**Becky Sanderson**

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**Bio**

**A picture containing tree, outdoor, person, dress

Description automatically generated**Ice at the north and south poles fascinates me because even the smallest changes in these environments impacts people around the world. The East Antarctica and across the South Pole specifically interest me because of its vast cold dry surface landscape, yet underneath the ice is an infinite number of englacial and subglacial features, from 3.5km high mountains buried under thousands of meters of ice to an extensive subglacial hydrological network, as well as Mega Dunes and subglacial basins. My project primarily uses radar images to investigate the internal stratigraphy of the ice with the purpose of formulating a dated stratigraphic architecture linking up a large proportion of East Antarctica across to West Antarctica.

**Research aims and techniques:**

I am focussing my PhD on englacial layers across central East Antarctica. The project primarily uses two pre-existing airborne radar datasets collected by the British Antarctic Survey: PolarGap and the AGAP surveys. These (and other similar surveys) have been previously used to constrain ice thickness, bed topography and subglacial hydrology. However, this project uses automated and manual approaches to concentrate on tracing and dating the internal layers imaged through the radar. The project involves assessing the continuity of englacial layers using the Internal Layer Continuity Index to investigate ice flow and the influence of bed topography on englacial layers. The project also aims to investigate basal ice units and anomalies at the ice bed interface using radar images.

**Supervisors:**

* Dr Neil Ross, School of Geography, Politics and Sociology, Newcastle University
* Dr Louise Callard, School of Geography, Politics and Sociology, Newcastle University
* Dr Kate Winter, Department of Geography and Environmental Sciences, Northumbria University

**Collaborations:**

* Professor Robert Bingham, AntArchitecture SCAR Action Group. <https://www.scar.org/science/antarchitecture/home/>
* Tom Jordan, British Antarctic Survey.

**Publications:**

S.J. Livingstone, Y. Li, A. Rutishauser, R.J. Sanderson, K. Winter, J.A. Mikucki, H. Björnsson, J.S. Bowling, W. Chu, C. Dow, H.A. Fricker, M. McMillan, F. Ng, N. Ross, M.J. Siegert, M. Siegfried, A.J. Sole. (in press) Subglacial lakes and their changes in a warming climate.