ASSOCIATION OF ENVIRONMENTAL& ENGINEERING GEOLOGISTS
Serving Professionals in Groundwater, Environmental, and Engineering Geology

Section Meeting

You are invited to attend the AEG KC/O Section's April 9, 2008 meeting. The Distinguished Jahns Lecturer – Dr. John Clague, Centre for Natural Hazards Research, Simon Fraser University, Burnaby, Canada will be our guest speaker.

Date: Wednesday, April 9, 2008

Time: 5:30-6:30 Registration and Dinner-BBQ by Jack Stack
6:30 Speaker Presentation

Topic: The Formation and Failure of Natural Dams

Speaker: Dr. John Clague

Cost: $15/person
Students $7.50

Location: Diastole, 2501 Holmes, Kansas City, MO

Diastole is a prominent fixture in the Hospital Hill area. It was built as Dr. E. Grey Dimond's residence which he later donated to UMKC. It contains valuable displays of 100s of artifacts that he had collected during his overseas travels. A picture and directions are available at:
http://www.umkc.edu/virtualtour/diastole.asp

Eligible for 1.0 Professional Development Hour (PDH) for attending.

For reservations, please call Blane Wood at (913) 563-1452 or email blane.wood@pacelabs.com . Reservation **deadline is noon April 8, 2008.** To access this information on the internet, please go to our section web page at www.vocshop.com/aeg/aegkco.html.
Don't forget our membership incentive program: bring a guest and receive a free gift, recruit a new member and earn free attendance at the next meeting for both of you!

John Clague Biography

Dr. John Claugue has been named the 2008 Jahns Distinguished Lecturer. The Association of Environmental & Engineering Geologists and the Engineering Geology Division of the Geological Society of America (GSA) jointly established the Richard H Jahns Distinguished Lectureship in 1988 to commemorate Jahns and to promote student awareness of engineering geology through a series of lectures offered at various locations around the country throughout the year. Richard H. Jahns (1915-1983) was an engineering geologist who had a diverse and distinguished career in academia, consulting, and government.

Dr. John Clague received an A.B. degree from Occidental College in 1967, an M.A. degree in Geology from the University of California at Berkeley, and his Ph.D. in Geology from the University of British Columbia in 1973. He worked as a research scientist for the Geological Survey of Canada from 1974 until 1998 and then accepted an academic appointment at Simon Fraser University (SFU) in Burnaby, British Columbia. He is currently Professor and Canada Research Chair in Natural Hazard Research at SFU and is the director of SFU's Centre for Natural Hazard Research. Dr. Clague is a Fellow of the Royal Society of Canada, Past-President of the International Union of Quaternary Research (INQUA), and a former President of the Geological Association of Canada. He has received several professional awards, including the Logan and E.R.W. Neale medals of the Geological Association of Canada, the Bancroft Award of the Royal Society of Canada, and the Burwell Award of GSA's Engineering Geology Division. He has been a member of the Geological Society of America since 1970.

Dr. Clague and his graduate students conduct research on a variety of natural hazards, including earthquakes, tsunamis, landslides, and floods. They also are documenting effects of Holocene climate change on glaciers, vegetation, and geomorphic processes in the mountains of western North America. Dr. Clague has authored or coauthored over 250 journal papers on these and other subjects in 40 different journals. His other major professional interest is earth science education. Dr. Clague has given countless public lectures, has written two general interest books on geology, and is coauthor of a textbook on natural hazards.

"The Formation and Failure of Natural Dams"

Lakes dammed by landslides, moraines, and glaciers in high mountains have drained suddenly to produce floods orders of magnitude larger than normal nival or rainfall floods. Reservoirs that form behind landslide dams pose a threat to upstream infrastructure. In addition, most landslide dams fail soon after they form, typically by overtopping and incision; the failure may produce destructive downstream floods. Lakes dammed by Neoglacial end and lateral moraines are susceptible to failure because they are steep-sided and consist of loose, poorly sorted sediment that in some cases is ice-rich. Irreversible rapid incision of a moraine dam may be caused by a large overflow triggered by an avalanche or rockfall. As climate

warms, lakes impounded by glaciers may drain suddenly and unexpectedly following a long period of stability due to progressive wastage of the glacier dam and the formation of subglacial, supraglacial, or ice-marginal channels. Most outburst floods display an exponential increase in discharge, followed by a gradual or abrupt decrease to background levels as the water supply is exhausted. Peak discharges are controlled by lake volume, dam morphology and materials, failure mechanism, and downstream topography and sediment availability.

Climate is an important determinant of the stability of moraine and glacier dams. Most moraine-dammed lakes formed in the last century as glaciers retreated from bulky end moraines constructed during the Little Ice Age. The lakes soon began to fail as climate warmed. With continued warming and glacier retreat, the supply of moraine-dammed lakes that are susceptible to failure will be exhausted, and the threat they pose will diminish. Glacier-dammed lakes typically have gone through a period of cyclic or sporadic outburst activity, lasting up to several decades, since climate began to warm in the late nineteenth century. The outburst floods from any one lake ended when the glacier dam weakened to the point that it could no longer trap water behind it. However, with continued glacier retreat, the locus of outburst activity may, in some cases, shift up-glacier to sites where new lakes develop in areas that are becoming deglaciated.