

# Purdue Geotechnical Society Workshop Program

Monday, May 7, 2007

Stewart Center Room 202, Purdue University, West Lafayette, IN

## Theme: *Geotechnics and Supplying Future Energy Needs*

### Morning Session

Moderator: **Brock Barry, P.E.** Coordinator: **Mike Wigger, P.E.**

- 8:00 AM Welcome – **M. Kathy Banks**, Head, School of Civil Engineering
- 8:15 AM *Geotechnical Engineering Considerations for Energy Development Projects*, **Timothy Crawl, P.E.** - Senior Engineer with Haley & Aldrich in Hartford, CT.
- 9:15 AM *Ground Modification Applications for Bio-Fuel Plants*, **Raymond J. Franz, P.E.**, Hayward Baker, Roselle IL
- 9:45 AM Break
- 10:00 AM *Landfill and Bioreactor Engineering for Enhanced Landfill Gas Recovery*, **Kevin Foye, Ph.D.**, CTI & Associates, Inc., Brighton MI
- 10:30 AM *Embankment Load Tests on an Active Coal Ash Basin*, **Alan F. Rauch, Ph.D., P.E.**, and Thomas G. Pace, P.E., Fuller, Mossberger, Scott & May Engineers, Inc, Lexington, Kentucky.
- 11:00 AM *Instrumentation Results from Construction of a Utility Tunnel for the New Indianapolis International Airport*, **Scott J. Ludlow, Ph.D., P.E.** and **Mike Wigger, P.E.**, Earth Exploration, Inc., Indianapolis IN
- 11:30 AM *Using BX Geogrids as Part of Heavy Duty Pavement Designs*, **Kevin A. McIlvaine**, Tensar International Corporation, Indianapolis IN

### Lunch Session

12:00 PM Lunch (Location to be announced)

### Afternoon Session

Moderator: **Antonio Bobet**, Coordinator: **Yiannis Zevgolis**

- 1:00 PM *Geotechnical Geophysics for Power Development*, **Richard D. Woods, Ph.D., P.E.** – Melchor Visiting Professor, Notre Dame University, Professor Emeritus, Civil and Environmental Engineering, University of Michigan, Ann Arbor, MI.
- 2:00 PM *Seismic and Electromagnetic Waves for Characterizing Fills and Backfills of Transmission Utilities*, **Vincent P. Drnevich, Ph.D., P.E.**, **Teresa E. Dallinger**, **Aaron Evans**, **Pao-Tsung Huang**, **Sochan Jung**, Purdue University, West Lafayette, IN and **Xiong (Bill) Yu**, Case Western Reserve University, Cleveland, OH.
- 2:30 PM *Paleoseismic Investigations for Determining the Design Ground Motions for Nuclear Power Plants*, **Russell A. Green, Ph.D., P.E.**, Univ. of Michigan Dept. of Civil & Environmental Engineering, Ann Arbor, MI
- 3:00 PM *Fluids for Trenchless Technology*, **Marika Santagata**, Purdue University, **David Geier**, Golder & Associates, Lakewood, CO, **Wendell Solomon**, Nicholson Construction Company, New York, NY.
- 3:30 PM Break

4:00 PM *Introduction of the Fifth G.A. Leonards Lecturer: Marika Santagata, Purdue University*

## ***The Role of Geotechnics in Supplying Future Energy Needs***

**Dr. Suzanne Lacasse**

**Director, Norwegian Geotechnical Institute  
Oslo, Norway**



**Abstract:** Increasing demand for energy poses new challenges to the geotechnical engineer. Our profession has greatly contributed to energy supply. Yet this contribution is often underestimated. The contribution of geotechnical engineering to energy supply in the future is indispensable. Achievements and challenges in this respect are illustrated with examples from the oil and gas industry, hydropower, geo-thermal energy, storage of CO<sub>2</sub> and nuclear waste and geo-solutions for exploiting wind energy. Always, environmental sustainability should be at the forefront of the prioritized solutions. Possible global warming and extreme weather causing more frequent than before natural disasters are also factors that will influence the future energy supply. The lecture focuses on: engineering more cost-effective, yet technologically improved and safer, solutions, encouraging innovation and preserving the environment. To meet these challenges, an alliance of good practice and research is required. The examples will illustrate that the profession needs, more than before, to act proactively in encouraging dialogue among client, designer, consultant, contractor and scientist, to include automatically the environmental component and to integrate hazard and risk assessment in the decision-making for the selection of optimum solutions. Only then can geotechnical engineering add value by saving lives, improving performance, reducing costs and exploiting natural resources in a responsible manner.

6:30 PM **Reception**, Ross Ade Suites, Ross Ade Stadium, Purdue University

7:00 PM **Dinner and Meeting of the PGS**, Ross Ade Suites, Ross Ade Stadium, Purdue University

8:00 PM *Geotechnical Engineering at Purdue; Past, Present, and Future*, C. William Lovell, Vincent P. Drnevich, Marika Santagata, and Yiannis Zevgolis

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**Purdue Geotechnical Society Program Committee:**

Vincent P. Drnevich, Antonio Bobet, Philippe Bourdeau, Marika Santagata, Yiannis Zevgolis,  
Pao-Tsung Huang, Brock Barry of Purdue, and Mike Wigger of Earth Exploration, Inc.

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***The Purdue Geotechnical Society***

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