

Water Challenges in a Changing World

APRIL NEWSLETTER

Hello everyone and welcome to the April edition of the Water Challenges newsletter. We have had another busy month with many members of the Water Challenges team attending the EGU conference in Vienna. Alongside this we have had several seminars presenting novel and cutting-edge research. Separately we have been saying goodbye to several visitors to the group, we wish you all the best in your future studies and endeavours!



EUROPEAN GEOSCIENCES UNION 2024

From April 15th to 19th many members of the university and the Water Challenges team travelled to Vienna for the EGU General Assembly 2024. This EGU24 general assembly welcomed over 20,000 registered attendees with 18,000 people making their way to Vienna from 116 countries. The massive event saw many talks, posters, and PICOs from staff and students where we were able to show case some of the fantastic work happening on our campus! It was a chance to catch up with many collaborators and also meet perspective students that are looking to come and join us in the coming year for research visits. There are many presentations/posters to mention, and we would like to

Water Challenges in a Changing World

thank everyone for putting in their best efforts during the week. We also had an in-person meeting for the IAHS Water and Health working group, so stay tuned for updates coming soon!

MICRO 2024 DEADLINE REMINDER

MICRO 2024
PLASTIC POLLUTION
FROM MACRO TO NANO
23-27 SEPTEMBER
LANZAROTE
INTERNATIONAL CONFERENCE

The 5th Edition of the International Conference MICRO 2024 will be held in Lanzarote and in person for 5 days from the 23rd - 27th September 2024.

A reminder that abstracts for MICRO 2024 must be submitted by 20 May, 21h Lanzarote time.

AQUATIC RESTORATION WEBINAR

REGISTER NOW!

7 May 2024, 16:00 CEST

Aquatic Restoration Webinar



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This webinar will be held on the 7th May from 16:00-17:30 CEST. It is open to anyone interested in the topic of aquatic restoration, including aquatic management and restoration practitioners and technical specialists in terrestrial, inland water, and marine and coastal ecosystems.

To register for the Aquatic Restoration webinar, please click [here](#):

For any questions, please

contact ashley.steel@fao.org or kim.friedman@fao.org

Water Challenges in a Changing World

WATER SEMINAR SERIES IN MAY



You are invited to attend our next Water Seminar Series talk where we welcome [Dr Catherine Hirst](#) from Durham University. This talk will be taking place on the **14th May from 12pm – 1pm** at Elm House, **room G08** and will be followed by a networking lunch in G05. The link for this talk has been sent around but please contact Suman if you need it resent to you.

Role of soil water residence time on the fate of permafrost soil organic carbon

Permafrost is the rock, sediment or soil that remains at or below 0°C for more than two consecutive years. Most of the permafrost on Earth is found in the terrestrial Arctic. The Arctic is warming nearly 4 times faster than the rest of Earth's surface¹ and Arctic precipitation (mainly as rain) is projected to increase by 50 – 60 % by 2100². Consequently, the permafrost area is projected to decrease by $24 \pm 16\%$ by 2100 (RCP2.6)³ and high Arctic landscapes are predicted to become wetter⁴. Permafrost contains ~ two times as much carbon (C) as Earth's atmosphere⁵. Upon permafrost thaw, organic C (OrgC) has different fates: it can be stored in soils without degradation or degraded in soils where the C is a) vertically released as greenhouse gases, b) laterally transported to rivers or c) retained in soils. A portion of the permafrost OrgC is associated with minerals. The fate of mineral associated permafrost OrgC (a, b or c pathway) depends (among other factors) on catchment hydrology. In this work, we hypothesise that the fate of mineral associated OrgC will depend on the soil water residence time. To test this hypothesis, we combine in-field hydrology measurements (precipitation and water table depth) with geochemical tools (concentrations, isotopes, microscopy, spectroscopy) on soil and river waters from a permafrost-dominated catchment with spatial and temporal variability in water residence time.

Dr Cat Hirst is an Assistant Professor in the Department of Earth Sciences at Durham University. Cat received a PhD from the Department of Geological

Water Challenges in a Changing World

Sciences at Stockholm University and was a postdoctoral researcher in the Earth and Life Institute at UCLouvain in Belgium. Cat is a geochemist. She applies her science toolbox to understand the impact of climate change and land-use change on soil and river constituents in high latitude (Arctic and Antarctica) and local environments.

TALKS THAT TOOK PLACE IN APRIL



This month we welcomed two great speakers for our Water Seminar Series. The first speaker was Dr Sam Cusworth, a recent graduate from the Lancaster University. His talk was titled ***Microplastics in Agroecosystems: Past, Present and Future***. We were also later joined by Dr. Changqing Wu, who is visiting the University of Birmingham from the University of Delaware as a Fulbright Distinguished Scholar. Her very interesting talk was titled ***Insights into the Health Impacts of Nanoplastics on Embryonic Development and Gut Health using a Chicken Embryonic Model***.

The Water Seminar Series talks are open to all who wish to attend, and they are a great way to meet and network with guest speakers and members of the Water Challenges Theme. Feel free to email Suman and request for people to be added to our Water Theme mailing list. We are always looking for interesting speakers to talk at our Seminar Series, so if you or anyone you know is interested in presenting to the group, get in touch.



Water Challenges in a Changing World

IAHS - CALL FOR ABSTRACTS



Bridging the gap between water science and solutions – A joint conference

IWRM
STAHY
EBHE

9th International Symposium on Integrated Water Resources Management

14th International Workshop on Statistical Hydrology

1^o Encontro Brasileiro de Hidrologia Estatística

IAHS and the Brazilian Association of Water Resources (ABRHidro) invite researchers to submit abstracts for presentation at a joint meeting on water resources systems and statistical hydrology, which combines three events:

1. The 9th International Symposium on Integrated Water Resources Management (IWRM),
2. The 14th International Workshop on Statistical Hydrology (STAHY),
3. The 1st Brazilian Meeting on Statistical Hydrology (EBHE)

The meeting will take place in Florianópolis, Brazil, from 4-7 November 2024.

This joint meeting brings together the experts – academics and practitioners – and young scientists alike for vibrant scientific discussions and debates. It is strongly suggested participants think of how their contributions to the meeting relate to the Themes, Goals and Working Groups of the current IAHS Scientific Decade IAHS initiative for 2023-2032: Science for Solutions: Hydrology Engaging Local People IN one Global world (HELPING).

Contributions welcomed on the following topics (but not limited to):

- Integrated water resources management,
- Characterization and prediction of hydrometeorological extremes,
- Forecast and optimization of water resources systems,
- Water resources in a connected world.

Water Challenges in a Changing World

The 9th IWRM will bring relevant contributions to the scientific community by making it possible to advance in finding solutions to the main water challenges faced by society. The 14th STAHY will focus on statistical methods for hydrological applications, a branch of hydrology with a long history and an exciting field of research. Last but not least, the 1st EBHE brings contributions to advance the maturity of the topic in Brazil by bridging research efforts from different existing groups.

Important dates:

31 May – Abstract submission deadline.

31 May – SYSTA Travel Grant Application deadline.

Date coming soon – Early bird registration deadline.

Date coming soon – Registration deadline for presenting authors.

Date coming soon – Registration deadline for all participants.

4-7 Nov – Conference dates.

Full information can be found on the conference website

<https://www.abrhidro.org.br/iebhe/>

WWD24 YOUTUBE LINK



The World Water Day 2024 panel discussion theme which was “Leveraging Water for Peace” is now live on Youtube. Please check it out and share the link with anyone who you think may find it relevant.

Click [here](#) to view.

Water Challenges in a Changing World

METTLER TOLEDO – EVENTS



Please see below for some events by METTLER TOLEDO that may be of interest to you:

07 May, 2024 [Fundamentals of Thermal Analysis - Thermogravimetric Analysis \(TGA\)](#)

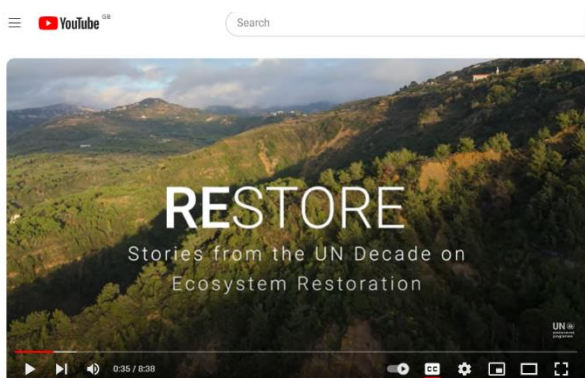
14 May, 2024 [Master your Pipette, Techniques and Ergonomics](#)

12 Jun, 2024 [Data Integrity and Regulation in Your Lab](#)

27 Jun, 2024 [SmartCheck eDemo - A New Way to Ensure Pipette Verification](#)

24 Sep, 2024 [Fundamentals of Thermal Analysis - Determining Glass Transition](#)

UN DECADE - ECOSYSTEM RESTORATION



A wonderful video story prepared by the UN Decade on Ecosystem Restoration: “Communities unite to save high Andean forests, for water & climate”, available here: <https://shorturl.at/gizLO>

“We could live without internet, electricity or other services, but not without water.”

This video is just one of the many stories that will be featured in RESTORE Season 2, where every Tuesday leading all the way up to World Environment Day on June 5, one story of people succeeding in the race to restoration will be shared. You can find all upcoming episodes here: <https://www.decadeonrestoration.org/restore-season-ii-films-frontiers-hope>

Water Challenges in a Changing World

UPCOMING GRANTS

[NERC - FMRI: Accelerating adoption of marine sensor innovation](#)

Deadline to apply: 02/05/2024

Award amount: £800k

Apply for funding to enhance marine biogeochemical sensors for integration and validation with autonomous underwater vehicles. This opportunity is part of the Future Marine Research Infrastructure programme.

[STFC - Leadership fellowships in public engagement 2024](#)

Deadline to apply: 07/05/2024

Award amount: £225k

Apply for funding to support a fellowship in the leadership of engaging the public with STFC supported science, technology or facilities.

[NERC/BBSRC - Sustainable and Resilient Aquaculture Systems in Southeast Asia](#)

Deadline to apply: 09/05/2024

Award amount: £3M

Apply for funding to undertake interdisciplinary research for the development of sustainable, resilient and productive aquaculture in Southeast (SE) Asia.

[EPSRC - Accelerating research outcomes to deliver a prosperous net zero: outline](#)

Deadline to apply: 16/05/2024

Award amount: £100-800k

Apply for follow-on funding to build on existing engineering and physical sciences research outputs to accelerate economic, societal, policy and environmental benefits on the path to net zero.

[NERC - TEAMxUK: Quantifying atmospheric processes in mountainous regions](#)

Deadline to apply: 13/06/2024

Award amount: £587.5k

Apply for funding to improve understanding of atmospheric processes in mountainous regions across scales for: weather and climate prediction; the UK's management of vulnerability, risk, and resilience to environmental hazards.

[MRC - Applied global health partnership: stage one](#)

Deadline to apply: 13/06/2024

Award amount: £150k - £1M

Apply for funding to support a partnership to enable research that will address global health challenges and inequities. We will accept applications of all sizes, including large projects and small to medium-scale applications

Water Challenges in a Changing World

[DAERA - directed AFBI research work programme 2024](#)

Deadline to apply: 21/06/2024

Award amount: £275k – 3M

The 2024 DAERA Directed AFBI Research Work Programme (DDARWP) call for applications aims to engage researchers in addressing research and development needs across 5 thematic areas; climate, sustainability and resilient food systems, one health, natural environment, rural affairs.

[AHRC - Doctoral focal awards in the arts and humanities](#)

Deadline to Apply: 02/07/2024

Apply for a doctoral focal award in the arts and humanities. Formerly pre-announced as focused Centres for Doctoral Training, this is the same funding opportunity but under a new name to align it with other upcoming UKRI doctoral funding opportunities. There are two broadly defined priority research themes or areas for this funding opportunity: arts and humanities for a healthy planet, people, and place creative economy.

[EPSRC - Network Plus: Tomorrow's Engineering Research Challenges](#)

Deadline to apply: 09/07/2024

Award Amount: £1-1.75M

EPSRC aims to encourage a new approach to address Tomorrow's Engineering Research Challenges (TERC) by supporting diverse teams from across disciplines and build unprecedented research capabilities.

[UKRI - Maximising UK adaptation to climate change research projects](#)

Deadline to apply: 16/07/2024

Award amount: £2M

Apply for funding for transdisciplinary research projects under the UKRI-Defra co-funded Maximising UK Adaptation to Climate Change programme to help improve the UK's resilience to climate change impacts.

[NERC - Pushing the frontiers of environmental research: July 2024](#)

Deadline to apply: 17/07/2024

Award amount: £950k

Apply for funding to pursue an ambitious, high risk and high reward project in environmental research.

[NERC – Delivering training courses for environmental scientists 2024](#)

Deadline to apply: 26/07/2025

Award amount: £60k

Water Challenges in a Changing World

Apply for funding to deliver training short courses within the NERC remit, focusing on areas of identifiable training need. Participants of the training do not need to be working on NERC-funded research.

[MRI – Young Academics Award 2024](#)

Deadline to apply: 31/07/2024

Award amount: £1,000

The 2024 edition of the Alpine Convention's Young Academics Award focuses on the issue of “Responding to environmental changes and maintaining high quality of life in the Alps.”

[Fulbright Scholar: Canada: Research Chairs in Environmental Studies](#)

Deadline to apply: 16/09/2024

Award amount: \$25k

Fulbright Canada Research Chairs are pre-arranged affiliations to host exceptional scholars who conduct research important to that university. Partner universities are excited to welcome Fulbright Canada Research Chairs into campus life and encourage them to engage with students and faculty, and the broader community.

[BBSRC – Standard research grant round 3 responsive mode](#)

Deadline to apply: 25/09/2024

Award amount: £2M

Standard research grants are available for researchers at eligible research organisations. This scheme supports excellent investigator-led research across the breadth of Biotechnology and Biological Sciences Research Council (BBSRC) scientific remit.

[NERC - Addressing environmental challenges: NERC highlight topics 2024](#)

Deadline to apply: 09/10/2024

Award amount: £2.35M

Apply for funding to address one of five environmental research challenges. We encourage multidisciplinary research and collaborations with other UK organisations, and applications from diverse groups of researchers.

Water Challenges in a Changing World

Open Calls with no closing date:

[NERC Urgency Fund \(£100k\)](#)

Apply for funding to respond quickly to transient and unexpected scientific opportunities.

[UKRI – Knowledge Transfer Partnership](#)

Open for business and not-for-profit organisations. Partnerships can last between 12 and 36 months. 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.

We welcome your contributions and suggestions for the newsletter. Please feel free to email Liam and Suman – l.kelleher@bham.ac.uk / s.hira@bham.ac.uk