

NEWS & information

MAY 2024

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 2024

The 2024 IAH World Groundwater Congress takes place in Davos Switzerland, from 8-13 September 2024. The Congress has received a huge response so far, enabling an exciting and extensive programme covering a huge range of topics. Page 6

Activities for World Water Day 2024

This year's World Water Day, which took place on 22nd March, was on the theme of 'Leveraging Water for Peace'. Once again, IAH groups and members got involved in this global campaign by organising and participating in a range of activities and events. Page 12

Vote in the IAH 2024 Council Elections

IAH council elections take place later this year, and nominations have been received for the available positions. Voting opens in July, and all IAH members are entitled to vote. If you're not yet a member, you can join us now and participate in the process. Page 10

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

 @iahgroundwater

 @iahgroundwater

 Find IAH groups

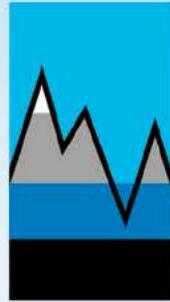
 www.facebook.com/iah.org

IAH WORLD GROUNDWATER CONGRESS 2024

Interacting Groundwater

08-13 September 2024
Davos, Switzerland

WWW.IAH2024DAVOS.ORG



World Groundwater Congress
IAH2024 DAVOS
Switzerland
Interacting
Groundwater
8.-13.9.2024

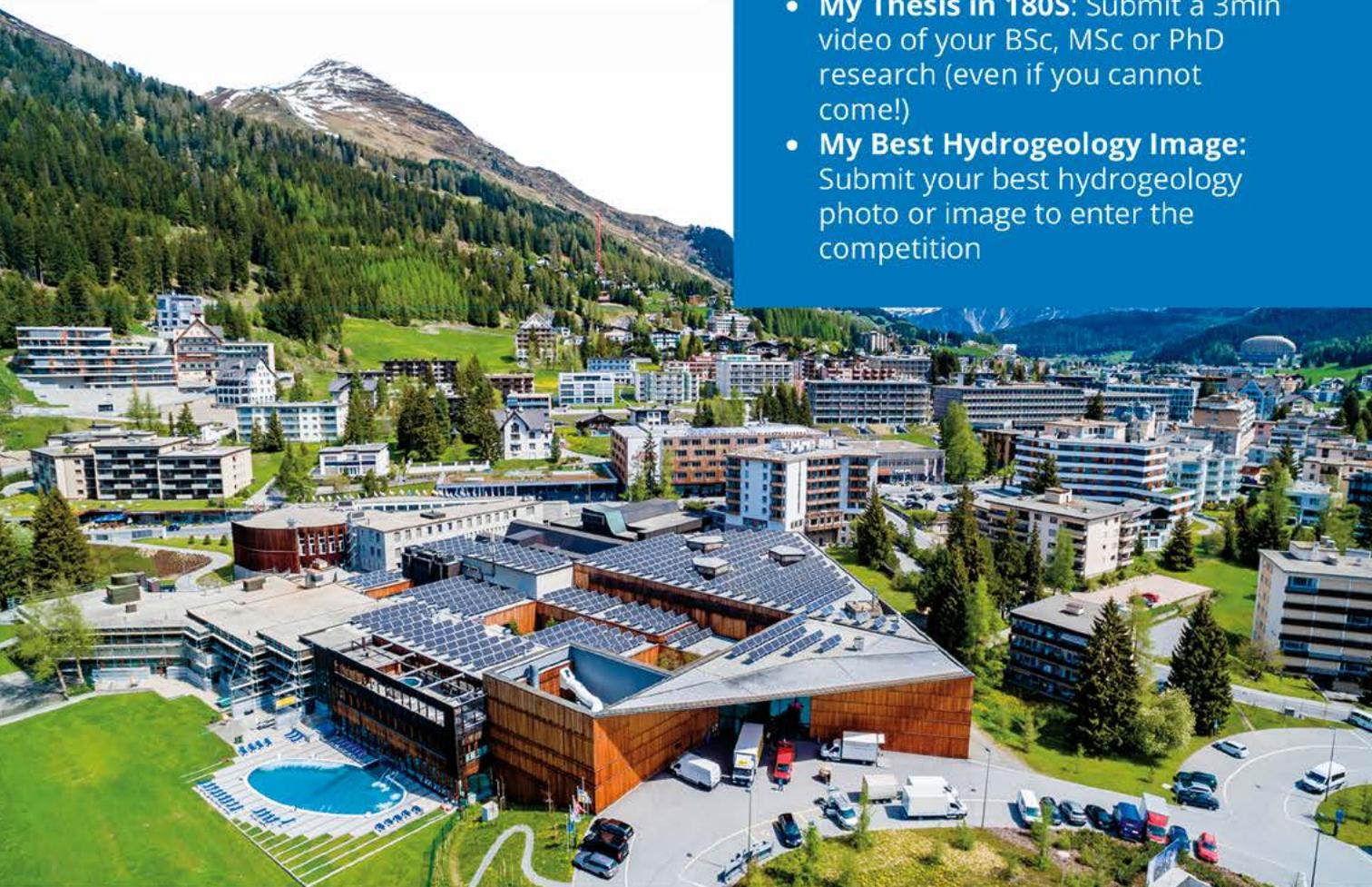
Key Dates

Until 31 May 2024

- Receive early bird registration rates

Until 30 June 2024

- **My Thesis in 180S:** Submit a 3min video of your BSc, MSc or PhD research (even if you cannot come!)
- **My Best Hydrogeology Image:** Submit your best hydrogeology photo or image to enter the competition



International Association
of Hydrogeologists
the World-wide Groundwater Organisation

unine
Université de Neuchâtel
Centre d'hydrogéologie
et géothermie

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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.

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 for further details.

Introduction

It seems that 2024 will be a year of questions for IAH and its members...

Firstly: how could the Organising Committee for the Davos Congress possibly follow up on 2023's outstanding Cape Town Congress? Well, they seem to be doing well so far, with 1200 abstracts received and now thinking about how they might expand their original plans to accommodate the incredible interest in this event in the Swiss Alps in September. You can register at the early bird rates until 31 May.

Who will you choose for the next IAH Council? The deadline for nominations closed at the end of March and there are worthy candidates for all posts. We give an update on the election process in this newsletter – and look out for the final list of candidates, which will be posted on IAH's website shortly. You will be able to see more about each candidate and what they hope to achieve if they are elected. See what you think – and make your vote count!

What part will you play as IAH strengthens and extends its outreach programme? Our new group to coordinate IAH's liaison with United Nations organisations will be chaired by Alice Aureli, former Head of the Groundwater and Water section at UNESCO. Sarah Bourke, IAH's Vice President for Australasia and the Pacific, has agreed to chair our Education and Outreach Working Group. If you want to support these groups or are already involved in these matters in some way, let us know.

Have you already met the new members of IAH's Secretariat? Hamish Johnson is Hydrogeology Journal's new Technical Editorial Advisor, taking over from Sue Duncan; and Olivia Fraser-Cobbett is our new Executive Assistant. We welcome them both on board.

Finally, we are almost halfway through the year - have you renewed your IAH subscription? We'd love to keep you as a member – or have you as a new member. Contact us if you would like to know more!

SECRETARIAT

From our Vice President

Dear members,

Springtime started with the World Water Day which has been celebrated everywhere, and most certainly by the groundwater community. The theme of the related World Water Development Report, launched by the United Nations on March 22nd, is "Water for Prosperity and Peace". It seems obvious to us that the availability of water resources is a milestone for prosperity, but we have the moral obligation to look at the opposite conditions, in areas where "inequalities in the allocation of water resources, in access to water supply and sanitation services, and in the distribution of social, economic and environmental benefits can be counterproductive to peace and social stability." (WWDR, 2024).

In this framework, hydrogeology continues to have limited visibility, though increased since the strong efforts made in 2022, but frequently still insufficient in terms of groundwater resource evaluation, vulnerability, protection and pollution. The effects of the several crises we are facing (now identified by the new word "multicrisis"), including climate change, pandemic, hyperinflation and war conflicts, are strongly affecting water availability, especially the poorest and more vulnerable people, dramatically diminishing their well-being and life expectations. And it must not be the case that water infrastructure such as pipelines, treatment plants and dams are seen as primary targets during wars and conflicts.

As groundwater people, researchers and practitioners, stakeholders and policy-makers, we are totally and continuously engaged in improving human society. This responsibility can be sometimes heavy, but also satisfying when we design a well, restore a polluted aquifer, improve an irrigation system, optimise the use of groundwater resources, and other successful activities.

The rapid and complex evolution of society, with deep changes during the last four years, brings

new challenges.

"Making groundwater visible" is still our mission, but it has to be accompanied by ensuring water availability for all, avoiding simplistic solutions and correctly using renewable resources of groundwater. Communicating the possible solutions that hydrogeologists can offer to water scarcity is another fundamental step to be improved.

To confront these challenges, both old and new, our IAH community can use different tools - scientific papers, our website, commission and network activity, etc. Our most prominent one is the world groundwater congress, which this year will be hosted by our Swiss Colleagues in Davos, from 8-13 September. "Interacting groundwater", the theme of the congress, is perfectly fitting for the above-mentioned challenges. We need to discuss and hear about new tools and data, to find together innovative solutions, to also exchange positive experiences and failures. In addition, we have to join with external actors, private and public organizations, policy-makers and local, national and international governments and entities.

The latest news from the organizers is that more than 1000 abstracts have been submitted, an outstanding success, which heralds the very relevant level of interaction we expect in Davos. More than 50 topics, networking opportunities, classical field-trips, invited lectures and public debates, thematic workshops: a comprehensive program which is available to view at www.iah2024davos.org, with the early-bird reduced fee option valid until 31 May.

Finally, in Davos we will know the composition of the new Council, which will be called on to direct our association for the next four years. You can find out more about the election and how to make your vote count in this newsletter.

Marco Petitta, Vice President, Programme and Science Coordination



IAH Council Meeting

The IAH Executive Committee met online in February, along with IAH's Trustees, the main purpose being to review the business plan for the year and to set a budget. The Executive aim to set a budget that corresponds to the expected income, supported by any funds that can be released from the Association's reserves, if needed. Mostly, IAH's income is from membership subscriptions so each year there is the hope that membership - and income - will be maintained or will increase and provide a firm foundation to work from. We are also grateful for the donations we receive from our congresses and for the financial support provided by our publisher, Springer Nature.

The Executive agreed that Alice Aureli should be invited to chair the new group that will coordinate IAH's liaison with United Nations organisations. Alice has been an IAH member and supporter for many years. While head of the groundwater group at UNESCO, she unstintingly promoted IAH and encouraged IAH to apply for Associate Partner status with UNESCO. Her experience of the 'UN family' will be of great benefit to IAH, as we aim to manage - and respond with the authority proportionate to IAH's standing - to the growing number of requests for support from different branches of the UN. Subsequently Alice agreed to take on this task and she will be in contact with members who have expressed interest in being involved in the work of the group.

Another group that began life at the Cape Town Congress is the Education and Outreach Working Group, and Sarah Bourke, IAH's regional Vice President for Australasia and the Pacific has agreed to chair this. Sarah will review proposals for the group's activities with Emma Clare, Education and Outreach Manager in IAH's Secretariat,

and will invite other IAH members to help in planning the group's activities. Potential activities that the Executive have agreed to fund include webinars and training activities, further translations of our Strategic Overview Series papers and support to students and early career members, particularly those in lower income circumstances.

The Executive offered their warm appreciation to Sue Duncan who, after eighteen years in post, is standing down as the Technical Editorial Adviser for IAH's Hydrogeology Journal. They wished her much luck in her new role with England's Environment Agency - and welcomed her successor, Hamish Johnson, currently at Aberdeen University.

Preparations for our congresses in Davos, Switzerland in September 2024 and Melbourne, Australia in September 2025 continue to be on track. No arrangements have yet been made for 2026 and the Executive encouraged chapters to consider putting forward a proposal. President Dave Kreamer would be very pleased to hear from you (email us at info@iah.org if you would like to know more).

Finally, the Executive wished all candidates well in the forthcoming elections for IAH's Council. Being a member of IAH's Council is a rewarding role but one which carries responsibilities on behalf of all IAH members. In putting themselves forward for office, candidates trust that members will also meet their responsibilities when deciding on who to vote for.



Dave Kreamer



Jane Dottridge



Marco Petitta



Teodóra Szócs

IAH World Groundwater Congress 2024, Davos

The IAH, the Swiss Society of Hydrogeology (SSH) and the Center for Hydrogeology and Geothermal Energy and Geothermics of the University of Neuchâtel (CHYN) invite you to the 51st IAH World Groundwater Congress in Davos in the Swiss Alps from September 8-13, 2024. The interest in the Congress has been enormous, with 1200 abstracts submitted from around the globe. The congress will be one of the most comprehensive groundwater events to date. Groundwater professionals, students, scientists, and stakeholders will join to exchange ideas and share knowledge about groundwater from a wide range of perspectives.

The Programme

The congress takes place over six days. The exciting programme will foster interactions, integration of knowledge and debates. The event opens with a day of workshops covering a broad range of topics from advanced field and modeling methods to innovative teaching approaches. View the workshop programme at www.iah2024davos.org/workshops.

The debate-format plenary sessions centre around major groundwater challenges, providing a platform for groundwater experts from different fields, backgrounds and domains to explore how science translates into policy and discuss the future of groundwater education and research. Delegates are invited to participate in surveys for some plenary topics that will feed into the debates. For more details visit www.iah2024davos.org/plenary.

There is an extensive parallel session programme comprising more than 50 sessions, which are grouped within five overarching topics;

- Hydrogeological systems and processes
- Groundwater in the Anthropocene – challenges and solutions
- Groundwater in a changing society
- Sustainable groundwater resources management
- Emerging field and computational methods

To view the full list of parallel sessions visit www.iah2024davos.org/parallel.

There are also plenty of opportunities for meeting friends, colleagues and forming new collaborations at the dedicated networking and social events, which take place both at the congress venue and at scenic locations in and around Davos.

Excursions

An exciting excursion programme is in place, with a selection of full-day and half-day trips. Get to know how the reshaping of the Alpine Rhine impacts the transboundary aquifer. Discover the role of groundwater in massive mass movements putting an entire village in motion and go underground to see measures to stop it. Discover mineral and thermal springs. Visit an old gold mine and a winery, or a silver mine and a brewery. Explore how the congress center is heated with geothermal energy. And more. Find out more on www.iah2024davos.org/excursions.



By Asumnupal - Own work, CC BY-SA 4.0, <https://commons.wikimedia.org/w/index.php?curid=68821229>

Image: www.rhesi.org

Student and Early Career Activities

Events and activities for students and early career attendees will take place organised by a collaboration of youth and early career associations.

Students are also invited to enter the 'My Thesis in 180s' competition by submitting a 3-minute video presenting their BSc, MSc or PhD research. The top three submissions will be shown during the congress, and the first prize winner will receive free conference registration. The



competition is open to all students, even those who cannot attend the congress in person. Submissions must be received by 30 June 2024.

Supporting, Sponsoring and Exhibiting at the Congress

There is still time to take this unique opportunity to showcase your knowhow, products and services to an international audience and support the debate around a resource that is vital to society. There are a range of supporter and exhibitor packages available, as well as the option to create tailored packages to suit your needs. Visit www.iah2024davos.org/#sponsors for more details.



Photo: Davos Congress.

Register Now

Join us and the international groundwater community this September in Davos, Switzerland. Register before 31st May to receive early-bird registration rates at www.iah2024davos.org/register.

We look forward to seeing you!

Contact: info@IAH2024DAVOS.org

www.iah2024davos.org



Free Registrations for Davos!

IAH is once again offering to cover the cost of registration for delegates from lower income countries and to younger members on lower incomes. The opportunity to apply is open to existing IAH members. A panel will review applications, with preference given to those who have an abstract accepted. To apply, use the following link where you will be asked to respond to a few questions and provide a short personal statement:

https://www.surveymonkey.co.uk/r/51st_Davos



Photo: Destination Davos Klosters/Martin Bissig

Young women under 35 years from lower or lower-middle income countries can apply for support to attend the congress via www.iah2024davos.org/apply.

Terms and conditions:

Applications close 11.00pm BST on Friday 31st May 2024. Eligibility is limited to IAH members only (2024 dues paid, or on sponsorship programme). Award winners will also be announced in the December 2024 edition of "News and Information".

SECRETARIAT

Hydrogeology Journal: Editors' Choice Articles 2023



The 2023 Editors' Choice articles have been announced for Hydrogeology Journal (HJ). The Editors have selected five articles, four of which are open access.

The Editors' Choice articles are those that are considered to be exceptional by the editors – Martin Appold, Jean-Christophe Comte, Jean-Michel Lemieux, Rui Ma, Maria-Theresia Schafmeister and Clifford Voss. These have been selected from among the ~150 articles that were published in HJ in 2023. They illustrate a range of attributes, from outstanding science to philosophical interest, challenging arguments, and more. The editors believe that HJ readers will find these articles to be especially interesting and valuable. They highlight the importance of groundwater in our world, how we humans interact with groundwater, and how we might preserve and manage groundwater resources in the future.

The 2023 articles can be grouped into four important areas:

- Characterizing heterogeneity of subsurface properties, and impacts of heterogeneity on flow and transport
- Borrowing valuable data for use in hydrogeologic studies from nonhydrologic sources, such as oil and gas field measurements
- Improving education and public awareness of water issues
- Sand-tank experiments for learning about groundwater processes and for research

Read the full Editor's Message at <https://tinyurl.com/editors-choice-23>.

Congratulations to the authors of these great articles!

Author(s) Vol/No, pages DOI	Hydrogeology Journal – Article Title
Stephen R. H. Worthington 31(1):87–96 https://link.springer.com/article/10.1007/s10040-022-02576-4	Examining the assumptions of the single-porosity archetype for transport in bedrock aquifers
Elizabeth Quiroga, Claudia Bertoni, Fridtjov Ruden 31(3):685–705 https://link.springer.com/article/10.1007/s10040-022-02589-z	Deep low-salinity groundwater in sedimentary basins: petrophysical methods from a case study in Somalia
Sofía Vargas-Payera, Matías Taucare, Claudio Pareja, Jessica Vejar 31(5):1165–1179 https://link.springer.com/article/10.1007/s10040-023-02641-6	Improving school children's understanding of water scarcity with a co-produced book on groundwater in Central Chile
L Stoeckl, G Houben 31(5):1353–1370 https://link.springer.com/article/10.1007/s10040-023-02635-4	How to conduct variable-density sand tank experiments: practical hints and tips
Nafyad Serre Kawo, Jesse Korus, Mats Lundh Gulbrandsen 31(6):1525–1546 https://link.springer.com/article/10.1007/s10040-023-02658-x	Multiple-point statistical modeling of three-dimensional glacial aquifer heterogeneity for improved groundwater management

Membership News

Welcome!

A warm welcome to the 330 new IAH members who joined our Association in the period 27 October 2023 - 22 March 2024. View the list of new members at <https://tinyurl.com/new-members-Mar24>.

Free Student Membership

The IAH free student membership scheme continues this year. The 'Associate Student Member' subscription entitles students to discounts offered by IAH, newsletters and email alerts, participation in competitions and prize draws, to vote in elections, and opportunities for participating in our national chapters and commissions and networks (though not currently access to Hydrogeology Journal). We believe that all students enrolled on groundwater and related courses will want to be part of the IAH family. More information is available at <https://iah.org/join-us/student-membership-of-iah>.

Are you an IAH Member?

We thank all of our members for their continued support of IAH and the important work of our Commissions, Networks and Chapters. Current members can renew their membership via the online membership portal on the IAH website.

If you are not yet a member, you can subscribe today to start receiving the great range of IAH membership benefits, and join our global network of hydrogeologists and groundwater-related specialists.

IAH also have a member sponsorship scheme to support those who would otherwise be unable to join, which IAH members can donate to when they take out or renew their membership. In 2023 we sponsored memberships for 296 of our colleagues who would otherwise not have been able to participate in the Association's activities and to represent IAH across the world. The IAH sponsorship scheme helps us to be the inclusive Association we strive to be.

For more information about IAH membership, and to join us, visit <https://iah.org/join-us>.

Are you receiving your regular IAH messages and alerts with HJ link and latest news digests and initiatives?

Ensuring that our members receive their IAH benefits such as Hydrogeology Journal, discounts and offers is important to us. Do you work for a large government/commercial/educational organisation? Many such employers have firewalls in place. You may have to provide an alternative email address to receive your member mailings, or speak to your IT department. IAH emails are always sent from an @iah.org address. We'd hate you to miss out. Check your records at: <https://iah.org/members/edit-details>.

The International Association of Hydrogeologists is a scientific, educational and charitable professional membership association for scientists, engineers, water managers and professionals working in groundwater resource planning, management and protection.

Our mission is to further the understanding, wise use and protection of groundwater resources throughout the world.

Members receive a great range of benefits, including *Hydrogeology Journal*, book and conference discounts, printed and electronic newsletters. You will be able to participate in our National Chapters, Commissions & Networks, and share knowledge and experience.

We also have attractive and cost-effective schemes that can help you and your staff participate in global groundwater affairs and publicise your company's services.

Corporate membership is designed to provide benefits for your company or institute. You receive 3 individual memberships and 25% discounts on further memberships, discounts on advertising in the IAH News & Information magazine, and at conferences.

Gold sponsorship is designed for companies providing services and equipment to the groundwater market. It provides wide-ranging opportunities for advertising in all IAH publications, discounts at exhibitions, publishing feature articles in our News & Information magazine, and opportunities to publicise your company in sponsoring events and activities.

For more details, pricing and the full list of membership benefits visit WWW.IAH.ORG/JOIN-US

www.iah.org info@iah.org



IAH Council Elections

The next IAH elections will take place in 2024 and all members who have paid their IAH membership fees are entitled to vote. Nominations have been received for all the positions of the Advisory Council and Executive Committee. Details about the nominees will be available on the IAH website at the end of May and voting will be open from July onwards.

IAH's elected officers are responsible for policy and strategic direction, ensuring that these serve our charitable objectives, "to advance public education and promote research in the study and knowledge of hydrogeological science". They have a vital role in developing IAH's policies and plans, and in overseeing their implementation on behalf of our members. They represent the IAH to external organisations across the world, particularly the 'UN family'.

Further to this, Regional Vice Presidents provide oversight for and support to chapters and members in their regions.

Members of the Executive Committee have the additional legal responsibilities of trustees and directors of IAH as a registered charity and company. The Executive Committee consists of the President, the Secretary General, the Vice President for Finance and Membership (the "Treasurer"), and the Vice President for Science.

Nominations

There are twelve positions for which elections will take place:

- Members of the Executive Committee
 - **President**, who represents IAH with other organisations and chairs the Board of Directors of the Charity, the Executive Committee and the General Assembly;
 - **Secretary General**, who has responsibilities particularly for external relationships and also for various internal groups;
 - **Vice President, Finance & Membership**, responsible for finances (income stream, planned budget and actual expenditure) and developing membership;

- **Vice President, Programme and Science Coordination**, with responsibilities for commissions, networks and promotion of science, internally and externally;
- Regional Vice Presidents, who provide stewardship of IAH interests and co-ordination of national chapters in a particular region:
 - Asia
 - Australasia and the Pacific
 - Eastern Europe and Central Asia
 - Europe (West and Central)
 - Latin America and the Caribbean
 - Middle East and North Africa
 - North America
 - Sub Saharan Africa

The election process

Nominations will be scrutinised and confirmed, and will be published on the IAH website at the end of May. Election details will be sent to members by email and electronic voting will be open from July until just before the Annual General Meeting, which is currently scheduled for 10 September during the 51st Congress. Any changes to this schedule will be advised in due course. Should you require details of the election in hard copy please contact me at idavey@iah.org.

IAH's Officers have important responsibilities for your Association. They do not take on these roles lightly and they trust that you will consider their candidature with due regard when deciding how to cast your vote.

Ian Davey, Returning Officer

IAH Applied Hydrogeology Award: Call for Nominations

We are pleased to call for nominations for the 2024 'Applied Hydrogeology Award'. This award aims to recognise those who have made an outstanding contribution to the application of hydrogeology resulting in an increase in living standards in low and middle income countries. We would especially like to receive nominations for our many colleagues who have less opportunity to publish papers in scientific journals and whose work is perhaps less well-publicised but nonetheless essential.

A panel appointed by IAH Council will review the nominations and it is intended that the award will be presented in September at the 51st IAH World Groundwater Congress in Davos, Switzerland.

Candidates do not need to be members of IAH but non-IAH members must be nominated by an IAH member.

IAH members may put themselves forward and they can submit the information that is requested themselves. In this case we also request details for a referee who would be prepared to provide additional information to the assessment panel, if required.

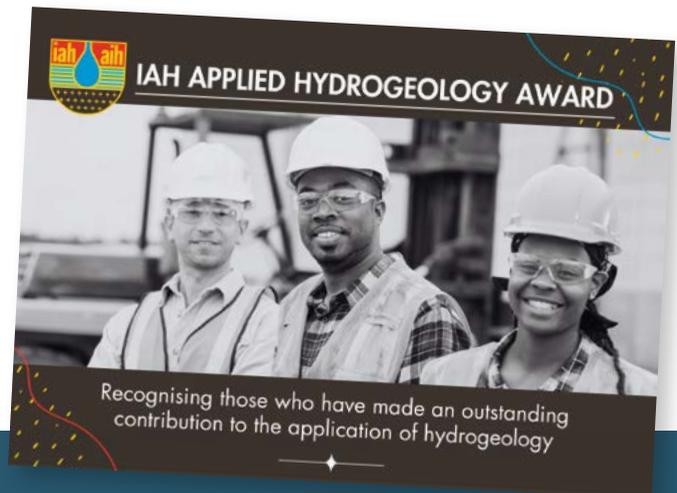
The information provided for candidates should include:

- An explanatory statement by the person submitting the nomination (up to 300 words);
- A brief career history of the candidate (up to 300 words);
- A list of projects the candidate has carried out, including aims, region and period of time;

- A list of projects (planned or accepted), patents, publications or equivalent information.
- For candidates who are not IAH members, a letter of recommendation from an IAH member (up to 300 words).

And finally, if you had just 1 minute to persuade the panel why your nomination deserves the award, tell us what you would say, using not more than 100 words!

Your proposal must be in total no longer than 5 pages of text in a single pdf-file. This should preferably be in English. Although we are happy to accept nominations in other languages such as Spanish, French, German, Chinese or Arabic, the judging will be based on an English version. It should reach the IAH Secretariat by e-mail (info@iah.org) before July 1st 2024. We look forward to receiving nominations from all our IAH Regions, to reflect the work of applied hydrogeologists across the world.



Previous Winners



Maria Stella Lizarazo Rojas

"In a remarkable career, Maria Stella has helped pave the way for female and male hydrogeologists and water well specialists, influenced national policy making and developed improved industry practices. In 2011 she was recognised by the Colombian Society of Engineers with the award of lifetime membership." Read more at <https://tinyurl.com/IAH-AHA-21>



Paul Bauman

"Paul has made a significant material improvement to the lives of those with precarious access to safe drinking water and, through his training programmes and initiatives, he has helped build resiliency within impoverished communities to locate, access, and maintain precious groundwater drinking resources." Read more at <https://tinyurl.com/IAH-AHA-21>



Ritchie Morris

"Throughout his career, Ritchie has brought a considered, practical and energetic approach to his work. He has used his hydrogeological knowledge for the good of the environment and society, contributing to sustainable life and societal well-being." Read more at <https://tinyurl.com/IAH-AHA-22>

World Water Day 2024

Every year, World Water Day (22 March) raises awareness and inspires action to tackle the water and sanitation crisis. It is a United Nations observance, coordinated by UN-Water and led by one or more UN-Water Members and Partners. In 2024, the theme of World Water Day is 'Leveraging water for peace'.

IAH are proud to be a member of the World Water Day 2024 Task Force, and to participate in the global public campaign to engage people in conversation and debate, raise awareness and inform decision-making across the world.

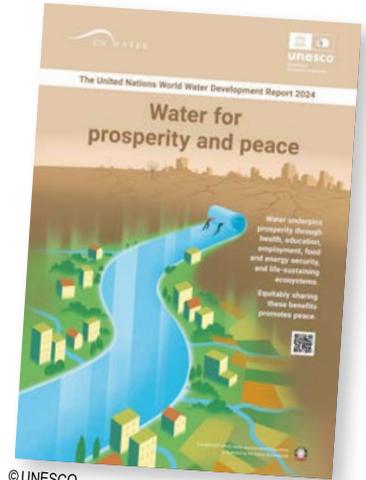
This year, IAH groups and members organised and participated in World Water Day events, including Hydrogeoday activities and webinars, and shared the campaign across social media.

For more information on World Water Day 2024 visit <https://www.un.org/en/observances/water-day>.

UN World Water Development Report

The UN World Water Development Report, 'Water for Prosperity and Peace', was published on World Water Day.

"The 2024 edition of the United Nations World Water Development Report (UN WWDR) calls attention to the complex and interlinked relationships between water, prosperity and peace, describing how progress in one dimension can have positive, often essential, repercussions on the others."



Find out more at <https://www.unwater.org/publications/un-world-water-development-report-2024>.

Groundwater for Peace

A message from the President of the International Association of Hydrogeologists in commemoration of World Water Day 2024.

If the earth has a secret, underground pulse, that pulse is groundwater. It is this heartbeat that half of humanity relies upon and is the sole source of water for almost a third of the world's population. Groundwater is the circulatory system under our agricultural fields and the lifeblood of many industries. Its veins and arteries reach cities, and perhaps of equal importance, isolated rural communities with no other source of water. Groundwater seeps from the banks of rivers and lakes feeding approximately half of our surface water resources. Its capillaries, and capillary fringes, not only connect with rivers and lakes, but also issue forth into springs and wetlands. In doing so groundwater supports ecosystems around the world.



Truly, groundwater is earth's last lifeline in the face of the onslaught of climate change and population growth. This invisible resource is essential to the survival of our planet and to the millions who desperately thirst for peace.

With nearly 500 transboundary aquifers and aquifer systems identified, but few international agreements for collaborative groundwater use, there is much work to be done. Groundwater professionals can help ensure a conflict-free and harmonious future. By informing and facilitating cooperative interaction on this hidden, subterranean pulse of the planet, we can move the world forward toward peace.

– David K. Kreamer, IAH President

Hydrogeoday

Hydrogeoday (Hydrogeodía) is a series of free local events for public audiences to mark and celebrate World Water Day. The purpose of Hydrogeoday is to raise awareness of hydrogeology and groundwater, and to highlight the work and profession of hydrogeologists. The activities include presentations, webinars and fieldtrips to locations of groundwater importance and interest.

Hydrogeoday was initiated by the Spanish Chapter of IAH (AIH-GE), and Hydrogeodía events now take place in multiple locations across Spain. Hydrogeoday has expanded into other countries as well, and this year activities also took place in Brazil, Ecuador and Botswana.

Find out more about this year's Hydrogeoday events at <https://www.aih-ge.org/hidrogeodia-2024/>.

IAH would like to see the continued expansion of Hydrogeoday. If you are interested in holding your own events, some guidance and information for organisers is available at <https://iah.org/education/professionals/hydrogeoday>.

Africa's inaugural Hydrogeoday event took place on 22 March 2024 in Palapye, Botswana.

Organised by IAH members, the event took place at the local Kgotla in Palapye, and the practicals were conducted at the Botswana International University of Science and Technology (BIUST) Borehole. A number of community stakeholders attended, as well as students from the BIUST Society of Exploration Geophysicists and members of the Khurumela ward community.

The gathering marked a significant milestone in advocating for the protection and suitable management of groundwater resources amidst the challenges posed by climate change in Botswana. The event also allowed the exchange of historical and cultural heritage associated with the origins of the Khurumela well.

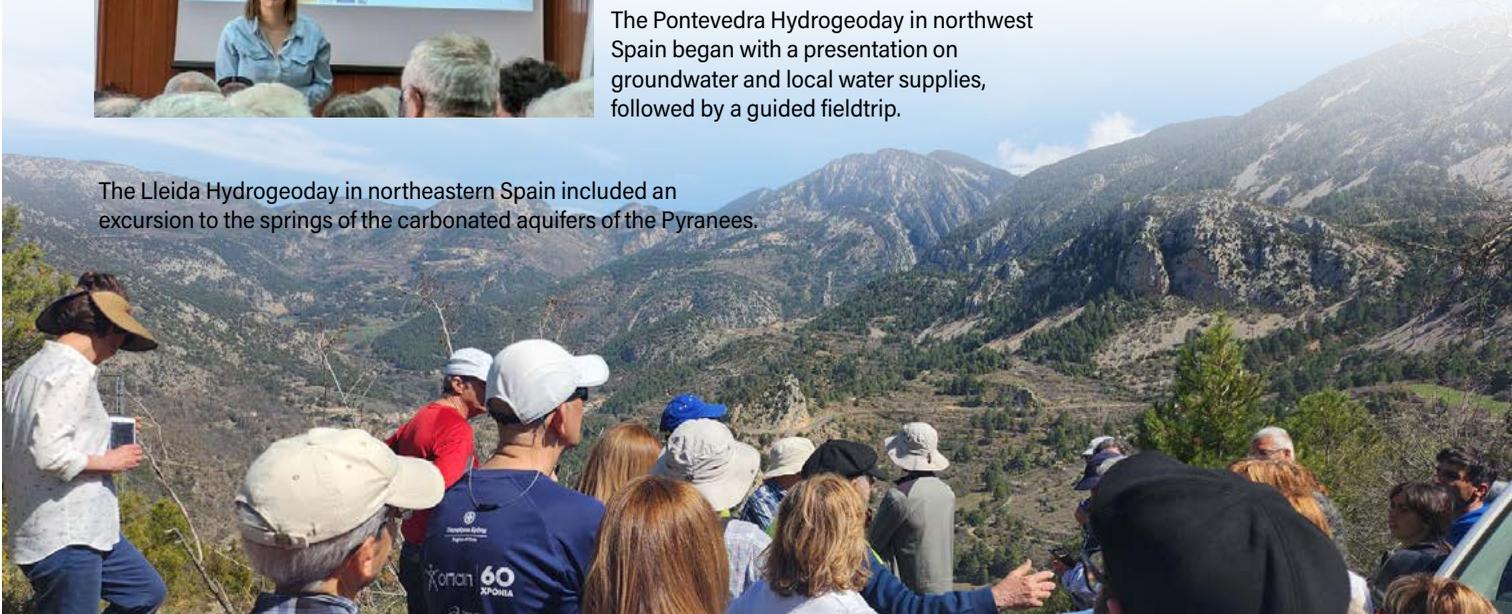


THE FIRST EVER HYDROGEOODAY IN AFRICA, PALAPYE-BOTSWANA
#OurWaterOurPeace
#AreChenCheng



The Pontevedra Hydrogeoday in northwest Spain began with a presentation on groundwater and local water supplies, followed by a guided fieldtrip.

The Lleida Hydrogeoday in northeastern Spain included an excursion to the springs of the carbonated aquifers of the Pyrenees.



New IAH Publications

Strategic Overview Series: Sanitation and Groundwater

The latest edition of the IAH Strategic Overview Series was published in December 2023, on the topic of 'Groundwater and Sanitation' and in collaboration with the Sustainable Sanitation Alliance (SuSanA).

The report explores the different types of sanitation technologies and their relationship with groundwater, a comparison of urban and rural settings and discusses recommendations for decision-makers in the sanitation and water-supply sectors.

The report can be viewed in full at <https://iah.org/education/professionals/strategic-overview-series>.

Technical Insight Series: Groundwater in the age of plastic

The IAH Groundwater Quality Commission have published the second edition of their Technical Insight Series, which considers microplastics in the context of groundwater. The paper reviews the current understanding of plastic contamination in groundwater, summarises methods that can be used for sampling and detection of plastics as well as the status of environmental regulation of plastics.

Read the report at https://iah.org/education/professionals/technical_insight_series.

KEY MESSAGES

- all sanitation technologies have a close (but often obscure) relationship with groundwater
- on-site sanitation systems invariably affect both the quantity and quality of groundwater resources, often causing pollution of shallow aquifers
- in villages the much lower density of sanitation units means that groundwater intrusion can be dealt with by sensible separation criteria between sanitation units and waterwells
- the interactions of main sewerage systems with groundwater varies markedly with urban topography
- in more elevated urban areas point leakage and line seepage from sewers can act as a significant source of groundwater pollution
- in lower-lying urban areas poor maintenance of main collector sewers often results in groundwater inflows and marked increases in the volume for wastewater treatment for which no revenue has been collected
- the reuse of inadequately-treated wastewater for irrigation can result in significant groundwater pollution, especially in more arid regions

What are the range of sanitation options under consideration here ?

The evacuation, disposal and/or reuse of urban wastewater is commonly achieved by one of two essentially-different types of technology : on-site sanitation units or (much more expensive) main sewer systems (including pipe network and centralised treatment).

The interaction of these two different technologies with groundwater needs to be approached individually but on an integrated basis. Both have a close, but often obscure, relationship with groundwater, which operates in two different directions :

- on-site sanitation practices impacting to a varying degree the quantity and quality of groundwater resources
- groundwater conditions exerting influences on, and increasing the cost of, sewerage sanitation systems.

Today over 3 billion of the global population are estimated still to be without access to safely-managed sanitation, which is the cause of widespread health and environmental problems.

GENERALISED RELATIONSHIPS OF URBAN SANITATION TO WATER-SUPPLY SYSTEM

Technical Insight Series
Groundwater in the age of plastic
DECEMBER 2023 | ISSUE 2

International Association of Hydrogeologists

Sampling shallow groundwaters for microplastics in England (D. Lapworth BGS @ UKRI 2022).

MIcroPLASTICS BACKGROUND

contamination in the environment is ubiquitous and we are only just starting to gather evidence as to groundwater and dependent ecosystems. This paper focuses on the current understanding of microplastic contamination in groundwater, summarizes methods that can be used for sampling and detection of plastics as well as the status of environmental regulation of plastics.

Microplastics (MPs) are solid plastic particles between 1–5 000 µm (Danopoulos et al., 2020) while ultra-fine particles smaller than 1 µm. MPs that are intentionally produced and enter the environment directly are called primary microplastics. Most MPs are known as secondary MPs, which are formed when larger plastic items break down into smaller pieces through exposure to chemical, physical and biological processes in the environment over time. MP abundance varies geographically and is largely governed by environmental and anthropogenic factors; thus, it is difficult to predict concentrations. However, MPs are found in even the most remote and unsuspected parts of the environment (Obbard, 2018). Although research on this emerging contaminant has been conducted in marine surface waters (Goia et al., 2021), MPs are everywhere, including groundwater (Figure 1). A handful of published studies that have quantified MPs in groundwater in countries including the United States, Canada, Australia, India, the United Kingdom, Germany, and China, various sources of emerging contaminants have been identified: wastewater effluent, road runoff, agricultural and landfill leachate (Mu et al., 2022; Patterson et al., 2023; Saniandra et al., 2022; Vioroli et al., 2020; et al. (2019) confirmed the occurrence of MP fibers in karst groundwater in the US with

Groundwater in the age of plastic | Technical Insight Series | 1

The Latest from our Commissions and Networks

Commissions and Networks

IAH's commissions and networks contribute to the science of groundwater and undertake outreach, education and training. They run sessions at IAH congresses, co-convene technical meetings and field excursions with other societies, host workshops and training courses and prepare educational and outreach publications.

Find out more about IAH's commissions and networks and make contact with them at <https://iah.org/groups/commissions-networks>.

Regional Groundwater Flow Commission

The IAH Regional Groundwater Flow Commission (RGFC-IAH) are recruiting new members to join their commission. Joining the group provides opportunities to be a part of an active scientific group, exchange ideas and work with other colleagues in the field, find collaboration and publishing opportunities, and much more. Find out more at <https://iah.org/news/invitation-to-join-the-iah-regional-groundwater-flow-commission>.

Commission on Managing Aquifer Recharge

The Commission on Managing Aquifer Recharge (IAH-MAR) and the IAH South Africa National Chapter have announced the dates for the 12th International Symposium on Managed Aquifer Recharge (ISMAR12). The Symposium will be held in Stellenbosch, South Africa, from 28 April to 2 May 2025. The main theme "From Theory to Implementation and Operation" places the focus on the latest research, implementation of MAR sites and the practicality of operating MAR schemes. Please note the abstract submission deadline is October 2024. For more details visit <https://ismar12.org.za/>.

For latest IAH-MAR updates subscribe to their monthly newsletters, available at <https://recharge.iah.org>.

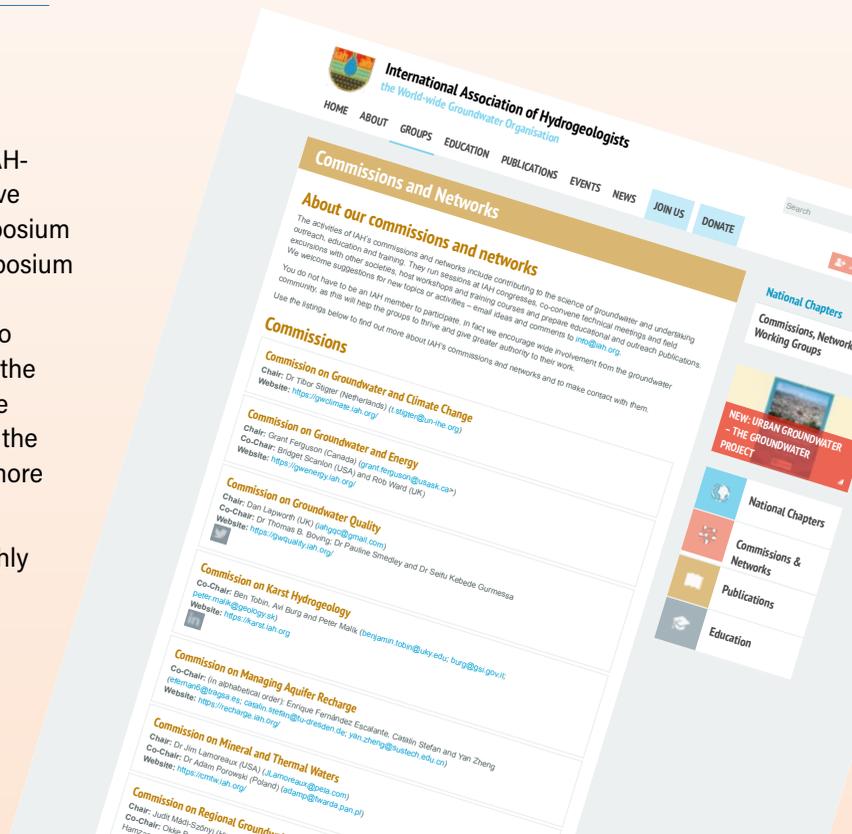
Commission on Transboundary Aquifers

Visit <https://tba.iah.org/> for all the latest updates from the IAH Commission on Transboundary Aquifers, including news, events, publications and resources, and more details about transboundary aquifers.

Commission on Karst Hydrogeology

The MIKAS (Most Important Karst Aquifer's Springs) Project is the international project of the Karst Commission. The project, led by Zoran Stevanović, aims to establish the first complete list of the most important karst springs at a global level, promote them and create a Code of Practice for them. The database has been adjusted into a website framework, which can be viewed at <https://mikasproject.org/>.

For more news from the Commission on Karst Hydrogeology, view their monthly newsletters at <https://karst.iah.org/kc-news>.



IAH National Chapters

IAH's national chapters are a valuable means of bringing scientific, professional and social benefits to our members and community, and also enable the Association to promote sound and sustainable groundwater use at a country and regional level. Some even collect fees in local currency for the convenience of our members. National chapter committees are run on a voluntary basis by members and we are very grateful for their efforts.

We currently have over 40 national chapters and are keen to establish more.

View the full listing at <https://iah.org/groups/national-chapters>.

National Chapters: Round-Up

Thank you to the national chapters that have already submitted their annual reports. This is a requirement for establishing a chapter and we look forward to receiving more reports in the coming weeks.

It's great to see how active chapters have been during the past year and we wish you success with your plans for 2024. Many chapters have a programme of webinars and we would like to support these where we can. Our Education and Outreach Working Group (E&O WG) aims to arrange webinars on topical subjects around the world and we can host these for chapters too. Likewise, if there are training events that you think would be particularly helpful, the E&O WG would like to hear from you. Hopefully our free (associate) student membership option will increase the popularity of the events you are running.

Unlike paid subscription, free (associate) student membership does not include a copy of Hydrogeology Journal. However, we are hoping to start a scheme to support students more during their studies by providing a printed copy of the journal to some university libraries, particularly in lower income countries. If your chapter has a recommendation for a university that might benefit from this scheme, let us know.

Some chapters mentioned competition from other professional societies for members in their country. This is not uncommon but we hope that IAH continues to be attractive and we rely on chapters and members

to tell us where we can do better. We welcome not just hydrogeologists as members, but also those who are involved in groundwater in different ways. The discounts we offer for our congresses – set at least the amount of annual subscription fee below the full cost – and other conferences, and the quality of our Hydrogeology Journal, hopefully go some way to help in justifying annual subscriptions. We hope too that many of our free student members will be encouraged to take out full membership once they complete their studies, to help sustain chapter membership in the coming years.

There is continued interest in collaboration between national chapters. At each congress we try to get chapter representatives together to share information and talk about possibilities for working together. We'll be doing this in Davos this year so if you have any points you would like to discuss, let us know. One thing that many chapters agree on is the value of supporting new chapters. There are a few 'twinning' arrangements between well-established chapters and those in lower income countries, and it would be good to develop this kind of collaboration further.

If you would like more information about any of the above, contact us at info@iah.org

SECRETARIAT

National Chapter News

IAH-Chile National Chapter

The Chilean Chapter of IAH elected a new board for the period 2024-2026 at their annual general meeting, held in April 2024.

For the latest Chilean Chapter news and updates visit <https://www.aih-cl.cl>.

IAH-India National Chapter

The IAH Indian Chapter have announced their newly elected Governing Council for the years 2024-2026.

The Chapter, in association with Chhatrapati Shivaji Maharaj University, Mumbai, held their International Conference "Addressing Challenges of Groundwater and Environmental Hazard Management through Socio scientific and Technological Approaches".



IAH-India International Conference

A summary of the Chapter's achievements for the last year, including a number of webinars, is available to view at <https://tinyurl.com/IAH-IndiaNC-Report>.

IAH-Japan National Chapter

The IAH Japanese chapter held the "Groundwater Sustainability" symposium on February 9th, 2024. Around 55 participants including 18 IAH members attended either on-site at Research Institute for Humanity and Nature in Kyoto, Japan or online.

Prof. Makoto Taniguchi and Prof. Fumi Sugita, president and vice president of the Japan chapter, spoke on the topic of "Groundwater sustainability based on science and narrative" and "Recent developments towards new groundwater use in urban areas of Japan", respectively. Three guest speakers were invited; Prof. Tom Gleeson (Univ. Victoria, Canada), Prof. Yoshihide Wada (KAUST, Saudi Arabia) and Prof. Kevin Hiscock (Univ. East Anglia, UK). After the presentations, a lively discussion about the

sustainability of groundwater resource was held with the speakers, on-site participants, and online participants from all over the world.



IAH Japan International Symposium

View the Symposium website at <https://japan.iah.org/en/groundwatersustainability2024>.

IAH-Mexico National Chapter

The IAH Mexican chapter organized a webinar on March 4th, 2024, which drew approximately 100 participants who joined via Zoom.

Lasting an hour and a half, the webinar aimed to foster knowledge exchange, showcase best practices, and spark discussions concerning the nexus between water and mining.

Watch the recording at <https://youtu.be/2D378f68dro>.



IAH-Mexico Webinar

IAH-Namibia National Chapter

The Namibian Chapter of IAH had a very active 2023, including participating in a number of conferences, seminars and workshops, and also activities for public and school audiences. These activities have culminated in the growth of their membership. View a summary of their 2023 activities at <https://tinyurl.com/IAH-NamibiaNC-Report>.

The Chapter invite you to follow them on social media; find them under the Namibian Hydrogeological Association on Facebook (<https://tinyurl.com/NHA-Facebook>) and LinkedIn (<https://tinyurl.com/NHA-LinkedIn>).

National Chapter News (cont.)

IAH-New Zealand National Chapter

The New Zealand Chapter of IAH had an exciting 2023 with IAH Technical Meetings in Auckland and Christchurch as well as hosting the Australasian Groundwater Conference (AGC) in Auckland in late November 2023. They also held a few Early Career Meetings in Christchurch in 2023. For more information about their meetings, including photos, visit their webpage at <https://newzealand.iah.org/past-events/2023-2>.



The AGC in Christchurch, New Zealand

The AGC was run in conjunction with the New Zealand Hydrological Society. A total of 374 people attended, and

these were mainly from New Zealand (245 participants) and Australia (106 participants), but they also had participants from other countries (23). Please check out the event webpage by following this link: www.agcnzhs2023conference.co.nz/.

IAH-Spain National Chapter

On March 7th 2024, the Spanish Chapter of the IAH (AIH-GE) and the University Polytechnic of Cataluña, among many other institutions, joined forces to pay homage to the esteemed Professor Emilio Custodio. For further details, including a video link of the event, visit <https://iah.org/news/emilio-custodio-tribute-event>.

AIH-GE marked World Water Day with a poignant event hosted at the School of Mines (University Polytechnic of Madrid). Against the backdrop of a profound drought gripping the country, the AIH-GE shed light on the pressing issues surrounding water scarcity. Following this, the coveted AIH-GE Awards for 2023 were presented to the deserving recipients. See the full list of winners at www.aih-ge.org/premios-aih-ge/.

Mentoring Scheme Now Open

IAH's next round of mentoring is now open for applications! Whether or not you have participated in the scheme before, if you are a member of IAH you may apply by completing the forms below.

- Mentor (giver of advice) apply here: <https://www.surveymonkey.com/r/IAHmentor2024>
- Mentee (receiver of advice) apply here: <https://www.surveymonkey.com/r/IAHmentee2024>

The IAH mentoring scheme supports its members in three important areas; scientific and technical advice, career options and pathways, and practical experience.

Demand for mentors continues to outstrip supply. Please, if you could give a little time to help support mentees, we

know it would be appreciated. Volunteering as a mentor does not take up as much time as you might think.

The scheme is only open to IAH members – but if you are not yet a member you are welcome to join us now!

For more information about the scheme, and to see examples of first-hand experience, visit <https://iah.org/education/professionals/mentoring>.

SECRETARIAT



IAH Events Listing and Activities Map

View the IAH event listing at www.iah.org/events, and the IAH activities map at www.iah-activities.org, to see upcoming IAH and other hydrogeology-related events taking place around the world.

Is your event listed? Send us the details via <https://iah.org/submit-an-event> and we will add it to the map!



New to the IAH Secretariat

Hamish Johnson

Hello everyone! My name is Hamish Johnson and I am the new Technical Editorial Advisor (TEA) for Hydrogeology Journal. I graduated with an MSci degree in Earth and Environmental Science at the University of Lancaster (England) in 2019, and I am currently completing a PhD in hydrogeology at the University of Aberdeen (Scotland). Here, I am researching groundwater nutrient transport in weathered and fractured bedrock aquifers in Northern Ireland and North East Scotland. During this time, I have been gaining experience in hydrogeology, groundwater sampling and geophysical surveys, which will support my editorial role for the journal.

The TEA bridges the gap between the manuscripts that have been provisionally accepted by the Hydrogeology Journal editors and the copyeditor at Springer. Thus, my role is to ensure that manuscripts comply with the style and standards of Hydrogeology Journal, and that manuscripts receive a technical edit that communicates the science clearly. I am really looking forward to supporting hydrogeologists around the world with sharing their research, and in turn supporting the IAH mission. I am also delighted to be a part of the team behind my favourite scientific journal!

Feel free to get in touch with me at hjohnson@iah.org.



Olivia Fraser-Cobbett

Hi there! My name is Olivia and I am very excited to have taken on the role of Executive Assistant with IAH. I assist with the maintenance of IAH's website, database and social media platforms, as well as supporting the Secretariat more generally. I have a BSc in Earth Science from the University of Glasgow, as well as an MSc in Hydrogeology from the University of Strathclyde. Studying geology in Scotland was a great experience and it gave me a much deeper appreciation for the natural world. I followed IAH's work and read Hydrogeology Journal throughout my studies, so it's a real pleasure to now be working within the Secretariat.

Following graduation, I worked as a Borehole Engineer for a drilling company, and then moved on to work as a Hydrogeologist with an environmental consultant in the UK. I am passionate about the protection and sustainable use of groundwater, as well as furthering public knowledge of this important resource. I'm really looking forward to assisting and working with a global network of groundwater professionals. My other interests include bike touring, seeing live music, meditation, and travel!

Get in touch with me at ofraser-cobbett@iah.org.



Diary Dates

01-03 Jun 2024 – Online

SCCEE First International Virtual Conference

On the theme “Building the Future – Innovations and Challenges in Sustainable Civil Engineering,” this conference aims to unravel the complexities and potentials inherent in sustainable infrastructure development.

Organised by Scientific Steps International Publishing Services L.L.C.

<https://scientificstepsgroup-ssg.com/bf-icsce-home/>

10-15 Jun 2024 – Rome, Italy

Eurokarst 2024

Presenting the latest news on hydrogeological research on karst aquifers, and discussing groundwater; a fundamental resource for human beings, societal development and environmental protection.

Organised by Aldo Moro University Bari, Sannio University Benevento, Sapienza University, Rome, IAH Italian Chapter.

<http://www.eurokarst.org/>

17-20 Jun 2024 - Burlingame/San Francisco, United States

Toward Sustainable Groundwater in Agriculture – Linking Science and Policy

The 3rd International Conference on groundwater issues in agriculture/food production; global groundwater-food-ecosystem nexus.

<https://ag-groundwater.org>

8-13 Sep 2024 – Davos, Switzerland

IAH 51st World Groundwater Congress

Share your findings and get a comprehensive update on the latest international developments on groundwater and their relevance for society in a scenic Alpine setting.

Organised by The Swiss Society of Hydrogeology and the Centre for Hydrogeology and Geothermics of the University of Neuchâtel.

<https://www.iah2024davos.org/>

17-20 Sep 2024 – Santa Rosa city (La Pampa - Argentina)

II Argentine Congress of Hydrogeology and the XVI Latin American Congress of Hydrogeology

Topics include: Regional Hydrogeology, Hydrochemistry, Quality and Contamination, Hydrogeology of Salars, Urban Hydrogeology, Surface water - groundwater interaction, Planning, Management and Legislation, Public Policies and Water Governance.

Organised by National University of La Pampa, ALHSUD and IAH Argentine Chapter.

Email: hydrolapampa2024@exactas.unlpam.edu.ar

25-27 Sep 2024 – La Coruña, Spain

Congreso Ibérico de las Aguas Subterráneas. CIAS 2024

The purpose of this congress is to bring together groundwater professionals to share knowledge and experiences. In this sense, the call is open to consultants, drillers, academics, students and, in general, to all those who orient their activity to hydrogeology.

Organised by the IAH Spanish Chapter (AIH-GE).

https://cias2024.webs.upv.es/?page_d=21

View more events at <https://iah.org/events>

Submit your event details at

<https://iah.org/submit-an-event>



Find us at <https://iah.org>



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