:

George Koerner, Ph.D., P.E. & CQA (Geosynthetic Institute)
Sam Allen (TRI/Geosynthetic Services)
Mark Sieracke, P.E. (STS)

Sponsoring Organization:

Geosynthetic Institute (GSI)

Description:

Here is your opportunity to focus on the quality control and quality assurance of geosynthetics as placed in permanent and critical applications. The course emphasizes manufacturing and installation. QC/QA are widely recognized as critically important factors in overall quality management of waste containment facilities. The best of designs and regulatory requirements will not

necessarily translate to waste containment facilities that are protective of human health and the environment unless the facility is properly constructed with first-quality materials. The course will cover CQA principles and plans, field tests and observations, the importance and discipline of CQA documentation, material acceptance and storage, installation of clay and GCL liners, geomembranes, geotextiles, geocomposites, geogrid and geopenance, seaming of geomembranes and geotextiles, sampling plans, patterns and documentation, geomembrane seam testing, review of test results, and nondestructive testing.

Professional Practice 101: The Essentials of Risk Management and Profitability for Project Managers

Presenter:

John Philip Bachner

Sponsoring Organization:

ASFE-The Best People on Earth

Description:

This course is designed for design and environmental professionals and administrative personnel who are involved in project management, who write proposals or reports, who communicate with clients, or who have other responsibilities that will be performed more effectively with a better understanding of basic risk involved and point out the one thing that almost all of us have in common. Bachner also will address contracts, commonly used words that can create significant problems, and the risk management attributes (or lack thereof) of professional liability insurance.

Practical Geophysics for Geotechnical Investigations

Presenter:

Ronald S. Bell (ENW Services-Geophysics & GIS)

Bell will be assisted by several noted industry specialists in the application of geophysical technology to engineering problems.

Sponsoring Organization:

Environmental and Engineering Geophysical Society (EEGS)

Description:

Practicing geotechnical engineers and geologists, as well as project managers, will gain a better understanding of how to apply non-invasive subsurface geophysical imaging for site characterization, as well as obtain geotechnical engineering properties in this course.

Topics will include the application of geophysical methods for: pavement studies, foundations, soils, infrastructure, groundwater supply and contamination, non-destructive testing (NDT), engineering properties, geological mapping, industry trends, and emerging technologies.

Technologies that will be discussed include ground penetrating radar (GPR), seismic, magnetic, gravity, electrical resistivity, electromagnetic conductivity, and borehole logging. Also included will be a discussion of airborne and marine applications.

Introduction to Waste Containment

Presenters:

Craig H. Benson, Ph.D., P.E. (University of Wisconsin-Madison)
Charles D. Shackelford, Ph.D., P.E. (Colorado State University)
Jorge G. Zornberg, Ph.D. (University of Texas at Austin)

Sponsoring Organizations:

Geo-Institute's (G-I) Geoenvironmental Engineering Committee
ISSMGE's TC5 Environmental Committee

Description:

This short course will provide the basic concepts required for the design and construction of waste containment facilities. It also will expose participants to a wide range of considerations involved in waste containment design. Important considerations include the types and properties of materials used for liner and cover systems, conventional and alternative types of liner and cover systems, seepage through liners and covers, contaminant transport through single and composite liners, strength and stability of components of waste containment facilities, systems for collection and removal of liquids, compressibility and settlement of solid waste, and use of reinforcements in cover and base liner systems.

Construction Monitoring and Acceptance of Deep Foundations

Presenters:

Jerry A. Dimaggio (Federal Highway Administration)
George G. Goble (Utah State University)

Sponsoring Organization:

Pile Driving Contractor Association (PDCA)

Description:

This course will concentrate on the construction monitoring and acceptance aspects of deep foundations. Both drilled piles (drilled shafts, auger cast and micropiles) and driven piles will be addressed in a balanced manner. Construction equipment, specifications, testing, inspection and acceptance considerations will be the key focus areas of this coordinated training program. Design topics are not the focus of this course.

The course content will present practical guidance on all topics that may be directly applied by participants. The course is intended for engineers involved with construction, construction monitoring and inspection of deep foundations. Contractors, structural, construction and geotechnical specialists will find this course extremely valuable. The course will be presented using adult learning procedures that focus on targeted objectives and measured outcomes. The program is designed on a platform of participant activity and interaction.

A coordinated series of presentations, examples and student exercises will address the following topics: relationship of construction methods and monitoring technologies on design decisions; construction equipment (drilled and driven piles); construction monitoring responsibilities; static load testing (drilled and driven piles); dynamic formulas (driven piles); wave equation analysis (driven piles); and inspection of drilled and driven piles.

Reinforced Soil Structures: Design, Methods, Issues and Innovations

Presenter:

Barry Christopher, Ph.D., P.E. (independent geotechnical engineering consultant)

Sponsoring Organization:

North American Geosynthetic Society (NAGS)

Description:

Examine the design and construction of reinforced soil systems including retaining walls, steepened slopes and embankments over soft subgrade during this course. A brief background of the application of each of these technologies, including their advantages, economic considerations and limitations will be covered, as well as details concerning their design, selection of reinforcing materials, specification and construction. Current design codes/standards and software will be referenced and summarized. Special issues that have on occasion resulted in undesirable performance reinforcement with lightweight fill and newly developed alternative design procedures also will be presented. Each participant will be given course notes to support the lecture, which include step-by-step design procedures and example problems. A CD containing additional course reference material also will be provided.

Innovation in Grouting: The Developments 2000-2005

Presenters:

Richard M. Berry (Rembco Engineering)
George K. Burke, P.E. (Hayward Baker Inc.)
Michael J. Byle, P.E. (Schoor DePalma)
Trent L. Dresse, P.E. (Gannett Fleming Inc.)
Thomas M. Hurley (Layne GeoConstruction)
James Warner (Consulting Engineer)
Donald A. Bruce, Ph.D., C. Eng., L.G., L.E.G. (Geosystems, L.P.)

Sponsoring Organization:

Geo-Institute Grouting Committee

Description:

Tremendous advances in the techniques, materials, and methods used in the variety of ground treatment techniques will be addressed during this Short Course. The course will provide an update to practicing professionals who already have experience in the field. Special emphasis will be placed on the outcome of the 2003 New Orleans Grouting Conference. Subjects will include drilling, chemical grouts, low mobility grouting (LMG) for karst, rock grouting and the use of computer-controlled grouting operations, jet grouting, crisis management techniques, and special case histories.

TERZAGHI LECTURE

OPEN TO ALL CONFERENCE REGISTRANTS

Sunday, Jan. 23, 2005

5:30-7:00 p.m.

One of the highest honors in geotechnical engineering, the Terzaghi Lecture is an annual lecture given by and honoring a distinguished engineer. The 2005 lecturer is Professor Delwyn G. Fredlund, Ph.D., P.E. of Saskatoon, Canada.

Fredlund graduated from the University of Saskatchewan in 1962, and subsequently earned his Master's and Doctorate degrees from the University of Alberta, Edmonton in 1964 and 1973. He has spent more than 35 years conducting research into the behavior of unsaturated and expansive soils. Most of those years have been spent at the University of Saskatchewan and have resulted in the formation of the Unsaturated Soils Group. In addition to over 300 journal and conference research papers, he is co-author of the book *Soil Mechanics for Unsaturated Soil*, published in 1993, which has remained the key reference on unsaturated soil mechanics.



INTERNATIONAL RECEPTION

Sunday, Jan. 23, 2005

7:00-8:00 p.m.

We welcome our international participants for an *invitation-only* reception.

OPENING PLENARY SESSION

Monday, Jan. 24, 2005

Geo-Frontiers: The Perspective from Space

NASA Astronaut, James F. Reilly II, Ph.D.

A true native of Texas, Reilly attended high school in Dallas, before moving on to obtain a Bachelor of Science, a Master of Science, and a Doctorate degree – all in geosciences from the University of Texas.

During graduate school, Reilly was selected to participate as a research scientist specializing in stable isotope geochronology as part of the 1977-1978 scientific expedition to Marie Byrd Land, West Antarctica. In 1979, Reilly worked as an exploration geologist with Santa Fe Minerals Inc., in Dallas. From 1980 to the time he was selected for the astronaut program, Reilly was Chief Geologist of the Offshore Region for Enserch Exploration Inc., also in Dallas.

Selected by NASA in December 1994, Reilly reported to the Johnson Space Center in March 1995, and completed a year of training and evaluation, qualifying for flight assignment as a mission specialist. To date he has logged over 517 hours in space, including three spacewalks totaling 16 hours and 30 minutes.



FIELD DEMONSTRATIONS

The field demonstration site, a short walk from the Geo-Frontiers 2005 Exhibit Hall, will contain a variety of companies and organizations demonstrating field operations and applications of new technologies. In addition, the Geo-Support student competition will be held at the field demonstration site.

Available to all Full Conference Registrants and Daily Registrants for the Day of Registration.

Monday, Jan. 24 10:00 a.m.–12:00 p.m.

Monday, Jan. 24 2:00–3:30 p.m.

Tuesday, Jan. 25 8:00–10:30 a.m.

GEO-CHALLENGE STUDENT COMPETITION

Sunday, Jan. 23, 3:00–4:00 p.m.

In this new G-I student competition, student teams will be challenged to design and build miniature reinforced-soil retaining walls inside plywood forms, using sand with paper affixed to a poster board wall facing as reinforcement. Plywood forms, paper, tape, wall facing, and sand will be provided at the competition. Samples of sand and paper will be provided to each competing team. The winning team will build a structure that withstands the design load with the least amount of reinforcement.

HEROES LUNCH & THE WALLACE HAYWARD BAKER AWARD

Monday, Jan. 24, 2005

12:00–2:00 p.m.

Be a part of this memorable event that will honor those individuals who have demonstrated exceptional innovation and leadership in the geo-technology industry. Join us in honoring our industry heroes: **Dr. J.P. Giroud**; **Dr. Robert M. Koerner**; and **Dr. Lymon C. Reese**.

The Wallace Hayward Baker Award was established by the Geo-Institute in recognition of the creative and innovative contributions of Wallace Hayward Baker in the field of ground modification. The award is given annually in recognition of ingenious innovation in the field of ground modification. Emphasis shall be placed on the resourceful development of a new technology or the creative application of existing technology to achieve field performance not previously demonstrated.

Included in all Full Conference Registrations and Monday Daily Registrations.

Additional Tickets are \$40.00.

EXHIBIT HALL GRAND OPENING AND NETWORKING RECEPTION

Monday, Jan. 24, 6:30–8:30 p.m.

Gather with colleagues and newly-found friends to make the most of this lively reception. Visit with vendors from a wide variety of specialties while you enjoy substantial hors d'oeuvres and beverages.

Included with all Full, Daily, Guest and Student Registrations.

Additional tickets are \$30.00.

GUEST LECTURE BY DAN McNICHOL

Tuesday, Jan. 25, 2005

10:30 a.m.–12:00 p.m.

Dan McNichol is a best-selling author and nationally recognized expert on the Big Dig and the U.S. Interstate System. In 2003, McNichol was awarded Journalist of the Year by the American Society of Civil Engineer's Boston chapter. McNichol will discuss many topics, including his recently released book, *The Roads that Built America: The Incredible Story of the U.S. Interstate System*.



PECK LECTURE

Tuesday, Jan. 25, 2005

5:30–7:00 p.m.

An award established by the Geo-Institute in honor of Ralph B. Peck, Hon. M.ASCE, the Peck Lecture is an annual lecture given by a geotechnical engineer for outstanding contributions to the profession through the analysis and publication of case histories.

GEO-FRONTIERS 2005 BARBECUE BASH

Tuesday, Jan. 25, 2005

7:00 – 9:00 p.m.

This is your opportunity to network with conference participants in a relaxed, fun atmosphere while enjoying the world-renowned food and music of Austin, Texas.

Barbecue Bash is included with all Full, Student and Guest Registrations.

Additional tickets are \$45.

GRI-18 SYMPOSIUM

Wednesday, Jan. 26, 2005

8:00 a.m.–5:00 p.m.

The 18th GRI Annual Conference will be held during Geo-Frontiers 2005. The GRI symposium will focus on the use of geosynthetics in transportation systems, geotechnical engineering, geoenvironmental engineering, and hydraulic engineering.

Full and Wednesday Daily Conference Registrations include access to GRI-18 Sessions.

Registration for GRI-18 alone is \$175 (does not include meal functions).

PROCEEDINGS

Proceedings will be available in CD format at Geo-Frontiers 2005, and are included with all Full Registrations. Additional copies are available for \$50.

PDH's

Earn up to 22 Professional Development Hours (PDH's)—nationally recognized units of record—by attending technical sessions and short courses. Please note that there are differences from state to state in continuing education requirements for professional engineering licensure. Each state registration board has the final authority to approve course, credits, professional development hours for courses, and other methods of earning credit in that state. ASCE strongly recommends that professionals regularly check with state registration boards for specific continuing education requirements in their jurisdictions that affect professional engineering licensure and the ability to renew licensure.

ABOUT THE ORGANIZERS

Geo-Institute (G-I)

The G-I, created by ASCE, is an organization of over 9,500 dedicated individual scientists, engineers, and technologists, and over 31 member organizations who have technical interests in soil, rock, and the fluids they contain. The G-I serves as the United States of America's member society of the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE).

www.geoinstitute.org



Geosynthetic Materials Association

A division of IFAI, GMA serves as the central resource for information regarding geosynthetics and provides a forum for consistent and accurate information to increase the acceptance and to promote the correct use of geosynthetics.

www.gmanow.com

American Society of Civil Engineers

The ASCE represents more than 133,000 members of the civil engineering profession worldwide, and is America's oldest national engineering society. ASCE's vision is to position engineers as global leaders building a better quality of life.

www.asce.org



Industrial Fabrics Association International

IFAI is dedicated to promoting and expanding the application of products made from specialty fabrics. Since 1982, IFAI has been the leading organization educating engineers on the applications of geosynthetics through its magazines and guides, IFAI Bookstore, information services, educational programs and conferences.

www.ifai.com

FOR MORE INFORMATION OR TO REGISTER FOR GEO-FRONTIERS 2005, CONTACT:

ASCE
800 548 ASCE, +1 703 295 6000

EXCEPTIONAL SHORT COURSE REGISTRATION OPPORTUNITY

Full Registration Conference Participants:

Pay only \$50 for your choice of the pre-conference (Jan. 23) SHORT COURSES that are priced at \$300 for all other participants. See pp. 7-9 for detailed descriptions of the Jan. 23 Short Courses.

GUEST REGISTRATIONS

Bring your spouse, your friend, your child, your neighbor! Austin offers many enticements to turn this visit into a family vacation.

Registered guests will have a private breakfast on Monday with a presentation of things to see and do in Austin, plus tickets to the Networking Reception and the Barbecue Bash. Registered guests also may attend the Terzaghi Lecture on Sunday.

Guest Registration package:

By Dec. 3, 2004 – \$75

By Jan. 7, 2005 – \$85

After Jan. 7 or on-site – \$95

STUDENT REGISTRATIONS

Special opportunities for students abound! For a greatly reduced registration fee, full time students can attend all conference sessions and lectures, and will have tickets to the Networking Reception and the Barbecue Bash.

Of particular interest to students will be the Geo-Challenge Student Competition. And there will be a Student Appreciation program during the Barbecue Bash.

Student Registrations:

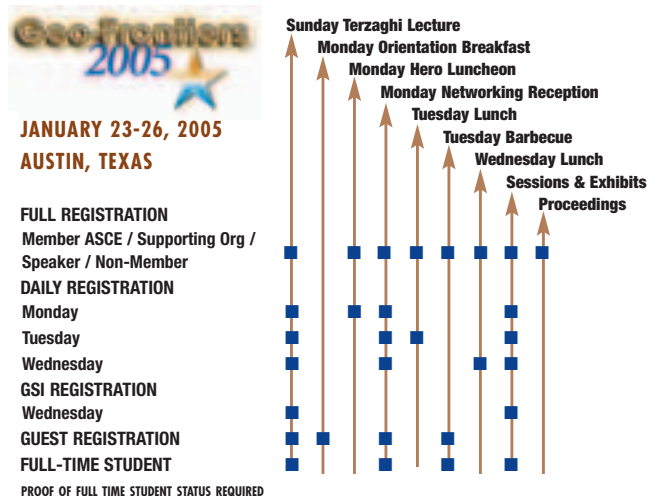
By Dec. 3, 2004 – \$95

By Jan. 7, 2005 – \$100

After Jan. 7, 2005 or on-site – \$110

Proof of current full-time student status required. Copy of Student ID or letter from Registrar's office is appropriate for this purpose. Student Registrations cannot be made online due to the requirement for proof of student status. Please send your registrations in by mail, fax or phone according to the instructions on the registration form.

INCLUDED IN YOUR REGISTRATION FEE



EXHIBITING AT GEO-FRONTIERS 2005

Exclusive Exhibitor Benefits

- Three days of exhibit time to allow you to meet with the potential new buyers gathered in one place
- Opportunities to secure qualified leads for your business
- One complimentary full registration
- Registration discounts for exhibitors sending multiple staff
- Unlimited VIP Show Floor Passes for your current and prospective customers
- Exclusive time to meet with customers in a relaxed atmosphere during the popular exhibitor reception
- Post-event participants list to use for sending important follow-up information

Bring the buyers to you

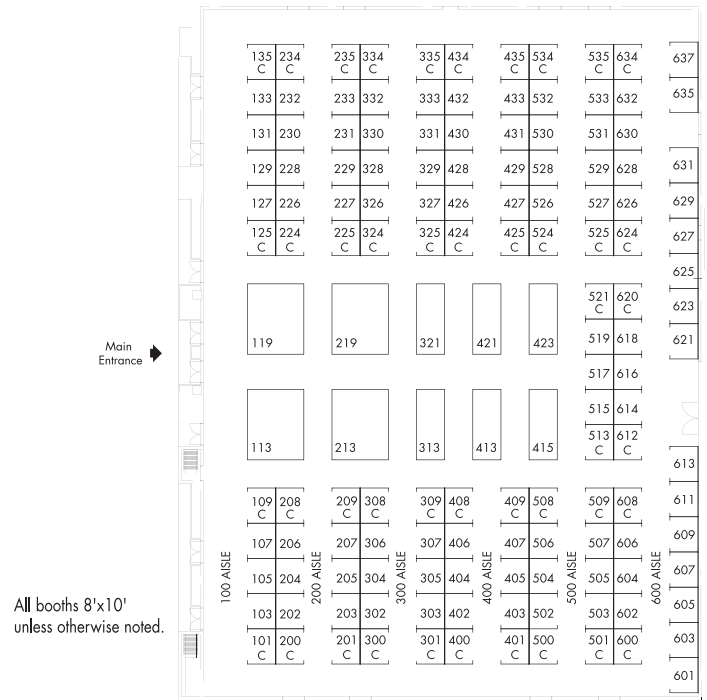
The Geo-Frontiers 2005 Show Guide will be printed in the January issue of *GFR* magazine. Make your company name stand out to the thousands of buyers at this much-anticipated event by placing your company advertisement in the guide. Contact Sarah Hyland for details on advertising at +1 651 225 6950, e-mail schyland@ifai.com.



FOR MORE INFORMATION ON EXHIBITING OR SPONSORSHIP OPPORTUNITIES, CONTACT:

Bob Smith
+1 651 225 6914
bhsmith@ifai.com

Chris Kohn
+1 651 225 6961
crkohn@ifai.com



All booths 8'x10'
unless otherwise noted.

GEO-FRONTIERS 2005 EXHIBITORS (as of 9/27/04)

- | | |
|---------------------------------|--|
| Advanced Geosciences Inc. | Intertape Polymer Group |
| AgruAmerica | Layfield Plastics Inc. |
| American – Newlong Inc. | Layne Geoconstruction |
| Amoco Fabrics & Fibers | Leak Location Services Inc. |
| Applied Foundation Testing Inc. | Leister Process Technologies |
| Applied Research Assoc. Inc. | Linear Composites Ltd. |
| Avanti International | Maccaferri Inc. |
| Belton Industries Inc. | Mesa Retaining Walls |
| Bradley Industrial Textiles | Miller Weldmaster |
| Burke Industries | Mirafi Construction Products |
| Carlisle SynTec Inc. | Modular Gabion Systems |
| Carthage Mills | Naue Fasertechnik |
| CETCO | Nilex Group |
| Colbond Geosynthetics | North American Green |
| Colorado Lining International | Plastatech Engineering Ltd. |
| Comanco Environmental Corp. | Plastic Welding Technologies Inc. |
| Concord Geotechnical LLC | Poly-Flex Inc. |
| Cooley Engineered Membranes | Precision Geosynthetic Laboratories |
| DEMTECH Services Inc. | Presto Products Co. |
| DrainGreat | Profile Products LLC |
| Durham Geo-Slope Indicator | Raito Inc. |
| Engepol Ltda. | SAIC |
| Environmental Protection Inc. | Samyang Corp. (Industrial Products & Fiber BU) |
| ESCSI | Seaman Corp. |
| Foresight Products LLC | SI Geosolutions |
| Fugro Airborne Surveys | SKAPS Industries Inc. |
| Firestone Building Products Co. | Solmax International Inc. |
| GeoComp Inc. | Stevens Geomembranes |
| Geometrics | Strata Systems Inc. |
| Geopier Foundation Co. | Synten Technical Fabrics |
| GEO-SLOPE International Ltd. | Tensar Earth Technologies Inc. |
| Geo-Solutions | Terra Plus |
| GeoTesting Express Inc. | Terrafix |
| GSE Lining Technologies Inc. | Tolunay-Wong Engineers Inc. |
| Geotechnics Inc. | TRI/Environmental Inc. |
| Hayward Baker Inc. | Union Special Corp. |
| HTS Inc. Consultants | Watersaver Co Inc. |
| Huesker Inc. | |

GEO-FRONTIERS 2005 HOTEL

Hilton Austin
500 E. 4th St.
Austin, TX 78701
Phone: +1 512 482 8000
Fax: +1 512 469 0078

SPECIAL CONFERENCE ROOM RATE:

\$149 single / \$149 double

Phone: 800 HILTONS

Online: www.austin.hilton.com.

Group code: ASC (necessary to get group rate)

Be sure to ask for the Geo-Frontiers 2005 group room rate to assure that you will find a room at this hotel.

The Hilton Austin Hotel is located in the heart of downtown Austin, just one block from the Sixth Street Entertainment District and walking distance from nearly all other popular points of interest, including the Warehouse Entertainment District, the downtown business district, the Capitol Building, University of Texas Campus, Bob Bullock Texas Historical Museum and the LBJ Presidential Library. The Hilton Austin Hotel is only seven miles or 10 minutes from the Austin Bergstrom International Airport.

TRAVEL DOCUMENTS NEEDED

A valid passport and visa are required of most visitors to the United States. Participants should check with their local consulates or embassies well in advance of travel. If a letter of invitation is required to secure a visa, please send your request to the ASCE Conference Department.

Letters cannot be e-mailed or sent to the Embassy or U.S. Consulate. ASCE cannot intervene on behalf of the invitees with the Embassy or U.S. Consulate via fax, phone, surface mail, or e-mail.

Send your request to www.geofrontiers05.org. Your full name, address and complete fax number should be included with your request.

AIR TRAVEL DISCOUNT

All registered Geo-Frontiers 2005 participants are eligible to receive a discount on their airfare when flying United Airlines to the conference. You **MUST** make your flight reservations via the following telephone number and reference the meeting ID Code listed below to receive the conference discount on your reservation: 800 521 4041 and Meeting ID: 597CH.

CAR RENTAL DISCOUNT

All registered Geo-Frontiers 2005 participants are eligible to receive a discount on any HERTZ Rental Car by calling 800 534 2210 or visiting www.hertz.com. Be sure to mention CDP#11381 and PC#945512 to receive the conference discount on your reservation.



CONFERENCE DRESS

Business casual attire is appropriate for most Geo-Frontiers 2005 events. You may choose to wear business attire for the Heroes Lunch. Also, be sure to bring good walking shoes and comfortable clothes in order to enjoy the sightseeing.

AUSTIN WEATHER

Month	Average High	Average Low	Average Rainfall
January	60.3	40.0	1.89

ELECTRICITY

The electricity used in the United States is standard electricity—110 volts. Please bring the appropriate adapters and transformers for your overseas appliances or computers, as these are not always readily available in the U.S. for adaptation from overseas appliances.

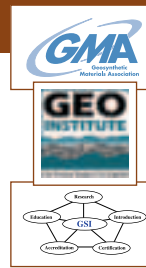
MESSAGES

Messages may be directed to conference participants through Voice-Mail services provided in guest rooms. The telephone number to contact hotel guests is: +1 512 482 8000. Faxes to guests may be sent to +1 512 469 0078. Please indicate that the recipient is a Geo-Frontiers 2005 participant.

GEO-FRONTIERS REGISTRATION



**Geosynthetics 2005™ Conference,
The Geo-Institute 2005 Congress & GRI-18**
January 23-26, 2005
Hilton Austin • Austin, TX



TO REGISTER:
Online
www.geofrontiers05.org
or Fax this
completed form to
+1 703 295 6144
or **PHONE**
800 548 2723 (US) or
+1 703 295 6300 (International)
or **MAIL this**
completed form to
Geo-Frontiers 2005
ASCE Conferences &
Expositions
P.O. Box 79668
Baltimore, MD
21279-0668 USA



Last Name: _____ First: _____ MI: _____

First Name / Nickname (for badge): _____ P.E. Yes No Ph.D. Yes No Other Credentials: _____

Organization: _____ Title: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Country: _____ E-mail: _____

Telephone: _____ Fax: (Confirmations will be faxed to this number.) _____

Your Conference-Week Emergency Contact Phone Number (Important!) _____

Membership (Check if appropriate) G-I/ASCE GMA/IFAI GSI Member # _____
 Supporting Organization _____

Special Services Check here if you require special accommodations. An ASCE representative will contact you to discuss your needs.

Please answer these questions so that we may serve you better:

1 The organization I work for is: Private Government Education Military Other
 2 My position is: Partner/Principal Senior manager Middle manager Technical/professional staff Faculty Student Retiree
 3 How many previous ASCE Conferences have you attended, including this one? 0 1 2 3 or more
 4 My age group: Under 25 25-34 35-49 50-65 Over 65 I am Male Female

Check here if you require Vegetarian or other special Meal(s)

All registrants will receive a full subscription to *GFR-Engineering Solutions*. New U.S. subscribers only.
 Check here to refuse this subscription.

REGISTRATION FEES (Check selections)	By 12/3	By 1/7	After 1/7 & onsite	Amount	ADDITIONAL TICKETS	Price Each	Number	Amount
<input type="checkbox"/> FULL REGISTRATION <i>Includes Sessions, Proceedings, 2 Exhibit Hall Lunches, Coffee and Refreshment Breaks, Terzaghi Lecture, Monday Hero Lunch, Networking Reception, Tuesday Barbecue, Field Demo, greatly reduced fee to attend a Sunday Short Course.</i>					<input type="checkbox"/> Monday Hero Luncheon*	\$ 40	_____	_____
Speaker / Member G-I/ASCE	\$595	\$695	\$745	_____	<input type="checkbox"/> Monday Networking Reception*	\$ 30	_____	_____
Member GMA/IFAI/GSI / Supporting Org	\$595	\$695	\$745	_____	<input type="checkbox"/> Tuesday Lunch-time entry to Exhibit Hall, includes box lunch*	\$ 30	_____	_____
Non-Member	\$725	\$825	\$895	_____	<input type="checkbox"/> Tuesday Barbecue*	\$ 45	_____	_____
<input type="checkbox"/> DAILY CONFERENCE REGISTRATION <input type="checkbox"/> Mon <input type="checkbox"/> Tues <input type="checkbox"/> Wed <i>Includes Sessions, Lunch & Refreshment Breaks for Day of Registration, Terzaghi Lecture, Monday Networking Reception.</i>					<input type="checkbox"/> Wednesday Lunch-time entry to Exhibit Hall, includes box lunch*	\$ 30	_____	_____
Speaker / Member G-I/ASCE	\$295	\$345	\$395	_____	<input type="checkbox"/> Additional Proceedings*	\$ 50	_____	_____
Member GMA/IFAI/GSI / Supporting Org	\$295	\$345	\$395	_____	*Included in Full Registration			
Non-Member	\$395	\$445	\$495	_____	SUNDAY SHORT COURSES (full day - check only one):			
<input type="checkbox"/> GRI-18 REGISTRATION Wednesday <i>Includes Sessions & Coffee Breaks only</i>	\$175	\$175	\$175	_____	Full Conference Registrants only: \$ 50			
<input type="checkbox"/> FULL-TIME STUDENT (Must register by mail or fax & submit proof of full-time student status with registration.) <i>Includes Terzaghi Lecture, Sessions, Monday Networking Reception, Tuesday Barbecue, Field Demo. Does not include Lunches or Proceedings.</i>	\$ 95	\$100	\$110	_____	All Other Registrants: \$300			
<input type="checkbox"/> GUEST REGISTRATION <i>Includes Sunday Terzaghi Lecture, Monday Orientation Breakfast, Networking Reception, Tuesday Barbecue</i>					<input type="checkbox"/> Soil Erosion – Problems, Regulations and Solutions			
Name of Guest _____	\$ 75	\$ 85	\$ 95	_____	<input type="checkbox"/> Static and Seismic Stability of Solid-Waste Landfills			
					<input type="checkbox"/> QC/QA of Geosynthetics			
REGISTRATION SUBTOTAL				_____	<input type="checkbox"/> Professional Practice 101: The Essentials of Risk Management and Profitability for Project Managers			
					<input type="checkbox"/> Practical Geophysics for Geotechnical Investigations			
					<input type="checkbox"/> Introduction to Waste Containment			
					<input type="checkbox"/> Construction Monitoring and Acceptance of Deep Foundations			
					<input type="checkbox"/> Reinforced Soil Structures: Design Methods, Issues and Innovations			
					<input type="checkbox"/> Innovation in Grouting: The Developments 2000-2005			
					Join the GEO-INSTITUTE Today and Save on Your Conference Registration!			
					Yes, I want to take advantage of my G-I benefits starting with Geo-Frontiers 2005:			
					<input type="checkbox"/> G-I Membership \$ 95 _____			
					ADDITIONAL TICKETS SUBTOTAL (from above) _____			
					REGISTRATION SUBTOTAL (from left) _____			
					GRAND TOTAL (Pay this amount) _____			

Payment must accompany registration. Registrations cannot be processed without payment or copy of purchase order.

GROUP DISCOUNTS
are available
for groups of 4 or more full registrations from the same organization, registering and paying together before November 19, 2004.
For additional information, please contact Demetria Taylor: +1 703 295 6075; dtaylor@asce.org.

To Pay Registration by Credit Card, Please Complete This Section:

AMEX VISA MC DISC DINERS **Total to be charged \$** _____

Card # _____ Exp. date _____

Signature _____ Government P.O. # _____

I agree to pay the above total amount according to the card-issuer agreement.

To Pay Registration by Check:
Make Congress registration check payable to **ASCE Geo-Frontiers 2005** and mail with this form to Geo-Frontiers 2005, ASCE Conferences & Expositions, P.O. Box 79668, Baltimore, MD 21279-0668 USA. Checks must be issued in US dollars, drawn on US banks.
To qualify for early pre-registration discount, register online, fax, or postmark payment before DECEMBER 3, 2004. REGISTRATIONS WILL NOT BE PROCESSED WITHOUT PAYMENT OR COPY OF PURCHASE ORDER. Cancellations must be made in writing to ASCE by DECEMBER 17, 2004. In order to receive a refund: a \$50 processing fee will be deducted from the registration fee. Additional Event Tickets will be fully refunded, if canceled in writing by DECEMBER 17, 2004. Fax cancellation request to: +1 703 295 6144. NO REFUNDS WILL BE MADE FOR CANCELLATIONS RECEIVED AFTER DECEMBER 17, 2004.

REGISTER BY DECEMBER 3, 2004 AND SAVE UP TO \$150

Geo-Frontiers 2005



*Explore the future.
Uncover the possibilities.
Experience the journey.*

Austin, Texas USA • January 23–26, 2005
Hilton Austin Convention Center Hotel

www.geofrontiers05.org



*Explore the future.
Uncover the possibilities.
Experience the journey.*

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