



International Association of Hydrogeologists
Irish Group

IAH TDM – soils and contaminated land

“Mapping Peatland Boundaries using Radiometric Data and Machine Learning” Dave O’Leary, Earth and Ocean Sciences (NUIG)

“Systematic review of metal contamination in European soils: progress and future directions” Hannah Binner, School of Biological, Earth and Environmental Sciences (UCC)

“Development of a Remedial Action Plan for TCE in a Fractured Limestone Aquifer” Sonya O’Loughlin, Geosyntec Consultants Ltd, Dublin

Venue: online – please register at
<https://tinyurl.com/IAHTDMNOVEMBER2021>

After registering, you will receive a confirmation email containing information about joining the meeting.

Date: Tuesday 9th November, 2021

Time: 6.00 – 7.30 pm

Future IAH Meetings

Tuesday 1st December **IAH TDM – Topic TBC**

For further information on this event, contact either Taly Hunter Williams (GSI, 087 993 8901), Alasdair Pilmer (GDG/GSI, 083 337 7671) or John Weatherill (UCC, 087 394 3506).



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Speaker bios



My name is **Dave O'Leary** and I'm a final year PhD researcher based at National University of Ireland Galway. I completed my undergrad at NUIG in 2009 before completing a masters in Exploration Geophysics at University of Leeds in 2010. I then worked for 8 years in the oil and gas industry as an exploration geophysicist both in an office role and on offshore seismic vessels. The focus of my PhD is using freely available geophysical and remote sensing datasets, alongside ground surveys, to attempt to spatially map soils in the Irish context. I've focused on a peatland site for this talk. I am using modern machine learning and numerical techniques to analyse these datasets in novel ways to firstly determine if they can "see" a difference between peat soil and other soil types, can the peat be spatially mapped, and finally how accurate are these maps. The maps produced would then be used to aid in the calculation of carbon stocks on Irish peatlands, by improving our knowledge of their extents and potentially any variation in peat properties within a peatland.



Hannah Binner is a PhD researcher in the Geology Department in UCC. Hannah holds a BSc (Hons) and a MSc by Research in Environmental Science. She has conducted research in diverse environmental areas, including freshwater, wastewater and soil studies. Her current PhD research focusses on contamination of urban soils by heavy metals, caused by both natural and anthropogenic factors, which can negatively impact the surrounding natural environment and the public. Her research will determine the extent to which heavy metals contaminate urban soils in southern Ireland, which is a priority area for metal assessment and monitoring, and test the bioavailability of these urban soil metals.



Sonya O'Loughlin is a hydrogeologist with over three years' experience working on a variety of environmental site assessment and remediation projects on both closed and active industrial sites involving geological, hydrogeological and chemical data collection, as well as data interpretation and preparation of technical reports. She has experience working on several specialized software packages including ArcGIS, Microsoft Access, AQTESOLV, and EVS

For more information on the International Association of Hydrogeologists (Irish Group) see <http://www.iah-ireland.org>, and for IAH International see <http://www.iah.org>