

Dr. Melanie Witt

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Employment

2005-Present

Post Doctoral Research Associate

Department of Earth Sciences, University of Cambridge (2005-2006)

Department of Earth Sciences, University of Oxford (2006-present)

- Quantifying the magnitude of volcanic Hg emissions and measuring mercury speciation in volcanic atmospheres
- Development of portable instrumentation to monitor volcanic gases
- Measurement of remote marine and urban gaseous mercury
- Supervision of M Earth Sci. student's projects on various environmental issues.
- UK Mercury Knowledge Transfer Network with emphasis on mercury policy effectiveness.
- Coordinator of departmental seminar series.

2003-2005

Visiting Assistant Research Professor

Department of Chemistry, University of North Carolina at Wilmington, USA.

- Research into the organic complexation of copper in rainwater.
- Investigation of the photochemistry of copper speciation in rainwater.
- Management of rain monitoring programme
- Assistance with undergraduate and postgraduate research.
- Preparation and presentation of undergraduate lectures, writing and marking exams.
- Preparing, teaching and assessing practical course in Environmental Chemistry.
- Writing and running workshops on excel and powerpoint use.

Academic Record

1999-2003 PhD "Studies of Trace Metals in the Atmosphere."

Supervised by Professor T. D. Jickells.

School of Environmental Sciences, University of East Anglia, Norwich, NR4 7TJ, UK.

1998 – 1999 MSc (with distinction)

Instrumental and Analytical Methods in Biological and Environmental Chemistry.

(Project with J. MacPherson and P. Unwin: Hydrodynamically Modulated Ultramicroelectrodes as a novel HPLC detection system)

School of Chemistry, University of Warwick, Coventry, CV4 7AL, UK.

1994 – 1997 BSc (Hons) 2:1 Environmental Chemistry

(Project with T. P. Kee: The use of modified clays for the removal of phosphates from natural waters)

The Environment Centre, University of Leeds, Leeds, LS2 9BT, UK.

1987- 1994

Ashmole School. London, UK.

A' Levels: Chemistry (A), Maths (C), French (C) A/S Level: Art and Design (A).

9 GCSEs (Grades A-C)

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Skills Summary

- Winner of the Cath Allen award for Best Poster Presentation at challenger marine science conference.
- Knowledge of a suite of analytical techniques and extensive experience in clean laboratories.
- I have worked at sea on cruises of over 6 weeks where I worked successfully both as part of a team, assisting with the work of other scientists on board, and independently working on my own project. While at sea I also developed good problem solving skills dealing with difficulties with the limited resources available.
- Field work experience on a number of volcanoes looking at a variety of emission types.
- Numerous teaching activities at UK and US universities including running a practical environmental chemistry course, preparing and presenting lectures and computer workshops, writing and marking exams, running fieldwork practicals.
- Successfully collaborated with colleagues overseas to produce peer reviewed publications.
- Peer reviewer for a number of publications including Marine Chemistry, Atmospheric Environment, Natural Hazards, International Journal of Environmental Analytical Chemistry and Geology.

Publications

- M.L.I. Witt, N. Merehan, T.A. Mather, C.J. de Hoog and D.M. Pyle (2009) Aerosol trace metals, particle morphology and total gaseous mercury in the atmosphere of Oxford, UK. *Atmospheric Environment*, in review.
- M.L.I. Witt, T.A. Mather, A.R. Baker, C.J. de Hoog and D.M. Pyle (2009) Atmospheric trace metals over the south-west Indian Ocean: Total gaseous mercury, aerosol trace metal concentrations and lead isotope ratios. *Marine Chemistry*, in review.
- R. Martin et al., (2009) Major and trace element distributions around active volcanic vents determined by analyses of grass species: Implications for biogeochemical cycling and biomonitoring. *Bulletin of Volcanology*, in review.
- B.M. Quayle, T.A. Mather, M.L.I. Witt, B.A. Maher, R. Mitchell, R.S. Martin and S. Calabrese (2009) Application and evaluation of biomagnetic monitoring of volcanically-derived particles at Mt. Etna, Italy. *Journal of Volcanology and Geothermal Research*, in review.
- Martin, R.S., et al., (2009) The environmental impacts from ashfall from the May 2008 Chaiten volcanic eruption: Results from air, water and vegetation sampling in Argentina. *Journal of Volcanology and Geothermal Research*, in press. doi.org/10.1016/j.jvolgeores.2009.04.010.
- M.L.I. Witt, Fischer, T.P., Pyle, D.M., Yang, T.F., Zellmer G.F (2008) Fumarole compositions and mercury emissions from the Tatun Volcanic Field, Taiwan: Results from real time measurements and direct sampling techniques. *Journal of Volcanology and Geothermal Research*. 178, 636-643. doi: 10.1016/j.jvolgeores.2008.06.035
- E. Furi et al., (2008) Sampling and surveying the ridge-hotspot interaction on the Central Indian Ridge, 19°S: Cruise KNOX11RR, *InterRidge News*, 17, 28-29.
- Witt, M.L.I., T.A. Mather, D.M. Pyle, A. Aiuppa, E. Bagnato and V.I. Tsanev (2008) Mercury and halogens from Masaya and Telica volcanoes, Nicaragua. *JGR Solid Earth*. 113, B06203.
- Aiuppa, A., E. Bagnato, M.L.I. Witt, T.A. Mather, F. Parello, D.M. Pyle and R.S. Martin (2008) Real-time simultaneous detection of volcanic Hg and SO₂ at La Fossa Crater, Vulcano (Aeolian Islands, Sicily). *Geophysical Research Letters*. 34, L21307.
- Witt, M.L.I., R. J. Kieber, Skrabal, S. and J. D. Willey (2007) Photochemistry of organic copper complexation in rainwater. *Journal of Atmospheric Chemistry*. 58. 89-109
- Witt, M., R. J. Kieber, Skrabal, S. and J. D. Willey (2007) Copper complexation in rainwater in southeastern USA. *Atmospheric Environment*. 41(17) 3619-3630.
- Witt, M., A.R. Baker and T.D. Jickells (2006) Atmospheric deposition of trace metals to the Atlantic and southern Indian Ocean. *Atmospheric Environment*. 40(28), 5435-5451.

Dr. Melanie Witt

- Avery, G. B. Jr., R. J. Kieber, M. Witt and J. D. Willey (2006) Rainwater monocarboxylic and dicarboxylic acid concentrations in southeastern North Carolina, USA, as a function of air-mass back-trajectory. *Atmospheric Environment*, 40(9), 1683-1693.
- Baker, A.R., T.D. Jickells, M. Witt and K.L. Linge (2006) Trends in the solubility of iron, aluminium, manganese and phosphorus in aerosol collected over the Atlantic Ocean. *Marine Chemistry* 98(1), 43-58.
- Witt, M and Jickells, T.D. (2005) Copper complexation in marine and terrestrial rain water. *Atmospheric Environment*. 39(40), 7657-7666.
- Baker, A. R., Kelly, S. D., Biswas, K.F., Witt, M. and Jickells, T.D. (2003). Atmospheric deposition of nutrients to the Atlantic Ocean. *Geophysical Research Letters* 30(24): article number-2296.
- Jickells, T. D., Kelly, S. D., Baker, A. R., Biswas, K., Dennis, P. F., Spokes, L. J., Witt, M. and Yeatman, S. G. (2003). Isotopic evidence for a marine ammonia source. *Geophysical Research Letters* 30(7): article number-1374.