



The
Geological
Society

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Janet Watson Meeting 2019

From Core to Atmosphere: Deep Carbon

26– 28 February 2019

Programme

Tuesday 26 th February 2019	
08.30	Registration & tea, coffee & refreshments
09.00	Welcome – Lotta Purkamo (University of St. Andrews) and Simon Matthews (University of Cambridge)
Session I: Deep Carbon: Storage and Origin	
09.10	KEYNOTE: The fate of carbonate in oceanic crust subducted into Earth's mantle Andy Thomson, University College London
9.50	Carbon network evolution from dimers to sheets in yttrium dicarbide under pressure Xiaolei Feng, Center for High Pressure Science and Technology Advanced Research (HPSTAR)
10.10	An Open-System Model for Coupled H₂O and CO₂ Transport in Subducting Slabs Tian Meng, University of Oxford
10.30	Carbon and Nitrogen in diamonds, meteorites and other mantle samples : Need for a re-evaluation Sudeshna Basgupta, University College London
10.50	Breakout Session: Tea, coffee, refreshments and posters
11.20	Earth in five reactions Simon Redfern, British Geological Survey
11.40	Helium isotopes reveal a mantle component for diamond with low $\delta^{13}\text{C}$ values James Crosby, University of Cambridge
12.00	How much carbon is stored as diamond is in the East African Lithosphere? Adrian Jones, University College London
12.20	Carbon Mobility in 10+ km Deep Melts John Parnell, University of Aberdeen
12.40	Lunch and Poster Session
13.15	ECR Workshop
14.30	Breakout Session: Tea, coffee, refreshments and posters

Session II: Deep Carbon in the Biosphere	
15.00	KEYNOTE: Life under pressure: Microbial response to hydraulic fracturing of the deep terrestrial subsurface Sophie Nixon, University of Manchester
15.40	Microbially mediated basalt alteration: an experimental approach Rachel Moore, Université Paris Diderot
16.00	Depth and dissolved organic carbon shape microbial communities in the deep biosphere Mark Dopson, Linnaeus University
16.20	Science Communication Storytelling and the Media: an Introduction to Science Communication Katie Pratt, Communications Director, Deep Carbon Observatory, University of Rhode Island
17.00	Drinks Reception and Posters
18.30	Close
Wednesday 27 th February 2019	
Session III: Deep Carbon Transport	
9.00	TBC Ery Hughes, University of Bristol
9.40	High fluxes of deep volatiles at ocean island volcanoes: insights from El Hierro, Canary Islands Zoltan Taracsek, University of Manchester
10.00	Remobilization of crustal carbon may dominate volcanic arc emissions Emily Mason, University of Cambridge
10.20	The extraction of carbon from the deep Earth's mantle through processes of redox melting and magma ascent Vincenzo Stagno, Sapienza University of Rome
10.40	Modeling the transport of melt and volatiles by integrating thermodynamic models in geodynamic simulations using the community code ASPECT Juliane Dannberg, Norwegian University of Science and Technology
11.00	Breakout Session: Tea, coffee, refreshments and posters
11.20	Constraining the distribution of sulfur between the Earth's mantle and crust Callum Reekie, University of Cambridge
11.40	Composition of volatile components in garnet from a diamondiferous eclogite of Udachnaya kimberlite pipe, Yakutia, Russia Nikolay Sobolev, Institute of Geology and Mineralogy of the Siberian Branch of Russian Academy of Sciences
12.00	Constraining the magmatic system of Ol Doinyo Lengai volcano by monitoring CO₂-H₂O in gases Kate Laxton, UCL
12.20	Lunch and Poster Session
12.45	ECR Workshop
Session IV: Deep Carbon in Time	
13.30	KEYNOTE: Linking massive emissions of deep carbon to major climate warming events in the geological past Lawrence Percival, Vrije Universiteit Brussels

14.10	Millennial storage of magmatic carbon near the Moho Euan Mutch, University of Cambridge
14.30	Quantifying and understanding present-day volcanic carbon degassing at rifts: challenges and implications Tamsin Mather, University of Oxford
15.00	Public Lecture The Story of Earth: How Life, Rocks, and the Carbon Cycle have Co-Evolved Robert Hazen
16.00	Breakout Session: Tea, coffee, refreshments and posters
16.20	The History of Deep Carbon Science, from Crust to Core Simon Mitton, University of Cambridge
16.40	Large Igneous Provinces and Environmental Change: Applying Geographic Information Systems to Estimate Total Deccan Lava Volumes Nick Barber, University of Cambridge
17.00	Quantifying the phosphorous inventory of the North American crust Craig Walton, University of Cambridge
17.30	Close

Thursday 28th February
Joint Workshop:
Janet Watson and DCO Executive Committee

The Future of Deep Carbon Research

Start	10:00
Joint Luncheon	12.30
Close	14.00

Poster Programme

The aqueous solubility of carbonates at subduction zone conditions

Stefan Farsang, University of Cambridge

Deep carbon cycling over the past 200 million years: evaluating contributions from tectonic settings

Kevin Wong, University of Leeds

Metamorphic controls on Earth's deep crustal CO₂ budget

Gautier Nicoli, University of Cambridge

Degassing pathways along a volcanic fissure: Combining lake and soil CO₂ fluxes

Ery Hughes, University of Bristol

What constraints do melt inclusions place on mantle carbon?

Simon Matthews, University of Cambridge

Hard rock life- Microbial communities in ultradeep crystalline bedrock

Lotta Purkamo, University of St. Andrews

t.b.c.

Craig Schiffries, Carnegie Institute, Washington