

# CGS Luncheon Notice

The Kingston Chapter  
of the  
Canadian Geotechnical Society  
invites you to a luncheon on:

**Thursday 21 October 2010, 12:00 PM**

at the  
**Kingston Brewing Company (Brew Pub)**  
where

**Dr. Sarah Springman** of ETH Zurich will be presenting:

## **The Rüdlingen Landslide Experiment**



### **Luncheon pricing will be:**

\$20 for CGS or PEO members	\$10 for student members
\$25 for non-members	\$15 for student non-members

**Lunch is included in this price!**

Please RSVP Melissa Chappel at [chappel@ce.queensu.ca](mailto:chappel@ce.queensu.ca) by **October 19**.

The CGS Kingston Section is sponsored by:



## Presentation Summary

### The Rüdlingen landslide experiment

A large scale field experiment was conducted on a steep 38° forested slope with preliminary field monitoring of sensors installed at depths from 15 to 150 cm, including tensiometers, TDRs, piezometers, rain gauges, pressure cells, acoustic sensors and deformation probes, prior to triggering a landslide by means of artificial rainfall. The project was designed to enhance the understanding of triggering processes and initiation mechanisms by replicating the effects of a heavy rainfall event in May 2002, in which 100 mm rain fell in 40 minutes, causing 42 surficial landslides. Geotechnical, and hydrological characterisation was carried out on the overlying colluvial silty sand, with bedrock at depths between 0.5 m and 5 m. Percolation of groundwater into the underlying bedrock was observed from test pits. Remote sensing of displacements was also carried out continually during the field experiments, through a photogrammetric monitoring system. It was deduced that the slope would fail during an extreme rainfall experiment that would lead to saturation of the soil overlying the bedrock. The failure mechanism was more or less as predicted, with vegetation reinforcement playing a role. Triggering occurred earlier than expected in March 2009, incorporating about 150 m<sup>3</sup> of debris, which was safely retained in a protection net at the base of the slope.

### Presenter Biography

Sarah Marcella Springman has been Full Professor of Geotechnical Engineering at the Institute for Geotechnical Engineering at the ETH Zurich since January 1997. She is engaged in the modelling and solving of geotechnical problems.

Prof. Springman was born in 1956 and studied soil mechanics at Cambridge University (1975-1978). Subsequently, she transferred to industry and worked as an engineer on several geotechnical projects in England, Fiji, and Australia. While completing her Master's and Ph.D. degrees at Cambridge, she also pursued an athletic career and won numerous national and international triathlon competitions.

The emphasis of Prof. Springman's research is on geotechnical modelling of soil structure interaction problems. These include design and construction of abutments, pile foundations, reinforced soil and oil drilling structures. She combines physical modelling in a geotechnical centrifuge with numerical modelling so that the data may be used to develop, calibrate or validate new design methods. ETH now possess a 2.2 m drum geotechnical centrifuge which will permit tests to be carried out on a range of geotechnical problems. These will be investigated at small scale but at the correct "field" stress levels, with associated savings in time and money.