NEWS &information

IAH - THE WORLD-WIDE GROUNDWATER ORGANISATION

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

DECEMBER 2021

Also in this issue:

and the regular IAH announcements and news

UN WATER
22 MARCH
WORLD WATER DAY
2022 Groundwater

A busy time ahead for us in a year of groundwater.

Can you help make the invisible, visible?

Reports and calls to action throughout this newsletter.

SÃO PAULO-BRUSSELS GROUNDWATER DECLARATION

Find out how you can sign!

Page 2

NEW, IN OUR STRATEGIC OVERVIEW SERIES

Two new titles, more coming...

Page 15

INTERNATIONAL ASSOCIATION OF HYDROGEOLOGISTS

São Paulo-Brussels Groundwater Declaration

In this year, 2021, when the International Association of Hydrogeologists (IAH) had two international congresses, IAH National Chapters in Brazil and Belgium, along with the IAH Executive Committee, Associação Brasileira de Águas Subterrâneas (ABAS), and Asociación Latinoamericana de Hidrología Subterránea para el Desarrollo (ALHSUD) launched a survey on groundwater challenges and solutions for sustainable management and awareness.

Hundreds of hydrogeologists from all over the world participated in the survey. Responses came from all levels of experience – those who are perhaps seeing all the challenges as new and those who have worked their way through the changes in issues over the years. They came too from across the spectrum of hydrogeological interests: the largest proportion was from academia, but we also had a large number from consultants and governmental organisations and from others, such as NGOs and other sectors.

Marijke Huysmans and Ricardo Hirata, of the Belgian and Brazilian IAH National Chapters, analysed the answers and thought-provoking suggestions, which form the basis of the São Paulo-Brussels Groundwater Declaration. This has now been published to highlight the challenges around the world and the need for sustainable groundwater management.

A range of issues was identified, across urban and rural areas, and a range of solutions and approaches were put forward. Groundwater is out of sight and out of mind and this lack of awareness and poor understanding so often mean that groundwater does not receive the attention it needs.

Better political will, funding and scientific understanding of certain issues will help, though responses and solutions are not straightforward. A range of factors must be considered, including local issues and capacity to deal with them.

The responses received provide a good representation of the views of the hydrogeological community. It goes without saying that there are significant challenges - but it's clear too that there is also an ambition to find ways of resolving the problems that have been highlighted

Many hundreds have already signed the Declaration - please add your name. With your help, the International Association of Hydrogeologists and all its partners will use the Declaration to inspire the actions needed to further the understanding, wise use and protection of groundwater resources throughout the world.

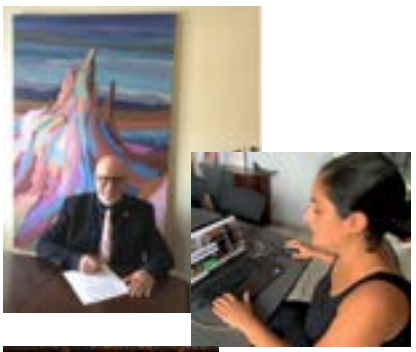
SECRETARIAT

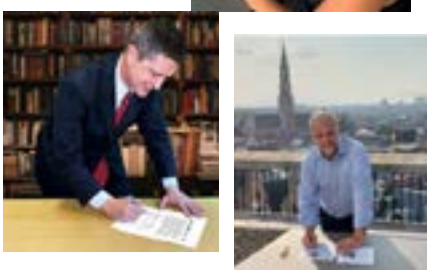
Groundwater is critical to Earth's survival: Aquifers, our planet's natural water reservoirs, hold 97% of the fresh and liquid water

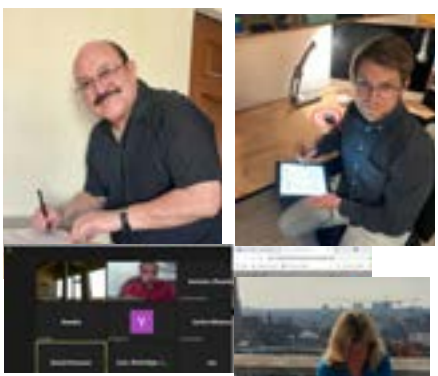
Everyone must face these issues: Sustainable groundwater management needs monitoring, regulation, and communication

It is imperative to protect groundwater through the following urgent actions: Strengthen the institutions responsible for the governance of groundwater so that they promote efficient, inclusive, ethical, democratic, and socio-ecologically conscientious policies

Let's make the invisible visible: There must be an effort by governments, hydrogeologists, NGOs, and all of society to make perceptible this crucial resource for planetary well-being and dignified human life.







Declare support and share

With a few clicks you can easily add your name to the São Paulo-Brussels Groundwater Declaration. With your help, the International Association of Hydrogeologists and all its partners will use the Declaration to inspire the actions needed to further the understanding, wise use and protection of groundwater resources throughout the world.

Make your voice heard. Let's make the invisible visible! And like those who've already made a start with their signatures, share this - and your photos on social media - and ensure the messages contained reach those those who need to see it.

Thank you! Click below to sign and share.

Read/sign here: https://iah.org/gwdeclaration

Share knowledge and memories... @iahgroundwater #iahgroundwater

Goodbye 2021, hello a year of groundwater

We are ending the year on a high after successful congresses organised by our national chapters in Brazil and Belgium. There's a note of caution, though, following COP26, which for the first time highlighted the role of water in adapting to climate change, but in which groundwater was not seen as a core issue of concern despite being the world's largest distributed store of available freshwater.

We all know that there is a continual need to argue the case for groundwater. Next year promises to provide a boost, with World Water Day and the World Water Development Report being devoted to groundwater, a congress in China and a UN-supported Groundwater Summit taking place at the end of the year in Paris.

How will you be supporting this 'year of groundwater'? If you haven't already done so you can sign the São Paulo-Brussels Groundwater Declaration and also let us have your views in our survey on the future plans for IAH. We want IAH to be increasingly successful for all of our members. We know that IAH activities and member benefits are key to this, so tell us what you think. We'll be looking for volunteers for working groups on particular issues for our future plans.

We continue to hope that Covid will abate, but progress remains regrettably slow in parts of the world, with recent backward steps as new lockdown measures have been introduced in some countries. Although there are signs that existing in the virtual world is becoming less enticing, it's clear that online meetings and webinars will remain a critical part of our working lives.

It's the time of year again to consider renewing your membership. Membership is recovering from the worst impacts caused by Covid and as we go to press we have 4242 members, up 6% on last year's numbers. We hope that you've been able to have a good year and that 2022 will be good for you. Most of all we hope that you will want to continue with IAH and that you will encourage your colleagues to join and take part in all the events planned for 2022, the 'year of groundwater'!

Ian, Kellie, Sue, Sharon

IAH SECRETARIAT

IN THIS ISSUE

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 knicholson@iah.org for further details.

FROM OUR PRESIDENT

Dear members, dear colleagues...

As we near the end of 2021 it's important to reflect on those we have lost during the year – friends, family, and colleagues. To those who have lost loved ones, our sincere and profound condolences. This has been a remarkable year for all of us, and the impacts on our association and our profession will be long lasting. As extreme weather events, climate change, and population growth continues, groundwater is a last lifeline. It supports a thirsty world where over 2.5 billion people depend solely on groundwater resources to satisfy their basic daily water needs. Groundwater is an essential element in sustaining our spring and wetland ecosystems. It is the backbone of agriculture and industry, supporting food and economic security, but in a larger sense, sustaining political stability and peace. The work we do as hydrogeologists has as much positive impact in the world as any profession on the planet.

In 2021 we have had two international Congresses in Brazil and Belgium. Both were excellent, in spite of the uncertainties of the Covid 19 pandemic. Coming out of the Congresses was the Sao Paulo – Brussels Groundwater Declaration which invites everyone to sign on: https://iah.org/news/make-a-difference-in-groundwater. If you haven't become a signatory to the Declaration, please consider adding your voice. The United Nations declared that, for the very first time, the theme of World Water Day in March of 2022 would be on groundwater, "Making the invisible, visible", and 2022 is shaping up to be a year of groundwater. Our September 2022 IAH Congress will be held in Wuhan, China and there is an excellent video that introduces that remarkable city and the Congress at https://youtu.be/nEOgZPOf-84. Following Congresses will be held in Cape Town, South Africa in 2023, and in Davos, Switzerland in 2024. We also have a symbolic initiative "Groundwater Uniting People" where groundwater from all over the world will be gathered and mixed together at conferences and in classrooms, and used to water plants, be artificially recharged, or used in some other symbolic way to highlight the value and vulnerability of groundwater.

IAH has established a Statement on Equity, Diversity and Inclusion and is dedicated to welcoming all: https://iah.org/about/statement-on-equity-diversity-and-inclusion. We believe that properly addressing issues of diversity, inclusion and equity are important for the long-term health and sustainability of the geosciences. IAH is committed to creating an inclusive environment within the Association and through its relationship with other organizations, and to widening participation in all its activities. We are also broadening educational materials, creating groundwater videos, and expanding our Strategic Overview Series with translation into many languages: https://iah.org/education/professionals/strategic-overview-series.

IAH is celebrating its 65th birthday, and we have a great deal of gratitude for all those who continue to make our association the largest and best organization in the world devoted to groundwater science, charity, and education. To all our thousands of members globally who participate from over 130 countries; in our National Chapters; in IAH Commissions and Networks; as Hydrogeology Journal editors; as organizers of Congresses, conferences, and webinars; and to our hard-working Secretariat – Thanks. We welcome three

new Vice-Presidents to the IAH Council, Yongje Kim, Vice President for Asia, and Marco Pettita, Vice President for Science and Program. We thank all those who stood as candidates for leadership positions and encourage everyone from all backgrounds to be part of IAH activities.

A year of groundwater, 2022, will be an exciting time for all groundwater professionals with many events, conferences, Commission and Network meetings, and interaction with the United Nations and other international organizations. If you have questions on upcoming meetings do not hesitate to contact us and/or visit our website at: https://iah.org/.

Best wishes to everyone for an excellent new year.

DAVE KREAMER

TIME CAPSULE PROJECT

Interested in karst / speleogenesis processes?

IAH's Time Capsule project is pleased to announce that they have just published a video interview of Wolfgang Dreybrodt. The interview was conducted by Franci Gabrovsek, Georg Kaufmann, and Douchko Romanov. The interview permits knowing better the human perspective in the work of Wolfgang Dreybrodt and the circumstances in which he started to work on karst. We hope that the interview will be of interest to everyone interested in speleogenesis processes and the history of ideas in science.

Thank you to all those involved in its production.

SECRETARIAT

https://timecapsule.iah.org/episode/wolfgang-dreybrodt/
https://timecapsule.iah.org/

WATER UNDERGROUND

Water Underground Talks elevates diverse voices, perspectives and groundwater research.
In Season 1, eleven hydrogeologists from around the world shared their passions and exciting research on the connections between groundwater, climate, food and people.

Season 2 will build on this success by releasing ~10 more videos from around the world. We aim that the themes will be the relationship between groundwater, anti-racism, decolonization and sustainable development. We actively seek nominees from under-represented regions and topics not often discussed in relation to groundwater such as migration, conflict and Indigenous rights. Videos will be released throughout 2022 to coincide with other international events related to groundwater such as World Water Day.

Find out more and nominate via the link below.

TOM GLEESON AND VIVIANA RE

https://blogs.egu.eu/network/water-underground/

MEDIA FOCUS

A selection of groundwater related features from around the world

RAIL CONSTRUCTION LOSES HUGE VOLUME OF BENTONITE TO UK CHALK AQUIFER

Vast amounts of bentonite slurry have been lost to the Chalk aquifer during the construction of the high-speed rail link. Monitoring has shown significant effects on pH, turbidity and other water quality parameters. Although long term impacts may be limited, changing climatic conditions could remobilise the lost bentonite causing it to migrate within the Chalk.
https://www.theguardian.com/uk-news/2021/sep/10/hs2-potentially-highly-polluting-bentonite

RESEARCHERS TRACE THREATS TO GROUNDWATER IN INDIA

The quality of water and its movement to and from aquifers are changing across India. Studies found increased flow of water from rivers to aquifers, especially during the dry season, but the reverse flow from aquifers to rivers decreased. Elsewhere natural geological processes in the hard Archean granite rocks and human activities, mainly evaporation from rice fields and reverse flow of the irrigation water back to the ground, are contributing to heavy fluoride contamination of the water.
https://eos.org/articles/researchers-trace-threats-to-groundwater-in-india

ANCIENT GROUNDWATER: WHY THE WATER YOU'RE DRINKING MAY BE THOUSANDS OF YEARS OLD

Most water stored underground has been there for decades, and much of it has sat for hundreds, thousands or even millions of years. Older groundwater tends to reside deep underground, where it is less easily affected by surface conditions such as drought and pollution. People today are drilling deeper wells as droughts deplete surface water and near-surface groundwater.
https://theconversation.com/ancient-groundwater-why-the-water-youre-drinking-may-be-thousands-of-years-old-167982

'LIKE A METRONOME': STALAGMITE GROWTH FOUND TO BE SURPRISINGLY CONSTANT

To look inside a stalagmite is to look back in time tens of thousands of years to see how the Earth's climate patterns have shaped the world we live in today. In a global investigation into the growth properties of stalagmites distributed across the world, scientists found that while growth fluctuations due to climate events are evident in the shorter period, stalagmite growth over the longer periods – tens of thousands of years – are surprisingly linear.
HTTPS://NEWSROOM.UNSW.EDU.AU/NEWS/SCIENCE-TECH/%E2%80%98-METRONOME%E2%80%99-STALAGMITE-GROWTH-FOUND-BE-SURPRISINGLY-CONSTANT

THE FIVE BIGGEST THREATS TO OUR NATURAL WORLD … AND HOW WE CAN STOP THEM

Groundwater extraction: 'People don't see it'

From hunting, fishing and logging to the extraction of oil, gas, coal and water, humanity's insatiable appetite for the planet's resources has devastated large parts of the natural world. While the impacts of many of these actions can often be seen, unsustainable groundwater extraction could be driving a hidden crisis below our feet, experts have warned, wiping out freshwater biodiversity, threatening global food security and causing rivers to run dry.
https://www.theguardian.com/environment/2021/oct/14/five-biggest-threats-natural-world-how-we-can-stop-them-aoe

DANISH MILITARY ACCUSED AS POLLUTION, CANCER-CAUSING SUBSTANCES FOUND IN DRINKING WATER

Harmful compounds from drills held by the Danish Armed Forces have been poisoning the groundwater and the local environment for years. Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) chemicals with values between 100 and 1,000 times above the maximum permissible concentration in groundwater have been discovered at the country's three current air stations.

https://www.republicworld.com/world-news/europe/danish-military-accused-as-pollution-cancer-causing-substances-found-in-drinking-water.html

[ed: we'd welcome links to news items, particularly in other languages. Email info@iah.org or tag us in social media]

WATER-USE EFFICIENCY – UN-WATER ANALYTICAL BRIEF

Ahead of COP 26 UN Climate Change Conference, UN-Water launched an analytical brief on water-use efficiency. The brief has been prepared by the UN-Water Expert Group on Water Scarcity, which is coordinated by the Food and Agriculture Organization of the United Nations (FAO).

Given changing socio-economic and climatic conditions and the level of uncertainty over future trends in freshwater scarcity, water efficiency gains will play a central role in adapting to climate change.

Sustainable Development Goal (SDG) target 6.4.1 is to, by 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.

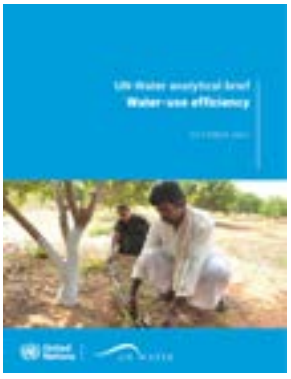
This brief examines the method adopted by the SDGs and compares it with specific sector approaches for evaluating the efficiency of freshwater use. It makes the case that operational water accounting will be needed to validate any claimed efficiency gains.

Globally, in recent years, there have been notable gains in efficiency in the areas of energy generation and industry. However, while the adoption of technology, including precision irrigation, has boosted the productivity of agriculture, there is little or no evidence of irrigation water-use efficiency measures 'freeing up' water for other uses or being returned to the environment as recharge or drainage.

Global water withdrawals may be slowing but the pressure on freshwater resources will not relax, meaning we will need stronger policy instruments and governance systems alongside 'joined-up' water technology to ensure that efficiency gains are shared with beneficiaries who need them most.

We welcome you to share the analytical brief on water-use efficiency – within your networks.

UN-WATER



https://www.unwater.org/water-use-efficiency-un-water-analytical-brief/

COP26

IAH Joins Forces with Water Partners

As this newsletter was being compiled, COP26 - the 26th United Nations Climate Change conference, was taking place in Glasgow, Scotland.

For the first time, Water had a major platform at the conference - the SIWI Water Pavilion. IAH joined SIWI in the Water Pavilion with other partners including UNESCO, IWRA, IWMI and GWP. Those presenting in the Water Pavilion aimed 'to elevate ideas and solutions to the highest possible levels through a unified voice on the role of water in meeting the goals of the Paris Agreement and support ambitious and science-based global climate action'.

IAH presented its recent video on groundwater protection, prepared by our Early Careers Hydrogeologists' Network. Topics for other presentations included managed aquifer recharge, offshore aquifers and a case study on the Mekong Delta.

As part of the COP26 preparations, we were pleased to support IWRA's video interviews on groundwater – 3 simple questions about what is groundwater, what is an aquifer and how much of all the available freshwater is groundwater. If you want to add your responses to the questions, email Sus.Water.Solutions@gmail.com. We'd also like to use your answers for World Water Day 2022. Updates on World Water Day plans follow on page 12.

We publicised our strategic overview paper on climate-change adaptation and groundwater: "Groundwater has always displayed excellent drought resilience, and the presence of aquifers (with their large volumes of stored water) provides a 'natural solution' for deployment in climate-change adaptation". This and some of our other strategic overview papers were posted on our website and social media during the conference period too, amongst other pertinent material from others.

Our partners SIWI reported after the conference that there was a big step forward in recognising the role that nature and water can play for climate action. Torgny Holmgren, SIWI Executive Director, said, "For the first time, a global climate meeting underscores the role of water and nature for both adaptation to climate impacts and contributing to solutions to the climate crisis."

It was acknowledged that improving how water is managed can also help reduce greenhouse gas emissions and accelerate adaptation. There should be greater consideration of water in policies and actions, for example for energy and agriculture. Wetlands, often dependent on groundwater, can act as greenhouse gas sinks. However, IAH members, Prof Bob Kalin and Prof Richard Taylor, present at the conference, regretted that groundwater was far from a core issue of concern despite being the world's largest distributed store of available freshwater.

Overall, much remains to be done, with the final statement falling short of what is required to achieve the 1.5-degree goal and financial support to developing countries still being insufficient.

SECRETARIAT

"...groundwater is far from a core issue of concern despite being the world's largest distributed store of available freshwater. The potential of groundwater to improve the resilience of water and food systems to climate risks remained largely unrecognised at COP26 outside of our community."

COP26: Water and Hydrogeology

Report from Prof Robert Kalin, University of Strathclyde and Prof Richard Taylor, UCL

This year's Conference of Parties (COP26) had 4 main goals: (1) Secure Global Net Zero to stay below 1.5C rise, (2) Adapt to protect habitats and communities, (3) Mobilise Finance, and (4) Work Together towards success. For the first time, Water had a major platform at the conference - the SIWI Water Pavilion supported by a wide range of global organisations - you can find the complete sessions on YouTube at the link below. Did Hydrogeology play a role at COP26? There were a few sessions at various events where groundwater was a central or key theme (for example an excellent BGR session: climate resilience of the water supply to Windhoek enabled by MAR: see Day 9 @ 00:56:00 https://youtu.be/PDwMEXUmn8E; climate adaptation through conjunctive use of water in the IWRA / IAH session on day 7 @ 08:18:00 https://youtu.be/1pqNi_k-VuM), but these two Hydrogeologists found that groundwater is far from a core issue of concern despite being the world's largest distributed store of available freshwater. The potential of groundwater to improve the resilience of water and food systems to climate risks remained largely unrecognised at COP26 outside of our community.

We had the opportunity to engage with the wider negotiating teams including those from Malawi (Lead of LDC delegations), Uganda, and Bangladesh. All three noted that discussions at COP26 recognised the disproportionate impacts of climate change experienced by low-income countries. High-income countries also acknowledged the need not only for increased climate finance but also for a more respectful and collaborative approach to its allocation. There was also a growing push from low-income countries for climate finance to support more transparent, locally led solutions to climate adaptation. Unfortunately, discussions of climate finance at COP26 remained largely focused on top-down 'single-pipe' solutions; little attention was given to the need to ensure climate finance reached those on the "front line" of climate change impacts. This is where practical hydrogeology has the potential to make a pivotal contribution to Climate Change Adaptation. As Hydrogeologists, we are well placed to inform innovative groundwater-based solutions to Climate Change Resilience.

Link to SIWI Water Pavilion Session: https://www.youtube.com/c/SIWI_water/videos

IAH/ECHN Groundwater Quality videohttps://vimeo.com/638602852

Strategic over view series: https://iah.org/education/professionals/strategic-overview-series

WORLD WATER DAY
AND A YEAR FOR GROUNDWATER

Brief from UN-Water communications team:

World Water Day 2022, on 22 March, focuses on the theme of groundwater and its importance in solving the water crisis and achieving SDG 6: water and sanitation for all by 2030.

Indeed, several moments throughout 2022 will be dedicated to groundwater:

- The World Water Development Report (UN WWDR), launched on 22 March 2022 at the 9th World Water Forum in Senegal, will explore the topic in depth and make policy recommendations. The report will also be presented at local and regional events. The UN WWDR is part of an annual series and provides the factual basis of communications throughout the year.
- World Toilet Day on 19 November 2022 will complement the content in the World Water Day campaign by focusing on the relationship between groundwater, sanitation and hygiene.
- The UN-Water Summit on Groundwater on 7-8 December 2022 will bring together scientists, policy makers and practitioners.

Throughout the year the international groundwater community will also be engaged in the development of the Groundwater Catalogue made available online for worldwide use.

So, what will be the key messages about groundwater during 2022?

Much of the thematic communications content in 2022 will be directed to a global audience of the general public as well as experts. This means that it will be more accessible than some of the content aimed primarily at technical professionals.

The public campaign will make the point that groundwater is invisible, but its impact is visible everywhere. We will explain what groundwater is and where it is stored, and outline its critical relationship to human society and healthy ecosystems.

To inspire action, the campaign will make clear groundwater's vital role in water and sanitation systems, agriculture, industry, ecosystems and climate change adaptation; calling for groundwater to be reflected in sustainable development policymaking.

The overarching message is that groundwater has always been critically important but not fully recognized. We now need to see urgent action on groundwater to meet SDG 6 and adapt to the impacts of climate change.

ANNA NYLANDER NORÉN, UN-WATER

[ed: WWD2022 website and visuals due to be launched late November 2021; look out for them in IAH communications too!]

IAH UPDATES: WWD22 AND BEYOND...

As you can see, World Water Day in 2022 will be dedicated to groundwater: making the invisible, visible! The decision for the focus on groundwater for World Water Day and for the World Water Development Report was taken at the UN-Water meeting in February 2019, so some years in the planning.

Three main objectives have been set out:

1. Highlight to a general audience the interaction and dependency that humans and nature have with groundwater.
2. Help technical advisors and policy makers understand how groundwater can be a solution to problems, but also to appreciate the risks.
3. Strengthen collaboration between international organisations, researchers and donors on science, policy and practice.

Managed use of groundwater has the potential to alleviate water crises, though we need to understand complementary issues, including transboundary and financial concerns. But we can't manage what we don't measure.

A website, digital publicity materials, social media and the involvement of regional and country offices are all planned to help support 'making the invisible visible'. A special session at the Stockholm World Water Week last August has already started this programme.

Other events include UNESCO's ISARM Conference in December 2021 in Paris, a WWD celebration during the World Water Forum in Dakar in March 2022, a Groundwater Summit in December 2022 in Paris and Member State briefings. A summary of the important outcomes from the different events will feed into the UN Water Conference in March 2023.

WWD 2022 at World Water Week 2021

IAH contributed to a number of events at the online SIWI World Water Week in August. In 'Groundwater: making the invisible, visible', representatives from IAH, FAO, UNESCO, WWAP, IGRAC, AMCOW and University of Pisa gave presentations on the developing proposals for the WWD 2022 campaign and explained how everyone can be involved. There was also an initial glimpse of the UN World Water Development Report, currently being drafted. You can see this session at https://www.youtube.com/watch?v=0lMbsORRiVY

Other sessions also highlighted the importance of groundwater.

'Building resilient communities: it's time to take groundwater quality seriously' explored how groundwater will be critical for the future, in particular its quality - see https://www.youtube.com/watch?v=IfFd3srjzi4

'Valuing Partnerships and (Trans-)Formative Processes for Resilience from the Subsurface' highlighted the benefits – and risks – relating to groundwater for climate change and human development - see https://www.youtube.com/watch?v=puiaiLT7nvg. This included a commemoration

of our former Vice President for Science and Programme, Ralf Klingbeil, who was active in this field, but sadly passed away earlier this year.

The session on 'Strengthening groundwater curricula in sustainability, anti-racism, equity, diversity and inclusion' can be found at https://www.youtube.com/watch?v=eH5eclXw3hM

AMCOW's Groundwater Program: 'Spearheading a vision on groundwater resilience' in Africa is available at https://www.youtube.com/watch?v=EpCzmYtCUlU

World Water Forum

The World Water Forum will be taking place in Dakar, Senegal to tie in with World Water Day on 22 March. This will include a groundwater session at which UN Water will launch the 'World Water Development Report' and the 'Catalogue on Groundwater Management' will be presented, along with a high-level panel discussion.

WWDR 2022

Drafting of the UN World Water Development Report 2022 on groundwater is well-underway. The report will present the state and trends of groundwater resources and will provide a systematic framework for considering groundwater resources in socio-economic and environmental contexts. The aim is to set out the current understanding of where the problems lie and how these can be confronted.

Groundwater Summit

This will take place in December 2022 in Paris, with scientists, policy makers and practitioners debating how to improve the science-policy-practice interface. A call for investment to help realise groundwater's potential is proposed, and hoped-for outcomes relate to monitoring and data assessment, improved knowledge, and co-operation in managing transboundary aquifers. A special focus on Africa is planned. The culmination will be a UN-Water co-ordinated 'Joint Statement on Groundwater'.

IGRAC Groundwater Catalogue

Good progress is being made on developing the Groundwater Catalogue. It has been created in a wiki-format and will hold information on groundwater management and governance, encompassing technical tools as well as legal, regulatory and institutional arrangements. It will be accompanied by international case profiles considered to be exemplary practice.

Participation in developing the GW Catalogue is very welcome. You can find out more by contacting: info@un-igrac.org

How can I contribute to make the invisible, visible?

What will you do for WWD2022 and beyond? You could:

- Set up a working group with your colleagues and tell us what you will be doing during next year.
- UN Water would like to put your stories on the WWD 2022 website.
- We will also be setting up a new IAH Working Group to work with you and the UN Water Task Force. We're seeking volunteers for this WG - NOW!
- Sign the São Paulo-Brussels Groundwater Declaration - https://iah.org/gwdeclaration
- Send in your aquifer interviews – email Sus.Water.Solutions@gmail.com
- Encourage others to participate!

Questions or comments? Email info@iah.org

New, in our Strategic Overview Series (IAH/AIH SOS)

Water Security and Groundwater

The concept of water security clarifies how water-resource scarcity impacts at varying geographic scales and on different socio-economic sectors, causing allocation conflicts and environmental risks. 'Water security' was defined by UN-Water in 2013 as "the capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being, and socioeconomic development for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability".

The related concept of 'water scarcity' has evolved, with 'absolute water scarcity' being defined as situations where local water resources are equivalent to less than 1,000 m3 /year/person of water availability.

The large natural storage of most groundwater systems offers exceptional drought resilience and is well positioned to enhance water security for a wide range of water users. To perform this function sustainably int the future, groundwater systems will require better data and analyses to inform water resource administration and effective pollution protection.

Water Utilities and Groundwater

Groundwater offers opportunities for water utilities to develop and operate water-supply sources that are more resilient to climate-change and more reliable in extended drought than surface-water sources.

Groundwater nearly always represents a much more reliable source of public water-supply, which can be developed (within defined sustainable limits) at lower cost. The extensive distribution of aquifers means that groundwater can often be developed close to water-demand centres reducing capital and operational costs. Water-treatment is also much less complex.

Water utilities should manage groundwater sources conjunctively with surface-water sources to optimize efficient service delivery and environmental benefits. They should also be actively concerned about groundwater management beyond their own water-wells, since effective groundwater protection is in their long-term interest and needs broad collaboration.

https://iah.org/education/professionals/strategic-overview-series

IAH NEWS

IAH COUNCIL MEETING

This year's IAH Council meeting was held at Vivaqua's offices in the centre of Brussels, for the members who were able to travel to Belgium, and online for others. Trying to find a time that suited everyone in all time zones was of course tricky.

There had been concerns from some IAH members that there no women candidates in the recent elections. It was agreed there should be encouragement for all members to consider standing in IAH elections. It was also suggested that IAH should adopt the "gold standard" applied for Stockholm World Water Week sessions, which requires more than 40% women speakers and at least one speaker under 35.

Council recommended that in view of the ongoing impacts of the pandemic membership fees should remain unchanged for 2022. Fees have remained the same since 2019. A detailed review of membership fees and of funding provision for national chapters was proposed, with recommendations to be considered by Council in 2022.

The members' survey on IAH's future strategic plan, which had produced 73 responses, would remain open for the time-being to encourage more contributions. The Early Careers Hydrogeologists' Network were also preparing their own plan, to be aligned with the overall strategy, which included considerations for social media, diversity/inclusivity, resources and proposals for ECH shadowing of 'senior' IAH positions.

There had been numerous online meetings and presentations organised by chapters and regions and it was felt that an over-arching education strategy applied at these scales would be particularly effective. Support proposed at international scale included preparing new papers in the strategic overview series and, more particularly, translating the existing papers into various languages.

There had been a big rise in the Impact Factor for Hydrogeology Journal to 3.178 in 2020, from 2.641 in 2019. The Usage Factor, at 364,777 downloads, was also high, indicating how much people read and use HJ content. Manuscript submittals had risen significantly (currently ca. 600/year), with an increase in the number of published articles. The adoption of UN practice for maps and country names had been functioning well.

Council members had made considerable input to international initiatives in the last year, particularly those related to preparing for World Water Day 2022 on groundwater and the accompanying World Water Development Report. This included consideration of next year's World Water Forum in Senegal, at which the WWDR2022 would be launched. Elsewhere there had been input to the UNECE Groundwater Working Group and to UNESCWA's consultation on the 2023 Midterm Comprehensive Review of the Water Action Decade. There was also input to the Groundwater Abstraction Management Guidelines for the Arab region.

IAN DAVEY, SECRETARIAT

ANNUAL GENERAL MEETING

Dave Kreamer, IAH President, welcomed those in the Square, Brussels and online to the AGM. Fifty IAH members were at the venue and 213 views were recorded on the YouTube transmission on the day of the AGM. There was a brief remembrance for those members who had passed away during the last year.

Jane Dottridge, IAH Secretary General, highlighted some of IAH's achievements during the past year:

- Published the statement on Equity, Diversity and Inclusion.
- Coordinated education activities, webinars and videos in a new virtual world.
- Increased the size, quality and usage of Hydrogeology Journal.
- 2 new papers in the Strategic Overview Series, with 11 in total, and published further translations with more proposed.
- A further IAH book is in preparation, for publication in 2022.
- The mentoring scheme, although involving a relatively a small number of people, continues to be successful.
- There have been several international engagement activities, including regarding World Water Day, World Water Week, UN Water, UNESCO, GRIPP, SADC, IMPEL.

She also reminded everyone that a survey has been published seeking views from members on how to develop IAH's strategic plan for the next 10 years (see page 22 for further information).

Marco Petitta, Vice President for Science and Programme gave an update on some of the recent achievements by our Commissions and Networks. There were special issues in 'Hydrogeology Journal' (Karst Commission), in 'Science of the Total Environment' (Groundwater Quality Commission) and in 'Water' (Socio-Hydrology Network). Several conferences took place, including on climate change, MAR and Karst.

Teodora Szocs, Vice President for Membership and Finance, summarised the accounts for 2020. Membership fell during the Covid pandemic and overall income at £330K was below that of 2019 (£352K). Counter-balancing this, tax paid in Germany on Hydrogeology Journal income in previous years was reimbursed and travel costs normally covered by IAH funding were not incurred. This gave an overall surplus of £76K, which Council can now use for funding member benefits and charitable activities, in line with IAH's remit. This additional reserve will also protect against ongoing financial uncertainties across the world.

Falls in membership were most keenly felt in North Africa and Middle East, Latin America and the Caribbean, and to a lesser extent in Australasia and the Pacific, and West and Central Europe. In contrast, membership increased in Eastern Europe and Central Asia. Overall, membership in 2020 was 3994, compared with 4458 in 2019. This has picked up strongly in 2021, particularly in Eastern Europe and Central Asia, Asia, and North Africa and Middle East. Currently we have 4211 members.

Members accepted the recommendation that annual subscription should remain unchanged for 2022.

SECRETARIAT

Watch AGM: https://youtu.be/rr0DpzLyZO4?t=1981

Questions or comments? Email info@iah.org

IAH AWARDS

IAH recognises the service and achievements of its members and others who have worked for improved understanding of groundwater through a series of awards. We were pleased to see the presentation of the awards, which took place in September at our annual general meeting, this year at our congress in Brussels.

Presidents' Award

The IAH Presidents' Award was established in 1995 and is determined by the current and past presidents. It is given annually to a member who has made outstanding international contributions to groundwater science and to furthering IAH's mission to promote understanding and management of groundwater resources for the benefit of humankind and the environment. In 2021 the worthy recipient of this award was Dr Judit Mádl-Szőnyi.

Honorary Member

The Association from time to time accords the title of Honorary Member to those who have given exceptional services to IAH over a long period. The candidates are elected, following a recommendation by Council, by a vote of the General Assembly of the Association. The most recent recipients were Judith Flügge and Sophie Vermooten, both whose nominations were approved by those participating in our General Assembly (in person and via live link to the ceremony) in September 2021.

Distinguished Associate Award

The IAH Distinguished Associate Award is presented to a person who is not a groundwater professional but has made an outstanding contribution to the understanding, development, management and protection of groundwater resources internationally. The Award was established by the IAH Council in 2005 and is made by the IAH Executive Committee following consultation. In 2021 the award was given to Gabriel Eckstein in acknowledgement of his contribution to the enhancement of policy and governance for groundwater protection worldwide.

Applied Hydrogeology Award

IAH's Applied Hydrogeology Award is presented to "a groundwater professional who has made an outstanding contribution to the application of hydrogeology, preferably in developing countries or in support of international development". Nominations are invited in March of each year from IAH members; in 2021 we are grateful to our new panel of David Ball, Rifaat Saaed Salim and Yanxin Wang for their careful considerations – during which they agreed unanimously to award two worthy recipients. Thus, the Awards for 2021 were presented to:

- María Stella Lizarazo Rojas, for her efforts to influence national policy making and developing improved industry practices, while maintaining a remarkable career in water well maintenance, pumping systems and geophysical methods for groundwater surveying across Colombia. She has stood out among a sea of men – and earned recognition of drillers and consultants alike.

- Paul Bauman, who has been a tireless advocate for using creative geophysical solutions to ensure access to safe drinking water for refugees, displaced persons, and water impoverished communities. Paul has volunteered countless hours to this cause and has personally funded and donated geophysical equipment to make groundwater exploration field programs possible. Paul is also an incredibly inspiring and passionate person who cares deeply about mentoring younger generations of geophysicists and hydrogeologists, including those in developing countries who would otherwise not enjoy the privilege of post-secondary education or training.

We are sure you will join us in congratulating all of the worthy awardees; further information about each and the award presentations can be found via the link below.

If you would like to make a suggestion for a possible nominee for 2022 we would be pleased to consider your idea; email idavey@iah.org with relevant details.

SECRETARIAT

https://iah.org/about/awards

2020 Annual Report

2020 was an extraordinary year, continuing into 2021 of course. Undoubtedly the support of family, friends and colleagues has been valued even more, and perhaps some have found depths resilience they didn't know they had. All of us, though, look forward to better times ahead.

While we are compiling this newsletter we're also finalising the IAH annual report and summary of finances for 2020. This will be going out with the December members' alert and on our website. As members who attended our AGM know, the full accounts were approved in September and they have been submitted to the UK authorities in accordance with our statutory obligations. Our aim is to make IAH's formal reporting as "accessible" as possible, to allow everyone to understand how IAH uses its funds to help meet the needs of members, as well as fulfilling its educational and charitable objectives. We hope the annual report continues to do that. If you have any questions or suggestions, please email info@iah.org

SECRETARIAT

IAH ELECTIONS

Thank you for voting in the elections for the Vice President, Science and Programme and Vice President, Asia Region. The proportion of members who participated in the elections was 26.1% (1072 registered members at this time) which is a little higher than for the full elections that took place in 2020. Thank you also to all the candidates for putting themselves forward and for being willing to serve IAH if successful. The results are:

Vice President, Programme and Science Coordination

Candidate	**Votes**
Marco Petitta (Italy)	481 Elected
Shafick Adams (South Africa)	310
Bhagwan Singh Chaudhary (India)	249
I do not wish to vote in this election	32

Vice President, Asia

Candidate	**Votes**
Yongje Kim (Republic of Korea)	344 Elected
Amarendra Kumar Sinha (India)	325
Dinesh Chandra Singhal (India)	159
Han Zaisheng (China)	130
I do not wish to vote in this election	114

There was disappointment from some IAH members that there were no women candidates in the elections. IAH encourages all members to consider putting themselves forward for election. If you don't stand, we can't vote for you! It was also noted by some members that they received requests for their votes. Although some members are happy with this practice, others prefer not to receive such requests.

IAN DAVEY, RETURNING OFFICER

Find out more about IAH's Council: https://iah.org/about/council

Meet the newly elected VPs

Prof. Marco Petitta, Programme and Science Coordination (Italy)

Marco Petitta is Professor of Hydrogeology at Sapienza University of Rome, Italy and has been a member of IAH since 1997. He is a past President of the Italian Chapter and was Chair of the 42nd IAH Congress in Rome in 2015. He was Vice-President of IAH for Western and Central Europe from 2016 to 2021. He is a member of the Council of the Italian Geological Society and is coordinator of the Panel of Experts in Hydrogeology of the European Federation of Geologists.

Dr. Yongje Kim, Vice President Asia Region (South Korea)

Dr. Yongje Kim received his PhD in Environmental Hydrogeochemistry at Texas A&M University, USA (1995). He is currently a principal researcher in the Groundwater Research Center of the Geologic Environment Division at Korea Institute of Geoscience and Mineral Resources (KIGAM), Republic of Korea. From 2012-2017 he was Executive Director of the International Cooperation Office at KIGAM to establish international networks and implement research collaboration with developed and developing countries.

IAH Vice President - Europe (West and Central)

Following Marco Petitta's election as Vice President for Science and Programme, we began the process to fill his former role of Vice President - Europe (West and Central). The Regional Vice President provides stewardship of IAH interests and coordination of national chapters in the Region and also has wider responsibilities as part of IAH Council for overseeing the work of the Association.

At the close of the nomination period one candidate had been confirmed – in fact he was nominated by several members from across Europe, so much so, that it was almost appointment by acclamation! We are pleased to announce that Manuel Abrunhosa of Portugal will take up his role as a member of IAH Council. We would also like to thank Patrick Lachassagne who stepped in as Acting Vice President when Marco took up his new role.

Manuel has wide-ranging scientific and technological expertise from his many years as a Hydrogeologist. Following many years as a Lecturer at the University of Porto, he is now an Independent Senior Consultant Hydrogeologist and Geoarchaeologist. He has worked in forensic Hydrogeology since 1980, frequently as an expert witness, and often working on a pro bono basis for environmental and heritage associations. He has also become well known recently for his promotion of hydrogeoethics. Until 2022 he remains in post as President of the Portuguese Chapter of the International Association of Hydrogeologists (AIH-GP).

IAH FORWARD LOOK: BEYOND 2020

Our call on our next strategic plan, Forward Look – Beyond 2020, will close very soon!

Thank you to those who have responded – but there are many, many more members who haven't yet contributed their ideas. We want all our members to have the opportunity to be involved in developing the next plan. You can do this at: https://www.surveymonkey.co.uk/r/IAH_progress21

This is about you and this is about us - the global groundwater family. We need you to tell us what we're getting right and wrong and what we need to focus on. What services and opportunities should we be providing?

The questionnaire has 14 questions and takes only 10 minutes to complete. There is a mix of multiple-choice questions and free text boxes for comments, which focus on:

- Membership
- Member benefits
- Income for IAH
- Publishing, both books and future of HJ as a printed journal
- Communication e.g. website, social media
- IAH's Mission
- World Water Day 2022
- Conferences
- Equality diversity and inclusion
- Education
- Outreach

We propose to look at the following themes for the plan:

1. Membership and member benefits
2. Communication (including publications, website, social media and conferences)
3. Income and fees
4. IAH's mission and outreach
5. Diversity

Diversity has been partly addressed through publication of our Statement on Equity, Diversity and Inclusion, but comments on social media, which criticised the lack of female candidates in our recent elections, show there is more to do to put these principles into action. One option that could help is for IAH to more actively encourage diversity in speakers and office holders, similar to the Stockholm World Water Week Gold Standard, which requires at least one speaker under 35 and >40% of speakers to be female.

But we want to hear your views on this and other subjects. As well as the survey, we also propose to invite the participation of those members who've contributed constructive comments that could be developed further for the plan. We will set up a number of working groups to meet online initially. We think that this plan will set out aims and objectives that will be developed over time so we also propose to arrange some in-person meetings at events in the future.

To add your contribution, go to https://www.surveymonkey.co.uk/r/IAH_progress21

Questions or comments? Email info@iah.org

An Update from the Morwick G360 Groundwater Research Institute

Given the complexity of hydrogeologic systems, IAH members are well aware of the importance of field research and training future professionals with hands-on experience. These have long been priorities of the (recently renamed) Morwick G360 Groundwater Research Institute, and plans are underway to take our programs to the next level. For those unfamiliar with the Institute, MG360 was founded at the University of Guelph in 2007 to enable evidence-informed groundwater resource stewardship through research, training, and collaboration. We work with industry and government to inform remediation and monitoring best-practices and understand contaminant transport and fate for water resource protection. MG360 largely focuses on bedrock systems – the most common regional aquifers in Canada, but also important globally, and often the most complex. Climate change and growing population pressures make understanding bedrock aquifers increasingly vital for sustainable water supply and ecosystem health; ways must be found to safeguard these resources and ensure hydrologic system resilience. The IAH and its members play a key role in this work, and we are proud to be members of this vibrant community.

MG360's ongoing projects include creating field-site-informed computer models that predict the spread of contaminants in bedrock aquifers; and developing monitoring infrastructure in places like the Liard Basin (NWT), where the effects of past and on-going oil and gas extraction on local water supplies are poorly understood, or in characterizing aquitards and flow systems associated with major water supply aquifers like the Silurian dolostone the City of Guelph and neighbouring communities rely on for their drinking water.

Over the last decade, we've built a vision for a global nexus of bedrock groundwater research at the University of Guelph. Our primary facility on campus enables equipment fabrication, storage and staging to field sites, but we are in the process of renovating it to facilitate human interactions within research and training programs. The renovation project was given a boost this year with a philanthropic gift from Ted Morwick (our new namesake), and with help from other partners, we are 65% of the way to achieving our goal and are seeking support to finish the project. When complete, the Morwick Groundwater Research Centre (MGRC) will host onsite classrooms and teaching boreholes to give students vital hands-on experience. It will also provide a space for technology demonstration and industry collaboration, while facilitating discussions amongst researchers and engaging the public. The facility is adjacent to an on-campus borehole network and is central to numerous research sites throughout the Guelph area, making it a powerful tool for regional groundwater monitoring and data synthesis.

Going forward, we are excited to work with IAH members to promote the important role of groundwater in solving important societal challenges within the food-water-energy nexus. Collaborations, workshops, and continuing education for professionals are part of our vision, and it is vital we work collectively with our colleagues across all sectors and generations; and ensure science and policy work together. The IAH has been a force for good in bringing together diverse hydrogeology expertise from different backgrounds, and MG360 is proud to continue that work alongside its members. To learn more about MG360 or to donate, visit https://g360group.org/

SCOTT JOHNSTON

https://g360group.org/

Mentoring Scheme reopens for new applicants

IAH's mentoring scheme is now open! Whether or not you have participated in the scheme before, if you are a member of IAH you may apply. Choose from the link below (you can also be a mentor and mentee).

- Mentor (giver of advice) apply here: https://www.surveymonkey.co.uk/r/iah_mentor21
- Mentee (receiver of advice) apply here: https://www.surveymonkey.co.uk/r/iah_mentee21
- General information about the scheme here: https://iah.org/education/professionals/mentoring

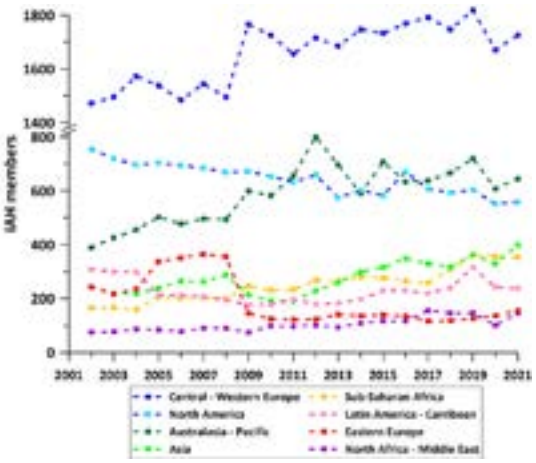
Of course, those who have just have a quick question or discussion point are free to use IAH's social media channels and engage with IAH's various national chapters and specialist groups, without formally joining the scheme. Don't be shy – we are the global groundwater family – and you will find that if you make contact you'll find people welcoming.

- National chapters listing/contact information: https://iah.org/groups/national-chapters
- IAH specialist groups, commissions and networks (including Early Career Hydrogeologists' Network): https://iah.org/groups/commissions-networks

SECRETARIAT

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

We're pleased that membership has been steady or on returned to an upward trend in most of our regions after falling back in 2020.



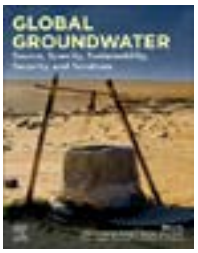
We would also like to improve the gender balance in our membership:

(43% gave no information)	Male	Female	No data
All	75%	25%	
More than 10 years' experience	81%	19%	4%
Less than 10 years' experience	65%	35%	3%
Student	62%	38%	5%

We would especially like to see the trends we see at younger ages continue to develop throughout our membership. We hope you will want to continue your membership next year and that you'll also want to encourage your colleagues to join!

Members' **Book Draw**

Win a copy of "Global Groundwater - Source, Scarcity, Sustainability, Security, and Solutions"



Global Groundwater: Source, Scarcity, Sustainability, Security, and Solutions presents a compilation of compelling insights into groundwater scenarios within all groundwater-stressed regions across the world. Thematic sub-sections include groundwater studies on sources, scarcity, sustainability, security, and solutions. The chapters in these sub-sections provide unique knowledge on groundwater for scientists, planners, and policymakers, and are written by leading global experts and researchers.
Noticing that a good number of IAH "champions" have been involved in the production of this book we decided to offer a copy to a lucky IAH member in this prize draw. **To enter to win, complete your details including membership number here:**

https://www.surveymonkey.co.uk/r/GlobalGWbook

Terms and conditions:

Prize draw closes 11.00pm GMT on Thursday 31 March 2022. Entry is open to current IAH members only (2022 dues paid). One entry per individual (additional entries will be discarded). One copy of the book is on offer for this draw. The winner will be picked by random draw and will be contacted by email soon after the closing date. The winner will be also be announced in the December 2022 edition of "News and Information".

SECRETARIAT

EARLIER PRIZE WINNERS

As promised, here are the names of prize winners for 2021

Contaminent Hydreogeology book was won by: Liv Fraser-Cobbett (UK); IWA congress registration was won by: Amanda Clements (Australia); Regulating for Water Quality - How to Safeguard the Water Environment was won by: Jennifer McDonald (Canada); International Law and Transboundary Aquifers was won by: Sean Berry (New Zealand).

Support for attendance at IAH congress

We were pleased to provide free registrations to the following in our prize draws and support for students and others on lower incomes: FOR BRAZIL: Adwoba Kua-Manza Edjah (Ghana); Andrew Joloza (Malawi); Ashwani Kumar Tiwari (India); Brian Murove (Zimbabwe); Eric Lai (Australia); Gopal Krishan (India); Loreto Valdivia (Chile); Renzo Velasco Gonzales (Peru): Rogerio Tadeu de Souza (Brazil); Saeed Mhanna (Lebanon); Sodiq Sologbade Oguntade (Netherlands).

FOR BELGIUM (participation of those outside Europe generally constrained by covid travel controls); Aditya Vikram Jain (Netherlands); Jeeban Panthi (Nepal) [studying in USA so was able to travel]; Titus Kruijssen (Netherlands); Okofo Boansi Louis (Germany); Roberta Bonì (Italy).

We're always happy to receive suggestions for prizes, offers etc. for IAH members. This may be books, products or discounts. Email info@iah.org to discuss. Thank you!

New Members

A warm welcome to the following new members, who joined our Association in the period 22 June - 20 October 2021

AFGHANISTAN
Asadullah FARAHMAND
Mohammad Salem HUSSAINI
Zia JAMAL
Abdulhalim ZARYAB

AUSTRALIA
Abdul-Samed ALIOU
Mike BALL
John BRADLEY
Malvina CHMIELARSKI
Dale COBBAN
Roger CRANSWICK
Clem DUVERT
Jordan FORSTER
Annabel GREEN
Clint HANSEN
Andrew HUGHES
Kate HYLAND
Malinda KAY
Sian KENNARE
Ulrike KRAUSE
Cameron James LOVE
Mark MITCHELL
Eloise NATION
Ross NEIVANDT
James NICOLSON
Josh RADFORD
Marija ROSIC
Helen RUTLIDGE
Toby SCRIVENER
Morgan SINGLETON-FOOKES
Jorg UNSELD
Antony VOLCICH
Dan WOOLLEY
Quanyi YE

AZERBAIJAN
Shamkhal BABAYEV
HYDRO-GEO ENVIRONNEMENT GROUP (c)
Gunel ULMAMMADOVA
Saleh SEYFULLAYEV

BELGIUM
Laura BALZANI
Sarah GARRE
Robin GLAUDE
Toon VAN DAELE
Lars VAN PASSEL
Guillaume VANDEKERCKHOVE

BURKINA FASO
Mahamadou KOITA

CANADA
Picard ANTOINE
Yassaman BABAEE
BACHIR DJERFAF
Kevin HUNSCHE
Andrew STOCKFORD
Alex WOOD

CHILE
Ignacio Esteban FARIAS
Jorge GARCIA
Catalina ORB
Victoria SANDOVAL
Ignacio TORO

CHINA, PEOPLE'S REPUBLIC
Cheng ZENG

EGYPT
Abdelazim NEGM

FRANCE
Ryma AISSAT
Paul BAUDRON
Bhavani BENARD
BRGM (c)
Herve CHAPUIS
Dominique DARMENDRAIL
Come DE MUN
Roberta DIAS AZEVEDO
Ibrahim DIOMANDE
Sandra GALVIS RODRIGUEZ
Adrien GERARD
Anne JOST
Antoine TOGNELLI

GERMANY
Sura ALQARAGHOLI
Uwe BOESTER
Anne IMIG
Alireza KAVOUSI

HONDURAS
Tania Maria PEÑA PAZ

INDIA
Ashutosh AGARWAL
Naima AKHTAR
Vivek Narayan BHAVE
Deepak CHAUHAN
Jitendra DIXIT
Amar K HUJARE
Biswajit JENA
Ritesh JUNNARKAR
VB KHILNANI
Anand KUMAR AGRAWAL
Arun Kumar MEENA
Yashoda MUSTURIA
Aditi PARDESHI
Diganta SAMRAH
Surajbhan SINGH
Ravindra Pratap SINGH
CHOLA MS RISK SERVICES LTD (c)
Ashish TANK

INDONESIA
M. Haris Miftakhul FAJAR

IRAN
Nosrat AGHAZADEH
Vahab AMIRI
Sasan HABIBI
Javad HOSSEINZADEH
Houshang KHAIRY
Kamal KHODAEI
Zargham MOHAMMADI
Hodjatollah NASSERY
Abolfazl REZAEI

IRELAND
Caroline ESS
Lorcan FARRELL
John MORAN
Eoin O'CONNOR
Eadaoin O'RAW
Orlaith TYRRELL
Simon VOKES
Ciara WALL

ITALY
Luigi ALESSANDRINO
Luca ARIENI
Sara BARBIERI
Paolo BUDETTA
Vincenzo CRITELLI
Gianluca FIANDACA
Linda FRANCESCHI

Mari Pia GERVASIO
Beatrice GIAMBASTIANI
Matteo GISOLO
Pietro GUTGESELL
Guido LEONE
Pierpaolo LIMONI
Francesca LOBINA
Luca MARCIA
Pietro MAZZON
Antonio MENGHINI
Riccardo NICOLINI
Sofia ORTENZI
Agnese REDAELLI

KENYA
Elizabeth LUSWETI

LATVIA
Karlis KUKEMILKS

MALAYSIA
Abdul Jalil OTHMAN

MEXICO
RENE ALBERTO DAVILA PORCEL

MOROCCO
Youness OUASSANOUAN

NEPAL
Bhaskar KHATIWADA

NETHERLANDS
Mark BAKKER
Roel BRUGMAN
Jasper HAVIK
Titus KRUIJSSEN
Emiel KRUISDIJK
Gualbert OUDE ESSINK
Thomas SWEIJEN
CRUX ENGINEERING B.V. (c)

NEW ZEALAND
Ken SCARLETT

NORWAY
Ellinore Bjørk HAVERL

PERU
Edgar ALVA

PORTUGAL
Katherine MALMGREN
Maria Conceição NEVES
Carla ROCHA
António SILVA

REPUBLIC OF KOREA
Yong chan CHO
JUNGWHA LEE
In-Hyun NAM

ROMANIA
Aurel CIUREL

RUSSIA
Nail AKZIGITOV
IIZHEVSKIY NEFTYANOY NAUCHNYI TSENTR (c)
Valentina MASTERKOVA
Dmitriy VASILIEV

SOMALIA
Hassan HASHI

SOUTH AFRICA
Jessie Mzati KANYERERE
Zandri RADEMAN

SPAIN
Miguel Angel DIAZ HURTADO
Alberto Roman GESSA FERNANDEZ
Sergio GIL VILLALBA
Juan Jose ROVIRA MEDINA
Alicia SANZ PRAT

SWITZERLAND
Daniela HUNZIKER
Philippe RENARD

TANZANIA
William MREMI

TURKEY
Umut Taha CAPANOGLU

UNITED KINGDOM
Stefan BRAMER
Paul EVANS
Simon GEBBETT
Simon MADDOCKS
Viktoria NEMETH
Ulisse PIZZI

UNITED STATES OF AMERICA
Andrew J.B. COHEN
Brian HUNT
Jessica MEEKS
Gretchem MILLER
Christian ROUMELIS
TEXAS WATER RESOURCES INSTITUTE (c)
Frank TSAI
Meysam VADIATI
Steve YOUNG
Hong-Bin ZHAN

NB: Those marked (c) are new IAH corporate members.

Check your records!

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 the Hydrogeology Journal 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. Please check your details and IAH settings regularly - we'd hate you to miss out.

SECRETARIAT

https://iah.org/members/edit-details

COMMISSIONS & NETWORKS

The activities of IAH's commissions and networks include contributing to the science of groundwater and undertaking outreach, education and training. They run sessions at IAH congresses and virtual meetings, co-convene technical meetings and field excursions with other societies, host workshops and training courses and prepare educational and outreach publications. We welcome suggestions for new topics or activities – email ideas and comments to info@iah.org. You do not have to be an IAH member to participate. In fact we encourage wide involvement from the groundwater community, as this will help the groups to thrive and give greater authority to their work. You can find out much more about all of IAH's commissions and networks on their individual websites. For more information go to https://iah.org/groups/commissions-networks.

SECRETARIAT

Socio-Hydrogeology Network (SHG)

We were pleased that SHG was able to contribute to the activities at the 48th IAH congress in Brussels in early September. SHG showed a moving screening of "Pani Check – The Sisterhood of Water" - the transdisciplinary cooperation between freelance filmmaker Katalin Ambrus and hydrogeologist Theresa Frommen from Freie Universität Berlin, which resulted in two films about a participatory and interdisciplinary hydrogeological project in India between 2016 and 2019. To find out more go to: https://www.geo.fu-berlin.de/en/geol/fachrichtungen/geochemhydromin/hydrogeologie/Projekte-neu/jaipur-inhalt/index.html .

SHG also held a special session "Socio-Hydrogeology – How can hydrogeology be inspired from other disciplines/ outside science?" which was chaired by Theresa Frommen (Humboldt-Universitaet zu Berlin, Germany), Viviana Re (University of Pisa, Italy). We also held our AGM during the week.

Theresa and Viviana also gave a talk at the 1st International Conference on Sociohydrology, Delft, The Netherlands,in September - Socio-Hydrogeology – Human-water perspectives from below the ground. Find out more here: https://delft2021sh.org/overall-program/

Looking ahead, there is a Special Issue in Water concerning the Socio-Hydrogeology in Groundwater Resources Assessments and Management" . Theresa and Vivana are guest editors. See https://www.mdpi.com/journal/water/special_issues/Socio_Hydrogeology_Groundwater

Finally for now, some of the IAH-SHG members have proposed a Session at the next EGU Conference:

ITS3.2/HS1.1.8 - Socio-Hydrogeology: a transdisciplinary approach to groundwater science | Virtual PICO

Convener: Viviana Re | Co-conveners: Paul Hynds, Theresa Frommen, Bárbara Azevedo

Abstract submission is now open, info at: https://meetingorganizer.copernicus.org/EGU22/session/43578

To join the network and/or receive the IAH-SHG newsletter, contact: iah.shg@posteo.net

https://sociohydrogeo.iah.org/

Commission for Karst Hydrogeology

In July 2021, the new co-chair trio was elected: Peter Malik (Europe/Africa); Avi Burg (Asia/Oceania) and Ben Tobin (Amercas). We'd like to thank the outgoing co-chairs Zhang Cheng, Augusto Auler and Zoran Stevanovic. During their tenure they kept up many of the long-lasting KC traditions while also expanding into new activities. This included seminars, conferences, revising the KC geotrips, international cooperation, a special 50th KC anniversary special issue of the Hydrogeology Journal - and some while

navigating the challenges of the global pandemic. We hope to give thanks in person during 2022!

A reminder that EUROKARST will be taking place on 22-25 June 2022 in Malaga. Find out more at http://www.eurokarst.org. The annual Karst Commission meeting will also take place during this event.

Sign up to receive our newsletter to receive news and information about other KC initiatives. We hope to update our website soon.

karstcommissioniah70@gmail.com

Regional Groundwater Flow Commission

During the 48th congress in Belgium RGFC co-organised the session, "Regional groundwater systems and transboundary aquifers" which was chaired by Ádám Tóth and Hanneke Verweij, attracted many abstracts so resulted in two oral sessions being run.

In July the International Symposium on Geofluids was organized by the ENeRAG H2020 project in collaboration with the Eötvös Loránd University (ELTE), the József and Erzsébet Tóth Endowed Hydrogeology Chair Foundation. The scientific objectives of the event were supported by the Regional Groundwater Flow and the Managed Aquifer Recharge Commissions and the Hungarian National Chapter of the International Association of Hydrogeologists (IAH), the MOL Group and the Water MDPI Journal. The event's main objective was to bring together scientists, professionals, and stakeholders to share and discuss all kinds of topics in geofluids, and especially groundwater, to highlight the interaction among geothermal energy, hydrocarbon, geogenic contamination and hydrothermal mineral resources.

The symposium featured 5 international keynote speakers (Inga Berre from Norway, Xiao-Wei Jiang from China,

Niels Hartog from the Netherlands, Vincent Post from the Netherlands, Daniele Pedretti from Italy) who shared their forward-looking and high-quality research findings with the participants. An Interactive workshop was organized within the framework of the event, where Judit Mádl- Szőnyi, Brigitta Czauner and Ádám Tóth, demonstrated the dynamic systems approach, involving the audience with thought-provoking questions. Transboundary aquifers were also presented from all around the world including cross-border political, socioeconomic and environmental differences.

To find out more about the commission and get involved, see our website.

https://regionalgwflow.iah.org/

Commission for Managing Aquifer Recharge (MAR)

As a part of the University of Birmingham's COP26 events, Prof. Yan Zheng of SUSTech, an IAH-MAR Commission co-chair, was invited to give the China Institute's 2021 Li Siguang Lecture which was broadcasted in October. The lecture "Enhancing Groundwater Sustainability for Climate Resilience through MAR" can be watched here: https://youtu.be/cKE3DUMGKFg

Looking ahead, we'd like to invite you to the 11th International Symposium on Managed Aquifer Recharge (ISMAR11), hosted by the Groundwater Resources Association of California and co-hosted by the Arizona Hydrological Society and the Orange County Water District. For more details visit the website: https://www.grac.org/events/272/

We have a number of projects and initiatives that you are welcome to participate in. To find out more visit our website.

https://recharge.iah.org/

IAH 47th Congress, **Brazil**

Our online Brazil Congress brought together IAH with, Latin American Groundwater Association (ALHSUD) and Brazilian Groundwater Association (ABAS). Although it wasn't possible to hold this in 2020, there was an innovative approach, with free biweekly online meetings, webinars and discussions taking place from September 2020. The sessions are available through the ABAS YouTube channel at https://www.youtube.com/channel/UCsgiRJ5ILtJD2VRh_IY8AHg

Ten WhatsApp groups were set up as a prelude to the main congress, with more than 900 people participating and discussing a range of issues - see https://iah2021brazil.org/en/find-out-more/. These introduced the topics covered at the Congress, which as well as classical 'geo-hydrology', considered:

- Climate change - Ecosystems - Education - Emerging technologies -
- Engineering aspects - Gender - Karst -
- Modelling - Managed aquifer recharge - Poverty alleviation -
- Quality and contamination -
- Sanitation - Sustainability - Transboundary aquifers -

The congress proper was also preceded by three short courses on: MODFLOW 6 for flow and transport, hydrocarbon site management and applications of isotopes in hydrological and forensic studies. Online access to led to a virtual auditorium, poster session and exhibition area.

Everton de Oliveira, President of the 47th IAH Congress Organizing Committee opened the congress proceedings, supported by Dave Kreamer, IAH President and José Paulo Netto, President of ABAS. John Cherry gave the opening presentation, on "Drought, food and the global water crisis"

For those who registered and were not able to keep up with all the live transmissions, you can now access the content via your desktop via https://iah2021.icongressolive.itarget.com.br/ or mobile devices at https://iah2021.icongressolive.itarget.com.br/mobile

There is also free access to several sessions:

- Interview with John Cherry
- Waterwells: Why is legality not more attractive?
- Water security and climate change
- Groundwater and poverty
- Water for future generations: the urgent need to increase managed aquifer recharge
- How isotopes enhanced our understanding in GW: Experiences around the world
- Gender and Groundwater
- Young Hydrogeologists: Challenge for a new hydrogeology
- The effect of global climate change on groundwater – from Brazil to Belgium
- What do we need to know, use and manage underground water in Latin America?
- Ten reasons why our relationship with groundwater is a total mess and what should be done

Find out more at https://iah2021brazil.org/en/free-programme/

IAH 48th Congress, **Brussels**

More than 460 delegates from about 40 countries were welcomed to our in-person 'Covid-safe' congress, as the risks became more manageable in Belgium. If this wasn't reason enough to celebrate, there were also important anniversaries to commemorate. The IAH Belgian National Chapter celebrates its 20th anniversary this year, IAH has its 65th anniversary and Vivaqua, corporate members of IAH, who were so supportive of Olivier Lagneau's role as Chairman of the Organising Committee and provided sponsorship for the congress, celebrates its 130th anniversary. Special Belgian guests, the Smurfs, helped with the celebrations!

The traditional 'ice-breaker' was held at Brussels' magnificent Town Hall, where delegates could wave from the balcony to the tourists in the Grand Place below. There was also a welcome reception at the end of the first day of the Congress, with Belgian folklore entertainment, Belgian food and even the launch of the Congress's own beer!

The science proceedings kicked off with a pre-Congress courses on time series analysis using Pastas and introductions to MODFLOW6 and MODFLOW-USG.

The general theme for the week was 'Inspiring Groundwater' and delegates were inspired by presentations in 55 sessions, 260 speakers, including 6 key-note speakers, and 100 posters. The topics were wide-ranging, taking in sustainable groundwater exploitation, protecting ecosystems, geothermal and hydro-energy, and a society without fossil energy sources. Paleo-groundwater and isotopes were considered, and managed aquifer recharge and climate change resilience. Speakers went from regional groundwater systems, transboundary issues and through karst, fractured rock and coastal aquifers. Experimental and field methods, geophysics, monitoring and modelling, groundwater flow and managing contamination were reviewed.

Ten field trips took participants to different parts of the country : the biggest groundwater catchment in Belgium, complete with a castle owned by the water company, to see wastewater recycling and managed aquifer recharge along the Belgian coast (combined with a spontaneous trip to the seaside to cool off in the 28C temperatures – yes, summer reached Belgium!) and to a Carboniferous stone quarry, where the participants were given an incredible souvenir.

Covid issues prevented the ECHN team from being present but an impromptu event led to heads aching from joint creative thinking – or possibly resulting from a few beers...

Several brave souls set out early on Thursday morning for a 'run for water' around Brussels, led by an official city guide, and donated money to

‘Objectif Ô’. The charity, supported at its outset by the European Commissioner for Development and Humanitarian Aid, the Belgian Louis Michel, funds sustainable access to water and sanitation.

The gala dinner was at Autoworld, the car museum of Brussels (after Malaga is this an ongoing theme for congress?) where we were entertained by a great band with a former Vivaqua president on drums – and also by some great movers and shakers on the dance floor (did anyone get any photos??!). Next time there’ll be a prize for the best dancer...

Thanks go to Olivier, Marijke, Tom, Jeroen, Tanguy, Pascal, Séverine and many others, including all the HydroSmurfs!

and introducing the IAH groundwater “torch bottle”!

A new tradition is born. To inspire a spirit of international cooperation and raise awareness about groundwater, a “torch-bottle” left Brazil with Brazilian groundwater, went to Belgium and will go on to China, where the next International Association of Hydrogeologists congress will be held.

Watch video: https://youtu.be/pXfhL0nxNJs

Chapter representatives meet during congress...

Representatives from several national chapters met at the Brussels Congress together with colleagues online. They discussed how chapters had adapted to the COVID pandemic and what plans they had as COVID abates. Many found that the increased number of online events had helped to maintain a link between their members during the pandemic. Many examples were mentioned, including online webinars organised by the national chapters in Chile, Colombia, Spain, Brazil (as part of the run up to the online congress), France, Slovenia, Germany, South Africa, Italy and the UK. Webinars held in English had wide participation.

Participants asked about the 'secrets of success' on how to attract members, including from different backgrounds - academic, commercial, governmental, etc. In a number of countries there are other hydrogeological organisations that compete with the IAH national chapter, but also there are cases where they work alongside each other. For example, the Swiss Hydrogeological Society is a sister organisation to IAH-AIH. It is felt to be less 'academic' than IAH-AIH but may be seen as more relevant to consultants and administrators. IAH-AIH is run alongside the 'French Hydrogeological Committee', with half the members also being individual members of IAH, who tend to be more comfortable with English, the dominant IAH language. Portugal has a programme aimed at increasing ECHN involvement with some memberships available to applicants. Most students, though, were not aware of IAH. The Portuguese chapter has competition from the much wealthier Water Resources Association.

Concerns remain that benefits of IAH-AIH are not clear to prospective members, though some see strong moral and networking reasons for membership. Better communications are needed on benefits and there should be greater involvement of members, for example on a project basis. There should also be better publicity for mentoring and job offers and opportunities should be publicised. It was thought that obtaining more corporate support would help many chapters.

It was agreed that training provision was valuable but the language used can inhibit participants from some countries. A recent successful programme has been the W&C Europe webinars. It was hoped that these should continue and that other Regions would be encouraged to maintain and develop their programmes. Supporting younger members through short courses was felt to be particularly important. Summer courses have been proposed in Portugal, which would be informal and would include field visits and socialising.

Iran National Chapter - in progress

IAH members are also active in Iran, where members convened a meeting on 22 September 2021 with the aim of forming the Iran National Chapter. Dr. Hossein Mohammad Zadeh was proposed as President, supported by Dr. Mohammad Mirzavand as Vice-President, Dr. Zargham Mohammadi as Treasurer, Dr. Rahim Bagheri as Secretary, Ms. Parisa Serati as Student Coordinator and Ms. Fatemeh Asghari Kaleshani as Event Coordinator.

SECRETARIAT

https://iah.org/groups/national-chapters

Find IAH groups

Regional Vice Presidents and National Chapters

At the Council meeting IAH's Regional Vice Presidents highlighted the potential for establishing more national chapters.

In North Africa and the Middle East, members in Algeria and Niger have signalled their interest, as have members in Kazakhstan and Azerbaijan in Eastern Europe and Central Asia. In Sub-Saharan Africa, members in Ghana have set up an informal WhatsApp group as an initial step towards a chapter. There is ongoing interest in Latin America for IAH initiatives. Peru would like to re-establish its national chapter and members in Paraguay hope to be able to form a chapter. The Mexican National Chapter has proposed that there could be an IAH Spanish-language magazine. Colombia has held several online courses and arranged co-operation with local associations and also with associates in Barcelona. The Argentina NC is alive and well, with new directors and a congress in 2022. For new chapters VPs noted that there needs to be the potential for a critical mass. In some countries, though, members don't know each other so joining together is challenging. Some also find IAH membership expensive. In these cases our sponsored membership scheme could help (see https://iah.org/join-us/sponsorship-scheme). VPs agreed that twinning arrangements with wealthier NCs could be useful, though they were aware that past arrangements had met with mixed results. The Indian National Chapter (INC) has increased its membership enormously in recent years and is now one of our largest chapters. Our colleagues in India are preparing for their chapter elections and we look forward to continuing to work with INC's directors. The Canadian chapter has been presenting a series of webinars and online conferences were being presented, including with the Geological Society of America. However, it appears that virtual conferences are less attractive than previously and could be affecting the rate of membership.

Regional VPs want to help ensure that IAH is as meaningful to members in all chapters and countries and are looking to arrange meetings with national chapters and members in their regions.

IAN DAVEY

Great Britain

A transatlantic effort during COP26

IAH's GB Chapter held its annual Ineson Lecture on 9 November and combined this with the 2021 Darcy Lecture. Mike Jones of Thames Water gave the Ineson Lecture on "Groundwater: How does it fit in planning water supply for future climates?". Mike showed how groundwater, both as a resource in its own right and in supporting surface water abstraction, is expected to show resilience in the face of climate change, but pointed out that the demand for water was also growing because of an increasing population.

Chen Zhu of Indiana University, gave one of the three presentations he has prepared for this year's Darcy Lectures, on "How are geochemical reactions in aquifers connected to climate change mitigation". This focused on the great potential within aquifers for carbon capture and storage to help in managing excess CO2 – but also emphasised the enormous increase that will be required in current use of this technology for it to be able to make a difference.

Both lectures were extremely topical, at a time when world leaders have been meeting in Glasgow at COP26. Both were immensely interesting, with different perspectives on the relevance of hydrogeology for managing and adapting to climate change – and also the critical roles and opportunities for hydrogeologists in the challenges ahead. This perhaps gave additional significance to the John Day Bursaries, which recognise outstanding dissertations and this year were awarded to three MSc students at UK universities.

http://www.iah-british.org/

Namibia

Namibian Hydrogeological Association's educational fun walk

The Namibian Hydrogeological Association (NHA - IAH's de facto NC for the country) organised an 8km Hydrogeological education/fun walk open to the general public. The walk was held in Windhoek at the end of May 2021. The aim of the walk was to show interesting hydrogeological sites around the eastern side of Windhoek. The walk covered five (5) major spots, led by a few of the council members of the NHA, and who were additionally accompanied by an official from the Municipality of Windhoek, who oversaw access to the boreholes. The City of Windhoek also made sure the walkers were safe by providing a traffic escort for the duration of the walk - as you can see from the top photo.

The cold winter morning kicked off with a short warm up and stretching exercises, from where the group proceeded to the first site, the Pahl Quelle, a borehole drilled into the Pahl Fault affecting the Auas Quartzite- a major aquifer that supplies Windhoek's potable water. The borehole was of interest because besides being drilled in 1928 to a depth of 165 m into a fault, it was previously artesian flowing and flooded the surrounding buildings on several occasions. It also produces hot water measured at about 79°C. At this site, the participants felt the hot water pipes, and enjoyed other demonstrations, such as how groundwater levels are measured.

The second site was a group of boreholes drilled targeting the major Pahl and Merensky faults at different depths. The water temperature was lower than at Pahl Quelle, at around 40°C, and it was interesting to note that boreholes drilled to shallower depths had lower temperatures. At this juncture, the group participated in some fun activities and a prize was up for grabs.

The third site was the actual exposed section of the Pahl Fault, where a short hydrogeological discussion was had, touching on the role the fault plays on groundwater recharge, extent of the fault and it being a target for groundwater exploration.

The group proceeded to a group of older boreholes before heading to the final site of interest- a domestic borehole, which has an interesting history as narrated by the owner.

After a morning's introduction to groundwater amid a busy city and a hearty history lesson the group tackled the last 3 km uphill back to the starting point where some cold refreshments were eagerly welcomed.

The walk certainly achieved its objective, it was fun and educational and raised interest in hydrogeology, especially amongst the young participants. Similar activities will be organised in the future. Everyone - participants, CoW officials and NHA members adhered to the COBVI-19 safety regulations throughout the walk.

NHA COMMITTEE

diganta@namibhydro.com

Share knowledge and memories... @iahgroundwater #iahgroundwater

Lebanon

Welcome to the new National Chapter

We are pleased to welcome the Lebanese National Chapter to the IAH family. Members held their first meeting in June and elected the committee, headed by President Ramez Kayal, supported by Vice president Wisam Khadra, Secretary Reda ElGhawi, Treasurer Saeed Mhanna and member at large Joanna Doummar (also IAH Vice President for North Africa and the Middle East, of course). They propose to hold monthly meetings to take forward their main objectives for the next year:

- Awareness-raising material, to promote hydrogeology and karst locally and regionally
- Contributing to the 2022 groundwater year, with a webinar or workshop proposed to highlight groundwater research in Lebanon
- Issues concerning groundwater policy; and
- Education at all levels

President: Mr. Ramez Kayal, rkayal@elard-group.com

Secretary: Reda ElGhawi, rmg13@mail.aub.edu

Australia (for Nepal)

IAH NSW and Australia supporting Ellen Kwantes' hydrogeology aid works in Nepal

Ellen Kwantes, the Australian Volunteers Program (AVP) and IAH are providing hydrogeology aid for an important project in the Kathmandu Valley. Ellen is an Associate Hydrogeologist working in Sydney and a committee member of IAH NSW. She recently started a remote assignment with the Kathmandu Valley Water Supply Management Board in Nepal. The Australian government-funded AVP project focusses on assisting the local team with their conceptual and numerical model development for the Kathmandu Valley. AVP matches a broad range of skilled Australians with partner organisations in the Indo-Pacific region. These partnerships help local teams achieve their development goals through capacity building.

Ellen has a special connection to Nepal. Her husband is from Nepal and she has always wanted to contribute to groundwater management in the Kathmandu Valley. In 2019 she took long service leave and spent 2 ½ months in Nepal with her family. During this time she volunteered for the NGO , which also enabled her to make contacts at the Kathmandu Valley Water Supply Management Board.

She is now volunteering with a team of three young hydrogeologists. She is training them in the use of Groundwater Vistas groundwater modelling software and other software packages. It's been a great experience for Ellen and the team, including opportunities to further develop knowledge of the hydrogeology of the Kathmandu Valley. The AVP program is currently running three-month remote assignments. However, assignment durations are likely to be extended, due to COVID and the need for local hydrogeologists to develop their conceptual and numerical modelling skills.

IAH NSW and IAH Australia are jointly supporting this project by providing funds for software-licencing fees.

https://www.iah.org.au/

IN MEMORIUM

Professor Aurelio Aureli

Aurelio Aureli was Professor at the University of Catania and Palermo. He taught Geomorphology and Applied Geology. During his long career, he studied many aspects of Sicilian Hydrogeology, producing the firsts vulnerability maps in Sicily. He was author of many papers, published in International Journals and presented at International Conferences around the world.

He was a man of great culture, not only passionate about geology, but also a great lover of history and literature. He collected ancient books and maps and he was able to spread his passion for researching, opening the door of his office, and sharing data and ancient books to every student or researcher. His last unpublished work, titled "Sicula Terra", was in fact intended to share all the data acquired in his long career.

He was thesis supervisor for hundreds of students, teaching them not only the aspects strictly related to the geology, but also the way to approach problems and how to solve them. This aspect, merged with his wonderful character, made him not only a professor, but a special person, always willing to help you in your professional career. He encouraged his students and collaborators to study abroad and to work in international teams, to attend conferences and present their works. He allowed his students and collaborators their won space and, as result of this, a large number of published papers see only the student's name as Author.

During the last years of his life, he continued to read and to feed his passions, remaining always available to give his help in professional issues. It seems unreal that, within a few hours, everyone who came to know him, gained the awareness of his human nature. The void he left in all the people who had the honour of knowing him is unbridgeable.

He was, of course, Alice Aureli's father and our thoughts go out to Alice for this sad loss.

SALVATORE CARRUBBA

Professor Giorgio Ghiglieri

Giorgio Ghiglieri, professor of Hydrogeology and Engineering Geology at the Department of Chemical and Geological Sciences at the University of Cagliari, suddenly passed away on August 10, 2021 at age of 58.

Giorgio concentrated his research interests for more than 30 years on hydrogeology and environment, protection of aquifers from contamination, managed aquifer recharge, salt-water intrusion, landslide hazard and desertification in Italy and Africa. He has directed numerous research projects in Sardinia and in developing countries, always involving colleagues and students.

His love for Africa led him to contribute with his research to the primary needs of African populations, considering the fight against desertification, the location of groundwater, and his management as a primary asset. Recently, he coordinated the H2020 Flowered Project aimed at improving health by the mitigation of fluoride contamination. Those activities, carried out in Ethiopia, Kenya, Tanzania, Mauritania, Benin, Tunisia, and Algeria, among others, have constituted perhaps the most important commitment for him and have led him to collaborate with researchers from different countries, with different administrative and academic realities, but also with non-governmental organizations. Over time an important network of research relationships has been built, committed to cultivating and expanding by developing ever larger international working groups. And still during these final days he continued to carry out these projects with the usual enthusiasm that distinguished him.

Still too young he leaves a void that is difficult to understand and that cannot be reduced only to his role as a teacher and researcher. All his colleagues, students, and friends, join the pain of his family members for this unbridgeable loss.

STEFANIA DA PELO

49th IAH Congress – China 2022
GROUNDWATER SUSTAINABILITY AND POVERTY REDUCTION

The theme of the 49th IAH Congress is "Groundwater Sustainability and Poverty Reduction". Poverty reduction is a top priority for most countries in the world. Unfortunately, most of the poor countries and regions have been faced with serious problems of water scarcity and contamination. It is the mission and ultimate responsibility of the international community of hydrogeologists to help the people get access to sustainable safe supply of fresh groundwater. With your active participation to share your ideas, experiences and knowledge, we believe this congress in China will be a great success, and look forward to meeting you in in Wuhan!

CHINA ORGANISING COMMITTEE

Watch an introductory video during which Prof. Yanxin Wang, on behalf of the organising committee, provides a warm welcome!

China Congress website - http://www.iah2022.com

DIARY DATES & EVENTS

2022 - SELECTION

20-22 March - Cyprus
12th International Hydrogeological Conference
Groundwater resources, protection and management, in our ever-changing environment. Organised by Association of Geologists and Mining Engineers of Cyprus in collaboration with the Hellenic Committee of Hydrogeology member of the Geological Society/IAH Greece. https://hydrogeologyconference2020.com.cy/

22 March - WORLD WATER DAY
Groundwater, Making the Invisible Visible
See page xxx of this newsletter - and tell us your plans! Questions or comments? Email info@iah.org.
https://www.worldwaterday.org/

11-16 April – USA
11th International Symposium on Managed Aquifer Recharge (ISMAR11)
Managed Aquifer Recharge, A Key to Sustainability. The International Symposium on Managed Aquifer Recharge (ISMAR) is the world's preeminent symposium on managed aquifer recharge (MAR). With the continued unsustainable, overuse of groundwater in many areas of the world, managed aquifer recharge, or the intentional recharge of groundwater aquifers, has become more important than ever in recovering depleted aquifers and developing resilient groundwater supplies for the future. Organised by The Groundwater Resources Association of CA, Arizona Hydrological Society, Orange County Water District. http://ismar11.net

18-20 May, France
International Conference: "Groundwater, Key to the Sustainable Development Goals"
This conference will examine the overall relationships between water-related SDGs targets, their stakeholders and groundwater. It will enable sharing of knowledge, experiences, findings and good practices on GWR in sustainable development trajectories, to elaborate recommendations to ensure the best integration of groundwater resources into the SDGs. Organised by IAH's French National Chapter, UNESCO's Intergovernmental Hydrological Programme, and the French Water Partnership (FWP), under the patronage of the French National Commission for UNESCO and with the support of the French Ministry of the Ecological Transition, the Seine-Normandy Water Agency, and Sorbonne University. http://www.gw-sdg2022.fr/

22-25 June – Spain
Eurokarst 2022
Eurokarst is the European bi-annual conference on the hydrogeology of karst and carbonate reservoirs. Organised by CEHIUMA and IGME in cooperation with universities of Neuchatel and Franche-Comte. http://www.eurokarst.org/

26-30 June, Italy
MinWat2020 (rescheduled date)
3° International multidisciplinary conference on mineral and thermal waters. 3° International multidisciplinary conference on mineral and thermal waters. Organised by Commission on Mineral and Thermal Waters of IAH and IAH Italy. http://www.minwatitaly2020.org

18-23 September, China
49th IAH Congress - Groundwater Sustainability and Poverty Reduction
Poverty reduction is a top priority for most countries in the world. Unfortunately, most of the poor countries and regions have been faced with serious problems of water scarcity and contamination. With your active participation to share your ideas, experiences and knowledge, we believe this congress in China will be a great success, and look forward to meeting you in in Wuhan!
http://www.iah2022.com

https://iah.org/events
For a fuller list of conferences, events and meetings and to submit an event

Share knowledge and memories... @iahgroundwater #iahgroundwater