

Dr. William Hartley

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Résumé

B.Sc. Applied Biology, Liverpool John Moores University (LJMU) 1998, Ph.D. Environmental Chemistry (LJMU) 2002. Senior lecturer in Environmental Science at Harper Adams University. Leadership in R&D during postdoctoral positions. Environmental Consultancy experience. Research background in soil trace element mobility, soil biology/ecology, brownfield land remediation and contaminated land risk assessment. Demonstrated pursuance and delivery of high-level research within applied environmental discipline. Advanced communication skills, oral and written, evidenced by publication record, international conferences, peer review of undergraduate teaching and feedback.

Knowledge of analytical techniques including ICP-MS, HPLC-ICP-MS, TOC-VCSN (carbon & nitrogen analysis), AAS, HG-AAS and XRF. Microbiological techniques including PCR and ATP analysis, ecological assays including earthworm and soil microarthropod identification.

Employment

September 2013 – present: Senior Lecturer in Environmental Science at Harper Adams University.

May 2013 – August 2013: Postdoctoral Researcher for Fe & Mn speciation in drinking water for United Utilities.

January 2012 – 2013: Analytical method development using the hyphenated technique HPLC-ICP-MS for trace element chemical speciation research for United Utilities.

March 2011- December 2011: Research Fellow at The University of Salford: (i) Iron & manganese speciation research supported by United Utilities using HPLC-ICP-MS (ii) Phytotechnologies for contaminated land stabilisation.

January 2009 – March 2011: Lead Postdoctoral Researcher on the 'Woolston Urban Ecology Park and Canal Restoration Project': Restoration Engineering (LJMU).

July 2008 – Nov 2008: Environmental Consultant at ERC (Ecological Restoration Consultancy)

September 2006 – June 2008: Lecturer in Environmental Sciences (Sessional Lecturer) (LJMU).

March 2005 - August 2006: Lead Postdoctoral Researcher on 'Creating Woodlands from Waste' Project: Assessing biological indicators for remediated anthropogenic urban soils (LJMU).

January 2003 - 2005: Ph.D. Researcher and Demonstrator (LJMU).

Education

- 1998 – 2002 Ph.D. (Environmental Chemistry). School of Pharmacy and Chemistry (LJMU): A Study of Novel Methods for the *In Situ* Remediation of Arsenic Contaminated Soils.
- 1994 – 1998 BSc (Hons) Applied Biology 2:1.
LJMU School of Biological and Earth Sciences

Research Experience

- Current research at Harper Adams:
 - Biochar to agricultural soils and influence on crop physiology.
 - Translocation of arsenic in rice plant genotypes.
 - Silica in plants.

- Recent research has focused on analytical method development using the hyphenated technique HPLC-ICP-MS for chemical speciation of Fe, Mn (United Utilities) and Cr.
- Previous research activity associated with soil quality, optimizing natural processes of clean-up and sustainability of brownfield land to soft end-uses thereby enhancing urban regeneration.
- Research effort attempted to understand the impact of pollution on plants, and soil ecology. Project leadership in the Creating Woodlands from Waste Project which has diverted 20,000 tonnes of recycled greenwaste from landfill and has demonstrated the benefits of use in remediation of brownfield land, directly influencing UK government (Defra-WRAP) waste management strategy and imparting knowledge-transfer.
- Previous research associated with biomass energy and soil carbon sequestration, studying *Miscanthus* growth in As/heavy metal contaminated brownfield soils remediated with organic amendments biochar and greenwaste compost.
- Focus and interests in soil management in terms of pollution impacts, changes in speciation of trace elements in compost remediated soils and the impact anthropogenic contamination has on soil fauna/microbes and associated processes such as carbon sequestration.
- Ecological restoration of brownfield sites, phytotechnologies for stabilisation of contaminated land and method development for chemical speciation in water distribution networks for United Utilities.

Teaching Experience

Teaching within the Crop and Environment Sciences Department at Harper Adams University. Teaching experience also within environmental and biological sciences at undergraduate level at Liverpool John Moores University. Mentor and supervision of research and technical staff. Research supervision (Ph.D. and M. Phil students).

Consultancy Experience

Ecological Restoration Consultants (ERC)
CASS Associates

Conference presentations

W. Hartley. Effects of three different biochars on aggregate stability, organic carbon mobility and micronutrient bioavailability. 18th Biennial National Atomic Spectroscopy Symposium. LJM. 4th -6th July 2016.

W. Hartley. Biochar Feedstocks: Their Effects on Agricultural Soil. 6th World Conference on Ecological Restoration, Manchester. 23rd -27th August, 2015.

W.Hartley. Exposure of an anoxic and contaminated canal sediment; mobility of metal(oid)s. Restoration & Recovery: Regenerating land and communities. British Land Reclamation Society. Restoration and Recovery: Regenerating Land and Communities, University of Glamorgan, South Wales, UK. 7th – 9th September 2010.

W. Hartley. Arsenic mobility and stabilization: Green waste, *Miscanthus* and Rice. Guest Lecture for the Royal Society of Chemistry: Analytical Chemistry by Open Learning (ACOL), Liverpool, UK. 5th – 7th January 2010.

W.Hartley. Arsenic stability and mobilization in soil at an amenity grassland overlying chemical waste (St. Helens, UK). SUITMA 5 2009 (New York, USA).

W.Hartley. Arsenic Remediation: inorganic and organic amendments. Croucher Advanced Study Institute, Innovative Technologies For Soil Remediation, Hong Kong Baptist University, Hong Kong, Invited lecture. November, 2008.

W.Hartley. Regeneration of brownfield land contaminated with arsenic and heavy metals – the do's and don'ts. Invited lecture at the University of Parma, Italy. June, 2008.

W. Hartley, N.W. Lepp. The use of in-situ Fe-based amendments to remediate As-polluted soils: Matching amendment to desired end-point. Arsenic in the environment: Arsenic from nature to humans. Invited lecture. 2nd International Congress, May, 2008 Valencia, Spain.

W. Hartley and N.W. Lepp. Effect of in situ soil amendments on arsenic uptake in successive harvests of ryegrass (*Lolium perenne*) grown in amended arsenic-polluted soils. In: Proceedings of COST Action 859: Working Group 1 meeting Plant uptake/exclusion and translocation of nutrients and contaminants. 2008, Slovakia.

W. Hartley. Biological Descriptors Of Soil Health For Use In Reclamation Of Brownfield Land. In: Proceedings of COST Action 859: Workshop of Working Groups 2 "Exploiting genomics, proteomics and metabolomics approaches in phytotechnologies" and 4 "Integration and application of phytotechnologies". 2007, Vilnius, Lithuania.

W. Hartley, L. Uffindell, A. Plumb, H. Rawlinson, P. Putwain and N. Dickinson. Healthy soil biomarkers for remediated brownfield soils. In: Proceedings of the Society for Environmental Toxicology and Chemistry (SETAC), 2005, Newcastle, U.K.

W. Hartley, R. Edwards, N.W. Lepp. A comparison of leaching tests for the determination of arsenic mobility in iron oxide amended contaminated soils. In: Proceedings of the 6th International Conference on the Biogeochemistry of Trace Elements (ICOBTE), 2001, Guelph, Canada.

W. Hartley, R. Edwards, N.W. Lepp. A study of novel methods for the *in situ* remediation of arsenic contaminated soils. In: Proceedings of the 6th International Conference on the Biogeochemistry of Trace Elements (ICOBTE), 2001, Guelph, Canada.

W. Hartley, R. Edwards, N.W. Lepp. Iron oxides reduce mobility and plant transfer of As in contaminated soils. In: Proceedings of the 19th European Conference for the Society for Environmental Geochemistry and Health (SEGH), 2000, Manchester, U.K.

Societies

Member of the British Land Reclamation Society