

Eoghan Reeves

Ph.D. Candidate

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RESEARCH INTERESTS

Organic/inorganic geochemistry of hydrothermal fluids, in particular:

- Sources and transformations of carbon compounds in hydrothermal fluids
- Constraining abiotic interactions between carbon and sulfur species in hydrothermal fluids and their potential importance for prebiotic chemistry and the emergence of life
- Techniques in experimental hydrothermal geochemistry and hydrothermal fluid sampling
- Influence of magmatic volatiles on hydrothermal activity in back-arc settings

EDUCATION

- 2005-Present **Ph.D. Candidate in Chemical Oceanography (ongoing)**
Massachusetts Institute of Technology/Woods Hole Oceanographic Institution Joint Program in Oceanography (Cumulative GPA 5.0)
Supervisor: Dr. Jeffrey Seewald
Expected completion: January 2010
- 2003-2004 **Master of Science, Geochemistry** (with distinction) School of Earth and Environment, University of Leeds, U.K.
- July 2003 **Guest Student**, Woods Hole Oceanographic Institution
(Supervisors: Dr. Susan Humphris, Dr. Wolfgang Bach, Dr. Margaret Tivey)
- 1999–2002 **Bachelor of Science, Geological Oceanography** (First Class Honours) School of Ocean Sciences, Bangor University, U.K.

ABSTRACTS AND PRESENTATIONS

⁺Talk, *Poster, *presenting author*

⁺**E. Reeves** and J. Seewald (2009) INVITED - Methanethiol: A geochemical link between carbon and sulfur in hydrothermal systems? *19th Annual V.M. Goldschmidt Conference, Davos, Switzerland.*

⁺**Seewald, J.** and **E. Reeves** (2009) INVITED - Chemical equilibria involving aqueous carbon compounds in submarine hydrothermal systems. *19th Annual V.M. Goldschmidt Conference, Davos, Switzerland.*

***Reeves, E.**, J. Seewald, P. Saccocia, M. van der Meer (2008) Methanethiol in hydrothermal fluids from the Mid-Atlantic Ridge, East Pacific Rise and Guaymas Basin. *Eos Trans. AGU, 89(53), Fall Meet. Suppl., Abstract B51D-0423.*

⁺**E. Reeves**, J. Seewald, S. Sylva (2007) Rapid hydrogen isotopic exchange between aqueous hydrocarbons and water under hydrothermal conditions. *Geochimica et Cosmochimica Acta, 71(15, Suppl. 1), pp A825. 17th Annual V.M. Goldschmidt Conference, Cologne, Germany.*

***Proskurowski, G.**, J. S. Seewald, **E. Reeves**, T. M. McCollom, J. Lupton, S. Sylva, and M. K. Tivey (2007) Volatile chemistry at Lau Basin hydrothermal sites: Basin-wide trends of slab carbonate influence and suggestions of abiotic methane oxidation at the Mariner vent site. *Eos Trans. AGU, 88(52), Fall Meet. Suppl., Abstract V34B-04.*

⁺Seewald, J., **E. Reeves**, P. Saccocia, O. Rouxel, E. Walsh, R. Price, M.K. Tivey, W. Bach, M. Tivey (2006) Water-rock reaction, substrate composition, magmatic degassing, and mixing as major factors controlling vent fluid compositions in Manus Basin hydrothermal systems. *Eos Trans. AGU, 88(52), Fall Meet. Suppl., Abstract B34-A02.*

***Reeves, E.**, J. Seewald, P. Saccocia (2006) Experimental Investigation of CO₂ reduction to CH₄ under hydrothermal conditions. *Ridge2000 Theoretical Institute 2006, Mammoth Lakes, CA.*

***Newton, R.J., E. Reeves**, N. Kafousia, P.B. Wignall, S.H. Bottrell (2006) Questioning the global nature of the Toarcian carbon isotope excursions: Regional isotopic evolution in an isolated European Epicontinental Sea? *16th Annual V.M. Goldschmidt Conference, Melbourne, Australia.*

***Proskurowski, G.**, J. Seewald, **E. Reeves**, T. McCollum, S. Sylva (2006) Isotopic insights from Lau Basin volatiles. *Ridge2000 Theoretical Institute 2006, Mammoth Lakes, CA.*

***Seewald, J.**, C. Johnson, **E. Reeves**, S. Sylva, G. Wheat (2006) Chemical and isotopic constraints on the origin of aqueous hydrocarbons in hydrothermal vent fluids at Guaymas Basin, Gulf of California. *Ridge2000 Theoretical Institute 2006, Mammoth Lakes, CA.*

***Seewald, J.**, T. McCollum, G. Proskurowski, **E. Reeves**, M. Mottl, J. Sharkey, G. Wheat, M.K. Tivey (2005) Aqueous volatiles in Lau Basin hydrothermal fluids. *Eos Trans. AGU, 86(52), Fall Meet. Suppl., Abstract T31A-0478.*

PEER-REVIEWED / IN-PREP PUBLICATIONS

From Ph.D Thesis:

Reeves, E., Seewald, J.S. *et al.* (in prep.) Evidence for magmatic acid-volatile input and seawater entrainment in hydrothermal fluids at the PACMANUS vent area, eastern Manus Basin.

Reeves, E. and Seewald, J.S. (in prep.) Methanethiol: a geochemical link between carbon and sulfur in seafloor hydrothermal systems.

Reeves, E., Seewald, J.S. and Sylva, S. (in prep.) Rapid hydrogen isotope exchange between aqueous hydrocarbons and water under hydrothermal conditions.

Reeves, E. and Seewald, J.S. (in prep.) Experimental investigation of CO₂ reduction to CH₄ under hydrothermal conditions: the role of metastable intermediates.

From M.Sc. Thesis:

P. B. Wignall, A. Hallam, R.J. Newton, J.G. Sha, **E. Reeves**, E. Mattioli, S. Crowley (2006). An eastern Tethyan (Tibetan) record of the Early Jurassic (Toarcian) mass extinction event. *Geobiology*, **4**(3), pp179-190.

FIELDWORK

2008 R/V Atlantis/DSV Alvin 2008 expedition (AT15-38) to Guaymas Basin and 9°50'N East Pacific Rise (starboard observer on Alvin dive# 4462)

2008 R/V Melville/ROV Jason II expedition (KNOX18RR) to Mid-Atlantic Ridge (Rainbow, Lucky Strike, Lost City, TAG)

2006 R/V Melville/ROV Jason II/ABE expedition (MGLN06MV) to Manus Basin

2005 R/V Melville/ROV Jason II expedition to Lau Basin

TEACHING EXPERIENCE

Teaching assistant for MIT Course 1.76 Aquatic Chemistry (taught by J. Seewald in 2007): prepared recitations, graded homework, taught several lectures.

AWARDS AND HONORS

2005-2006, 2008-2010 WHOI Graduate Research Assistantship

2007 WHOI Deep Ocean Exploration Institute Fellowship

2003 University Of Leeds Full Fees Bursary for UK/EU Mastership postgraduates.

2001 Darbyshire Prize Award, School of Ocean Sciences, University of Wales, Bangor.

1999 Aughinish Alumina Ltd. (Ireland) Educational Award for University education.

PROFESSIONAL AFFILIATIONS

American Geophysical Union
The Geochemical Society
Ridge 2000
Interridge
American Chemical Society

ACTIVITIES AND SERVICE

WHOI Institution Safety Committee Joint Program Representative (2006 – 2009)
MIT/WHOI Joint Program Student Representative (2007-2008)

OTHER

FAA certified Private Pilot (Airplane Single Engine Land) 2008
PADI Advanced Open Water Diver 2002

References available on request