NEWSLETTER of the

BERKELEY GEOENGINEERING ALUMNI ASSOCIATION

Issue #5, April 2008

26th ANNUAL GEO-ENGINEERING DISTINGUISHED LECTURE SERIES

May 9th ASCE / UCB event

Raymond B. Seed, Professor, UC Berkeley GeoEngineering Program

"Lessons from Disaster: California's New Levee and Water Infrastructure Challenges"

Demetrious Koutsoftas, Principal, ARUP (San Francisco, CA)

"Ground Characterization and Performance: A 25-Year Bay Area Perspective"

James K. Mitchell, Professor Emeritus, UC Berkeley & Virginia Tech

"1958-2008: Reflections and Lessons from Half a Century of Teaching, Research, and Practice in Geotechnical Engineering"

Register now! See you in Berkeley!

EDITORIAL: SEE YOU AT THE BANQUET!

Dear friends of the Berkeley Geoengineering Alumni Association,

Welcome to the 5th issue of the Berkeley Geoengineering Alumni Association (BGAA) newsletter. This newsletter is distributed just a week or so before the Annual Berkeley Banquet, in collaboration with the ASCE Geotechnical Group.

The Banquet will include a great group of speakers, a poster session on the research being performed at Berkeley Geoengineering as well as great opportunities for socializing and meeting alumni, friends and colleagues. So do not miss out! See you there!

The Berkeley Geoengineering Alumni Association

26th ANNUAL GEO-ENGINEERING DISTINGUISHED LECTURE SERIES

May 9th ASCE / UCB event

The 26th Annual Geo-Engineering Distinguished Lecture Series at UC Berkeley is Friday, May 9th. This year's speakers are:

- **Raymond B. Seed**, Professor, UC Berkeley GeoEngineering Program, ***"Lessons from Disaster: California's New Levee and Water Infrastructure Challenges"***

- **Demetrious Koutsoftas**, Principal, ARUP (San Francisco), ***"Ground Characterization and Performance: A 25-Year Bay Area Perspective"***

- **James K. Mitchell**, Professor Emeritus, UC Berkeley & Virginia Tech, ***"1958-2008: Reflections and Lessons from Half a Century of Teaching, Research, and Practice in Geotechnical Engineering"***

Following the lectures there will be a hosted Social with beer & wine in the Garbarini Lounge. You are all invited to attend the Celebration of GeoEngineering Banquet in the Hearst Mining Building Lobby featuring a brief presentation by Alan Kropp titled "Bay Area Geotechnical Companies- History and Evolution". Please view the attached announcement for more information and linked registration. You must register **by April 28th**.

Question? ASCE_UCBevent@engeo.com

History of Bay Area Geoengineering Firms to Be Presented During the ASCE/UCB Distinguished Lecture Banquet

Solicitation for contributions

Alan Kropp and J. David Rogers are developing a summary of the development of geotechnical engineering companies in the Bay Area. They will be compiling chronological threadlines of companies, their name changes and derivative companies that emerged. Key individuals, project accomplishments and technological breakthroughs will be cited. An initial summary of the materials will be presented at the upcoming ASCE/UCB Distinguished Lecture Banquet on May 9. As a prelude to the presentation, there will be a scrolling program of images projected on screens during the meal that will include photographs of people and projects, company materials (like brochure cover pages, business cards and company letter head stationery), newspaper article headlines, and other memorabilia. Alan Kropp is soliciting contibutions for this visual presentation and would like contributors to scan any materials people have and email them to him at akropp@akropp.com. The source of all contributions will be appropriately cited. Any questions can be emailed to Mr. Kropp or he can be reached at (510) 841-5095."

News of our Alumni

Please send us your news (professional or personal) for inclusion in this column to Claire Roggero (MSc, 2002) at clq@shanwill.com. We want to hear about it!

- **Brian Collins (PhD, 2004)** has accepted a permanent position with the USGS (Menlo Park) in the Earth Surface Processes Group. Brian can be reached at: bcollins@usgs.gov

- **Professor Mike Duncan (PhD, 1965)** is the recipient of the Harry Bolton Seed Medal and delivered the 2008 Seed Lecture at the recent ASCE-GI Geocongress Conference in New Orleans on "the failures of floodwalls during Hurricane Katrina". The lecture is given biannually by the recipient of the H. Bolton Seed Medal for outstanding contributions to teaching, research, or practice in geotechnical engineering.

26TH ANNUAL GEO-ENGINEERING DISTINGUISHED LECTURE SERIES

MAY 9, 2008

Hosted by:

U.C. Berkeley GeoEngineering Society
ASCE San Francisco Section Geotechnical Group
Berkeley GeoEngineering Alumni Association
Geo-Institute

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For sponsorship 2009 opportunities, please contact bray@ce.berkeley.edu.

EVENT INFORMATION

- Lectures and hosted social will be held in Sibley Auditorium in the Bechtel Building
- The ASCE/UCB Celebration of GeoEngineering Banquet will be held at Hearst Mining Building
- Campus Map
- Public transit is recommended. Limited space is available in public parking garages.

PROGRAM & SCHEDULE

12:30 pm – 1:10 pm	Registration outside Sibley Auditorium, Bechtel Building
1:10 pm – 1:15 pm	Welcome by Professor Juan Pestana and Michelle Shriro
1:15 pm – 2:20 pm	Raymond B. Seed, Professor, UC Berkeley GeoEngineering Program, “Lessons From Disaster:California’s New Levee and Water Infrastructure Challenges”
2:40 pm – 3:45 pm	Demetrious Koutsoftas, Principal, ARUP, “Ground Characterization and Performance: A 25-Year Bay Area Perspective”
4:05 pm – 5:30 pm	James K. Mitchell, Professor Emeritus, UC Berkeley & Virginia Tech, “1958-2008: Reflections and Lessons from Half a Century of Teaching, Research, and Practice in Geotechnical Engineering”
5:30 pm – 6:50 pm	Social with Hosted Cocktails, The Garbarini Lounge, Bechtel Building
7:00 pm – 9:00 pm	ASCE/UCB Celebration of GeoEngineering Banquet, Hearst Mining Building Lobby

REGISTRATION INFORMATION

- Registration **by April 28, 2008** is required for the awards banquet and requested for the lecture. On-site registration is available for the lecture only.
- Register Online

$100 Lecture + Banquet
($40 Student)

$70 Banquet only
($35 Student)

$45 Lecture only
($5 Student)

- Donate Online

Current Research – Meet the students

Assessment of Seismic Vulnerability of Levees in Select California Regions

Advisor:
Raymond B. Seed

Research Student:
Adda Athanasopoulos-Zekkos

(e-mail:adda@berkeley.edu)

Several California regions are facing a great risk with regard to flooding as a result of potential failure of the system of levees that provides protection from high runoff flows in the Sacramento River. In the wake of the unprecedented flooding of New Orleans during hurricane Katrina, this long-neglected risk is now being addressed by combined State and Federal efforts. Recent studies have shown that the annual risk of catastrophic levee failure due to seismically induced soil liquefaction is, in general, as great as the combined non-seismic risks associated with high water, levee settlement, overtopping, underseepage or through seepage, erosion and scour. This assessment creates a new class of engineering problems, as seismic levee vulnerability has only recently begun to be considered as part of evolving joint State and Federal efforts to assess and mitigate the unacceptable levels of potentially catastrophic flooding risk that will impact large numbers of Californians, as well as the State's vital water supply infrastructure.

This research focuses on developing a simplified procedure for the assessment of the seismic vulnerability of the Sacramento levees considering both seismically-induced soil liquefaction hazard and seismically-induced deformations and displacements caused by cyclic "lurching" of levee embankments on very challenging foundation soils. This procedure is based on a systematic study of the seismic response of levees with regard to the ground motion selection, the site geometry and the soil properties. This research includes a study of the ground motion parameters that mostly affect the response and guidelines for ground motion selection for levees. It also includes a brief projection of the annualized likelihood of catastrophic seismically-induced levee failures.

The procedure will be validated against a couple of case studies of levee performance during the Loma Prieta Earthquake in 1989, in the Santa Cruz area. Finally, this project will include a comparison between results from equivalent-linear FE codes and non-linear FE codes to help us identify the advantages and disadvantages of each method with regard to seismic response of levees. Read more…

Seismic Response of Difficult Soft Soils

Advisor:
Juan Pestana & Jonathan D. Bray

Research Student:

Xavier Vera-Grunaer

(e-mail: xvg@berkeley.edu)

An area of earthquake engineering practice that is not well defined is the seismic response of sites requiring site-specific evaluation (Site Class F), which includes soils vulnerable to potential failure or collapse under seismic loading, such as quick and highly sensitive clays, peats and/or highly organic clays, with thickness exceeding 10 feet, very high plasticity clays with plasticity index, PI > 75, where the depth of clay exceeds 25 feet and very thick soft/medium stiff clays where the depth of clay exceeds 120 feet (2006 International Building Code, IBC). The research project is developing much needed information on the characterization and the seismic response of these deep soft clay deposits.

U.S. building codes, such as the 2006 IBC, require site-specific evaluations at Class F sites, yet, established guidelines for performing the site-specific evaluations are not available. Similar troublesome soil deposits exist in Guayaquil City, Ecuador, and this project took advantage of work already performed under a United Nations initiative to investigate these special types of soil deposits further. Studies of the seismic response of these soils through cyclic testing and numerical analysis is yielding useful insights and advancing the profession in the areas of code development and seismic zonation.

The primary objectives of the research project are to take advantage of the existing geotechnical, geological, and seismological information that has already been compiled, as well as collect and perform cyclic triaxial and simple shear testing of soft, sensitive, lightly cemented clay soils to characterize their response to earthquakes. In addition, the study aims to develop advanced numerical site response procedures that can be used in U.S. practice to perform the building code required site-specific evaluations, and to develop practical guidelines for engineering practice. Such guidelines include simplified site factors in the short and long period range and correlations of dynamic properties with available in situ test results.

Critical lessons can be learned from this study, because the soils and intense level of earthquake shaking investigated in this research project represent one of the controlling earthquake hazards in the United States (i.e., poor soils close to large magnitude earthquake sources). Read more…

In the next issue: More PhD students and research at Berkeley

The Motley View

In the previous issue, the host of Motley View, Dr. Edmund Medley, PE, CEG (MS 1991, PhD, 1994) authored an article "On the Rewards of Being Fired and Other Career Road Blocks". In this issue we publish a letter sent by our Alumnus Doug Schwarm (MSc, 1988) received by e-mail. Doug discusses his own roadblock stories. Doug can be reached at: dschwarm@atlas-svcs.com

From: Doug Schwarm (MSc, 1988)
Date: February 28, 2008

Aloha Ed - I greatly enjoyed your Motley View column this most recent Berkeley Newsletter. What a fantastic soap box, and you make great use of it. Since you asked for roadblock stories, here's the summary:

1. 15 years into a career I had accomplished everything I could anticipate, I had strained my marriage as hard as I wanted to, and I had been reluctantly promoted to the job from which I would likely retire. Everything that I enjoyed was behind me, the stuff I liked less was stretched out ahead of me until the day I would collect my gold watch.

2. I took a bailout assignment that nobody else knew how to approach, managing Midway Atoll, and relocated on short notice to Hawaii.

3. That bailout assignment turned out just as badly as one would expect for a poorly-conceived bailout plan, but I made the most of the chance to fail spectacularly and recognize that the failures weren't all my doing.

4. From that unsettled position, in a rented house and working in an operation that I no longer expected to succeed, it made perfect sense to quit my job, move with my family to Maui, and start an oddball consulting career that I never would have considered if I still had a normal job and a 10-person group relying on me to act responsibly.

5. So, as I write 3 years later, I live with a healthy family on a beautiful tropical island, I have a great mix of oddball projects with people I really like and respect, my billing rate is higher than if I were still a Principal, my backlog stretches out to the distant horizon, and I work fewer hours than I ever had back when I had a normal job.

So, recognizing my personal dead-end, bailing out of the predictable career path, and trudging through a quagmire of a failing (but very interesting) tropical project turns out to have been exactly what I needed to create for myself the best work situation I ever could have imagined.

Have a great week, Ed, and keep in touch.

Doug

The Motley View

On Geonudity and Some Benefits of Your GeoEngineering Graduate Education

by Dr. Edmund Medley, PE, CEG (MS 1991, PhD, 1994)

About the time that this issue of the *Motley View* will be published, the 2008 class of UC Berkeley GeoEngineers will be finishing the Spring Term, soon to graduate. They will work through the night to complete the CE270L report for Prof. Seed, attend the Distinguished Lectures, party at the Banquet, listen to the speeches, and then get a Rock.

Having been there, done that, I warmly congratulate this year's GeoEngineering Graduates on completing their grueling adventures. But having got this far, what have you learned? What are the benefits you won from the considerable cost of spending between 1 and 5 years or so in the GeoEnginering Graduate program? What prompted you to put up with the pain anyway?

Let me tell my story before you tell me yours…

In 1989 I came to San Francisco from Hawaii for a short visit as the site project engineer for the largest earthwork project underway in the San Francisco Bay Area. I had planned on being here for a few weeks, long enough to train the technicians and staff engineers in earthwork observation. But my plans were soon upset when initial excavations revealed a horrible rock composed of sheared shale with embedded strong blocks of rock – a Franciscan Complex melange. I had never even heard of melange, let alone worked with anything so complex. Life was also complicated by the local City's Technical Reviewers, a gang of guys mostly armed with PhDs in Geotechnical Engineering from Berkeley, led by a world-famous Geotechnical Engineer. The project was a very difficult one and rather than return to Hawaii, I stayed on for about a year to battle with the gang over issues that often revolved around the horrible melange. I gradually started to feel ignorant. For the first time in a dozen years my excellent Bachelor's education in Geological Engineering seemed insufficient. So I applied to Berkeley, was accepted to the MS Geotechnical Engineering program, and started studies in August 1990.

The first semester was challenging indeed. I was 42 – I had been told by a Berkeley Professor that I was too old to be a graduate student – and my class mates seemed much younger and much cleverer than I. I was awed by the knowledgeable, kind older professors, less impressed with the nasty green paper problem sets I had to struggle with. Most upsetting was that some of the stuff I thought I knew about Geotechnical Engineering, and learned on the job in the dozen years since, seemed to be wrong. I was gradually being stripped of my geotechnical confidence; by the end of my MS program I would be naked, a geonude, and not in a fit condition to return to geotechnical consulting. Read more…

Information

Professors

Jonathan D. Bray

Steven D. Glaser

Tad Patzek

Juan M. Pestana

Raymond B. Seed

Nicholas Sitar

Adjunct Professors

Norman Abrahamson

Associate Adjunct Professors

Michael Riemer

Steering Committee

Dimitrios Zekkos (Chair) (MSc 2002, PhD 2005)

Adda Athanasopoulos-Zekkos (MSc 2004)

Claire Gibson (Roggero) (MSc 2002)

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To support the BGAA in any way please contact us.

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The Berkeley Geoengineering Alumni Association website is hosted by the Geoengineer.org website (http://www.geoengineer.org)

The Berkeley Geoengineering Alumni Association Newsletter is a publication of the Berkeley Geoengineering Alumni Association.

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