



**IGS**

International  
Glaciological  
Society

**British Branch  
Meeting**

4<sup>th</sup> and 5<sup>th</sup>  
September 2019

Geography and  
Environmental  
Sciences,  
Northumbria  
University



**Northumbria  
University**  
NEWCASTLE

Programme



# Welcome

On behalf of the department of Geography and Environmental Sciences at Northumbria University, Newcastle, we would like to welcome you to the North and to Newcastle. It is our pleasure to host the 2019 British Branch Meeting of the International Glaciological Society. Thanks to all delegates, and presenters for supporting the meeting - we look forward to hosting you and wish you a productive and enjoyable meeting!

## Location & Venue

The conference will be held in the Ellison Building, in Northumbria University's City Campus (Number 10b on the enclosed map – see page 2). Registration will commence in the foyer of Ellison Building B block (next to Subway) between 8:30 AM and 9:30 AM on Wednesday the 4<sup>th</sup> of September.

## Oral Presentations

Oral presentations will take place in the Ellison Building lecture theatre EBB 0001. The talk slots are each 15 minutes in duration, with 12 minutes allocated for the presentation and 3 minutes for questions. The lecture theatre has a desktop PC and we ask that you upload and test your presentation in the break before the session, at the very latest. IT support will be available.

## Poster Presentations

The poster session will take place off campus, in the foyer of Wylam Brewery in the Palace of Arts, within Exhibition Park (NE2 4PZ). This is a 20 minute walk from the City Campus (see page 3). Poster boards will be allocated on a first-come first-serve basis, so arrive early to secure your spot! The poster boards will accommodate posters in A1 portrait.

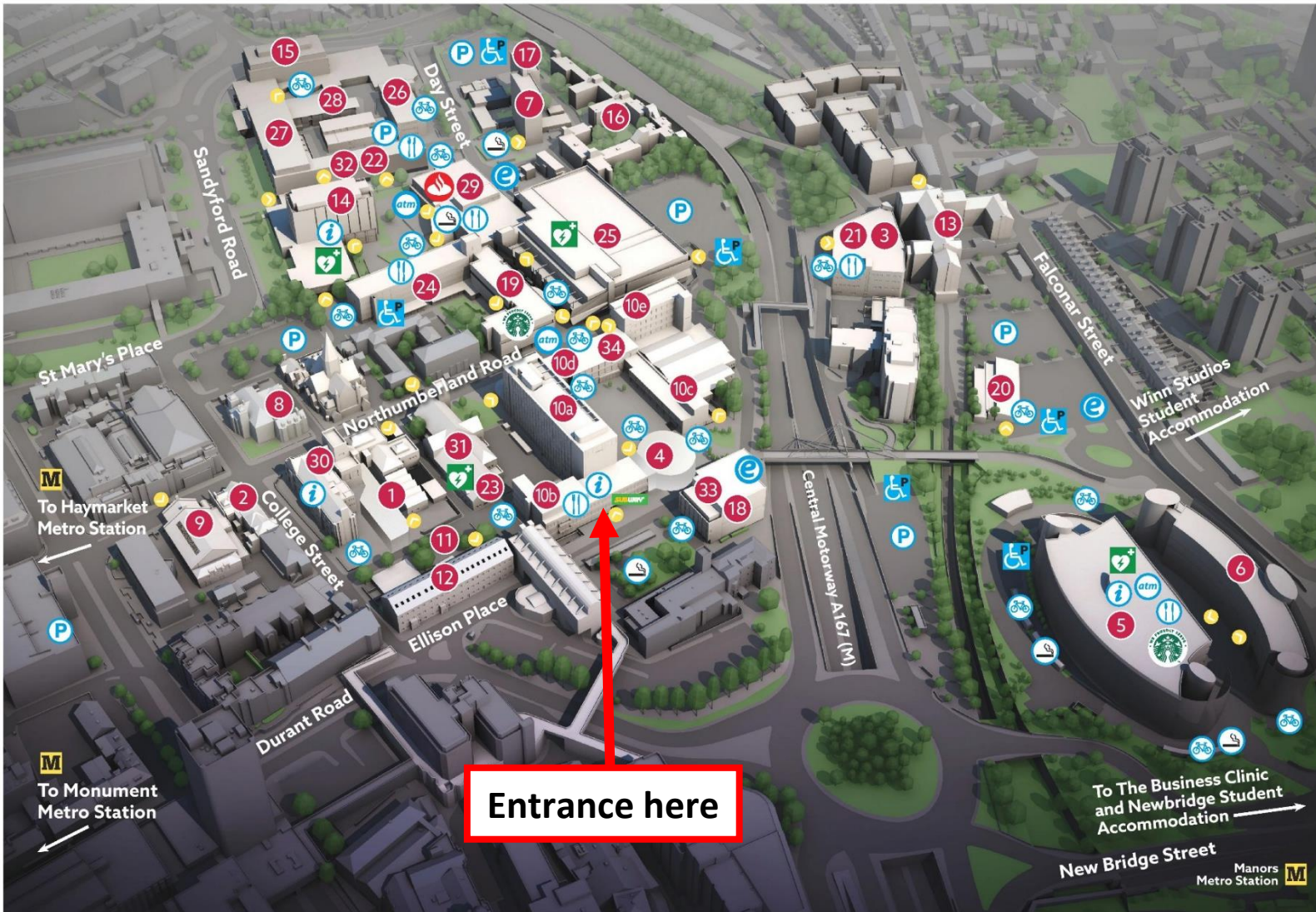
## Abstract Booklet

To save paper we will not print out this programme, or a book of abstracts. Both documents are available electronically, so you may print copies in advance yourself if you wish.



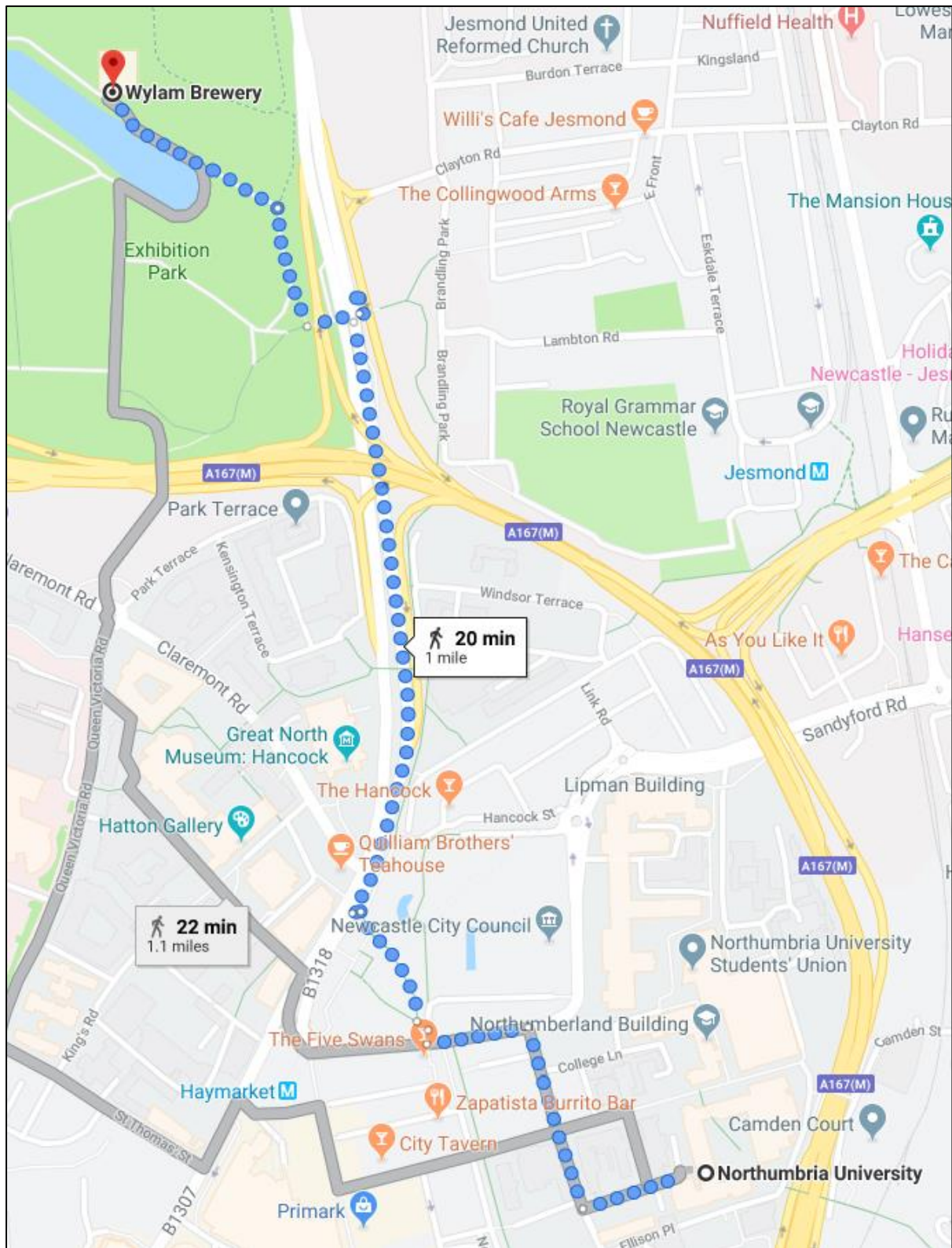
# City Campus

- Reception/ Information
- Parking
- Cycle Parking
- Electric Vehicle Charge Point
- Food and Drink
- ATM Machine
- Starbucks
- Subway
- Smoking Area
- Santander Branch
- Accessible Building Entrance
- Accessible Parking
- Automated External Defibrillator



- 1 Architecture Studios
- 2 Burt Hall
- 3 Campus Services
- 4 CIS Building
- 5 City Campus East 1 – Business and Law  
**Student Central**  
Ask4Help  
CCE Restaurant & Deli, 1880 Café
- 6 City Campus East 2 – Design School
- 7 Claude Gibb
- 8 College House
- 9 Drill Hall
- 10a Ellison Building A Block
- 10b Ellison Building B Block
- 10c Ellison Building C Block
- 10d Ellison Building D Block
- 10e Ellison Building E Block
- 11 Ellison Gardens
- 12 Ellison Terrace  
Occupational Health
- 13 Glenamara House
- 14 Library  
**Student Central**  
Ask4Help  
Student Support and Wellbeing
- 15 Lipman Building
- 16 Lovaine Halls
- 17 Muslim Prayer Facility
- 18 Nixon Hall
- 19 Northumberland Building  
Café Central  
University Library Digital Commons
- 20 Northumbria Nursery
- 21 Pandon Building  
Pandon Grab and Go
- 22 Sandford Building  
Taste Café
- 23 Security, Mail and Transport
- 24 Shop Central
- 25 Sport Central
- 26 Squires Annexe
- 27 Squires Building
- 28 Squires Workshops
- 29 Students' Union  
Santander
- 30 Sutherland Building
- 31 Trinity Building
- 32 The University Gallery  
Gallery North  
The University Collection  
The Woon Gallery of Asian Art
- 33 Wynne-Jones Building inc Chaplaincy and Faith Advice Centre
- 34 The Zone

# Walking directions from Ellison Building, Northumbria University to Wylam Brewery, in Exhibition Park



## Conference Dinner

The conference dinner will take place at Wylam Brewery from 19:30-23:00 on the evening of Wednesday the 4<sup>th</sup> September (location marked on page 3). *Please note that the dinner is only open to those who have pre-booked.* There is no formal seating plan for the dinner, so take a seat wherever you like. Once your dinner choices have been noted, your food will be on its way! If you don't remember exactly what you ordered then take a look at the reverse of your conference name badge where all will be revealed... As soon as everyone is seated we will be able to start handing out drink vouchers, which you can exchange for alcoholic or non-alcoholic drinks at the bar.

## Wifi

Visitors to Northumbria can use our "WiFi Guest" for free internet access whilst on campus.

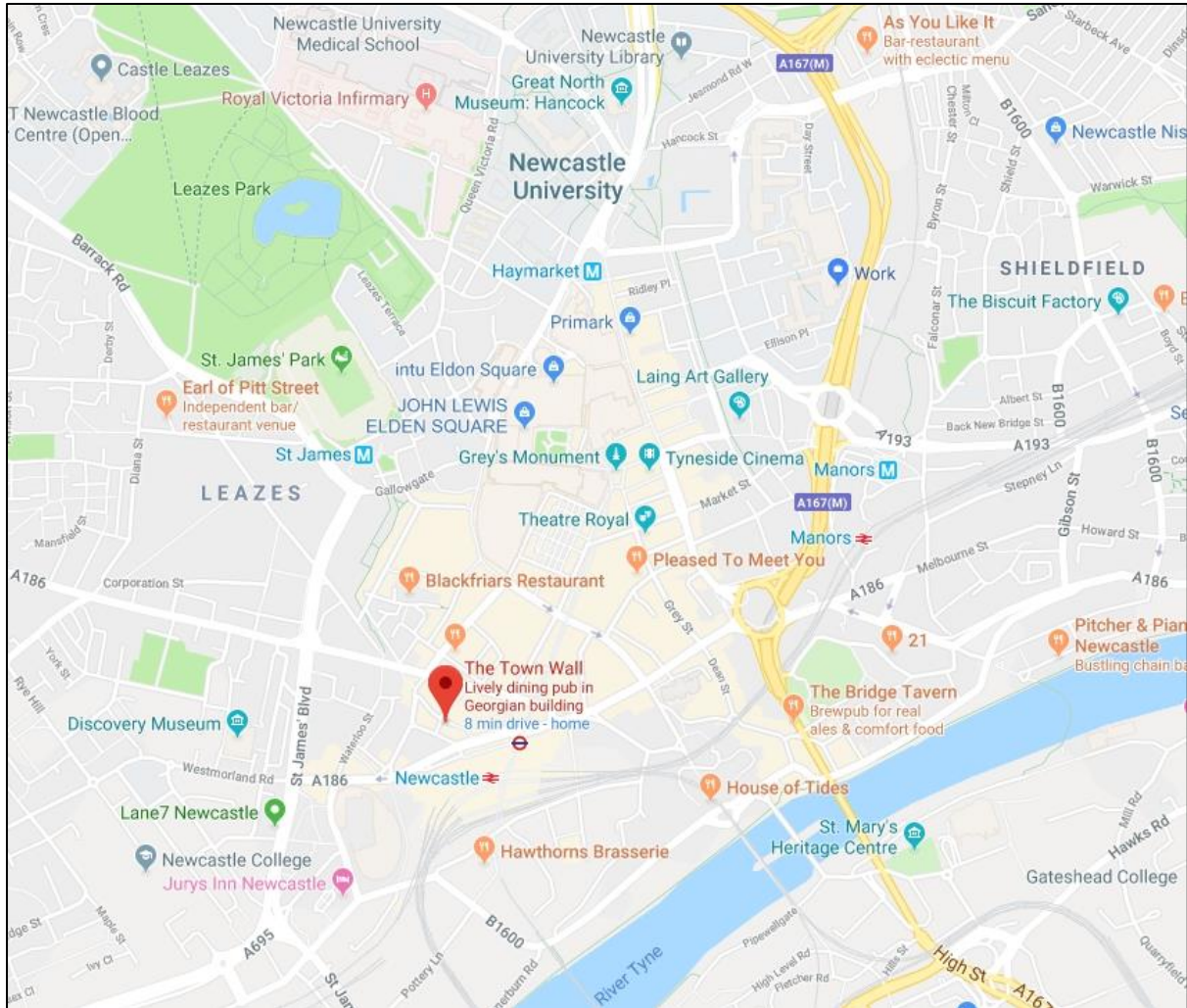
Here's what you need to do to connect:

- 1) Connect to the network 'WiFi Guest' on your device
- 2) Open a web browser (if you receive a Certificate notice, select Proceed Anyway to continue)
- 3) From the Cloud landing page locate the box 'Get online at Northumbria University' and click 'Go'
- 4) Scroll down to select 'Create Account'
- 5) Enter your details and your account will be created
- 6) You should then be connected to WiFi Guest

## Icebreaker

If you are arriving on the 3<sup>rd</sup> of September please come and join us at The Town Wall pub (see map on page 5) from 7pm for an informal pre-conference meet-up. It's less than a 2 minute walk from Newcastle Central Train Station and the Central Station metro stop (which has a direct link to the airport). Look for IGS signs on the tables!

# Icebreaker pre-conference meet-up at The Town Wall, 7pm on Tuesday the 3<sup>rd</sup> of September



# Conference Schedule

## Wednesday 4<sup>th</sup> September, 2019

08:30 - Registration Foyer, Ellison Building, B Block, Ground Floor  
09:30

09:30 - Welcome (Nick Rutter & Lecture Theatre (EBB 0001), B Block, Ellison  
09:45 John Woodward) Building

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### Session 1: Glacier Dynamics and Mass Balance (Chair: Rachel Carr)

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09:45 - Paco Navarro Dynamic discharge variability and mass  
10:00 balance of the Academy of Sciences Ice Cap,  
Severnaya Zemlya, Russian Arctic

10:00 - Tobias Bolch Glacier mass budgets in High Mountain Asia  
10:15 since 1960s

10:15 - Jenna Sutherland\* The impact of large proglacial lakes on past  
10:30 outlet glacier dynamics during the Last Glacial  
Maximum in New Zealand

10:30 - Ethan Lee\* Quantifying post-Little Ice Age mass change in  
10:45 the Himalaya

10:45 - Owen King Glacial lake expansion exacerbates Himalayan  
11:00 glacier mass loss

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11:00 - Refreshment Break, Foyer, Ellison Building, B Block, Ground Floor  
11:30

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## Session 2: Ice Sheet Dynamics and Mass Balance (Chair: Amber Leeson)

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11:30 - 11:45	Tavi Murray	Using fluctuations in borehole water pressure to infer sediment properties beneath Rutford Ice Stream, West Antarctica
11:45 - 12:00	Samuel Cook*	Validating a fully coupled model of calving, subglacial hydrology, proglacial plumes and ice flow at Store Glacier, West Greenland, using high-resolution radar
12:00 - 12:15	Dominik Fahrner*	Regional linear retreat patterns of Greenlandic tidewater glaciers over the past 34 years in response to climate forcing
12:15 - 12:30	Frazer Christie	Inter-decadal climate variability induces dichotomous ice response along Pacific-facing West Antarctica
12:30 - 12:45	Charlie Bunce*	Investigating controls on seasonal variations in iceberg calving at a large Greenlandic tidewater glacier, inferred from time-lapse image analysis
12:45 - 13:00	Andrew Sole	Sudden and substantial late winter speed-up of Nordenskiöld Glacier, west Greenland, forced by subglacial hydrology

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13:00 - 14:00	Lunch	Foyer, Ellison Building, B Block, Ground Floor
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## Session 3: Snow & Seligman Crystal (Chair: Liz Morris)

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14:00 - 14:15	Hamish Pritchard	SNOWFALL: a new way to measure an important water resource
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14:15 - 14:30	Markus Todt	Simulated single-layer forest canopies delay Northern Hemisphere snowmelt
14:30 - 14:45	Johanna Malle*	Effects of canopy structure and snow cover fraction on wintertime land surface albedo of forested environments
14:45 - 15:00	Alex Priestly*	Assimilation of geophysical data in snow hydrology modelling
15:00 - 15:15	Mel Sandells	Representation of 3D Microstructure of Snow for Microwave Scattering
15:15 - 15:30	Richard Essery	Turning snow models the right way up on tundra
15:30 - 16:15	Richard Hindmarsh	Seligman Crystal Presentation & Talk
16:15 - 17:00	Transfer between Northumbria University and poster session at Wylam Brewery	
16:30 - 17:00	Poster Session Setup	Wylam Brewery
17:00 - 19:30	Poster Session	Wylam Brewery
19:30 - 23:00	Conference Dinner	Wylam Brewery

## Thursday 5<sup>th</sup> September, 2019

### Session 4: Ice Shelves and Ice-Ocean Interactions (Chair: Sebastian Rosier)

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|------------------|----------------------|---|
| 09:00 -<br>09:15 | Tom Cowton           | Impact of submarine melting on tidewater glacier retreat governed by plume locations  |
| 09:15 -<br>09:30 | Richard Selwyn-Jones | Ocean-driven non-linear glacier retreat during the Holocene: southwestern Ross Sea, Antarctica                                  |
| 09:30 -<br>09:45 | Emily Hill           | Modelling the response of Petermann Glacier to ice shelf loss   |
| 09:45 -<br>10:00 | Bradley Lipovsky     | Ice shelf rifts: a three-dimensional linear elastic fracture mechanical analysis  |
| 10:00 -<br>10:15 | Jan De Rydt          | Calving cycle of the Brunt Ice Shelf, Antarctica, driven by changes in ice-shelf geometry                                       |
| 10:15 -<br>10:30 | Donald Slater        | Atmosphere doubles the impact of the ocean on the Greenland Ice Sheet   |
| 10:30 -<br>10:45 | Amber Leeson         | Evolution of Supraglacial lakes on Larsen B in the decades before it collapsed  |
| 10:45 -<br>11:00 | Joe Mallalieu        | Calving at lacustrine ice-margins: an integrated SfM time-lapse analysis of processes, mechanisms and drivers in west Greenland |
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- 11:00 - Refreshment Break, Foyer, Ellison Building, B Block, Ground Floor  
11:30
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**Session 5: Glacier & Ice Sheet Hydrology** (Chair: Cat Fyffe)

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11:30 – 11:45	Bernd Kulesa	Airborne and ground-based geophysical evaluation of the surface hydrological system of the Sarsdal Glacier, East Antarctica
11:45 – 12:00	Neil Ross	Near-margin ice thickness and subglacial water routing, Leverett and Russell glaciers, Greenland
12:00- 12:15	Felipe Napoleoni*	The subglacial hydrology of the Ellsworth-Whitmore Mountains West Antarctica: newly identified subglacial lakes and the stability of water flow since the Mid-Pleistocene.
12:15 - 12:30	Jonathan Carrivik	Glacier outburst floods in Greenland
12:30 - 12:45	Thomas Chudley*	Supraglacial lake drainage at a fast-flowing Greenlandic outlet glacier
12:45 - 13:00	IGS BB AGM	Annual general meeting
13:00 - 14:00	Lunch	Foyer, Ellison Building, B Block, Ground Floor

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**Session 6: Glacier Geophysics & Biogeochemistry** (Chair: Bernd Kulesa)

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14:00 – 14:15	Caroline Clason	Contamination from nuclear fallout in glaciers across the global cryosphere: cryoconite's anthropogenic memory
14:15 – 14:30	Francesca Falcini*	Are ice stream beds always smooth? Insights from contemporary and palaeo-ice streams

14:30 - 14:45	Joseph Graly	What can subglacial hydrochemistry reveal about upstream glaciological conditions?
14:45- 15:00	Kate Winter	Radar-detected englacial debris
15:00 – 15:15	Stewart Jamieson	Reconstructions of Antarctic palaeotopography since the Eocene-Oligocene boundary and implications for ice sheet behaviour
15:00 - 15:30	Michael Cooper	Unearthing the Forgotten Record of Glacier and Ice-sheet Change
15:30 - 15:45	David Ashmore	Englacial architecture and age-depth constraints across the Weddell Sea Sector of West Antarctica
15:45 - 16:00	Closing Remarks and Award of John Glen Prize for Best Student Poster and Presentation	
16:00	Meeting Close	

\*indicates presenting author is an undergraduate or postgraduate student

## Twitter

Follow [@igsbb2019](https://twitter.com/igsbb2019) on Twitter for conference announcements and use the hashtag [#igsbb2019](https://twitter.com/igsbb2019) for any conference related tweets.

# Notes