



16/01/2018

Harry Alexander Mount will be proposed for membership on 23rd January 2018 meeting.

**January 23rd
meeting at 7.30pm
in Lecture Theatre 137 of Liverpool John Moores University,
Byrom Street L3 3AF**

**Dr Tim Lane, Liverpool John Moores University
Greenlandic glacier behaviour during the last 2,000 years**

The climate of the past 2,000 years provides critical context for current anthropogenic climate forcing, and provide a great baseline for better understanding the impact of natural climate variability on Earth surface processes. Glaciers in the Arctic are currently experiencing rapid retreat, thinning, and mass loss, contributing to global sea level. Given the Arctic is projected to warm at twice the rate of the global average, melt of these glaciers are likely to increase. Studying the past extent of glaciers and the timing of their advance and retreat can provide a detailed insight into how these Arctic ice masses respond to climate change. Throughout the past 2,000 years, most mountain glaciers experienced their largest extent during the Little Ice Age (1450 to 1850 CE, LIA), a period marked by colder hemispheric temperatures. However, despite known climate fluctuations such as this, the record of glacier behaviour is more complex.

**February 6th
meeting at 7.30pm
in Lecture Theatre 137 of Liverpool John Moores University,
Byrom Street L3 3AF**

**Dr Pat Byrne, Liverpool John Moores University
Water quality impacts and river system recovery following the 2014 Mount Polley mine tailings dam spill, British Columbia, Canada**

The Mount Polley mine tailings embankment breach on August 4th 2014, in British Columbia, Canada, is the second largest mine waste spill on record. The mine operator responded swiftly by removing significant quantities of tailings from the primary receiving watercourse, stabilizing the river corridor and beginning construction of a new river channel. This presented a unique opportunity to study spatial patterns of element cycling in a partially-restored and alkaline river system. Overall, water quality impacts are considered low with Cu being the only element of concern. However, the spatial pattern of stream Cu loading suggested chemical (dominant at low flow) and physical (dominant at high flow) mobilization processes operating in different parts of the watershed. Chemical mobilization was hypothesized to be due to Cu sulfide (chalcopyrite) oxidation in riparian tailings and reductive dissolution of Cu-bearing Fe oxides in tailings and streambed sediments whereas physical mobilization was due to erosion and suspension of Cu-rich stream sediments further downstream. Although elevated aqueous Cu was evident in Hazeltine Creek, this is considered a relatively minor perturbation to a watershed with naturally elevated stream Cu concentrations. The alkaline nature of the tailings and the receiving watercourse ensures most aqueous Cu is rapidly complexed with dissolved organic matter or precipitates as secondary mineral phases. Our data highlights how swift removal of spilled tailings and river corridor stabilization can limit chemical impacts in affected watersheds but also how chemical mobilization (of Cu) can still occur when the spilled tailings and the receiving environment are alkaline. We present a conceptual model of Cu cycling in the Hazeltine Creek watershed.

Herdman Symposium - The 'Centenary Symposium'

will be held on Saturday 17 February 2018 at the University of Liverpool, Central Teaching Lab. Presentations (from 10am-5pm) include; fossil sharks, low carbon aggregates, continental breakup, igneous intrusions, faults and geology for global development. Details and tickets are available at <https://tinyurl.com/Herdman2018>.

LGS members are entitled to register for a reduced rate. (Tickets will be on sale at LGS meetings for those who do not wish to register online).

ADVANCED INFORMATION

Dr Roger Suthren's lecture on the "Geology of Wine – Languedoc, France" at the Joint Meeting with the Herdman Society on November 21st was a great success, as was the wine tasting afterwards. Assuming there is sufficient interest from members, Roger has agreed to lead us on a week long field excursion to the South of France in late September 2018. In order to take this opportunity further we need to know who is potentially interested in the trip. If you would like to express an interest can you send an email to Philip Firth using this address, Philip_firth@yahoo.com.

CONTACTS

To make contact with officers of the society, please use the addresses given here. This information is also available on the contacts page of the website at: www.liverpoolgeologicalsociety.org

Money and membership:

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