# THE ASSOCIATION OF ENVIRONMENTAL & ENGINEERING GEOLOGISTS

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SOUTHERN CALIFORNIA S E C T I O N

# **NEWSLETTER – Mar 2012**

SOUTHERN CALIFORNIA S E C T I O N

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Greetings, AEG Southern California Section Member! Please join us next week for the joint AEG & ASCE LOS ANGELES SECTION GEOTECHNICAL GROUP JOINT MEETING.

Visit the Southern California Section Website: www.aegsc.org

Upcoming AEG Meeting Date: \*\*\*Wednesday, March 21, 2012\*\*\*

Meeting Location: Steven's Steak House, 5332 Stevens Place, City of Commerce, Southwest Corner of I-5 & Atlantic Boulevard, CA (323) 723-9856

Meeting Time: 5:30pm Social Hour, 6:30pm Dinner, 7:30pm Presentation

Cost: \$35 per person with reservations, \$40 without reservations, Free with a valid Student ID.

\*Reservations: Please email Andrew Liu at <u>ahl\_77@yahoo.com</u> by Friday March 16, 2012

Speaker: Joseph Wartman, Ph.D., P.E., University of Washington

**Topic: UNCERTAINTY IN SEISMIC SLOPE DEFORMATION MODEL PREDICTIONS** 

## Chair's Column

### By David Perry

Our first meeting of the year, held last month at Victorio's Restaurant in North Hollywood, was well attended, a positive sign amidst the recent National jobs report showing large employment gains for the last three consecutive months. Engineering geologists, in addition to many geotechnical engineers, from several large consulting firms were present and heard an excellent presentation from Fred Burnett, CEG with the City of Los Angeles Department of Public Works, on the geotechnical investigation and construction challenges faced on a major sewer tunnel project along the bank of the Arroyo Seco. Thanks to the geologists and engineers from Jacobs Associates, URS, Mountain Geology, AMEC, Grover Hollingsworth, Byer Geotechnical, PB Americas, and others for your participation in the meeting.

The Section has a new Secretary. Edmond Lee of GeoConcepts, Inc. has stepped forward to volunteer in this capacity. We will now return, after a period of absence, to seeing updates of our Section activities in the quarterly AEG News. The Section is still in need of a Vice-Chair. One of the functions of the Vice Chair is to assist in coordination of speaker presentations. This would be a good opportunity to reach out and communicate to those in the profession working on some challenging projects or new research.

Our meeting this month is a joint meeting with the ASCE Los Angeles Section Geotechnical Engineering group at Stevens Steak House on Wed. March 21st. ASCE is hosting the meeting and RSVP's for the meeting will be coordinated through ASCE, with the contact information provided in the Newsletter. An abstract of the presentation is included in the Newsletter and has been posted on our Section Website. In April, Dr. Jeff Keaton of AMEC will be presenting new findings on the federally funded NCHRP research on Bridge Foundations on Rock. We are looking to return to Victorio's and their terrific Italian food in April. An abstract of Dr. Keaton's presentation will be presented in the April Section Newsletter.

There has been some preliminary discussion about hosting a short course for the section in the summer timeframe. Potential course topics have been identified. Please provide some input as to what short course topics would be of professional interest to you. These courses cannot materialize without your interest and involvement.

Hope to see you at Stevens Steak House for the Joint ASCE/AEG meeting.

## Secretary's Summary of February Meeting

## By Edmond Lee

Greetings to all of our AEG Southern California Section Members. February's section meeting at Victorio's Ristorante in North Hollywood was a huge success. There were many new and familiar faces at the gathering, including some whom have been missed at previous meetings for quite some time.

Our guest in Febraury was Mr. Fred Burnett, engineering geologist with the City of Los Angeles, Department of Public Works. The topic of Mr. Burnett's presentation is the "EPB Tunnel Drive of Avenue 45 and Arroyo Drive Relief Sewer, City of Los Angeles." The presentation outlined the geotechnical conditions encountered during the construction of a relief sewer line along a portion of the Arroyo Seco and the different methods employed to accomplish the construction. The earth materials encountered during the alignment of the sewer included alluvium deposited along the Arroyo Seco and Puente Formation bedrock. Construction of the sewer line utilized conventional trenching methods and tunneling with a small Earth Pressure Balance (EPB) Tunnel Boring Machine (TBM) which was 115.5-inches in diameter. One challenge of the construction included the numerous large-diameter boulders within the alluvium. The boulders varied in size, ranging up to 36 inches in diameter. Boulders or granitic origin ranged in strength up to 30,000 psi.

The geotechnical baseline report for the relief sewer alignment could provide useful data for geotechnical consultants with projects in and around the Arroyo Seco area.

### March Speaker

Joseph Wartman is the H. R. Berg Associate Professor of Civil and Environmental Engineering at the University of Washington. The author of over 60 professional articles, Wartman is an editor of the ASCE Journal of Geotechnical and Geoenvironmental Engineering and former chair of the Geo-Institute (GI) Committee on Embankments, Dams, and Slopes. He is the recipient of several awards and honors including, most recently, the 2011 Prakash Research Award and selection in 2011 for the National Academy of Engineers' Frontiers of Engineering program. Prior to his

arrival at the University of Washington in 2010, Wartman spent nearly 10 years at Drexel University, where he was a founding Co-Director of the Drexel Engineering Cites Initiative. From 2007 to 2008, he was a Visiting Scholar at the Universitat Politècnica de Catalunya (UPC) in Barcelona, Spain. Before his career in academia, Wartman was a professional practitioner in California and Pennsylvania for 5 years. He received his B.C.E. from Villanova University, and his M.S., M.Eng., and Ph.D. degrees from the UC Berkeley. Wartman is a Registered Professional Engineer in Pennsylvania and California.

#### Speaker Abstract

In this talk I will discuss how variability in driving and resisting force parameters together translate into uncertainty in seismic slope deformation predictions. Predictive uncertainty of the Newmark rigid-block and Makdisi-Seed decoupled deformation-based methods was evaluated by performing a series of probabilistic Monte Carlo simulations for two idealized slope models. Results from these analyses demonstrate that the highly non-linear relationship between acceleration ratio and displacement associated with the deformation models dictates the way in which parametric variability is propagated through the analysis and can lead to varying degrees of uncertainty in the deformation predictions. Based on this observation, three zones along the displacement-acceleration ratio relationship will be identified according to their relative degree of nonlinearity and correlated with their relative influence on predictive uncertainty; these are: (i) highly uncertain, (ii) moderately uncertain and (iii) low uncertainty. Using this framework, the widely held notion of generic "order-of-magnitude" estimate for deformation predictions is a misnomer. Based on this, it is recommended that realistic levels of parametric variability be incorporated in the seismic slope deformation analysis to establish the operating conditions of the slope system. Systems identified as highly uncertain or moderately uncertain require a more robust probabilistic analyses to meaningfully interpret poorly constrained deformation predictions. The findings will be discussed in the context of three well documented case studies of earthquake-induced deformation in natural slopes.

### NOMINATIONS FOR HOLDREDGE, JOHNSTON, AND PITEAU AWARDS

Nominations for the Claire P. Holdredge, Floyd T. Johnston, and Douglas R. Piteau Awards are due on MARCH 15. There are many deserving members in our section and throughout the association so please send in your nominations.

## **CLAIRE P. HOLDREDGE AWARD**

This award, first established in 1962 by the Association of Environmental and Engineering Geologists, is named in honor of Claire P. Holdredge, a founding member and the first President of the Association. The award is presented for a publication by an AEG Member(s) within the 5 previous years that is adjudged to be an outstanding contribution to the Engineering Geology profession. Nominations for this award are due from the membership at large to HQ by MARCH 15. The Awards Committee, at its discretion, selects a candidate from the nominees for confirmation by the President.

## DOUGLAS R. PITEAU OUTSTANDING YOUNG MEMBER AWARD

This award, established in 1985, is named in honor of Douglas R. Piteau, a deceased Member of the Association who distinguished himself early in his career as an expert on landslides and rock slope stability. This award is presented to a Member who is age 35 or under (not 36 until January 1 in the year following the Annual Meeting in which the Award is given) and has excelled, either singly or in combination, in the following areas: Technical Accomplishment, Service to the Association, and Service to the Engineering Geology Profession. Each Section is, at its discretion, to choose an individual deserving of the Award, to publicize the nomination at the Section level, and to nominate the individual to HQ and the Awards Committee. Nominations can also be made by the membership at-large to HQ and the Awards Committee. All nominations must be presented to HQ by MARCH 15 in the year of award. The Committee, at its discretion, selects a candidate from the nominees for the President's confirmation.

## FLOYD T. JOHNSTON SERVICE AWARD

This award, established in 1982 on the occasion of his retirement on the Association's Twentyfifth Anniversary, is named in honor of Floyd T.

Johnston, the first Executive Director of the Association. The award is presented to a Member for outstanding active and faithful service to the Association over a minimum period of 9 years to coincide with Floyd's tenure as Executive Director. Contemporary Board members are not eligible until one year after leaving office. Nominations for this award are made by the membership at-large to the Awards Committee and HQ. For nominations to be valid, they must be endorsed by 3 Members having different Section affiliations. The Committee chooses the candidate(s) from the nominations for consideration and selection by the President. Nominations are due to HQ by MARCH 15, 2012.

## **BPELSG Announcements**

Visit <u>http://www.geology.ca.gov/</u> for news, meeting announcements, notices, and exam information. The following recent notices have been posted:

**ADDED FEBRUARY 3, 2012 - 2012 LAWS NOW AVAILABLE -** The 2012 Geologist and Geophysicist Act, the Professional Engineers Act, the Professional Land Surveyors' Act, and the Regulations Relating to the Practices of Geology and Geophysics and the Practices of Professional Engineering and Land Surveying are now available on the Board's website. Click the following link <a href="http://www.geology.ca.gov/laws/index.shtml">http://www.geology.ca.gov/laws/index.shtml</a> for the links to the laws.

**NOTICED JANUARY 27, 2012 - GEOLOGIST AND GEOPHYSICIST TECHNICAL ADVISORY COMMITTEE MEETING -** The agenda for the Geologist and Geophysicist Technical Advisory Committee meeting is now available. Please click on the following link <u>http://www.geology.ca.gov/about-us/meetings/agendas/20120207 gg tac agenda.pdf</u>.

**ADDED JANUARY 20, 2012 - ONLINE ADDRESS CHANGE SUBMITTAL -** Applicants and licensees may now submit their address change notifications to the Board via our new online system. Click the following link <u>https://www.dca.ca.gov/webapps/pels/address\_change.php</u> for the online submittal form. NOTE: It is the responsibility of the applicant or licensee to notify the Board of any change to their address of record within 30 days of the change. The Board is not responsible for the applicant's or licensee's failure to receive official mailings from the Board due to the applicant's or licensee's failure to timely notify the Board of a change of address.

**POSTED JANUARY 12, 2012** - California Specific Examination for Professional Geologist will be administered as a computer based test (CBT) beginning March 14, 2012. All candidates will receive a letter from the CBT vendor with instructions on when and how to schedule their examination.

**RELEASE OF SEPTEMBER/OCTOBER 2011 EXAMINATION RESULTS** - Click on the link <u>http://www.geology.ca.gov/applicants/release\_of\_september\_2011\_exam\_results.pdf</u> for information regarding the release of the September/October 2011 results. **TECHNICAL ADVISORY COMMITTEE MEMBERS WANTED** - Click the link <u>http://www.geology.ca.gov/licensees/tacwanted.shtml</u> for information regarding becoming a Technical Advisory Committee member.

**EXPERT CONSULTANTS WANTED - ENFORCEMENT** - Click the link http://www.geology.ca.gov/licensees/tewanted.shtml for information regarding becoming an Expert Consultant for the Geologist and Geophysicist Program enforcement unit. Experts are needed to help review enforcement complaint investigations.

**EXPERT CONSULTANTS NEEDED TO ASSIST WITH EXAMINATION DEVELOPMENT** - The Board is recruiting Professional Geologists, Professional Geophysicists, Certified Engineering Geologists, and Certified Hydrogeologists to assist with the development of licensing examinations. Please click the link <a href="http://www.geology.ca.gov/licensees/smeswanted.shtml">http://www.geology.ca.gov/licensees/smeswanted.shtml</a> for additional information. The Board appreciates your interest in the professions and your willingness to assist in the licensure process.

## **Other Meetings**

So Cal AEG's Inland Empire Chapter is hosting a meeting next week on Thursday March 22, 2012 featuring Dr. Scott Burns, 2012 Jahns Distinguished Lecturer. The meeting will be held at CSU-San Bernardino, Dept. of Geosciences. Contact <a href="mailto:aeginland@gmail.com">aeginland@gmail.com</a> for additional information and reservations.

## Abstract

Scott Burns, <u>burnss@pdx.edu</u>

### "Urban Landslides – Challenges to Forensic Engineering Geologists"

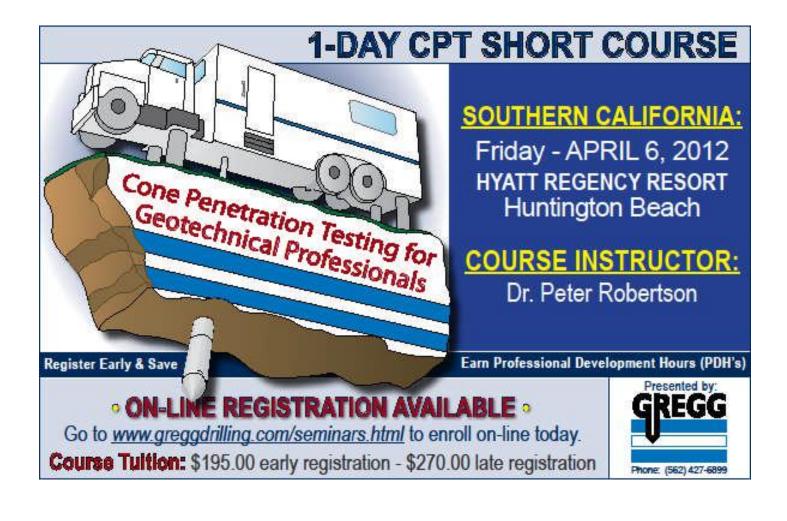
Each year landslides cause 25-50 deaths and on the average \$3.5 billion in damage in the United States. Many of these landslides occur in urban settings. Figuring out what caused these landslides and also how to prevent them in urban settings can be a challenge to forensic engineering geologists and geotechnical engineers. The talk will focus on lessons learned from case histories in urban settings, focusing on homes hit by landslides, homes that moved down the slope on landslides, reactivation of ancient landslides, triggers such as precipitation and earthquakes, and vacant lots. Development of susceptibility maps, especially using LiDAR imagery, will be included. Different mitigation methods including different types of dewatering devices, walls, and freezing of the soil will be mentioned. In importance of lack of insurance for landslides on normal homeowner policies has great significance.

## **CAREER OPPORTUNITIES**

Current career opportunities in California are posted on our section website at <u>http://aegsc.org/jobs/</u>.

Additional career opportunities in California are also posted on AEG's national website on the Careers page at <a href="http://careers.aegweb.org/jobs#/results/filter=%28state\_province%3Acalifornia%29&resultsPer">http://careers.aegweb.org/jobs#/results/filter=%28state\_province%3Acalifornia%29&resultsPer</a>

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## **Chapter Meetings**

#### Inland Empire:

For the latest information and updates, please visit http://www.aegsc.org/chapters/inlandempire/

#### Central Coast:

For the latest information and updates, please visit http://www.aegsc.org/chapters/centralcoast/

#### <u>San Diego</u>:

For the latest information and updates, please visit http://www.aegsc.org/chapters/extremesocal/

## **National Business Donation**

- Platinum \$1,000
- Gold \$500
- Silver \$250

Company name, address and contact information are presented in AEG News and section receives 10% of donation. A national donation does not yield a line in our local section newsletter.

If you would like to post an ad in the newsletter, please contact Christy Confar at <u>cconfar@groupdelsol.com</u>. Advertisement rates are shown in the box below.

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#### SEND ALL AD MATERIAL TO:

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\* The deadline for submitting an advertisement for next month's newsletter is March 31, 2012.

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