



## Vancouver Geotechnical Society

A Local Section of the  
Canadian Geotechnical  
Society

[www.v-g-s.ca](http://www.v-g-s.ca)

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## NOTICE OF UPCOMING TECHNICAL PRESENTATION

Thursday, October 27, 2016

**SUBJECT:** Liquefaction and Spatial Variability

*Canadian Geotechnical Society (CGS) Cross Canada Lecture Tour – Fall 2016*

**SPEAKER:** Ross W. Boulanger, Ph.D., P.E., F.ASCE – *University of California Davis*

Professor Ross W. Boulanger is the Director of the Center for Geotechnical Modeling in the Department of Civil and Environmental Engineering at the University of California, Davis. He received his Ph.D. and M.S. degrees in Civil Engineering from the University of California at Berkeley, and his B.A.Sc. degree in Civil Engineering from the University of British Columbia. His research and professional practice are primarily related to liquefaction and its remediation, seismic soil-pile-structure interaction, and seismic performance of dams and levees. Over the past 25 years, he has produced over 250 publications and served as a technical specialist on over 50 seismic remediation and dam safety projects. His prior honors include the TK Hsieh Award from the Institution of Civil Engineers, and the Ralph B. Peck Award, Norman Medal, Walter L. Huber Civil Engineering Research Prize, and Arthur Casagrande Professional Development Award from the American Society of Civil Engineers (ASCE).

**CONTENT:** The development and application of engineering procedures for evaluating soil liquefaction during earthquakes rely heavily on case histories and their interpretations. Our ability to correctly interpret and utilize case history observations requires a sound understanding of the underlying physics, as is often derived from a synthesis of experimental and theoretical findings. In this regard, understanding the effects of spatial variability on liquefaction phenomena is essential for facilitating interpretation of case histories and application of liquefaction evaluation procedures.

In this presentation, nonlinear dynamic analyses of liquefaction in spatially variable (stochastic) deposits are used to draw insights on how spatial variability may affect the system performance and be appropriately accounted for in other types of analysis procedures. Results and insights are summarized for different types of problems: dynamic response and pore pressure generation as observed at the Wildlife liquefaction array; lateral spreading and surface settlements in gently sloping ground underlain by alluvium with different depositional structures; and deformations of an embankment dam underlain by a liquefiable alluvial layer. The practical lessons drawn from these simulations illustrate the complementary roles of theoretical, experimental, and case history based findings for advancing our ability to address liquefaction problems in engineering practice.

**DETAILS:** **Location:** Executive Inn, 4201 Lougheed Highway, Burnaby, BC V5C 3Y6

**Social Hour:** 5:30 to 6:30 pm (drinks available at the hotel bar)

**Technical Presentation:** 6:30 to 7:30 pm (No need to RSVP)

**Dinner:** 8:00 pm (\$30 will be charged for dinner)

If you would like to stay for dinner, please RSVP to Aran Thurairajah via email or at the door  
[Aran.Thurairajah@golder.com](mailto:Aran.Thurairajah@golder.com)

*The VGS would like to thank the following companies (in alphabetical order) for sponsoring this Cross Canada Lecture Tour:*

- BGC Engineering*
- Geo-Slope International*
- Golder Associates Ltd.*
- Tetra Tech EBA*

*The Cross Canada Lecture Tour is organized by the Canadian Geotechnical Society and its various local sections, and travel funds are provided by the Canadian Foundation for Geotechnique.*