

Geochemistry Group  
Research in Progress Meeting

# GGRiP 2025

*Tuesday 8th - Thursday 10th April 2025*  
*University of Birmingham*

## Programme



The  
Geological  
Society



UNIVERSITY OF  
BIRMINGHAM

# Programme Day 1

## Tuesday 8th April 2025

*Location: Alan Walters Building*

12:00 - 13:00      **Registration**

13:00 - 13:15      **Welcome/introductions**

### **Session 1: Old Rocks, New Tricks** (Chairs: Dr Jane Barling & Dr James Bendle)

13:15 - 13:30      **Raimund Wahlen (Agilent)**

*Novel tools for ICP method development in challenging matrices*

13:30 - 14:00      **Clare Warren (Keynote)**

*Making Mountains: The role of metamorphic processes in economic geology*

14:00 - 14:15      **Matthew Allison**

*Quantifying the uniformitarian assumption across 200 million years of GDGT-based temperature reconstructions*

14:15 - 14:30      **Paul Savage**

*The Si isotope compositions of TTGs indicates increased weathering of subaerial land ~3.7 billion years ago*

14:30 - 15:00      **Tea/coffee break**

15:00 - 16:15      **Poster Session (G11)**

### **Session 2: Ice, Ice, Maybe?** (Chairs: Dr. David Wilson & Matthew Allison)

16:15 - 16:30      **Craig Storey (Datech)**

*Laser ablation ICP-MS and Laser Induced Breakdown Spectroscopy using Excimer and Femtosecond lasers from Applied Spectra – What can we ask and what can we learn?*

16:30 - 16:45      **Emily Archibald**

*Holocene dynamics of Thwaites Glacier (West Antarctica): New insights from offshore provenance records*

16:45 - 17:00      **James Bendle**

*Compound-specific  $\delta^2\text{H}$  of algal biomarkers: a novel proxy for glacial meltwater inputs*

17:30 - 20:00      **Icebreaker event (Lapworth Museum)**



## Programme Day 2

### Wednesday 9th April 2025

*Location: Alan Walters Building*

09:30 - 10:00      **Welcome tea/coffee**

#### **Session 3: What's in the Ocean?** (Chairs: Dr Bridget Warren & Dr Pam Vervoort)

10:00 - 10:15      **Mike Seed (Elementar)**  
*High precision stable isotope analysis of carbonate and water samples for paleoclimate applications using the Elementar iso DUAL INLET*

10:15 - 10:45      **Ross Whiteford (Keynote)**  
*Using Gaussian Processes to Reconstruct Phanerozoic Seawater Calcium, Magnesium, and Sulphate Concentrations*

10:45 - 11:00      **Molly Trudgill**  
*Glacial alkalinity in the Pacific Ocean constrained from paired oxygen and carbonate system reconstructions*

11:00 - 11:15      **Kirsty Edgar**  
*Stable isotope palaeoecology of middle Eocene to early Oligocene planktonic foraminifera from IODP Expedition 342, north-western Atlantic Ocean*

11:15 - 11:45      **Tea/coffee break**

11:45 - 13:00      **Poster Session (G11)**

13:00 - 14:00      **Lunch (Alan Walters Atrium)**

#### **Session 4: Fossilised Fables & Ancient Labels** (Chairs: Dr Tom Dunkley Jones & Dr Marie-Laure Bagard)

14:00 - 14:15      **Florian Kuhl (MK Versuchsanlagen)**  
*MK Mobile Labs: metal-free clean lab solutions in a container*

14:15 - 14:45      **Kirsty Penkman (Keynote)**  
*Through the Looking-Glass, and What Amino Acids Found There*

14:45 - 15:00      **Katie Brown**  
*Lithium isotopes in Holocene speleothems from the Yorkshire Dales: testing their application as weathering regime tracers*

15:00 - 15:15      **Thomas Marquand**  
*Using stable carbon isotopes to quantify the production and consumption of CO<sub>2</sub> and CH<sub>4</sub> in soils with changing water table depth*



## Programme Day 2

### Wednesday 9th April 2025

15:15 - 15:45      **Tea/coffee break**

**Session 5: From Mantle to the Moon** (Chairs: Dr Aled Evans & Dr Kathryn Shaw)

15:45 - 16:00      **Niel Williams (Thermo Fisher Scientific)**

*Thermo Scientific™ Neoma™ MS/MS MC-ICP-MS: improved abundance sensitivity for uranium isotopic analysis*

16:00 - 16:15      **Matthew Varnam**

*Crystal clear or a crystal ball? Major element profiles created by devitrification of picritic glass prior to melting in volatile-loss experiments*

16:15 - 16:30      **Hugo Moreira**

*Tracing the redox-state of the upper mantle in the early Earth*

16:30 - 16:45      **Elsa Amsellem**

*Primordial Signatures of Early Magma Ocean Crystallisation in Barberton Komatiites: Insights from Fe Isotopes*

16:45 - 17:00      **Catriona Menzies**

*Using Geochemical Tools to Investigate Fluid Flow and Earthquake Processes*

19:00 - LATE      **Conference Banquet at Celebrity Indian Restaurant**



## Programme Day 3

### Thursday 10th April 2025

*Location: Alan Walters Building*

09:30 - 10:00      **Welcome tea/coffee**

#### **Session 6: It's a Hard Rock Life** (Chairs: Dr Paul Savage & Dr Catriona Menzies)

10:00 - 10:15      **Paul Watson (Elemental Scientific Instruments)**

*Overview of Elemental Scientific's products for Geochemistry*

10:15 - 10:45      **Aled Evans (Keynote)**

*Ocean crustal veins record dynamic interplay between plate-cooling-induced cracking and ocean chemistry*

10:45 - 11:00      **Sukalpa Chatterjee**

*Formation of Paleoarchean greenstone belt by melting of evolving plume sourced from the deep mantle*

11:00 - 11:15      **Kevin Wong**

*Numerical modelling of H<sub>2</sub>-generating fluid-rock reactions in subduction setting*

11:15 - 11:45      **Tea/coffee break**

#### **Session 7: Carbon Chronicles** (Chairs: Dr Ross Whiteford & Dr Savannah Worne)

11:45 - 12:00      **Ariane Donard (Nu Instruments)**

*Accessing new analytical approaches for high-precision and accuracy isotope ratio analysis with Sapphire XD Dual Path MC-ICP-MS/MS*

12:00 - 12:30      **Tom Dunkley Jones (Keynote)**

*Coccolithophore-based geochemical proxies*

12:30 - 12:45      **Bridget Warren**

*A tale of two [CO<sub>2</sub>] proxies: an inter-proxy comparison of palaeo-CO<sub>2</sub> concentrations in the early Eocene*

12:45 - 13:00      **Rich Norby**

*Forest biogeochemistry under elevated CO<sub>2</sub>: a survey of relevant results from BIFoR FACE*

13:00 - 13:30      **Lunch (Alan Walters Atrium)**

13:30 - 14:15      **AGM/Prize presentations**

