Water Challenges in a Changing World

JANUARY NEWSLETTER

Welcome to our first newsletter of 2026! We're excited for the year ahead and to kick things off with the Environmental Micro and Nano Plastic Identification and Characterisation Workshop starting on Monday 2 February and being held in Molecular Sciences.

Looking further ahead, we're organising two major conferences: Micro - and Nanoplastics Conference 2026 (MnP26) and HydroEco26, the 8th International Multidisciplinary Conference on Hydrology and Ecology — both with abstract submissions now open.

We're also celebrating the 17th annual Catchment Science Summer School, bringing together postgraduate researchers for hands-on learning and community building in catchment hydrology and biogeochemistry. Plus, our Water Seminar Series will feature exciting guest speakers, including Thom Bogard from Delft University of Technology, an expert in freshwater ecosystem and biogeochemical research whose work explores ecological and environmental dynamics within water systems. Stay tuned for his seminar details and link soon, along with other guest speaker information. We can't wait to share more throughout the year!

NEW STARTERS

Shravani Yadav

Hello everyone! I'm Shravani Yadav, and I have joined as a visiting research scholar working under the supervision of Prof. Stefan Krause. I am a full-time PhD scholar at the Indian Institute of Technology Roorkee, India. My research focuses on understanding the transport, of microplastics in soil-water systems, with particular emphasis on groundwater and surface water interactions. The increasing prevalence of microplastics in terrestrial environments poses emerging risks to environmental quality and human health, yet their transport mechanisms remain poorly understood. During this visit, I aim to study microplastic transport by simulating various surface water and

groundwater interaction scenarios through tank/flume experiments. The insights of this study will help in understanding the aspect of contaminant transport through surface and subsurface interactions.

Yongyong Zhang

Hello everyone, my name is Yongyong Zhang. I joined as a Senior Visiting Scholar in January 2026 under the supervision of Professor David Hannah.

I am a Professor of Soil Hydrology and Ecohydrology at the Northwest Institute of Eco-Environment and Resources, Chinese Academy of Sciences. My research expertise lies in soil hydrological processes and ecohydrology in arid regions of Northwest China.

My work focuses on several key aspects of soil hydrology, including mesoscale soil moisture monitoring using cosmic-ray neutron sensing, the role of soil macropores in preferential flow, and surface–groundwater interactions across soil horizons and their implications for groundwater recharge. I am also actively engaged in ecohydrological research, particularly ecological restoration and the environmental impacts of land-use change in desert–oasis systems. Through this work, I aim to contribute to sustainable water management and ecological restoration, addressing the critical challenges of water scarcity and environmental degradation in arid regions.

Zhi – Yun Jiang

Hi, my name is Zhiyun Jiang, and I have recently joined in Prof. David Hannah's group at the University of Birmingham as an academic visitor. I have got my Ph.D. from Beijing Normal University in 2017 and is currently an associated professor of ecohydrology at the School of Geography, South China Normal University.

My research interests mainly focus on (1) forest hydrological processes, particularly in water and associated nitrogen processes in the interfaces of forest canopy and soil; (2) modelling and partitioning the regional or global evapotranspiration processes under global change, particularly for the precisely estimation of canopy interception; (3) variations of

landscape and associated effects on ecohydrological processes in watershed. Multi means including observations, experiments, and modelling are involved in my studies, and a total of nearly 70 papers related to these fields have been published in classic journals such as Water Resources Research, Global Change Biology, Agricultural and Forest Meteorology, Journal of Hydrology.

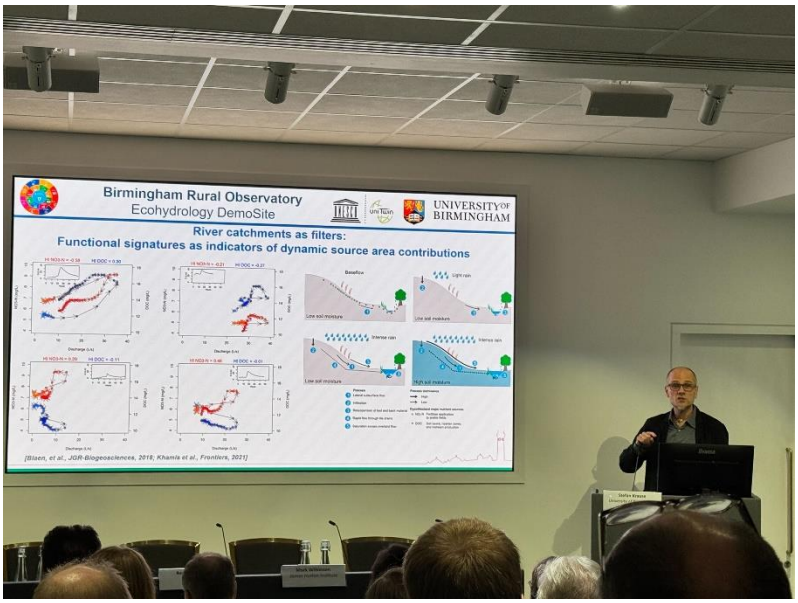
During the one-year visiting, I hope to conduct 1-2 frontier research that involves the advantages from the group in UoB and also extended from my current work.

UOB CONTRIBUTIONS TO UNESCO HYDROLOGY ANNIVERSARY EVENT

Colleagues from the University of Birmingham played key roles at the recent conference celebrating 50 years of UNESCO's Intergovernmental Hydrological Programme and 60 years of water sciences at UNESCO. The event brought together global experts to discuss the escalating pressures on water resources and the collective action needed to achieve Sustainable Development Goal 6.

Stefan Krause (Birmingham Water Centre) presented his talk, *"Mitigating water conflicts and human health risks through multi-parametric water quality sensing and advanced adaptive modelling,"* showcasing cutting-edge approaches to managing water quality in a changing climate.

Prof David Hannah (BISCA) contributed as both a panellist at the event and as a Chair for Session 3: *"A Vision for the Future: Transformative Approaches for Global Water Challenges,"* helping steer discussions on innovative and collaborative solutions for global water sustainability.

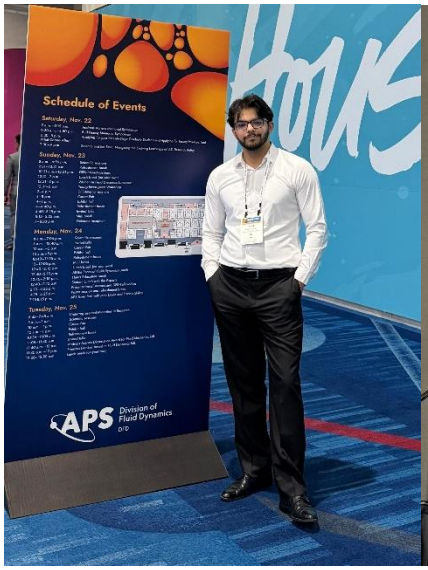


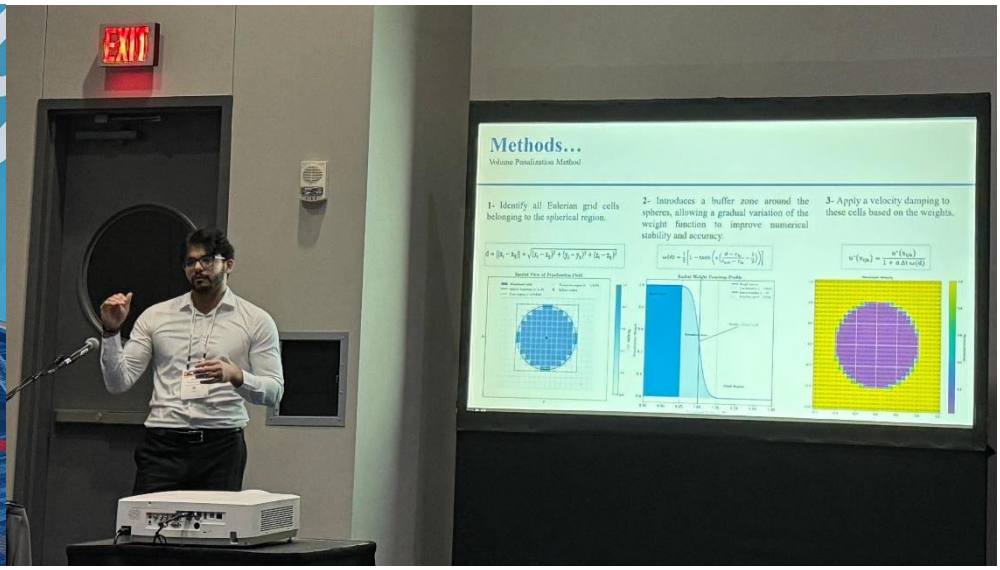
Jointly organised by the British Hydrological Society and UKCEH, the event highlighted the UK's leading role in international hydrology and explored future opportunities for engagement in global water science and policy initiatives.

PRESENTATIONS

Written by Fuad Alqrinawi

Last year, I attended two major international conferences. The first was the APS DFD 2025 Conference in Houston, Texas-one of the largest and most influential conferences in computational fluid dynamics. There, I presented a novel numerical method for simulating flow within porous media, designed to make





simulations of particle transport in fully saturated porous environments more efficient and computationally feasible.

In December, I also attended AGU 2025, New Orleans, where I presented the application of this model, demonstrating how particles size, density, and flow velocity influence microplastic transport behaviour. Together, these conferences provided an excellent opportunity to showcase both the methodological advances and applied insights of my work, while engaging with the broader community working on microplastic transport and particle-based modelling in porous media.

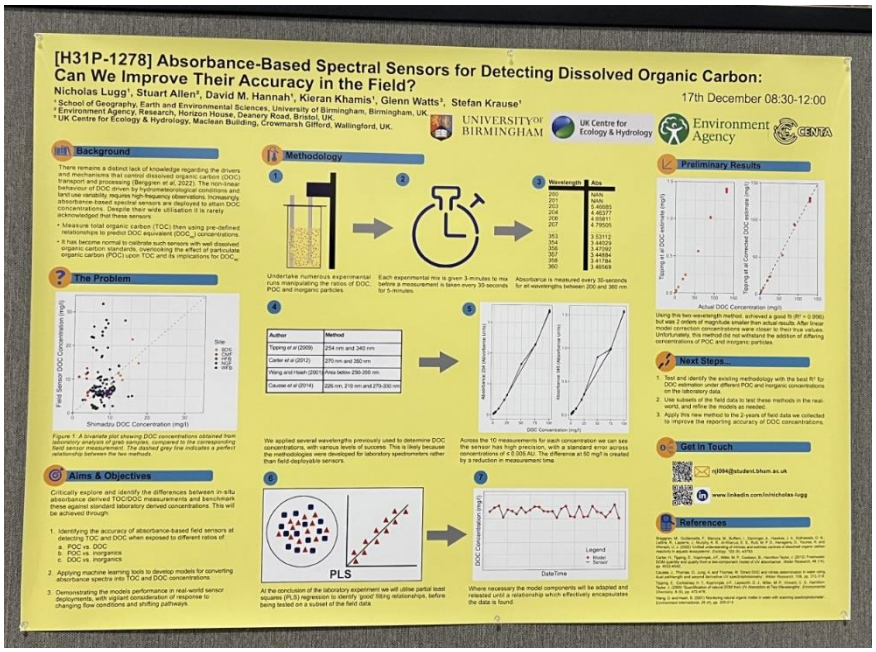
Written by Liam Kelleher

On the 26th of January I was invited to give a presentation as part of the NERC Arctic Station Open Day. It was good opportunity to show the developments of the Polarsense project that has been running for the passed year. In collaboration with UFZ Helmholtz (Dusan Materic), University Centre in Svalbard – UNIS (Gijsbert Breedveld), Healthy Earth (Steve Allen) and UoB (Stefan Krause and myself). Polarsense focuses on the transport of pollutants into the Arctic atmosphere and makes use of a newly developed auto sampling system to collect samples for subsequent analysis at our collaborators labs.

Water Challenges in a Changing World

Written by Nicholas Lugg

Last month I had the pleasure of attending the AGU 2025 Fall meeting, this year hosted in New Orleans, Louisiana. This was my second time attending this conference and can say it was just as exciting as the first. I was grateful for the opportunity to present my research on "Absorbance-based spectral sensors for detecting dissolved organic carbon: can we improve their accuracy in the field?", where I had some very productive and valuable discussions with researchers from the international community. A highlight for me are the poster sessions which are much larger in scale than other conferences and are alive with insightful discussions that foster new connections and collaboration.



JOB OPPORTUNITIES

We have a job opportunity

The recruited person will be working on the NERC Environmental Challenges grant "P-FASE: Advancing And Integrating Knowledge And Data On PFAS Sources, Fate And Risks For UK Environments." In the School of Geography, Earth and Environmental Sciences research will be complete in the Water Sciences division, working on the fate and transport of Per-(poly)-fluorinated substances (PFAS).

PFAS are a diverse set of chemicals with different structures and functional groups. There are currently major gaps in our knowledge of how different PFAS occur and behave in the environment. For example, we do not know all the sources of these chemicals; how their different properties affect how long they persist and transform; there in the environment the various PFAS forms go; and how they accumulate in and affect organisms. Fate and exposure experiments and modelling are essential approaches for predicting and assessing the movement and bioavailability of chemicals in the environment.

The post holder will be expected to conduct laboratory and field analytical research to study the environmental fate and transport of different PFAS at surface water - sediment interfaces. For this, experiences in working with artificial flow simulators (flumes) such as the Birmingham EcoLab (https://www.birmingham.ac.uk/research/centres-institutes/ecolaboratory) will be highly desired.

Please check out the internal job posts. These will be made visible to the public next week.

Grade 6 Opportunity Marketplace - Job Information - Oracle Fusion Cloud Applications

Grade 7 Opportunity Marketplace - Job Information - Oracle Fusion Cloud Applications

HYDRO – ECO 2026

We are pleased to announce that the webpage for the HydroEco 2026 conference is now live at - https://birminghamwatercentre.com/conferences-2026/hydro-eco-2026/. Registration is also open and we invite all interested parties to submit their abstracts.

Abstract Submission

Abstract submissions for oral and poster presentations are now open.

We invite the submission of abstracts for oral and poster presentations that address the conference theme *"HydroEcology Meets One Health"*. Contributions are welcomed from across disciplines, including hydrology, ecohydrology, environmental and public health, social sciences, policy, and practice.

We encourage submissions presenting original research, applied case studies, methodological innovations, and interdisciplinary perspectives that explore the links between water systems, ecosystem processes, and human and animal health.

Submit your abstract: HydroEco26 Abstract Submission

Submission Deadline: Friday 27 March 2026 (11:59 PM Local UK Time)

Submission guidelines and the submission portal are available on the conference webpage.

CATCHMENT SCIENCE SUMMER SCHOOL

The 17th Annual Catchment Science Summer School will be run in person from 6 - 11 September 2026. It is designed for PhD students and postdocs in catchment science. The course is taught by Prof Jeff McDonnell (University of Saskatchewan and University of Birmingham) Prof Chris Soulsby, Dr. Jan Seibert, Dr. Ilja van Meerveld, Prof David Hannah and Prof Stefan Krause. It is co-hosted by the University of Birmingham and the University of Aberdeen, University of Zurich, TU Berlin and the Global Institute for Water Security.

Course instructors bring a broad spectrum of experience and knowledge from a variety of universities with water programs. This course is an excellent opportunity for professional networking and planning next steps in your career.

Course Overview

The Catchment Science Summer School is a 5-day short course that is intended for post-graduate students and post-docs interested in a hands-on catchment science curriculum, focusing on northern catchments, runoff processes and combined hydrometric, isotope/chemical tracer and modeling techniques in catchment hydrology. The learning objectives for this short course are to understand:

- Rainfall-runoff processes
- Rainfall-runoff model development, use, and testing
- Hydrochemical and isotopic measurement and analyses
- Linking field experiments with modeling approaches
- Evolution of empirical and theoretical understanding of runoff processes
- Landscape analysis, land-use and climate change impacts on streamflow

Please note, demand is high for positions on this course, so please secure your spot - buy a ticket here.

UPCOMING GRANTS

RGS – Explore Grants
Deadline to apply: 15/02/2026
Award amount: £500- 5,000
Awards will be made to teams undertaking original, challenging journeys with meaningful local collaborations at their core, aiming to advance geographical knowledge and deepen understanding of the world's environments, people and places.

NERC - Pre-announcement: Pushing the frontiers of environmental science 2026
Deadline to apply – tbc
Award amount: £950k
Apply for funding to pursue an ambitious, high-reward curiosity-driven project in environmental research.

NERC -Large Grant Outlines: February 2026
Deadline to apply: 26/02/2026
Award amount: £1.12 – 3.45M
Apply for funding to support innovative, large-scale and complex projects that tackle big environmental science questions and have the potential to produce world-leading research.

NERC - Pre-announcement: Biological influence on ocean carbon: novel modelling approaches
Deadline to apply: TBC
Award amount: £312k
Apply for funding for a UK-US project to develop new representations of key processes regulating ocean carbon storage for use in global models.

RGS – Fieldwork Apprenticeships
Deadline to apply: 01/03/2026
Award amount: £1,500
The Fieldwork Apprenticeships aim to give students the opportunity during the summer to work as a Fieldwork Apprentice for a number of weeks on a research project either in the UK or overseas, led by an academic member of staff at their university.

AGU – Horton Research Grant
Deadline to apply: 27/03/2026
Award amount: $10k
The Horton Research Grant is awarded to up to three Ph.D. students studying hydrology, water resources, or a closely related field each year and is made possible through the generosity of the Robert E. Horton Fund for Hydrologic Research. The

purpose of the award is to promote excellence by encouraging the next generation of professionals in the hydrological sciences.

AGU – Cryosphere Early Career Award
Deadline to apply: 27/03/2026
Award amount: £700
The Cryosphere Early Career Award is presented annually and recognizes significant early career contributions to cryospheric sciences and technology from honorees within 10 years of receiving their Ph.D.

Horizon -HORIZON-JU-GH-EDCTP3-2026-02-CH-01-two-stage: Global collaboration action on climate and health in sub-Saharan Africa
Deadline to apply: 04/03/2026
Award amount: €5m
Proposals submitted under this topic should aim to deliver results that are contributing to improved health outcomes related to climate sensitive vector- and water-borne pathogens in the scope of the Global Health EDCTP3 SRIA in SSA

Horizon - CL6-2026-01-ZEROPOLLUTION - Clean environment and zero pollution: Call 01 - single stage (2026)
Deadline to apply: 17/09/2026
Award amount: €10m
Research funded under this destination will support the EU Commission priorities 'Sustaining our quality of life: food security, water and nature' and 'A new plan for Europe's sustainable prosperity and competitiveness'. Proposals for topics under this destination should set out a credible pathway to achieve a clean environment, ensure water resilience, and enable the transformative change necessary to reduce air, water and soil pollution to levels no longer considered harmful to health and natural ecosystems, while respecting planetary boundaries.

Open Calls with no closing date:

IGB: Leibniz Institute of Freshwater Ecology and Inland Fisheries – Senior Fellows
We invite excellent established scientists to apply for a research visit at IGB. We offer stays for 3 to 12 months to enable senior scientists to contemplate and pursue new inspiring research ideas in collaboration with scientific staff at IGB. At the time of application, successful candidates can be based at institutions in any country worldwide except Germany. Scientists residing in Germany are not eligible to apply, independent of their nationality.

NERC Urgency Fund (£100k)
Apply for funding to respond quickly to transient, unexpected environmental research opportunities created by sporadic natural occurrences such as earthquakes, droughts, floods, or ephemeral events in ecosystems.

UKRI – Knowledge Transfer Partnership

Open for business and not-for-profit organisations. Partnerships can last between 12 and 36 mounts. Business provide one-third to half the project cost depending on their size.

NERC - Work with US-based researchers on environmental science research

Award amount: £300k Apply for funding to work with US-based researchers on an environmental science application. Collaborative work is governed by an agreement between NERC and NSF.

Work with Brazilian researchers: NERC FAPESP lead agency

This opportunity allows UK-based researchers and researchers in the State of São Paulo, Brazil to submit a collaborative proposal under existing NERC funding opportunities. This will go through a single review process.

UKRI - Collaborate with researchers in Norway

UK Research and Innovation (UKRI) and Research Council of Norway (RCN) have signed a Money Follows Cooperation agreement to reduce barriers to cross-border collaboration.

UKRI - Collaborate with researchers in Luxembourg

UK Research and Innovation (UKRI) and FNR have signed a memorandum of understanding (MoU) to welcome and support collaborative applications. The MoU provides for a lead agency agreement whereby UKRI will receive and assess joint applications from eligible UK and Luxembourg applicants on behalf of both organisations

EPSRC - overseas travel grant: Nov 2023: responsive mode

You can apply for an overseas travel grant in any area within the remit of Engineering and Physical Sciences Research Council (EPSRC). We will award 80% of the full economic cost (FEC) of the project.