

# NEWS

AUGUST 2023

# & information

IAH – THE WORLD-WIDE GROUNDWATER ORGANISATION

Furthering the understanding, wise use and protection of groundwater resources throughout the world

## In this issue:

IAH & other resources

New publications

Meeting & event reports

Chapters, commissions  
& networks

Regular IAH  
announcements & news



INTERNATIONAL  
ASSOCIATION OF  
HYDROGEOLOGISTS



## IAH WORLD GROUNDWATER CONGRESS

Have you registered for IAH's 50th Congress yet? There's still time, so come and join us in Cape Town, South Africa. There's a lot on offer in the plenary, parallel and special sessions, not to mention some exciting field trips. We hope to see you there!. *Page 6*

## Indigenous Groundwater Declaration

We invite IAH member to sign the Indigenous Groundwater Declaration: *"We recognise and reaffirm that each respective Nation holds their own cultural and spiritual identity, songs, dances, and stories, which are expressions of their connections to their lands". Page 16*

## Equity, Diversity, Inclusion and Accessibility

IAH is proud to announce the establishment of its new working group that will operate within the IAH Socio-Hydrogeology Network (SHG). This initiative is designed to further enhance the EDIA landscape within our organisation and beyond. *Page 15*

Find us at <https://iah.org>. Connect by email [info@iah.org](mailto:info@iah.org) and on social media:

 @iahgroundwater

 @iahgroundwater

 Find IAH groups

 [www.facebook.com/iah.org](http://www.facebook.com/iah.org)



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### Advertising & copy information

IAH News and Information is published 3 times a year. It is distributed as an insert in Hydrogeology Journal and is also published via IAH's website and email alerts. It reaches all members and supporters of the International Association of Hydrogeologists – around 8000 people – and can also be freely downloaded by individuals worldwide for personal/not for profit use.

We accept commercial advertisements. Advertising rates are €300 per full-page advert and €200 per half page. These rates apply for one issue. If you take an advert in two successive issues then the third is offered free of charge.

## Introduction

**The Organising Committee in South Africa is now putting in place the final touches to the 50th IAH Congress. It promises to be good and it looks like many of our colleagues think so too – the Organising Committee are expecting between 400 and 500 delegates. There's a lot on offer in the plenary, parallel and special sessions, not to mention some exciting field trips. Have you registered yet? There's still time – we hope to see you there!**

IAH members are concerned that our colleagues should have fair opportunities to get on in the profession - and similarly in their wider life. Quite right too. IAH wants to be at the forefront in supporting members on this and we're pleased to include reports in this newsletter about new steps that colleagues round the world have been taking in this direction.

We know how much IAH members' work contributes to improving the quality of life and environment in all settings around the world. Many of you will have been involved in installing boreholes in remote rural communities and in this issue we include a call for support for improving the reliability of the India MkII/III and Afridev handpumps. Can you help?

Our Annual General Meeting takes place on 19 September during the Cape Town Congress. We hope as many of you as possible will join us – in person at the Congress, but if not, then online. As well as our other communications with you, we believe it's important to report back formally to members in this way each year, so we hope you'll be able to take part. At last year's AGM members agreed that a review of proposals to adjust the membership fee country categories should be carried out and there will be a further vote on this at the meeting.

Finally, we're pleased to introduce you to our two new starters in the Secretariat, Emma Clare and George Redford. They're looking forward to working with you all and will no doubt be in touch with many of you during the coming months.

SECRETARIAT

Corporate members, supporters and sponsors are offered special rates. Contact us for more details.

We are also happy to consider groundwater related articles from our members and supporters.

Copy dates are 1 March, 1 June and 1 October.

Email [info@iah.org](mailto:info@iah.org) for further details.

## From our Secretary-General



### Dear members, dear colleagues ...

While the IAH President, David Kremer, is enjoying fieldwork in Niger, I'm taking the opportunity to highlight IAH's commitment to equity, diversity, inclusion, and access, which form the main themes of this newsletter. I am delighted that we can show some real progress following my introduction to this topic in the August 2022 newsletter. Two of the initiatives originate from IAH, but collaboration with other organisations is essential and we are pleased to be official partners with the World Bank.

The Indigenous Groundwater declaration ([article on p16](#)) is the first of its kind in the international groundwater community. It acknowledges indigenous people's long association with and knowledge of groundwater, which are essential both for water supply and survival and the cultural and spiritual connections. The Australian national chapter of IAH wrote the declaration and launched it at their conference in November 2022. The timing was perfect, as several IAH speakers were able to introduce it to a global audience at the UN Groundwater Summit in December and the UN Water Conference in March 2023 and highlight the relevance of this topic in all parts of the world, not limited to Australia. Surprisingly and appropriately, it also demonstrated our global connectivity, as I received messages of support and thanks from Australia within hours of showing the beautiful picture of pathways to water in France.

A more recent initiative by IAH is the establishment of its new working group on Equity, Diversity, Inclusion and Access (EDIA) ([article on p15](#)) within the IAH Socio-Hydrogeology Network (SHG). This working group aims to promote EDIA within IAH, the wider hydrogeological community and beyond, taking practical steps to implement positive

change. It goes without saying that the active support and participation of all IAH's members are fundamental for the progress and success of the group. In line with IAH's strategic plan, we encourage much wider participation of members of all ages and backgrounds in national chapters, commissions and networks and working groups. More information and contact details can be found on the website.

IAH has joined the Equal Aqua initiative by the World Bank as an official partner ([article on p18](#)). This organisation aims to increase gender diversity and inclusion in the water sector, by increasing awareness, promoting opportunities for women and sharing good practices. While checking the details, I was surprised to find another organisation called Equal Aqua; Equal Aqua Uganda, which works effectively with communities to tackle inequalities in access to WASH, as recognised by a Points of Light Commonwealth Award.

All of these initiatives will feature at this year's IAH 50th Worldwide Groundwater Congress in Cape Town in September. It has a focus on youth, with the Early Careers Hydrogeology Network playing a prominent role, and a first class scientific content. But it is also an opportunity for IAH to celebrate another milestone, with 50 years of successful congresses. Appropriately for a 50th anniversary, the gala dinner will be held at the Gold Restaurant in Cape Town. I'm looking forward to my first visit to South Africa and to meeting as many IAH members as possible during the conference.

**Jane Dottridge**

## Media focus

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### A selection of groundwater related features from around the world

#### The subterranean chemistry that explains India's groundwater contamination

Vajinder Kumar, a Chemist at Akal University, reports that 'Malwa is known as the cancer belt of Punjab'. Many residents also suffer from other conditions linked to water contaminated with excess fluoride and arsenic. Fluorosis is characterised by dental and debilitating bone problems, while arsenicosis or arsenic poisoning is characterised...

Read more at <https://www.chemistryworld.com/news/the-subterranean-chemistry-that-explains-indias-groundwater-contamination/4017578.article>

#### Reducing pollution in EU groundwater and surface waters

Environment Committee MEPs adopted their position on new laws that revise the Water Framework Directive, the Groundwater Directive and the Environmental Quality Standards Directive (Surface Water Directive). The aim of the revisions is better protection for human health and natural ecosystems from pollutants. The revisions include a watch list of...

Read more at <https://www.europarl.europa.eu/news/pt/press-room/20230626IPR00824/reducing-pollution-in-eu-groundwater-and-surface-waters>

#### We've changed Earth's spin by pumping groundwater

A new study shows that our human pumping and relocating of groundwater has slightly shifted Earth's mass – thereby slightly changing Earth's spin – and causing Earth's rotational axis to increase its rate of wandering. Groundwater withdrawal for agriculture, mining, or household use, for example, has caused a slight-but-noticeable shift...

Read more at <https://earthsky.org/earth/changed-earths-spin-pumping-groundwater-sea-level/>

### The Hidden Wealth of Nations: Groundwater in Times of Climate Change

Groundwater is our most important freshwater resource, but the lack of systematic analysis of its economic importance has evaded attention from policymakers and the general public – threatening the resource. The Hidden Wealth of Nations: The Economics of Groundwater in Times of Climate Change report, published by the World Bank, offers new data and...

Read more at [https://www.worldbank.org/en/topic/water/publication/the-hidden-wealth-of-nations-groundwater-in-times-of-climate-change?intcid=ecr\\_hp\\_headerP\\_en\\_ext](https://www.worldbank.org/en/topic/water/publication/the-hidden-wealth-of-nations-groundwater-in-times-of-climate-change?intcid=ecr_hp_headerP_en_ext)

#### Arizona announces limits on construction in Phoenix area as groundwater disappears

The state will no longer grant certifications for new developments within the Phoenix area, as groundwater rapidly disappears amid years of water overuse and climate change-driven drought. A study found that around 4% of the area's demand for groundwater cannot be met over the next 100 years under current conditions...

Read more at <https://edition.cnn.com/2023/06/01/us/arizona-phoenix-groundwater-limits-development-climate/index.html>

#### Groundwater is the solution to the water crisis in Uruguay

During the persistent drought and the low flow of the Santa Lucía river, which normally supplies Montevideo, the water supply company has also abstracted water from further downstream, near to the estuary of the La Plata River. This has raised chloride and sodium levels in the drinking water quality, described...

Read more at <https://www.plenglish.com/news/2023/05/19/groundwater-is-the-solution-to-the-water-crisis-in-uruguay/>

# South Africa – Still chance to register for our Cape Town Congress!

**The Organising Committee – and all their colleagues – will provide a warm welcome when you come to Cape Town in September for the 50th IAH World Groundwater Congress of the International Association of Hydrogeologists:**

*“If you haven’t already registered you still have time! In 2023, we come together as hydrogeologists at the southern point of Africa. We offer extraordinary cuisine, a diverse culture, large parks, biomes from deserts to tropical forests, and – most importantly – South African hospitality. South Africa and Cape Town are extraordinary destinations and accessible from most international airports.*

*In 2023, we celebrate the early careers and their importance in the development of the IAH and the hydrogeology profession. We call for new members, but also for new chapters, groups, and networks. Groundwater affects the entire planet. Our community is growing, but it should also expand into new countries and scientific developments.*

*We invite you all to join us in-person in Cape Town in 2023! Welcome to South Africa!”*

## **The programme**

On the first day, Monday 18 September, you can join field trips that range from a hike up Table Mountain to see the local geology and the five dams making up the first real water supply scheme for Cape Town in the 1800s, to a winelands and wetlands tour focusing on isotopic techniques. The field trips are followed by four days of plenary, parallel and special sessions, which promise to be engaging and thought-provoking, covering a wide range of topics that are at the forefront of groundwater research and management.

The Congress theme is **Groundwater: A Matter of Scale**. This theme combines scientific advances through local to regional scale experiments and case studies, with those extending over various temporal scales. The sub-themes cover a range of issues:

- **The connectedness of groundwater and planetary sciences** explores the connectedness of groundwater to various parts of the Earth system across different scales and disciplines.
- **Catchment scale integrated surface water and groundwater studies** deals with conjunctive use of water resources and other catchment issues
- **Scale aspects of groundwater flow and transport systems** explores methods to study groundwater flow and transport systems both at local and regional scales.
- **Critical zone sciences – a multidisciplinary, cross-scale science:** As anthropogenic impacts increase in magnitude and scale, fundamental biogeochemical processes that create and sustain ecosystem patterns will continue to change at an unprecedented rate.
- **Upscaling/downscaling** considers new techniques and approaches, such as advances in remote sensing missions, global circulation models (GCMs), social media and other internet-related platforms provide new sources of data for groundwater.
- **Local-scale, pore-scale, and discreet scale:** improved techniques make it possible to model or visualise hydrogeology at scales down to water molecule or water-mineral interfaces.
- **Polycentric groundwater governance systems:** good governance requires a proper institutional design so that stakeholders trust that the management and regulatory decisions about groundwater use are legitimate, fair, credible and predictable.
- **Improving shared sustainable use of groundwater resources that cross two or more jurisdictional borders** explores the management of transboundary groundwater resources.



The programme includes oral and poster presentations from six continents, with more than 400 abstracts and counting under review. A stellar cast of keynote presenters has been assembled, find all their details at <https://iah2023.org.za/keynote-presenters/>



Dr. John A. Cherry



Prof. Seifu K. Gurmesssa



Prof. Wendy Timms



Virginia Molose



Dr. Shafick Adams



Dr. Zahid Badroodien



Gavin Kode



Mohammed Hammie



Mike Killick



David Allpass



Prof. David Kreamer



Prof. Makoto Taniguchi



Alexis Gutierrez



Bruno Mougin



Jerome Nicolas



Candice Lasher-Scheepers

**If you need a visa** to attend the Congress, please apply as soon as possible to allow enough time for the visa application process. Registered delegates can request a visa invitation letter from [confetal@iafrica.com](mailto:confetal@iafrica.com)

If you plan to bring an **accompanying person**, please visit our website for the latest information on the accompanying person programme and registration details.

**September is one of the best months** to visit Cape Town and the surrounding region. It's an ideal time to extend your visit to South Africa and explore the beauty of the country. Spring officially starts on the 1st of September, with mild days and average temperatures in the low to mid-20°C/68°F. Fewer rainy days are expected, but evenings can still get chilly.

**The Congress Registration and Hospitality Desk** will remain open throughout the Congress to register, delegates, provide support to presenters and delegates with general congress and travel enquiries. Prior to the Congress please contact [confetal@iafrica.com](mailto:confetal@iafrica.com) if you require any general travel/accommodation/touring assistance.

**Find out more about IAH's 50th IAH World Groundwater Congress at <https://iah2023.org.za/>**

#### Wetlands and Winelands





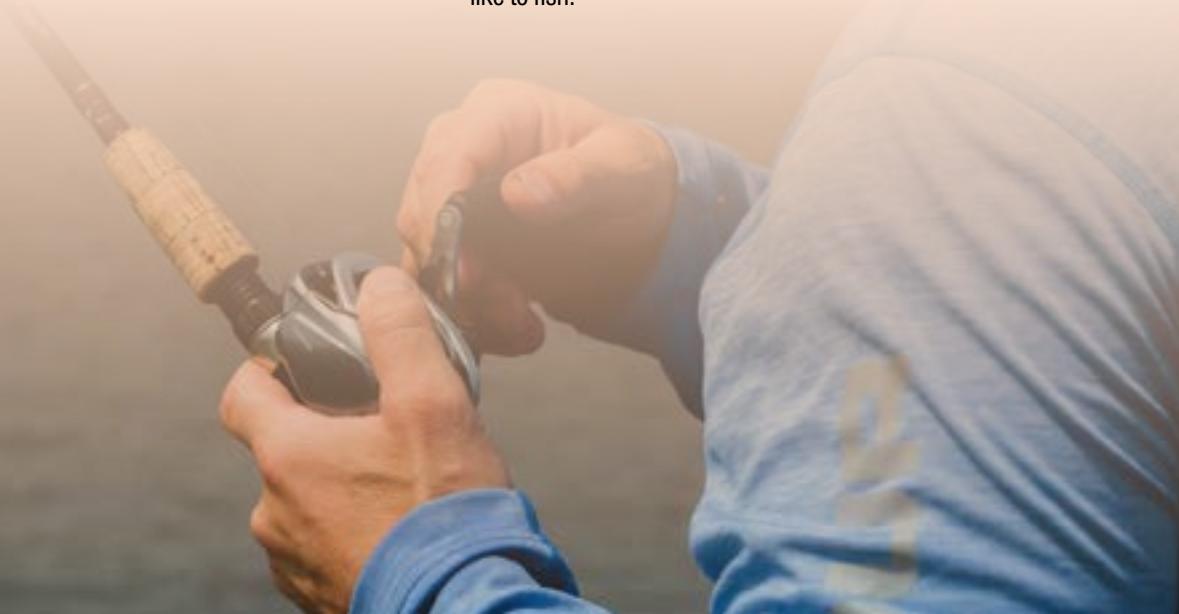
## Meet the editors – Martin Appold

**It is a pleasure to serve IAH as an Editor of Hydrogeology Journal, which I have done since 2015. I enjoy seeing the breadth and diversity of research submitted to the journal and the impact that it is having in science and society. I first came to appreciate the impact of hydrogeology while I was a master's student in economic geology. My thesis research was focused on the origin of various relatively small but widespread "Mississippi Valley-type" (MVT) zinc, lead, and barite ore deposits in the Central Appalachian Mountains of the eastern U.S. In my research I mainly used sulfur isotope compositions and fluid inclusion properties of ore minerals to infer the paleo flow paths of the ore fluids, which were highly saline groundwater (brines) discharged from sedimentary basins. I was eager to find a way to corroborate the interpretations I was making from the isotopic and fluid inclusion data I was collecting, so I began taking courses in groundwater hydrology. For my Ph.D., I decided that I wanted to merge my interests in economic geology and hydrogeology by using principles of groundwater flow and geochemistry in numerical reactive transport modeling to understand the origin of the giant MVT lead deposits in the Southeast Missouri district of the U.S. Numerical modeling of the physical and chemical behavior of groundwater and other subsurface fluids has remained one of my principal research interests ever since, which I have continued to apply to studies of ore deposits and of hydrocarbon migration and CO<sub>2</sub> sequestration.**

One of the limitations that I have frequently encountered in my attempts to model ancient ore-forming groundwater systems is a lack of sufficient information about the chemical composition of the groundwater, particularly its concentrations of the ore metals, lead, zinc, and copper. Samples of ancient groundwater are commonly trapped as fluid inclusions in minerals precipitated from the groundwater, which has motivated me to try to analyze the composition of fluid inclusions using tools such as laser ablation ICP-MS. Fluid inclusions also have their limitations, e.g. analyzable fluid inclusions do not always exist in minerals of interest, which has led to me to pursue laboratory experiments to try to quantify water-rock reactions.

I also enjoy teaching hydrogeology. At the University of Missouri, I teach Groundwater Hydrology, Groundwater Modeling, and Hydrogeologic Processes, and include units on groundwater in my introductory physical and environmental geology courses.

When not teaching or researching hydrogeology or reading Hydrogeology Journal manuscripts, I enjoy spending time with my family, my church, in the outdoors, and attempting to grow fruit and vegetables. I am grateful for the groundwater that is supplied to my home that allows me to irrigate my fruit and vegetable plants during the often hot and dry Missouri summers, and for the groundwater that discharges into the streams and ponds that I like to fish.



# New to IAH Secretariat

## Emma Clare

Hello! My name is Emma and I am the new Education and Outreach Manager at IAH. I graduated with a geology degree at the University of Southampton in 2004, and since then I have primarily worked in science events, communication and outreach. I started out in Earth Science education and geoconservation, before moving to a science centre and then into science festivals. I've spent a lot of time working on activities that engage people with science; including school workshops, museum exhibits, lecture series, comedy nights, and quite a few dinosaur days!

In 2014 I became involved in association management, and have been working with gene and cell therapy societies across Europe to organise their conferences and help them deliver their objectives. It's been challenging but also very rewarding, and has given me a first-hand appreciation of the important role professional associations play.

I am really excited to join IAH and to be involved in your education and outreach programmes. I am looking forward to learning more about hydrogeology and the work that you do, and getting to know you all in the months to come. Get in touch with me at [eclare@iah.org](mailto:eclare@iah.org).



## George Redford

Greetings IAH Newsletter readers! I am George and I have recently been appointed as Executive Assistant here at IAH. I am a recent graduate with a background in Theology, Religion and History. I have always had a keen interest in environmental issues which was developed more directly when I undertook a globally focused MSc in History in 2021–2 at the University of Edinburgh. I studied modules in Environmental History and produced a thesis on the subject of gender and landscape in Medieval Iraq. The project had a particular emphasis on the importance of water in the region during this period but also more generally in Islamic culture and history. As a result of this study, I have a deep appreciation for the impact and significance of groundwater from a historical perspective and I look forward to learning more about how the IAH's mission statement aiming to "further the understanding, wise use and protection of groundwater resources throughout the world" can be applied to issues facing communities across the globe.

In terms of my role at IAH, I will be helping to maintain social media platforms, the newsletter, and the website and support the Secretariat more generally. Feel free to get in touch at [gredford@iah.org](mailto:gredford@iah.org).



Find us at <https://iah.org>. Connect by email [info@iah.org](mailto:info@iah.org) and on social media:

  @iahgroundwater

 Find IAH groups

 [www.facebook.com/iah.org](https://www.facebook.com/iah.org)



# Translators needed – can you help?

As an international association we want to do more to make our information accessible to members and wider groups across the world. As part of this we are translating our Strategic Overview Series (IAH-SOS / AIH-SOS). These papers aim to inform professionals and learners in a variety of sectors about the key interactions with groundwater resources and hydrogeological science. They are also intended to aid IAH members and supporters in their outreach activities.

Our SOS papers cover a broad scope of topics and several have been translated, with various papers available in Spanish, Portuguese, French, Chinese and Hindi. Can you help in translating more of our SOS papers?

Let us know at [info@iah.org](mailto:info@iah.org). We'll be pleased to include your name on the SOS paper in acknowledgement of your role as translator.



## Executive Committee

**The Executive Committee met online in June to review items to be presented to Council at their meeting at the Cape Town Congress in September, and for the Annual General Meeting (which will be in hybrid format, for those who are unable to travel to Cape Town). Members of the Organising Committee are expecting between 400 and 500 delegates, having received around 425 abstracts. IAH is supporting the attendance of a number of delegates from low income backgrounds.**

The Exec also reviewed progress with other planned congresses. The Organising Committee for our congress next year in Davos will be represented at Cape Town, and with the venue confirmed and other details taking shape, they plan to launch the website during the Congress.

Our 2025 congress will be in Melbourne, Australia. The Organising Committee has held initial meetings and will be reporting progress to IAH Council in September. Any news will of course be passed on to IAH members. Arrangements for 2026 are yet to be determined – proposals are invited!

The Exec were keen to ensure IAH members could be provided with information that supports their needs. They aim to finalise the draft proposals for our continuing professional development scheme (see page 22 of our May Newsletter – [https://iah.org/wp-content/uploads/2023/05/IAH\\_Newsletter\\_May\\_2023-web.pdf](https://iah.org/wp-content/uploads/2023/05/IAH_Newsletter_May_2023-web.pdf)). They also called for more involvement of our commissions and networks in publishing strategic overview papers, or to add to our new Technical Insight Series, to follow on from the Groundwater Quality Commission's 'PFAS – Groundwater's Dark Matter' (see [https://iah.org/education/professionals/technical\\_insight\\_series](https://iah.org/education/professionals/technical_insight_series))

An easier to view annual report has now been established – see <https://iahgroundwater-annualreports.org>. The 2022 report will be available later this year.

At the time of the Exec meeting there were 4000 members, including 300 sponsored members (thanks to the generosity of IAH members) and around 450 students. Some members may be affected by the proposals for the review of country categories for membership fees (see elsewhere in this newsletter) and the Exec were still keen to receive feedback. Under the proposals, some countries would change category and see increased fees. It was noted, though, that fees have not increased since 2019 and inflation has reduced the relative costs involved.

The Exec discussed the possible impact of Springer's decision to withdraw IAH members' discounted fee for open-access publishing of papers in Hydrogeology Journal. They were disappointed at this decision and hoped that an alternative benefit would be put forward in place of this.

The meeting concluded with agreement that IAH should continue to push for better awareness of groundwater and the benefits it brings to society and the environment. They proposed that our outreach activities should be developed further and better coordinated, including through the establishment of a UN-Engagement Working Group. You can find out more about our latest outreach activities on [page 12](#).



Dave Kreamer



Jane Dottridge



Marco Petitta



Teodora Szöcs

# Engagement

Since IAH became a formal 'Associate Partner' of UNESCO it has become clear that we need to have a better mechanism for channeling our support to UNESCO and other parts of the UN family. There will be a meeting of the new IAH UN-Engagement Working Group at Cape Town Congress – come along if you would like to be involved. If you're not able to come to the congress, let us know if you would be interested in being part of this WG – [info@iah.org](mailto:info@iah.org).

In the meantime, Dave Kreamer is involved in the UN Task Group for the 2024 World Water Development Report on Leveraging Water for Peace and work has already started on the programme for 2025, on 'Water and glaciers preservation'. If you think you could contribute, let us know!

In a parallel initiative, a groundwater experts group is being established through UNESCO, with IGRAC preparing the terms of reference, supported by Alice Aureli. No doubt our new UN Engagement Working Group will be working closely with this. Although Alice has now retired from UNESCO she won't be resting on her laurels. She intends to be further involved with IAH and will be our representative at World Water Week in Stockholm, in August

As well as UN family, we are frequently contacted by other groups seeking our support and we will have **a meeting at Cape Town to establish an 'Education and Outreach Working Group'**. We already do a lot, with our annual congress, conferences and webinars, and events run by chapters, commissions and networks. The WG hopes to set out a strategy for developing further support, taking account of different needs from students to continuing professional development across the world.

An example that could be considered by this WG is a recent request from Azerbaijan State Oil and Industry University (ASOIU) and President DK has just signed a memorandum of understanding with the University. Traditionally a university focusing on oil resources, they would like to explore how IAH could help in establishing environmental study modules for their students.

The next World Water Forum will take place in Bali, Indonesia in May 2024 and IAH members in Indonesia are involved in preparations for this. Sarah Bourke, Vice President for Australasia and the Pacific, has been in touch with them to see how IAH Council can also provide support.

IAH is affiliated to the International Union of Geological Sciences (IUGS). IUGS is cataloguing '100 Geological Heritage Sites' and has invited IAH to put forward groundwater sites of international significance. The list already includes Pamukkale in Turkey and the hydrothermal features in Yellowstone, USA – see <https://iugs-geoheritage.org/> for more information

Finally, IAH President Dave Kreamer has been awarded honorary membership of the International Association of Water Resources (IWRA). Honorary Membership is the highest honour bestowed by IWRA, granted to individuals who have made significant contributions to the field of water resources or achieved acknowledged eminence in a water-related area. It serves as a testament to their exceptional achievements and enduring impact on the world of water resources. Dave will present a short video at IWRA's congress, which takes place in Beijing in September.



# India Mark II/III and Afridev Project

## Enhancing the reliability of the India Mk II/III and Afridev handpumps

A project is currently underway to enhance the reliability of the India Mk2/3 and Afridev handpumps. The aim is to produce variants of these designs that will run at least 5 years (ideally more than 10 years) between major breakdowns and also will have improved lives for the faster-wearing parts.

The India Mark II/III was developed to meet the urgent needs stemming from the 1967 drought in India, and millions of India Mark II/III handpumps have been produced since then. The Afridev was developed in the 1980's in Malawi and has been adopted in many other countries since.

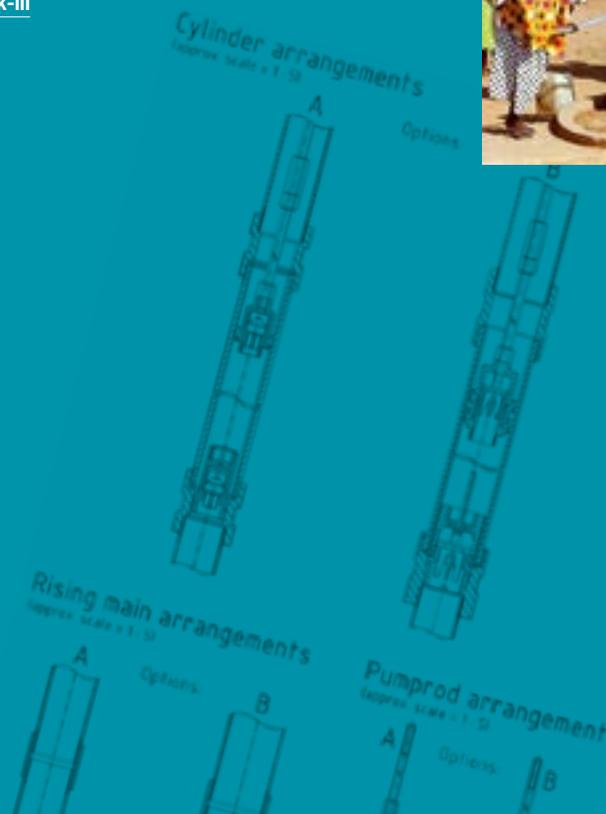
Field Note No 2013-1, published by RWSN (Rural Water Supply Network) noted that while the failure rate of handpumps continued to be a common topic of debate in rural water supply circles, this should not diminish the benefits brought by these designs. They felt that the challenge was how these handpump designs might continue to evolve and improve, and whether there was still a role for the standards of public domain pumps.

Images: <https://rural-water-supply.net/en/implementation/public-domain-handpumps/india-mark-iii>

The demand for handpumps is still present. An estimated 200 million people rely on approximately 700,000 handpumps for clean water in Sub-Saharan Africa, and functionality rates at country level have been estimated to range from 11% to 58%, although comparing figures should be done with caution (Danert, K. 2022). Replacement of handpumps by solar pumps and other technologies will not be able to eliminate this issue in less than a few decades.

The project has a number of goals. The repair interval on wearing parts should be increased from 6 months on average to 2-3 years and expensive parts that require major repairs this should last at least 10 years. Corrosion from pipes and excessive lead and iron from water should be eliminated. Supply chain and quality control issues will also be considered. Improved designs will be made available in the public domain.

(continued on page 14)



(continued from p13)

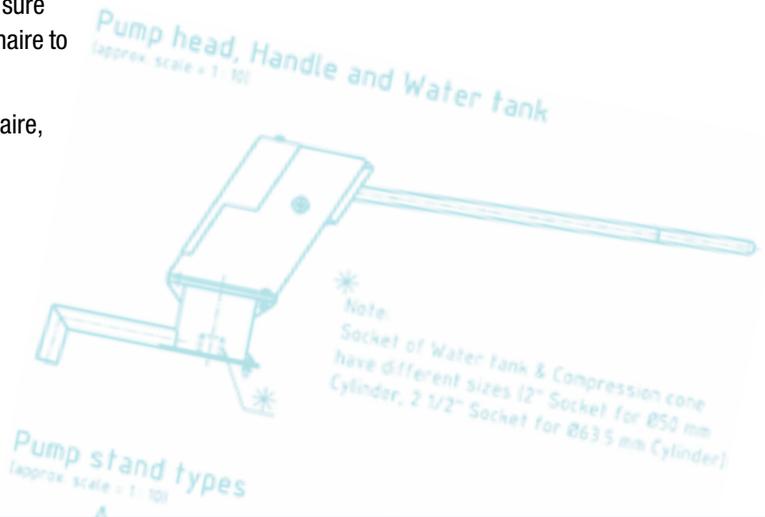
The project is being carried out by Design Outreach with Neale Consulting Engineers, Ltd. and RWSN, collaborating with handpump experts around the world and aiming to partner with the many other efforts already seeking to improve the reliability of these pumps. The project partners are aware of many handpump failure modes that need to be addressed. To understand these failure modes more clearly, prioritise effectively and make sure none have been missed any, they have launched questionnaire to learn more about failure modes directly from the field.

You can help with this project by completing the questionnaire, which can be found at:

- English: <https://forms.gle/vkqa963WDL81Xq8w8>
- Español: <https://forms.gle/JJ7JiStyt8Ceqx5j9>
- Français: <https://forms.gle/oJ4QqA5qmhPvNEP89>
- Português: <https://forms.gle/kf8JvWauhojqjQoP9>

Danert, K. (2022) “Stop the Rot Report I: Handpump reliance, functionality and technical failure Action research on handpump component quality and corrosion in sub-Saharan Africa”. Ask for Water GmbH, Skat Foundation and RWSN, St Gallen, Switzerland

Baumann, E., Furey, (2013) Field Note No 2013–1: How Three Handpumps Revolutionised Rural Water Supplies. RWSN, St Gallen, Switzerland



## IAH mentoring scheme

**We've had quite a lot of interest in this year's mentoring scheme – and thank you especially to all the members have volunteered to be mentors!**

If you would still like to register as a mentor or 'mentee' there's still time – just follow the links below (you can be a mentor, a mentee – or both, if you like).

Mentor (giver of advice) apply here:

<https://www.surveymonkey.co.uk/r/IAHmentor2023>

Mentee (receiver of advice) apply here:

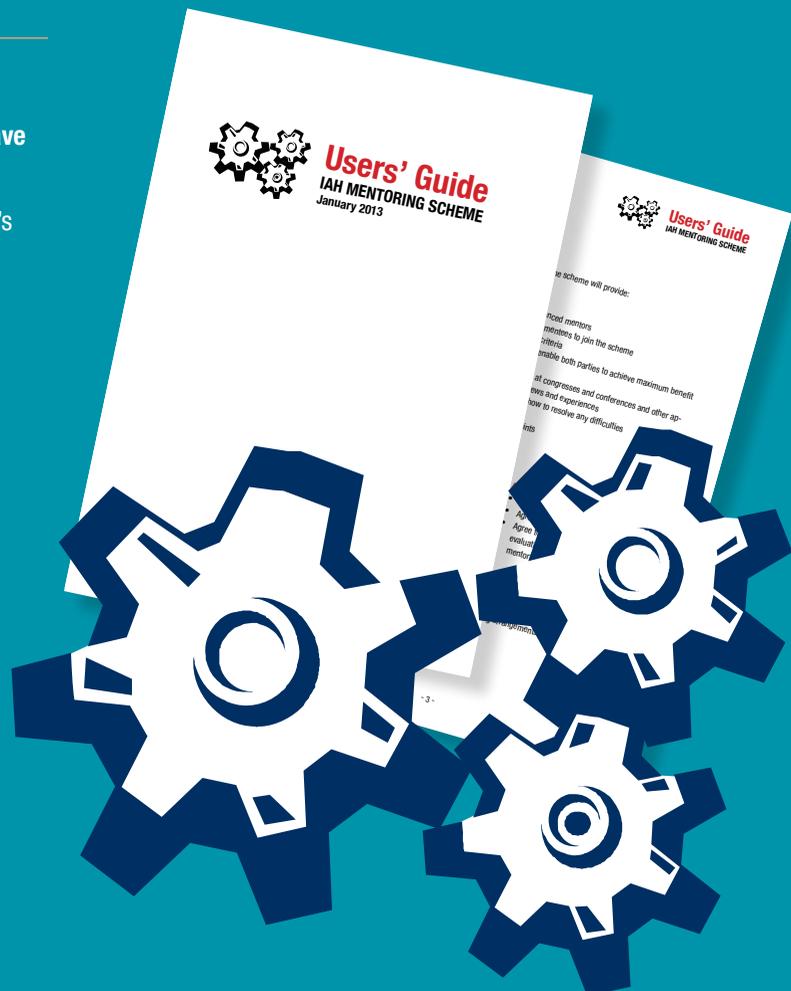
<https://www.surveymonkey.co.uk/r/IAHmentee2023>

General information about the scheme here:

<https://iah.org/education/professionals/mentoring>

The scheme is only open to IAH members – but if you are not yet a member you are welcome to join us now. Find out how to join at <https://iah.org/join-us/>

SECRETARIAT



# Nurturing Equity, Diversity, Inclusion, and Accessibility: Introducing the EDIA Working Group within our Socio-Hydrogeology Network (SHG)

**In its commitment to promoting equity, diversity, inclusion, and accessibility (EDIA), the International Association of Hydrogeologists (IAH) is proud to announce the establishment of its new working group that will operate within the IAH Socio-Hydrogeology Network (SHG). This initiative is designed to further enhance the EDIA landscape within our organisation and beyond. By harnessing the power of collective effort, the EDIA Working Group aims to foster a positive impact that resonates throughout the IAH and wider hydrogeological community.**

IAH already takes meaningful steps towards equity, diversity, inclusion, and accessibility, recognising the importance of putting these principles into practice. IAH's statement (<https://iah.org/about/statement-on-equity-diversity-and-inclusion>) reflects its dedication to fairness, equal treatment, and the elimination of discrimination based on attributes such as age, civil status, class, disability, gender identity, nationality, parental status, race or ethnic origin, religion or belief, and sexual orientation. The association strives for gender-neutral and discrimination-free language, continuously reviewing terminology to ensure appropriateness and inclusivity.

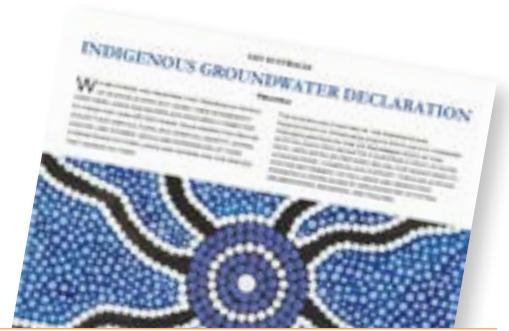
**Image:** Taken from *A Guide for ensuring inclusion and equity in education* by UNESCO. Available at <https://unesdoc.unesco.org/ark:/48223/pf0000248254>

The establishment of the EDIA Working Group demonstrates IAH's ongoing commitment to creating a more equitable, diverse, inclusive, and accessible organisation and environment. It is the result of collaborative endeavours, extensive discussions, and productive meetings within our organisation. We are immensely grateful for the unwavering support and guidance provided by Kellie Nicholson and the entire IAH Secretariat, our Secretary General Jane Dottridge, as well as the invaluable contributions of Prof. Marco Petitta (IAH Vice President for Programme and Science Coordination), Dr. Viviana Re (IAH SHG Director), Dr. Theresa Frommen (IAH SHG Co-Director), Bárbara Zambelli (IAH SHG Task Team Leader for Gender and Groundwater), and Dr. Luka Vucinic who will lead the newly formed EDIA Working Group within the IAH SHG.

By fostering collaboration, advocating for fairness, and embracing diversity, IAH is dedicated to nurturing positive change within the hydrogeological community. As we move forward, we invite all IAH Commissions, Networks, and members to actively contribute, ensuring better representation and balance at congresses and empowering the global IAH family. Together, we will achieve our objectives, forging a future where everyone is valued, respected, and empowered within the realm of hydrogeology.

**Luka Vucinic**  
**EDIA Working Group Lead, IAH Socio-Hydrogeology Network**





# Indigenous Groundwater Declaration

**We welcome all International Association of Hydrogeologists (IAH) members to sign the Indigenous Groundwater Declaration to acknowledge, champion and support through actions for the betterment of including and respecting Indigenous knowledge in groundwater activities, deliberations, decisions and policies.**

The Indigenous Groundwater Declaration was introduced in November 2022 during the Australasian Groundwater Conference by Associate Professor Bradley Moggridge, Dr Sarah Bourke and Dr Kelly-Jane Wallis (featured from left to right below).

We recognise and reaffirm that each respective Nation holds their own cultural and spiritual identity, songs, dances, and stories, which are expressions of their connections to their lands.

This Declaration is the first of its kind within the international groundwater community. Indigenous people's long association and connections to groundwater covers a broad range, such as historic use for consumption and survival and a suite of cultural and spiritual connections associated with knowledge and use of the water and places associated with groundwater.

The declaration can be viewed and signed here: <http://declaration.iah.org.au/>

Artwork, Pathways to water (Gali) by B.Moggridge (Kamilaroi) 2006



# AGC 2022





## IAH joins EqualAqua

**The EqualAqua is a collaborative platform established by the World Bank's Water Global Practice, with the support of Global Water Security & Sanitation Partnership (GWSP) and in collaboration with external partners. It aims to deepen the dialogue on gender diversity and inclusion in water sector jobs. Objectives of this platform include:**

- Provide participating utilities/water organizations with a framework, diagnostic tools, and step-by-step processes to enhance female recruitment, retention, and promotion in water sector jobs. Support women in the water sector by offering resources, training opportunities, and tools to advance their careers.
- Increase awareness of gender diversity and inclusion among utility managers/water managing bodies.
- Share good practices and approaches used by water and sanitation providers and water managing bodies worldwide.
- Expand the global database on gender diversity in water institutions, offering industry-wide comparative benchmarking and individual institutional scorecards.

In May 2023 IAH joined Equal Aqua as an official partner, with IAH-SHG the official contact point. IAH expects to benefit from this partnership in promoting gender equity and supporting women in the water sector by using the framework and tools provided by EqualAqua. By participating in the forums, we can share our experiences and learn from what is being done in by other organizations. It is a great opportunity to encourage our members to engage in initiatives that promote gender diversity within and outside of our Association.

To advance the discussion and bring visibility to the interconnection between gender and groundwater and advance the promotion of equity, diversity and inclusion, some activities and initiatives have already been developed. Amongst them, it is important to highlight: the side event during UN-Groundwater Summit in Paris on December 2022 which focused on social aspects, gender disparities and inclusion and the role of youth. We hope that our free membership for students in 2023 will increase diversity of memberships and encourage young professionals and those from lower income countries. We aim to provide more assistance with and opportunities for career development and training by revisiting mentoring schemes and online training initiatives. Our 'Statement on EDI' is a fundamental part of our strategic plan to 2030. We can also use online questionnaires to find out about people working in the groundwater sector, to further develop the research on gender issues.



These actions are aligned with five pillars proposed by Equal Aqua: attraction, recruitment, retention, advancement, research and benchmarking.

On April 26th 2023, IAH participated in the Annual Equal Aqua Forum, which was in two parts. The first was the webinar “Learning from Practice: Systemic Changes to Support Women in Water”, and the second was the Equal Aqua Forum Interactive Workshop. It was a rich environment to exchange experiences and challenges faced regarding the promotion of equity, diversity and inclusion by the partners.

As for the future, priorities include making EDI a primary consideration, ensuring that the mentoring scheme continues to be active and diverse, assessing the success of free membership for students, and continuing to propose and participate in high level events, such as the special session at the IAH 50th Worldwide Groundwater Congress in Cape Town, September 2023.

Bárbara Zambelli  
IAH Socio-Hydrogeology Network Task Team Member on  
Gender and Groundwater

**Find out more about Equal Aqua here:**  
**<https://www.worldbank.org/equalaqua>**

# Your votes count:

## Discussion points at this year's annual general meeting

A vote is proposed at the AGM on bringing our fee categories back into line with the original principles we used when setting these. These were aligned with World Bank data for countries and territories but they have since diverged.

### COUNTRY FEE BANDS

IAH has had different fee bands for many years, offering lower fee rates to individuals and organisations who live or are based in non “high income” countries and territories. Our policy is based on World Bank economic data and is reviewed by IAH Council periodically.

The World Bank has four income groupings: low, lower-middle, upper-middle, and high. IAH currently uses four categories for countries and territories: low, transitional, middle, and high.

As stated by the World Bank, the term country, used interchangeably with economy, does not imply political independence but refers to any territory for which authorities report separate social or economic statistics. Information about how the World Bank classifies countries and territories can be found at <https://datahelpdesk.worldbank.org/knowledgebase/articles/378834-howdoes-the-world-bank-classify-countries>. IAH does not accept responsibility for the classification of the countries or territories defined by the World Bank or other parties.

It is many years since IAH reviewed its fee categories. During this time the alignment between IAH's categories and the World Bank's income groups has diverged significantly. It is therefore proposed that IAH's fee categories should be realigned with the World Bank's income groupings, to re-establish a more realistic and fairer scheme. The fees would be adjusted accordingly, with fee categories set as A, B, C and D (equivalent to low, lower-middle, upper-middle and high).

About half the countries would remain in the same category. For the other half, nearly all would move to a higher category – and of these, nearly half would move upwards by more than one category. For those that move by more than one category it is proposed that this should be done in phases, for example over 3 years for each category change, to help mitigate the impacts for those affected. Any proposed changes would be subject to confirmation that it represents a consistent, and therefore appropriate, change in category.

The proposed revised fees shown in the table below. You can find the proposed categories for each country at <https://iah.org/members>. We understand from members and national chapters that the fees are often an obstacle in recruiting or maintaining IAH members and we have tried to take this into account when setting out the proposed fee structure. We have therefore reduced the initially proposed fees for the categories A, B and C, and propose not to increase the fees for category D. Overall the revised fees would have a neutral effect on IAH's membership income.

IAH Fees 2023	High income	Middle income	Transitional	Low income
Member	€88.00	€58.00	€50.00	€42.00
Online Member	€78.00	€48.00	€40.00	€32.00
Student Member	€30.00	€26.00	€24.00	€22.00
Student Online Member	€20.00	€16.00	€14.00	€12.00
Associate Student Member	€0.00	€0.00	€0.00	€0.00
Retired Member	€40.00	€27.00	€24.00	€22.00
Corporate Member	€485.00	€300.00	€255.00	€190.00
Gold Sponsor	€1,875.00			

Proposed categories & fees	D	Intermediate	C	B	A
Member	€88.00	€68.00	€54.00	€46.00	€36.00
Online Member	€78.00	€58.00	€44.00	€36.00	€26.00
Student Member	€30.00	€26.00	€24.00	€22.00	€20.00
Student Online Member	€20.00	€18.00	€16.00	€14.00	€12.00
Associate Student Member	€0.00	€0.00	€0.00	€0.00	€0.00
Retired Member	€40.00	€32.00	€27.00	€24.00	€22.00
Corporate Member	€495.00	€400.00	€305.00	€260.00	€195.00
Gold Sponsor	€1,875.00				

# 2023 IAH Annual General Meeting

**Notice is given that the 2023 Annual General Meeting of the International Association of Hydrogeologists will be held online at 17.30 BST on 19th September 2023. All members of the Association who have fully paid their subscriptions for the current year are entitled to attend the proceedings.**

- The AGM agenda will include receiving the report and accounts for the period ended 31st December 2022. The full financial statement will be made available on the annual reports pages of the IAH web site <https://iah.org/about/reports/management>.
- Votes will take place on future fees for IAH membership.
- Minutes of the 22nd Annual General Meeting held on 20th September 2022 are available at: <https://iah.org/members/iah-meetings>.
- If you would like to attend online please send an email to [info@iah.org](mailto:info@iah.org) with IAH AGM 2023 in the subject line and your name and membership number in the body of the email. We will then send you the joining details, including a password, and papers for the meeting. We would be grateful if you could email us by 31st August 2023 so that we can arrange for enough online capacity for everyone who like to join the meeting.

SECRETARIAT

We have had some feedback from a few chapters so far. Those that are not affected by a change in category, understandable have not raised objections. One of the countries that would change to a higher fee-rated category has emphasised the concerns over attracting and retaining members. We understand that it is never easy to accept an increase in costs. Do keep in mind, though, that we have not raised membership subscriptions since 2019, during which time inflation has increased other costs that we all have to pay by more than 15% in many if not most countries. We accept, though, that salaries may not have increase by the same amount.

If you have any questions or comments about the above, let us know at [info@iah.org](mailto:info@iah.org).

**Teodóra Szócs**  
**Vice President, Finance and Membership**

**Ian Davey**  
**Executive Manager**

# Commissions and networks

## Commissions and Networks

Some Commissions and Networks continue to be very active, though some inevitably are less so. Often this is because the volunteers who run these just don't have the time – or support – to keep the activities running at the level they would like. Marco Petitta, Vice President for Science and Programme, has encouraged Chairs and Directors of our Commissions and Networks to look for support among our more than 4000 members to help these groups.

One group of members with enthusiasm and energy – and who may be able to spare a little time – is our student members. We now have nearly 500 students among our membership, so we are putting out a call to all our student members – take a look at the Commissions and Networks, and see if there are groups that would be useful to your academic and career development. Perhaps you can offer your help to our hard pressed C&N teams! Many would really welcome your support in maintaining websites and keeping affiliates of groups updated. If you would like to know more, contact us at [info@iah.org](mailto:info@iah.org) – or contact the Commissions and Networks directly.

After some intensive and excellent work, the Groundwater and Energy Commission is now closing. But it is hoped that some of the group's activities might be adopted by a proposed new network on Water-Energy-Food-Ecosystem (WEFE) nexus. If this is something that you would be interested in, let us know at [info@iah.org](mailto:info@iah.org).

A new network is proposed, which will look at groundwater classification and is associated with the UNECE WG on groundwater classification – see <https://bit.ly/3XLvPPw>. Peter van der Keur of GEUS will lead the proposed network, which will seek formal approval at the IAH Council meeting in September.

After the successful publication of [PFAS] by Groundwater Quality Commission (see [https://iah.org/education/professionals/technical\\_insight\\_series](https://iah.org/education/professionals/technical_insight_series)) Marco Petitta is looking for other Commissions and Networks to step forward and propose a further paper for our new **Technical Insight Series**. You can contact Marco at [marco.petitta@uniroma1.it](mailto:marco.petitta@uniroma1.it).

Commissions and Networks look to be busy at the **IAH World Groundwater Congress in Cape Town, South Africa**, with the Organising Committee making space available for several of our groups:

- Commission on Groundwater and Climate Change
- Commission on Groundwater Quality
- Transboundary Aquifers Commission
- Commission on Managing Aquifer Recharge
- Burdon Groundwater Network for International Development
- Early Career Hydrogeologists' Network
- Socio-Hydrogeology Network
- Urban Groundwater Network

If you belong to these groups, look out for more details soon about the meetings. And if you're not already involved – why not go along and find out more!

## Regional Groundwater Flow Commission

Celebrations were in order for the RGFC as Dr József Tóth, the founder of the Commission reached his 90th birthday. Some of the many achievements associated with his name are:



- mathematical foundation of groundwater's basin hydraulics analysis;
- description of the systematic movement of groundwater flow;
- recognition of the role of groundwater flow systems as subsurface geologic agent;
- and, consequently, the formulation of the basic concept of modern hydrogeology.

Check his achievements and the interview with him at:

- <https://timecapsule.iah.org/person/jozsef-toth/> and
- <https://regionalgwflow.iah.org/>

We wish him continued good health and long life!

## Managed Aquifer Recharge Commission

There will be a **MAR session at the Cape Town Congress**, with 17 abstracts submitted.

The MAR Commission publishes a monthly newsletter and includes a wealth of information that no self-respecting IAH member should go without! You can find the June issue at <https://recharge.iah.org/files/2023/06/IAH-MAR-JUN-2023-newsletter.pdf> They would like to include more information particularly about MAR activities in Asia. Contact [dinamar@tragsa.es](mailto:dinamar@tragsa.es) if you would like to publish your MAR information in the IAH MAR Commission Newsletter.

## Karst Commission

In May, members of the KC group participated in a 6-day geotrip in Croatia and Slovenia, viewing large karst springs, spectacular caves, national parks, impressive karst phenomena, and observation points. They took in an evening lecture on springs (by Abe Springer), visited the Karst Research Institute in Postojna, Slovenia, and enjoyed the peaceful atmosphere and the local food and drinks of these two Balkan countries.

You can find out more about Karst Commission activities at <https://karst.iah.org/kc-news>

*Breaking news – Karst Commission conference now being planned for Rome, June 2024!*



## Socio-Hydrogeology Network

The **Socio-Hydrogeology Network has organised a special session at Cape Town** on the connectedness of groundwater and human systems. Traditional hydrogeological approaches tackle the complexity of human-groundwater interactions by focusing on the pressures people exert on groundwater quality and quantity. Conversely, socio-hydrogeology proposes integrating these observations with assessing how scarce and polluted groundwater shapes human livelihood and well-being. This session aims at discussing approaches, techniques and case studies focused on inter- and transdisciplinary assessments of the connections between humans and groundwater at different scales – time, space and social scale.

You can see also on p15 news about the **Equity, Diversity, Inclusion, and Accessibility (EDIA) WG** which has just been set up under the Socio-Hydrogeology Network.

## Mineral and Thermal Waters Commission

Members of the Mineral and Thermal Waters, after being involved in a successful conference on 'Advances in developing geothermal resources for heating, cooling and electricity production in developing geothermal resources for heating and cooling' in Ljubljana, Slovenia are calling for submissions to a special issue publication on 'Sustainable Development of Hydrogeology'

Find out more at [Sustainability | Special Issue : Sustainable Development of Hydrogeology](#)



## ECHN

Our **Early Career Hydrogeologists' Network will feature prominently at our Congress in Cape Town**. There will be awards for the best ECHN presentation and poster, to be given out during the closing ceremony. A keynote presentation will be made by a 'yet to be announced' ECHN member. An ECHN co-convenor will be present at each session, a great opportunity to gain experience of co-convening a session. There are also plans to add to the contents of the Time Capsule (<https://timecapsule.iah.org/>) with the help of ECHN. And of course, no congress would be complete without the ECHN Social event (hopefully they might allow a few oldies in too...)

# Chapters – round-up

We continue to receive annual reports for 2022 from national chapters. Thank you for all of these – it looks like there is a packed programme of activities for IAH members across the world, led of course by our *World Groundwater Congress in Cape Town, South Africa* in September.

Chile has plans this year for up to six technical talks on different topics of interest. They are also looking forward to presenting their new website to the members. Chile has benefited from fairly stable numbers of members in the recent past. It is a different story in Great Britain where numbers have been gradually declining, possibly because of competition from a sister organisation, though one that the GB chapter cooperates with. GBNC are planning this year's programme of activity, including possible support to a chapter in a lower income country.

The IAH Lebanon National Chapter has activities proposed for promoting membership of the chapter, offering sponsorship schemes, encouraging network building, and participation in the national and international water community. The chapter hopes to organise a conference on recent groundwater issues in Lebanon and the MENA. Mexico NC's activities include roundtables for dialogue between women involved in management of groundwater, along with virtual meetings on other groundwater issues. Slovakia NC has joined the MIKAS project with IAH's Karst Commission (find out more at <https://karst.iah.org/projects>).

The major activity for the Swiss Chapter continues to be organisation of the IAH World Groundwater Congress 2024 in Davos. They will be highlighting progress with the arrangements during the Cape Town Congress, after which attention will be focussed on them. We can expect to hear much more from them later in the year.

We continue to receive interest from colleagues who would like to establish national chapters in their own countries, with proposals being made in Azerbaijan, colleagues in Malaysia with plans for the chapter to be hosted by the Malaysian Geological Society, and some discussions taking place in Niger and Mozambique. Representatives from Ghana will be present at the Cape Town Congress, and they will have discussions with members of IAH Council, with the aim of formalising a chapter in Ghana.

An important issue for chapters – and indeed all members – is the plan for realigning IAH's fee categories for countries. Proposals were presented at last year's annual general meeting, though we have had only limited feedback (see also this newsletter on pXXX). Of the responses received so far, most are neutral, largely because the chapters concerned would be unaffected. However, understandably, concerns have been raised by those chapters that would be in a higher rate category under the current proposals. Please do take the opportunity to tell us what you think by contacting us at [info@iah.org](mailto:info@iah.org). Note that our membership fees have not increased since 2019. During this time inflation has increased the price of many other items by 15% or more – though we know only too well that salaries have not necessarily increased by this amount. . .

IAH Secretariat

Images: From <https://karst.iah.org/files/2023/05/MIKAS-Slides-for-Web-Site-ZStevanovic-12-04-2023.pdf>



# 6th edition of FLOWPATH – Italian National Chapter meeting on hydrogeology

The Italian Chapter of the International Association of Hydrogeologists and the Energy and Water Agency (EWA) of Malta organized the 6th Edition of FLOWPATH, the National Meeting on Hydrogeology, in Malta on 14th – 16th of June. Following the tradition of the previous editions of FLOWPATH, the conference was an opportunity for hydrogeologists and professionals to exchange ideas and discuss different issues on groundwater resources.

FLOWPATH 2023 received 90 abstracts from 150 attendees. All the abstracts were subject to rigorous peer-review process by the Scientific Committee members and assigned to oral or poster presentations. The Authors involved came from Universities, Public Bodies and Private Companies from Italy and Malta, as well as other countries.

The conference had five main objectives:

- To ensure that hydrogeology can play an important role in supporting the development of groundwater management and protection policies;
- To strengthen knowledge and research initiatives on emerging challenges to the groundwater environment;
- To update all the stakeholders, researchers and professionals on recent challenges in the hydrogeological sciences;
- To encourage researchers, professionals and administrators to contribute to the improvement of a sustainable water resources management;
- To highlight research initiatives undertaken in the Maltese islands and improve technical cooperation between Maltese and Italian hydrogeologists.

(Continued on p26)



The image shows a brochure for the FLOWPATH Malta 2023 conference. The cover features the Flowpath logo, the Energy & Water Agency logo, and a photograph of St. Paul's Cathedral in Valletta, Malta. The brochure content includes:

**FIRST ANNOUNCEMENT**  
The Italian Chapter of the International Association of Hydrogeologists (IAH) is pleased to invite you to the 6th Edition of FLOWPATH, the National Meeting on Hydrogeology. Following the tradition of the previous editions of FLOWPATH, the conference will be an opportunity for hydrogeologists and professionals to exchange ideas and discuss different issues on groundwater resources.

**CONFERENCE SESSIONS**

- Session 1** Policies and Practices to Protect Groundwater (14th June)
- Session 2** Special Session on Hydrogeological Studies on Malta (14th June)
- Session 3** Addressing Emerging Challenges to Groundwater Quality and Quantity (15th June)
- Session 4** Groundwater Dependent Ecosystems (15th June)
- FIELD TRIP** (16th June)

**KEY DATES**  
Opening of registration phase and abstract submission: **15th January 2023**  
Deadline for abstract submission: **15th March 2023**  
Notification of abstract acceptance: **28th April 2023**  
Deadline for registration: **15th April 2023**

**VENUE**  
14th to 16th June 2023  
MALTA, Valletta

**CONFERENCE OBJECTIVES**  
The objectives of the conference are:

- To ensure that hydrogeology can play an important role in supporting the development of groundwater management and protection policies;
- To strengthen knowledge and research initiatives on emerging challenges to the groundwater environment;
- To update all the stakeholders, researchers and professionals on recent challenges in the hydrogeological sciences;
- To encourage researchers, professionals and administrators to contribute to the improvement of a sustainable water resources management; and...
- To highlight research initiatives undertaken in the Maltese islands, and improve technical cooperation between Maltese and Italian hydrogeologists.



(continued from p25)

The objectives were achieved through 4 scientific sessions, each with its own Keynote lecture.

- 1: Policies and Practices to Protect Groundwater
- 2: Special Session on Hydrogeological Studies in Malta
- 3: Emerging Challenges to Groundwater Quantity and Quality
- 4: Groundwater Dependent Ecosystems

The congress concluded with four technical site visits which took place on Friday 16th June – morning. All site visits ended at the archaeological site of the Neolithic Temples of Hagar Qim and Mnajdra.

The conference was sponsored by: Government of Malta (Ministry for the Environment, Energy and Enterprise; Ministry for Finance and Employment), Water Service Corporation, Water be the Change. It was also sponsored by other prestigious organizations

and associations including: Associazione Acque Sotterranee, Società Geologica Italiana (SGI), Associazione Italiana di Geologia Applicata e Ambientale (AIGAA), International Association of Engineering Geology (IAEG Italian Group), Istituto di Geologia Ambientale e Geoingegneria of CNR (IGAG), Istituto di Ricerca sulle Acque of CNR (IRSA), Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA – SNPA), UNESCO (United Nation Educational Scientific and Cultural Organization), Consiglio Nazionale dei Geologi (CNG).

For further information, programme, abstracts, and photos, visit the conference website:

<https://energywateragency.gov.mt/flowpath2023/>

SERGIO RUSI PRESIDENT OF THE IAH ITALIAN CHAPTER  
STEFANIA DA PELO SECRETARY OF THE IAH ITALIAN CHAPTER  
MANUEL SAPIANO CHAIR OF THE ORGANIZATION COMMITTEE  
THE FLOWPATH 2023 ORGANIZING COMMITTEE



# IAH Spain NC

In May, from 15th -19th , IAH Spanish National Chapter organized the course “Surface Water – Groundwater Interaction: from watershed processes to hyporheic exchange” in Granada city. The course was taught by Donald Rosenberry (USGS) and Masaki Hayashi (University of Calgary).

Twenty-three people attended the course. 50% of the students were younger than 35 and most of them were from universities or research centres.

Students and professors had the pleasure to enjoy a social event during May 16th in the evening. Jose María Martín Civantos, Doctor of Archeology in University of Granada, made a tour through the streets of Granada. He highlighted the water structures and buildings created during Moorish dominion centuries and created a better understanding about the management of the water resources of the ancient city.



## In memoriam

### It is with sadness that we mark the passing of William E Wilson (1934–2023)

William (Bill) E. Wilson was the first Technical Editor of the IAH international journal, Hydrogeology Journal. Bill was a very kind and witty person and a very insightful hydrogeologist.

He served as a hydrologic scientist at US Geological Survey (USGS) for 28 years, and conducted numerous investigations of groundwater resources in the US states of Connecticut and Florida. Bill developed and directed the hydrologic characterization program at Yucca Mountain, Nevada, the proposed US site for disposal of high-level nuclear waste. As a result of these efforts, he received the USGS Special Achievement Award in recognition of exceptional service. After retiring from USGS, he worked in Switzerland from 1991–1993, advising the Swiss National Cooperative for the Storage of Radioactive Wastes (NAGRA) on hydrogeologic aspects of their characterization programs in fractured crystalline rocks and marls.



Bill concluded his tenure as Technical Editor at the end of 2000, after shepherding the IAH journal through its first 7 years. In his “Farewell and thanks!” note, part of an Editors’ Message (Hydrogeology Journal, 2000, 8:577-578) Bill was proud that his efforts had provided an opportunity for scientists from countries all over the world to publish their results and analyses in an international scientific journal. IAH is indebted to William E. Wilson for helping to put its new journal on a path to international success.

Cliff Voss  
Executive Editor, Hydrogeology Journal

# New Members



A warm welcome to the following new members, who joined our Association in the period  
29 March 2023 to 23 June 2023

## ALGERIA

Fadila SAOULI

## ARGENTINA

Nicolas GARCIA SALAZAR

## AUSTRALIA

Luis ALEGRIA OLIVERA

Elora BAIRD

Milan BALABAN

Michael BALL

Summer BARRON

Joelene BARRON

Kristyn BLOMME

Matt BOSTON

Robert CAMERON

Hayley CHAPMAN

Timothy CHARLESWORTH

Costante CONTE

India CYWINSKI-JAN

Kirsty DALTON

Selene DEBREE

Chris DICKINSON

Andile DLAMINI

Dan ESEKHILE

Richard EVANS

Emma FAKES

Mohammadali FARAJI

Matteo FRANCESCONI

Yaw FRIMPONG

Mickayla GRAHAM

Lisa GURIEFF

Michael HOLLOWAY

Gabrielle KILLALEA

Blair KILPATRICK

Alvin LAL

Xiaocheng LIU

Adam LLOYD

Alona MATTVEY

Shane MCSWEENEY

Bradley NORTH

Kelvin OLZARD

Reuben PARIGE

Juan PRETORIUS

Joel ROBERTSON

Andrew ROSS

Caityn SCOBIE

Callum SHARP

Madi STYLES

Michael THOMA

Cassie TURVEY

Alice TYSON

Nim UDAWATTA

Greg VAN BLOMESTEIN

Althea WALKER-HALLAM

Penny WALLACE-BELL

Scott WARNER

Eric WEIGHTMAN

Matthew WOJCIK

Simon YAT-FAN HO

Shahla YAVARI

Jed YOUNGS

Gengshuo ZHANG

## AZERBAIJAN

Huseyn BAGIRLI

Elvin MAMMADLI

N\_zrin\_IX\_HM\_DOVA

## BARBADOS

Kevin SEALE

## BELGIUM

Luka TAS

Niels VAN PUTTE

## BENIN

SOTIMA MARTIN NOUKOUSSI

## BOTSWANA

Diloro PHITLHO

## BRAZIL

Pedro ASSUNÇÃO

Frederico DA FRAGA LEMOS

Fernanda SOUTO BARRETO

Claudia Luciana VARNIER

## BURKINA FASO

Younaise Sounkanmi Olouwacheyi

ADEOTAN

## CANADA

Aspen ANDERSON

Kevin BODNAR

Madeline CALVERT

Andrew CLARKE

Sarah DICKSON-ANDERSON

Kelly HOKANSON

Alexander HOLDEN

Alexandra HUGHES

Alexandra HUGHES

Yan LÉVESQUE

David MARKS

Fernando MEDINA

Hamed MOZAFARISHAMSI

Philippe PASQUIER

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Xinyang FAN

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Kofi Antwi YEBOAH

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Wener OCHOA

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Palak SINGH

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Tom MCINTYRE  
Alexandra MILLER

### ZAMBIA

Sankwe Michael KAMBOLE

### ZIMBABWE

Moses SOUTA

# Diary dates

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20 Aug – 24 Sep 2023 –  
Stockholm, Sweden, and online

## SIWI World Water Week

The theme Seeds of Change: Innovative Solutions for a Water-Wise World invites us to rethink how we manage water. Which ideas, innovations, and governance systems will we need in a more unstable and water scarce world?

<https://www.worldwaterweek.org/>

21–24 Aug 2023

## 2023 Asia-Pacific Coastal Aquifer Management Meeting

APCamm in 2023, will bring together experts, policymakers, and community representatives to collaborate, share best practices, and develop innovative solutions for effective coastal aquifer management.

Organised by Institute of Geology Malaysia (IGM) in collaboration with Universiti Tenaga Nasional (UNITEN).

<https://hydrogeology.hku.hk/apcamm2023/>

6–7 Sep 2023 – Pontifical Gregorian University of Rome Roma Eventi Congress Center Piazza della Pilotta, 4, Rome - 00187 Italy

## 11th International Conference on Sustainable Development

Creating a unified foundation for the Sustainable Development: Research, Practice and Education - an excellent opportunity to share ideas and research findings through the European network of academics, with a particular focus on environmental, economic and socio-cultural sustainability.

Organised by European Center of Sustainable Development - CIT University.

<https://ecsdev.org/conference/11th-icsd-2023> [icsd@ecsdev.org](mailto:icsd@ecsdev.org)

11–15 Sep 2023 – Beijing, China

## IWRA XVIII World Water Congress

“Water for all - harmony between humans and nature”. The focus will be on developing improved scientific policies and solutions in water management.

Organised by IWRA.

<https://www.worldwatercongress.com/>

17–22 Sep 2023 – Cape Town, South Africa

## IAH 50th World Groundwater Congress

In 2023, we come together as hydrogeologists at the southern point of Africa. The theme of the congress is Groundwater: A Matter of Scale. Research, modelling and consulting work is developing at discrete scales right through to regional scale work related to the critical zone and transboundary aquifers. Data starts at the molecular level and moves to “big data”. We up-scale data and we down-scale data. Datapoints become temporal data. And we govern at different scales of involvement.

<https://iah2023.org.za/>

24–27 Sep 2023 – Marsa Alam Egypt

## Living with Environmental Challenges in the Coastal Zones

This conference session seeks to highlight the importance of coastal aquifers management in a context of climate change, considering the increasing demand due economic reasons, the over-exploration of water resources, especially in arid regions, and groundwater salinization processes. Organised by The Egyptian Society of Environmental Change.

<http://www.marsaalam2023.com>

[torab.magdy@gmail.com](mailto:torab.magdy@gmail.com)

27–29 Sep 2023 – JRC in Petten (the Netherlands)

## Innovation Workshop on Water Quality Monitoring & Assessment

A unique experience in pulling collective intelligence to innovate on water quality monitoring and assessment challenges, and to look ahead on how to build momentum and support to go further down the road together. Organised by WMO, UNEP, UNESCO, WWQA & EC - JRC.

<https://hydrohub.wmo.int/en/news-events/call-participation-innovation-workshop-water-quality-monitoring-assessment>

1–4 Oct 2023 – Saskatoon, Canada

## GeoSaskatoon2023

Bridging: research & practice, theory & experience, and different areas of practice. Lessons can be learned when we focus on the similarities, differences, and synergies in different areas of geotechnical, geosynthetics and hydrogeological practice.

Organised by the International Geosynthetics Society – North America (IGS-NA) and the International Association of Hydrogeologists – Canadian National Chapter (IAH-CNC).

<https://geosaskatoon2023.ca/>

9–13 Oct 2023 – La Paz, Baja California Sur, Mexico

## XIII Mexico Groundwater Congress

Regional Mexican Hydrogeology. Groundwater management, regulation, governance and sustainability.

Organised by Mexican Hydrogeological Association.

<http://agmx.org>

[agmx.ac@gmail.com](mailto:agmx.ac@gmail.com)

15–20 Oct 2023 – Dead Sea, Israel

### **SWIM – Seawater intrusion in coastal aquifers.**

The Dead Sea is located at the lowest elevation of the earth and is the deepest hypersaline lake in the world. SWIM brings together experts who focus on the theory, monitoring, modelling, and management of saltwater intrusion.

Organised by Eyal Shalev and Yossi Yechieli.

<https://swim2023.com/>

[eyal@gsi.gov.il](mailto:eyal@gsi.gov.il)

23–25 Nov 2023 – Laayoune, Morocco

### **Integrated Water Management and sustainable development (GIRE3D) (4th Edition)**

Participatory and Integrated Management of Water Resources in Arid Zones.

Organised by Moroccan Chapter AIH.

<https://gire3d2023.cm-aih.ma>   [gire3d2023@gmail.com](mailto:gire3d2023@gmail.com)

28 Nov – 1 Dec 2023 –  
Auckland, New Zealand

### **Australasian Groundwater / New Zealand Hydrological Society Joint Conference (AGC NZHS Conference)**

The conference theme is “Manaaki Wai (caring for our water): learning from the past, adapting for the future”. It captures the idea that water is a living entity, with its own mauri (life force) that needs to be respected and cared for, which is central to te ao M ori (M ori worldview).

Organised by IAH and NZHS.

<https://www.agcnzhs2023conference.co.nz/>

[tracy@on-cue.co.nz](mailto:tracy@on-cue.co.nz)

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