



# Carbon System Science

Geochemistry Group Research in Progress meeting

The Geological Society, Burlington House, London

4<sup>th</sup> March 2010

## Oral program

**09.30 am** Registration, Poster set up and Tea/Coffee

**10.10 am** Welcome address

### Planetary carbon

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|-----------------|---------------------------------|--|
| <b>10.15 am</b> | Keynote:<br>Pierre Cartigny     | Carbon in the Earth's mantle: The obvious, the weak and the very speculative aspects of its cycle  |
| <b>10.45 am</b> | Sami Mikhail*                   | 'Organic-looking' carbon and nitrogen isotope compositions in mantle derived diamondites: Mantle fractionation vs. re-worked crustal organics? |
| <b>11.00 am</b> | Adrian Jones                    | Bulk Earth carbon; review in a planetary context   |
| <b>11.15 am</b> | Ben Harte                       | A model for the formation of deep diamonds in subduction zones   |
| <b>11.30 am</b> | Ken Bailey                      | Deep source carbonate volcanism: pressure, temperature, and primary magma indicators   |
| <b>11.45 am</b> | Alison Wright*                  | The use of Raman microspectroscopy to characterise carbon in terrestrial and extraterrestrial environments                                     |
| <b>12.00 pm</b> | <i>Geochemistry Group AGM</i>   |  |
| <b>12.05 pm</b> | <i>Lunch and Poster Session</i> |  |

## Ancient carbon

<b>12.45 pm</b>	Keynote: Paul Pearson	The carbon cycle and the greenhouse – icehouse transition
<b>1.15 pm</b>	Frances Bragg	Effects of CO <sub>2</sub> on biome distributions: modelling glacial-interglacial changes in the $\delta^{13}\text{C}$ of ecosystems as recorded in leaf waxes from sediments along the western African margin
<b>1.30 pm</b>	Hayley Manners*	Understanding the sensitivity of the Earth's climate to CO <sub>2</sub> forcing: comparative organic geochemistry of hyperthermal events
<b>1.45 pm</b>	James Rae*	Tracing ocean palaeocarbon with boron isotopes in benthic foraminifera
<b>2.00 pm</b>	Cecily Chun	Biogeochemical impacts of methane hydrate destabilization during the PETM
<b>2.15 pm</b>	Kirsty Edgar	Reconstructing ocean carbonate compensation depth variability in the Oligocene
<b>2.30 pm</b>	<i>Tea/coffee</i>	

## Modern carbon

<b>3.15 pm</b>	Keynote: Andrew Watson	Observing the ocean sink for atmospheric carbon dioxide – a status report.
<b>3.45 pm</b>	Dave Lowry	Carbon Isotopes of Atmospheric Methane: Constraining Source Signatures for Regional and Global Modelling
<b>4.00 pm</b>	Rebecca Fisher	Arctic atmospheric methane sources
<b>4.15 pm</b>	Phil Renforth*	Engineering the soil carbon sink: carbonation of amorphous calcium silicate materials
<b>4.30 pm</b>	Carla Washbourne*	Engineering the Soil Carbon Sink: Mineral Carbon Capture and Storage at Field Scale
<b>4.45 pm</b>	Invited lecture: Joe Cartwright	Subsurface sequestration of CO <sub>2</sub> : challenges and risks
<b>5.15 pm</b>	Closing remarks & prizes	
<b>5:20 pm</b>	Wine, nibbles and posters	
<b>6:00 pm</b>	<i>Exeunt omnes</i>	

## Poster Session

Hillary Downes	Carbon in the Solar System: an astronomical and meteoritical perspective
Sudeshna Basu	Review of the Scope of Noble Gas studies in diamond
Aron Vecht	Sources of Carbon on Earth and the Planets: Paradigm shift required
Allison Wright*	The behaviour of organic carbon in igneous melts – evidence from Raman microspectroscopy
Barbara Smith*	Not all that is black is basalt: recent subaerial carbonatite volcanism at four vents on Brava (Cape Verde Islands)
Heather Birch*	Return to the light: Evolution of photosymbiosis after the end Cretaceous mass extinction.
Nathalie Grassineau	The first steps of photosynthesis recorded by $\delta^{13}\text{C}$ of Archaean Stromatolites
Peter Bloxom*	Testing the Panama Gateway Hypothesis with a North Atlantic proxy record
Emma Hodgson*	Geochemical and palynological evidence for the presence of the Paleocene / Eocene Thermal Maximum in sediments from the Hampshire Basin, UK
Pauline Gulliver	Application of radiocarbon analysis to carbon system studies.
James Griffiths*	Investigating the Silicic Acid Leakage Hypothesis (SALH) as a cause of $\text{CO}_2$ drawdown during MIS 4

\* denotes student contribution