

Joanne Murray

Doctoral Researcher

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About

Title of PhD: The Impact of Hydrothermal Systems on Petroleum Systems in Sedimentary Basins

Supervisors: Nick Schofield, **[Steve Jones \(/staff/profiles/gees/jones-stephen.aspx\)](/staff/profiles/gees/jones-stephen.aspx)**, Simon Holford (Australian School of Petroleum), Paul Green (Geotrack)

Joanne is currently undertaking doctoral research, studying hydrothermal systems in sedimentary basins, linked to the **[Volcanic Margins Research Consortium \(VMRC\) \(https://www.dur.ac.uk/vmrc/\)](https://www.dur.ac.uk/vmrc/)**.

The heating effects of intrusions on both reservoir and source rocks can pose major risks to hydrocarbon systems. Long term hydrothermal systems within the sub-surface can transmit heat large distances away from intrusions into a basin, where hot fluids can act to degrade the porosity and permeability of reservoir sequences, as well as interacting with hydrocarbons that may be already in place.

The possible link between heating of organic rich source rocks by intrusions and major deviations in the past earth climate, such as the Palaeocene-Eocene Thermal Maximum will also be explored.

This project aims to integrate high-quality 3D seismic datasets (courtesy of PGS), palaeotemperature data (VR and AFTA) and fieldwork to understand the regional palaeo-hydrothermal systems which have operated within Sedimentary Basins.

Qualifications

1st class BSc (Hons) Earth Science – University of Glasgow, 2008-2012

Biography

2008–2012: BSc (Hons) Earth Science – University of Glasgow (1st class)

- Scottish Universities Environmental Research Centre (SUERC) – Summer Internship
- Sir Alwyn Williams Prize for outstanding performance in the penultimate year
- TAQA Bratani (work experience) – Geophysics, seismic interpretation, reservoir engineering, digital modeling
- Sir E. B. Bailey Prize for the top 5 students in Level 2 Earth Science

Research

Research interests

- Seismic interpretation
- Volcanic Systems in Sedimentary Basins
- Petroleum Geology

Other activities

- Postgraduate demonstrator
- Member of the Mineralogical Society of Great Britain and Ireland and the Geological Society of Glasgow