

Surface and subsurface hydrology of a debris-covered glacier revealed by dye tracing

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The IUGG General Assembly

A BSG conference attendance grant (£750) enabled me to attend the International Union for Geodesy and Geophysics (IUGG) General Assembly in Montréal, Canada, 7–14th July 2019. I gave an oral presentation within the Debris-Covered Glaciers session on part of my PhD research: dye tracing investigations of a debris-covered glacier's hydrological system ([abstract](#)). The fieldwork for this research was also generously supported by a BSG postgraduate research grant.

While I spent most of the conference in sessions for the International Association of Cryospheric Sciences (IACS) Symposium, there were also numerous inter-association sessions that were of great interest. This is the only large conference I have and will attend during my PhD, and it therefore provided valuable networking opportunities as I look for my next position after I hand in my thesis.

Presentation

Meltwater from Himalayan glaciers provides a vital resource (drinking water, irrigation, and hydroelectric power) for millions of people across the Hindu-Kush Himalaya foothills. Debris-covered glaciers make up a substantial number of Himalayan glaciers, and their relatively well-studied supraglacial hydrological systems are known to differ from those of clean-ice glaciers. However, almost nothing is known about how water is transported beneath the surface of debris-covered glaciers. This research used fluorescent dye tracing to reveal previously unknown features and complexities in the surface and subsurface hydrology of a debris-covered glacier: Khumbu Glacier, Nepal. The paper is published and open-access ([Miles et al., 2019](#)).

Media summary

My attendance at the IUGG General Assembly in Montréal, Canada, was supported by a BSG grant. I gave an oral presentation on a paper from my PhD research and had valuable networking opportunities.

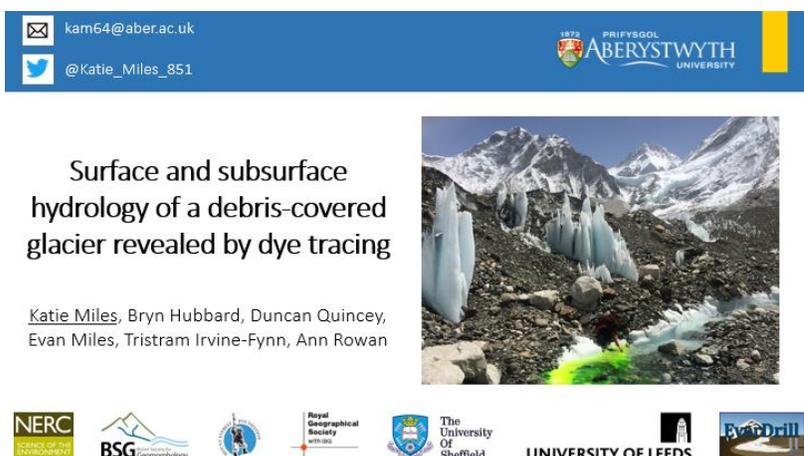


Figure 1 – Title slide of my IUGG presentation