

NEWS

& information

IAH - THE WORLD-WIDE GROUNDWATER ORGANISATION

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

DECEMBER 2020

Also in this issue:

From our (new) President Conference & research reports
International engagement
Member news and initiatives
Competitions and calls
Chapter updates
Commissions & Networks
Congress updates
Events listing

and the regular IAH announcements and news



June 2020: a reconnaissance survey in northern Uganda for the identification of farmer groups who should benefit from an irrigation scheme for their farms, funded by FAO Uganda. Congratulations to Charity Kisirisa, winner of this year's IAH photo competition. We're in touch with Charity to make sure she safely receives her prize. More winner announcements - and new prize draws - are within... and again we say stay safe, stay well.

WELCOME TO OUR NEW COUNCIL!

The results of the election for the new IAH Council were declared at the Annual General Meeting of the Association, which this year was held online. Election report and new Council information is within.

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EQUALITY, DIVERSITY AND INCLUSION

As announced at our AGM, the new Socio-Hydrogeology Network recently launched a survey on 'Gender and Groundwater', in collaboration with the UNESCO-World Water Assessment Programme (UNESCO-WWAP). Participate now!

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INTERNATIONAL
ASSOCIATION OF
HYDROGEOLOGISTS

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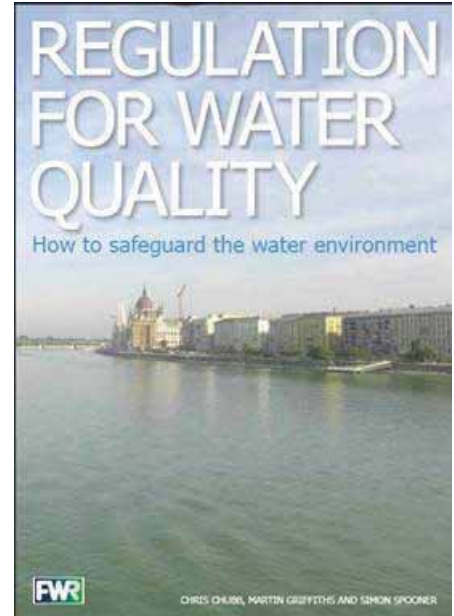
DECEMBER 2020

WIN A COPY OF “REGULATING FOR WATER QUALITY - HOW TO SAFEGUARD THE WATER ENVIRONMENT”

We have a print edition of “Regulating for Water Quality - How to Safeguard the Water Environment” from The Foundation for Water Research available in a prize draw. You do not have to be an IAH member to enter.

We’re sure many of you will be aware that it is possible to download the book from <http://www.fwr.org/WQreg/index.htm>, but we know that for some (especially in recent times), the reassuring feel of a *real* book in hands still feels special! If this is you, or someone you know, entry information is below.

“It can be argued that water is the most precious of all natural resources and is therefore most in need of good regulation. Too much water causes floods, too little causes water scarcity and drought. Activities that pollute water make it unavailable for drinking, industry, food production and wider societal use. Cleaning up polluted water is very expensive and therefore water protection and pollution prevention activities are very cost-effective options.”



To enter to win, complete your details here: https://www.surveymonkey.co.uk/r/RWQ_book

Terms and conditions:

Prize draw closes 11.00pm GMT on Wednesday 31 March 2021. Entry is open to all. 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 2021 edition of “News and Information”.

Questions or comments? Email info@iah.org

SECRETARIAT

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.



For many, under the disorientation of lockdown, days have become blurred as time merges into one experience, hunched and 'zoomed out' in front of the computer screen...

It has been an extraordinary year, with no let-up in sight for many as yet – a roller-coaster experience, but without the thrills and few of the positive emotions. We have pretty much run out of phrases to describe this 'unprecedented year of challenging, difficult and uncertain times'. Undoubtedly the support of family, friends and colleagues has been valued even more, and perhaps some have found depths of resilience they didn't know they had. All of us, though, look forward to better times ahead.

Still, it is good to see that many activities have been able to evolve and continue, with increasingly successful use made of webinars, though it is difficult to replicate the benefits and pleasure of networking with friends and colleagues at face to face meetings. We joined this trend by holding our Council Annual General Meeting online for the first time.

At the AGM, Council's recommendation to freeze membership fees for 2021 was agreed by members. Members also heard that Council had decided that the IAH Congress for 2023 would take place in Cape Town, South Africa, to follow China in 2022 and, of course, what is now the double act of Brazil and Belgium in 2021. Do look out for updates from the 2021 Organising Committees, which are now very active in setting up newsletters and webinars. Both invite you to submit your abstracts now.

IAH's finances, despite all of the problems associated with the pandemic, are up – but regrettably membership is down, with the current level of 3994 around 10% lower than last year's high (partly owing to the economic impact of the pandemic, but also as we normally welcome new members at our various events throughout the year). But with lower expenditure we have been able to maintain our reserves to help us withstand ongoing economic uncertainties and we have the possibility to use more funds for IAH's charitable activities.

We now have a new Council, following this year's elections. Although the proportion of IAH members who voted is lower than last time, in 2016, it still compares well with that of similar organisations. Considering the distractions this year, it's good to see that we had this level of participation. We welcome the

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new Council and wish them 'all the best' for their term as the senior representatives for all IAH's members. In their first meeting they promised that their doors would be open to all members in their Regions and for their other responsibilities – virtually of course, via email!

A priority for them will be to consider the programme of work for the next four years. They have a sound foundation to build on following the hard work of the previous Council members and our sincere thanks go to them. Items already under review are the next strategic plan, with several other initiatives to enhance member benefits under consideration.

All at the Secretariat wish you all well for the remainder of 2020 and for 2021, whatever it brings.

IAH SECRETARIAT





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PITEAU ASSOCIATES

GEOTECHNICAL AND WATER MANAGEMENT CONSULTANTS

ANNOUNCING OUR NEW PRESIDENT

The Board of Directors of Piteau Associates is pleased to announce the appointment of Jeremy Dowling as President, effective October 1, 2020. Jeremy succeeds Mark Hawley, who has held the position of President and CEO since 2009. Mark will continue as CEO and Chairman of the Piteau Group.



Jeremy Dowling
President
Chief Advisor-Hydrogeology

Jeremy joined Piteau Associates in 2016 as Vice President of Mine Water Management, and currently resides in Tucson, Arizona. He has over 25 years of global experience in mining hydrogeology, surface and underground mine dewatering, pit slope depressurization, mine water management, integrated groundwater and engineering geology studies. Prior to joining Piteau Associates Jeremy was a member of the Strategic Management Team at Water Management Consultants and later with Schlumberger Water Services. Since joining Piteau Associates he has been instrumental in the growth and global expansion of Piteau Group and the integration of our Geotechnical, Hydrogeology and Mine Water Management teams.

"I am very excited for the future of the Piteau Group under Jeremy's leadership" says Mark Hawley. "He will guide our continued expansion in North & South America and Europe & Africa and identify new opportunities in other regions. He has a proven track record of providing practical, value-based solutions to our clients, growth and development opportunities for our staff, and profitable and timely project delivery. Congratulations Jeremy!"

Piteau Associates is an employee-owned company with offices in the Americas, Europe and Africa. We provide a comprehensive range of geotechnical, hydrogeological and environmental consulting services to the mining, energy, municipal and industrial sectors worldwide. We are focused on delivering practical, innovative and environmentally responsible solutions.

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MEDIA FOCUS

A selection of groundwater features from around the world

THE UNDEREXPOSED EFFECTS OF CLIMATE CHANGE ON GROUNDWATER: AN OUT-OF-SIGHT CRISIS

It is well known climate change challenges are currently receiving more and more attention worldwide. However, the effects these challenges have on groundwater are still underexposed. There is an urgent need to address this out-of-sight, growing crisis.

<http://sdg.iisd.org/commentary/guest-articles/the-underexposed-effects-of-climate-change-on-groundwater-an-out-of-sight-crisis/> and https://iah.org/wp-content/uploads/2019/07/IAH_Climate-ChangeAdaptationGdwtr.pdf

IN A THIRSTY WORLD, INFORMATION GAPS DOG A PUSH TO TAP GROUNDWATER

As growing populations and accelerating climate change worsen water scarcity pumping more from underground could help fill the gap in poorer nations – but only if supplies are better charted and they are used wisely. Limited information about how much groundwater is available and poor organisation between government agencies can mean it does not reach people effectively.

<https://news.trust.org/item/20201019162247-3jalp/>

COULD FRACKING PLANS AFFECT SHARED WATER RESOURCES IN SOUTHERN AFRICA?

Plans are in preparation for exploring for oil and gas in some of Africa's most sensitive protected areas, including the Namibian headwaters of the Okavango delta and a world heritage site, Tsodilo Hills, in Botswana. Plans are afoot to explore inside the Kavango-Zambezi transfrontier conservation area. Both conventional and unconventional oil and gas are the targets, with specialised methods, such as fracking, being considered for extraction.

<https://theconversation.com/how-fracking-plans-could-affect-shared-water-resources-in-southern-africa-147684>

GROUNDWATER AND GLACIER GROWTH

A new study has demonstrated that irrigation in parts of High Mountain Asia is having profound effects on maintaining or growing some of the region's glaciers, in contrast to the dramatic shrinking of glaciers elsewhere through global warming. But this is increasingly threatened by stress on groundwater, the primary source for irrigation, which is being depleted as irrigation expands and intensifies.

<https://blogs.ei.columbia.edu/2020/10/15/irrigation-glacier-growth/>

ALBERTA OIL SANDS TAILINGS PONDS MAY BE TAINTING GROUNDWATER

An environmental watchdog says it has found "scientifically valid evidence" that Alberta's oilsands tailings ponds are contaminating groundwater sources. Alberta's chief scientist says he is reviewing their report.

<https://www.cbc.ca/news/politics/oilsands-tailings-groundwater-contamination-1.5711471>

GROUNDWATER CRISIS IN ZIMBABWE BROUGHT ON BY DROUGHTS

Zimbabwe's groundwater is disappearing fast, leaving rural communities without water for household and agricultural use. Although drought years are part of the normal climate cycle in this part of Africa global warming is causing droughts to become more frequent, more intense and less predictable.

<https://eos.org/articles/groundwater-crisis-in-zimbabwe-brought-on-by-droughts>

NEW MEXICO'S OIL FIELDS HAVE A SINKHOLE PROBLEM

The hunt for industrial brine has opened massive and unexpected sinkholes, which is taking delicate work, and more than \$54 million, to fill.

<https://www.hcn.org/articles/climate-desk-energy-industry-new-mexicos-oil-fields-have-a-sinkhole-problem>

GROUNDWATER STORES RESILIENT TO CLIMATE CHANGE – THOUGH CAUTION REQUIRED

A new study suggests fewer aquifers are depleting than previously but the authors urge caution in unsustainable extraction levels. The findings suggest that although groundwater depletion is occurring in many parts of the world the scale of depletion is more localised than past studies have indicated.

https://www.eurekalert.org/pub_releases/2020-08/uos-mog082520.php

SOME CALIFORNIA CITIES THINK THEY'RE SAFE FROM SEA LEVEL RISE. THEY MAY NOT BE...

Sea level rise is a lot more complicated than just waves breaking over seawalls and beaches disappearing. As the ocean level rises inland it will push groundwater upward until it breaks the surface. Basements will heave, brackish water could corrode sewer pipes, toxic contaminants buried in the soil could bubble up and spread.

<https://phys.org/news/2020-08-california-cities-theyre-safe-sea.html>

WATER BANKING COULD PREPARE FOR DROUGHT

Areas in the Murray-Darling Basin could be used to store vast amounts of water underground and help build drought resilience, a CSIRO study has found. Water banking - known as managed aquifer recharging - is when water is stored underground to be used later for irrigation and town water supply.

<https://www.denipt.com.au/national/2020/10/28/1885767/water-banking-could-prepare-for-drought>

SCIENTISTS STRIVE TO EXPLAIN GROUNDWATER FLOW IN MINNESOTA'S KARST REGION

Minnesota scientists, geologists and groundwater experts have teamed up to help educate residents about groundwater flow in southeast Minnesota. Using a combination of high-resolution drone camera imagery, 3D graphics and animation, they worked with a Farmington company to produce videos and infographics that illustrate southeast Minnesota's geology, landscape and groundwater flow.

<https://www.farmprogress.com/conservation/scientists-strive-explain-groundwater-flow-minnesotas-karst-region> and <https://www.mda.state.mn.us/segwresources>



IAH COUNCIL MEETS ON SCREENS

IAH Council members met one last time before handing over the reins to the new Council.

First on the agenda, and always of paramount importance, was consideration of the financial situation. Although the income from membership fees was less than last year, outgoings were lower, and as a result, finances appeared to be in a reasonable state. This gives the opportunity for some further spending on IAH's charitable activities, which members thought the incoming Council should decide on. They felt strongly that sufficient reserves should also be maintained in case of challenging financial conditions in 2021.

Teodóra Szócs, Vice President for Finance and Membership, reported that membership had fallen significantly in many countries, but there had been an increase in Russia. Overall membership was down by around 10%. It was also acknowledged that some national chapters were in need of support to maintain their activities. It was recommended that in view of the ongoing pandemic and concerns from many individual and corporate members that there should be no increase to any of the fees. Those who had not been able to maintain their membership in 2020 should be encouraged to rejoin in 2021.

Council discussed ways that IAH could support members in their continuing professional development. Although a formal scheme would not be practical it was agreed that informal guidance should be prepared for those who are unable to join schemes that already exist in many countries. This could include information on the IAH website to help identify training programmes and events, including through IAH's congresses and meetings, and how to gain CPD points. Many National Chapters and Commissions and Networks are also active, with recent examples being the Colombian Chapter uploading presentations to YouTube, and the Portuguese Chapter promoting the online conference on geoethics. The US Chapter was also beginning its own webinars.

Members have also asked from time to time for information on jobs and Jared van Rooyen informed Council that the Early Careers Hydrogeologists Network was already working on this.

Cliff Voss reported that Hydrogeology Journal continued to do well, with citations and downloads growing. Submissions and content were also growing, and Cliff was mindful of the workload that this presented for all involved in managing the Journal. There had been a lot of additional effort during the year, too, on the preparations for a change to Editorial Manager for managing submissions.

IAH supports the 'sister' journal, 'Sustainable Water Resources Management', and it was thought that for some papers, this could be a valuable route for publication.

HJ articles are expected to include location maps but there were increasing concerns about the use of disputed borders for these. It was agreed that UN-agreed borders should be used, though authors should also be invited to include a statement on any variance there might be with other boundaries that were advocated.

Council heard updates on progress for the Congresses in Brazil, Belgium, both now in 2021, and China (2022). They were pleased to agree to the proposal for the 2023 Congress to be held in Cape Town, South Africa.

IAN DAVEY, SECRETARIAT





IAH COUNCIL ELECTION 2020

We are pleased to announce that the results of the election for the new IAH Council were declared at the Annual General Meeting of the Association, which this year was held online. 1003 members voted, a turnout of 25.1%. This is significantly lower than the turnout of 36.8% in the last election in 2016 and we will review what lessons we can learn from the way we conducted the elections this time.

Of course, 2020 has been an extraordinary year for everyone across the world and we realise that some of you may have had matters other than the IAH elections on your mind. We are aware too that some members may have had problems in receiving the invitation to vote, which may have been related to protective firewalls. Our contractor tried various other ways of ensuring that invitations were received and we believe that these were successful. In some cases, the email invitation found its way to junk folders, so it's always worth checking if there is something there if you are expecting an important communication.

We thank all the candidates for putting themselves forward and for being willing to serve IAH if successful. The results were:

Role	Candidate	Votes
President	David Kreamer	800
Secretary General	Jane Dottridge	784
Vice President, Finance and Membership	Teodóra Szőcs	772
Vice President, Programme and Science Coordination	Ralf Klingbeil	762
Vice President, Asia	Devinder Kumar Chadha	487
	Han Zaisheng	279
Vice President, Australasia & Pacific	Sarah Bourke	595
	Theo Sarris	189
Vice President, Europe & Central Asia	Natalia Vinograd	677
Vice President, Europe (West and Central)	Marco Petitta	721
Vice President, Latin America & the Caribbean	Carlos Molano	668
Vice President, Middle East & North Africa	Joanna Doummar	653
	Ahmed Fekri	117
Vice President, North America	Grant Ferguson	551
	Gary Robbins	121
	Mike Wireman	87
Vice President, Sub-Saharan Africa	Seifu Kebede Gurmessa	336
	Ahmad Abubakar Kana	208
	Kevin Pietersen	195



Meet our new Council!

Our new Council held its first meeting in October. Everyone introduced themselves and expressed their aspirations for the coming years. Some of the 'old hands' gave advice on how it's been done in the past, but all will no doubt find their own way – starting with a check of the IAH Rules and studying guidance on being a trustee of a charity, with all the responsibilities for governance that this entails. They are ambassadors for IAH – as of course are all our members. We wish them well!



Prof. David Kreamer, IAH President (USA)

David Kreamer, Ph.D. is a Professor of Geoscience, and past Director of the interdisciplinary Water Resources Management Graduate Program at the University of Nevada, Las Vegas. Dave formerly served as Vice President for Science and Programme for the International Association of Hydrogeologists (IAH), past IAH Vice President for North America, and as IAH U.S. National Chapter Secretary. Dave also served as Division Director of the National Groundwater Association and is a past President of the Universities Council on Water Resources.



Jane Dottridge, Secretary General (UK)

Jane Dottridge is a hydrogeologist with over 40 years' experience in groundwater and contaminated land. She is a Technical Director at Mott MacDonald (a global engineering consultancy), providing technical advice and oversight to the contaminated land and water resources teams based in Cambridge, UK. She has been a member of IAH since 1990 and chaired the British National Chapter from 2006-2011. She participates in the mentoring scheme and was on the judging panel for the Applied Hydrogeology Award from 2016-19.



Dr. Teodóra Szócs, Vice President - Finance and Membership (Hungary)

Teodóra Szócs was Head of the Hydrogeology Department at the Geological Institute of Hungary from 2007, then 2012-2017 at the Geological and Geophysical Institute of Hungary (MFGI), before becoming Head of the Hydrogeology Department when MFGI joined the Mining and Geological Survey of Hungary. Teodóra was Secretary of the IAH Hungarian National Chapter (2006-2008), President (2008-2010) and a board member from 2010 and she was IAH Regional Vice President for Western Europe (2012-2016) and VP for Finances and Membership from 2016.



Dr. Ralf Klingbeil, Vice President, Programme and Science Coordination (Germany)

Ralf Klingbeil is a Senior Expert, Groundwater at BGR, the German Federal Institute for Geosciences and Natural Resources, where his focus is on international groundwater, networking and public relations for groundwater and soil science. In the past he has worked as hydrogeologist with private companies in Germany and the UK, and with the UN, including several years as Regional Advisor Environment and Water for a UN regional commission based in Lebanon. He was also a member of the Board of Directors for MENA NWC, the Middle East North Africa Network of Water Centres of Excellence, from 2014-2017.



Prof. Antonio Chambel, IAH Past President (Portugal)

António Chambel has been a lecturer at the Department of Geosciences of University of Évora since 1985. He was also a lecturer at the University of Algarve, the Universities Charles of Prague, Huelva (Spain) and Sapienza, Rome and at the Superior Institute of Transports and Communication in Maputo, Mozambique. António has been an IAH member since 1988 and was President of the Portuguese Chapter, IAH Vice-President for Finance and Membership, Vice-President for Programme and Science Coordination, before becoming IAH President in 2016.



Dr. Sarah Bourke, Vice President Australasia and the Pacific (Australia)

Sarah Bourke was a post-doctoral fellow at the University of Saskatchewan in Saskatoon, Canada, before returning to the University of Western Australia in Perth as a Lecturer and Course Coordinator of the Master of Hydrogeology in the School of Earth Sciences. Sarah has been engaged in IAH activities for 15 years and is the Chair of the Western Australian chapter. She is a member the Australian Water Association and Women in Earth and Environmental Sciences Australasia.



Dr. Joanna Doummar Vice President, Middle East and North Africa, (Lebanon)

Joanna Doummar is assistant professor of hydrogeology at the department of Geology at the American University of Beirut (AUB) in Lebanon. Joanna is a member of the IAH Karst Commission, has been accepted into the World Economic Forum Young Scientists Community-Class of 2020, and is co-founder of LAUS (Local Association for Underground Studies) aiming at encouraging science and service work in hydrogeology at a local scale.



Dr. Seifu Kebede Gurmessa, Vice President - Sub Saharan Africa, (Ethiopia and South Africa)

Seifu Kebede Gurmessa currently works with the School of Agricultural Earth and Environmental Sciences and Centre of Water Resources Research, University of KwaZulu Natal. In the past he has been an Associate professor at the School of Earth Sciences, Addis Ababa University, Ethiopia and has worked with the International Atomic Energy Agency. He is a past President of the Ethiopian National Chapter.



Prof. Devinder Kumar Chadha, Vice President, Asia (India)

Dr Devinder Kumar Chadha is Chair Professor & Chairman, Centre for Advanced Water Technology & Management, Manav Rachna International Institute of Research & Studies, Faridabad, India. He was Chairman, Central Ground Water Board & Central Ground Water Authority and held roles from Deputy General Manager to Group General Manager in RITES, India, a public sector enterprise for earth sciences technical services. He is a past President (on 2 occasions) of the Indian Chapter and also a past Secretary.



 [continued] Meet our new Council!



Prof. Grant Ferguson, Vice President, North America (Canada)

Grant Ferguson is a Centennial Enhancement Chair and Professor in the Department of Civil, Environmental and Geological Engineering and School of Environment and Sustainability at the University of Saskatchewan and an Adjunct Professor in the Department of Hydrology and Atmospheric Sciences at the University of Arizona. He is a past President of the IAH Canadian National Chapter and was one of the founders of the IAH's Early Career Hydrogeologists Network.



Dr. Natalia Vinograd, Vice President - Eastern Europe and Central Asia (Russia)

Natalia Vinograd is Associate Professor of Hydrogeology in the Institute of Earth Science, St Petersburg University. She has previously worked at the All-Russian Research Institute of Petroleum Geology (1992-1993) and with ESB International in Ireland (1997). Natalia joined IAH in 1997 and the Commission on Mineral and Thermal Waters (CMTW) in 2001. She is also a member of the Russian Union of Hydrogeologists since 2012. Natalia was elected IAH Vice-President for Eastern Europe and Central Asia in 2016.



Prof. Carlos Molano, Vice President - Latin America and the Caribbean (Colombia)

Carlos Molano is Professor of Groundwater Flow and Pollution in the Department of Civil and Environmental Engineering at Los Andes University in Bogotá, founder and President of HydroGeocol where he has been working as a consultant hydrogeologist since 1988. He is co-founder and member of the Colombian Association of Hydrogeologists, former Vice-President (2004-2012); co-founder and member of ALHSUD and former Vice-President (1998-2006). He also contributed to IAH's 2010-2020 Forward Look strategic plan.



Prof. Marco Petitta, Vice President - West and Central Europe (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 has been Vice-President of IAH for Western and Central Europe since 2016. 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.

 <https://iah.org/about/council>

Equality, Diversity & Inclusion

As announced during this year's Annual General Meeting the new Socio-Hydrogeology Network recently launched a survey on 'Gender and Groundwater', in collaboration with the UNESCO-World Water Assessment Programme (UNESCO-WWAP). The aim of the survey is to obtain gender-specific information for people working in the groundwater sector and to assess whether - or to what extent – there is already gender sensitivity. The survey takes into account personal education, current employment and gender aspects, and it is based on the initiative by Ana Maciel de Carvalho (Federal University of Jequitinhonha and Mucuri Valleys, Brazil) and Bella Castilho (State University of Campinas, Brazil), performed in Brazil early 2020.

The online survey is available in English, French, German, Italian, Japanese, Portuguese and Turkish, and it takes less than 5 minutes to fill it. For more information and links to the survey, please visit the IAH-SHG website (<https://sociohydrogeo.iah.org/groundwater-and-gender>).

We welcome your participation and we look forward to sharing the results!

More generally, issues of equality, diversity and inclusion are important to us and a statement has been produced which will be available in the near future. With 4000 members across 130 countries, diversity is inherent in our membership. We promote equality, diversity and inclusion.

Equality means ensuring individuals and groups are treated fairly and equally. This involves taking into account the different experiences and needs of all.

Diversity is recognised by understanding that each individual is different; supporting diversity produces fairer and better outcomes.

Inclusion means including or being included within a group or structure. Promoting an inclusive culture is about recognising the value of diversity and providing support that might help all to realise their potential.

Look out for special sessions, workshops and short courses at our congresses in Brazil and Belgium next year!

SECRETARIAT & IAH SOCIO-HYDROGEOLOGY NETWORK CO-DIRECTORS



<https://sociohydrogeo.iah.org/groundwater-and-gender>

FROM OUR PRESIDENT



Dear members, dear colleagues...

I would like to extend a warm welcome to all our members and returning professionals. The world has been experiencing the worst global pandemic in decades, with strong implications for the future of hydrogeological practice, research, and funding. First and foremost, I hope that you, your families and friends, and your colleagues are well. There are important challenges before the International Association of Hydrogeologists, and one of the most important is to contribute to the stability of the world through our science, research, outreach, and advocacy for the wise use and protection of groundwater.

I've been convinced for many years that hydrogeologists have one of the greatest jobs possible. We have the potential to do many good things on the planet, relative to many other professions. The need for having sustainable groundwater is a key element in global resilience to climate change, as a shield against ecosystem loss, as a defense against human deprivation and poverty, and for peace and equity in the world. The IAH is a registered charitable organization made up of dedicated volunteers that can address these challenges. Our professional world and science represents one of the most interdisciplinary and intellectually challenging fields of endeavor possible. The diversity and global scope of our organization provides unique opportunities for people, ranging from students and those just starting out to experienced groundwater experts.

In the coming months of Covid-19 uncertainty, IAH is forging ahead and we are appreciative of all our colleagues and the larger hydrologic community. As IAH Vice President for Science and Program over the last 4 years, I have been overwhelmingly impressed by the dedication and accomplishments of our colleagues including those in our Commissions and Networks, National IAH Chapters from around the world, our governing IAH Council, our steadfast IAH Secretariat, and the special efforts of the editors, translators, and authors who produce and contribute to our books, journals, videos, Strategic Overview Series, conferences, and congresses. For those IAH members and colleagues who have not yet met these thousands of talented and accomplished individuals from approximately 130 countries, you have a host of resources, potential activities and collaborations awaiting you. To the younger members of the Association, the Early Career Hydrogeologists Network welcomes you back.

Thanks and appreciation is due to the outgoing members of our IAH Council for their hard work through the years: Ken Howard (Canada), Bruce Misstear (Ireland), Wendy Timms (Australia), Callist Tindimugaya (Uganda), Ahmed Fekri (Morocco), Joanne Thompson (Canada), and Makoto Taniguchi (Japan). Welcome and welcome back to our new and returning members of the Council: Antonio Chambel (Portugal), Teodora Szocs (Hungary), Jane Dottridge (United Kingdom), Ralf Klingbeil (Germany), Devinder Kumar Chadha (India), Sarah Bourke (Australia), Natalia Vinograd (Russia), Marco Petitta (Italy), Carlos Molano (Columbia), Joanna Doummar (Lebanon), Grant Ferguson (Canada), and Seifu Kebede Gurmessa (Ethiopia). We have gratitude to all those who stood for election and to those who, everyday, contribute their time and effort to the IAH community.

Let's have a great year.

DAVE KREAMER

[ed: we look forward to being able to feature a photo of Dave speaking "presidentially" at an IAH event...]

INTERNATIONAL ENGAGEMENT

The pandemic has reduced the opportunities for international engagement but increasingly these are taking place online. As this trend continues, it is certainly our hope that IAH may be able to participate in these meetings more easily.

SECRETARIAT

World Water Week – Stockholm International Water Institute (SIWI)

IAH contributed to three webinars, organised by GRIPP (Groundwater Solutions Initiative for Policy and Practice) with the collaboration of AMCOW (African Ministers' Council on Water), BGR (German Federal Institute for Geosciences and Natural Resources) and the University of Victoria, Canada, at this year's online event. The webinars considered groundwater resilience under climate change and other global disrupters. They were targeted towards policy makers, practitioners, researchers, development partners and the private sector and aimed at highlighting groundwater-smart solutions, management strategies and partnerships for resilience of the groundwater resource and the people and ecosystems depending on it.

- In the webinar on, "AMCOW's Pan-Africa Groundwater Program – A Roadmap to Resilience" Callist Tindimugaya shared "Lessons from Uganda on National Level Groundwater Management". (See <https://www.youtube.com/watch?v=UhT1IW87T04>)
- IAH was joint convener of, "Global Groundwater Sustainability Statement – Call to Action for Resilience", with Dave Kreamer as the moderator. (see <https://www.youtube.com/watch?v=0ujmhC6ilyw&t=15s>)
- Under "Groundwater to the Rescue! Climate Adaptation from the Underground", Antonio Chambel gave a keynote presentation on "Practical Examples of groundwater-based climate adaptation". (See <https://www.youtube.com/watch?v=grFk9EowCfk>)



UNEP World Water Quality Alliance

Groundwater quality is a major cornerstone of the UN Environment-coordinated World Water Quality Assessment (<http://www.wwqa-documentation.info/>) which also considers rivers, lakes and freshwater ecosystems. There are plans for accelerating progress on this initiative and support is being given by several institutions concerned with groundwater-quality issues at the international level - the "Friends of Groundwater". The partner organisations are IAH, IGRAC (International Groundwater Resources Assessment Centre), BGR, the Swiss Federal Institute of Aquatic Science and Technology (Eawag) and Umvoto Africa.

World Water Day 2022: "Groundwater: Making the invisible visible"

Preparations continue for this and a draft storyline report is being prepared by UNESCO, supported by IGRAC and IAH. This will act as a planning document for the full World Water Development Report, which will be published in March 2022 for World Water Day.

 Questions or comments? Email info@iah.org

Report from Tibor Stigter

Online Conference 2020 “Addressing Groundwater Resilience under Climate Change”

The Online Conference 2020 “Addressing Groundwater Resilience under Climate Change” was held from 28 to 30 October 2020, organised by the International Water Resources Association (IWRA), jointly with UNESCO Intergovernmental Hydrological Programme (IHP), and supported by our association IAH. It was a great event, which ran smoothly throughout the three days, thanks to the careful preparation, good organisation and great support by the online platform. It was as active as an online conference could be, running from 8 am to 8 pm CET, to cover the different time zones in the world as much as possible, with a live audience and Q&A platform where more than 500 questions were answered either verbally or in writing by the speakers. Great keynote talks were given by Jay Famiglietti, Karen Villholth, John Cherry, Bridget Scanlon, Basant Maheshwari, Aditi Mukherji and Eddy Moors - and IAH’s new President, Dave Kreamer, joined the welcome in the “opening ceremony”. In addition, a high-level panel was organised on the “Science and Policy Interface”. Below is a brief reflection on the main sessions for each theme by each of the theme coordinators. All sessions were recorded and will be made freely available through the conference website (<https://iwraonlineconference.org/>).

Theme 1: Groundwater natural resources assessment under climate change (Richard Taylor)

1. Declining groundwater (GW) storage in drylands is observed and projected under climate change where GW is used intensively for irrigated agriculture; adaptation requires urgent demand- and supply-side solutions such as conjunctive GW and SW use, and Managed Aquifer Recharge as well as trust where GW resources are shared.
2. GW abstraction in coastal environments and small-island states exacerbates risks posed by both seawater intrusion and episodic seawater inundation from storm surges.
3. Projections of GW recharge under climate change remain constrained by GCM uncertainty and effective representation of recharge processes but there is progress!
4. The intensification of precipitation driven by climate change is observed to amplify GW recharge in many environments, highlighting the importance of extreme events to GW sustainability and enhanced risk to GW quality from human activity.

Theme 2: Climate change effects on groundwater resilience - Pollution and remediation (Tibor Stigter)

1. Passive strategies for groundwater remediation: very effective for point source contaminants
2. Managed Aquifer Recharge: high potential for

(passive) attenuation of pollution; but micro-pollutants (e.g. pharmaceutical compounds) also found in groundwater: health/ecological risk?

3. MAR water quality guidelines need to be more common and specific to purpose, type & setting
4. Challenge for MAR is upscaling: can be supported by GIS and modelling, requires investment
5. Climate change: increasing rainfall intensities both beneficial and problematic for water quality
 - Higher recharge promotes leaching, but also dilution
 - Lower recharge and higher ET promote concentration, but may also increase travel time
6. To reduce negative impacts on water quality from overexploitation, we also need to reduce (ground)water demand

Theme 3: Contribution of technology to groundwater resilience (Neno Kukuric, Enrique Fernandez Escalante)

1. Rapid advancement of technology has improved monitoring and collection of data/info relevant for understanding of groundwater resources change due to climate variability.
2. ICT has brought variety of new devices and applications, often originating from other sectors, providing a significant contribution to information accessibility, faster processing and better understanding of measures required to increase resilience to climate change.
3. Remote sensing technology provides important proxy



data for assessment of groundwater resources, to be interpreted only in combination with terrestrial measurements.

4. Information systems and mobile applications narrowing the gap between the regional data and solving local groundwater problems, also increasing stakeholder's participation.
5. Technology assists geographically remote groundwater users, privacy needs consideration, initial costs could be high, but technology does not need to be expensive, etc.

Theme 4: Groundwater governance, management & policy (Elena López Gunn)

1. Increased importance of self organizing emergent behavior of people and communities to address groundwater problems (bottom up)
2. Multiscalar governance - from households (water justice in California), to neighbor communities (Indian collective Wells); groups of farmers (spontaneous MAR movements), to state (USA macroscale diplomacy) and national level planning (covering knowledge gaps for better national planning and action) to international global norms (human rights and self supply)
3. Groundwater governance- no silver bullet- as a tailored multiple pressure points (China and Mexico) (legal + incentives + policies) - do not forget the WEF nexus (and indirect entry points e.g. electricity, fallowing land,..) (South Asia)
4. Adaptive and (social and institutional) learning will be critical - collective mental models and behavior - systems thinking

Theme 5: Groundwater education & capacity building (Alice Aureli, Jorge Ellis de Luca)

1. Investments in GW education, training and capacity development, at the individual and institutional levels, remain issues of universal relevance, that need to be constantly adapted and renewed – especially under the increasing pressures of humanity and climate change,

to better study and understand climate change impacts and improve adaptation measures.

2. AMCOW agenda is looking how to improve capacities and education on GW resources in the African continent, and with the support of UNESCO's IHP they will implement a road map for GW management capacity development. Actions are already taken in the SADC subregion.
3. Explore more in depth: participatory approaches re GW, informed participation of
4. more stakeholders; GW and citizen science – ensure that no one is left behind!
5. Water as a connector to all SDGs of the 2030 Agenda; the SDG 6 Global Acceleration Framework has capacity development as one of its specific objectives.

TIBOR STIGTER, CO-CHAIR, IAH COMMISSION ON GROUNDWATER AND CLIMATE CHANGE



<https://iwraonlineconference.org/>

<https://gwclimate.iah.org/>

MEMBER MATTERS

Updates and initiatives for IAH members,
plus opportunities to contribute to IAH's efforts worldwide

All About You

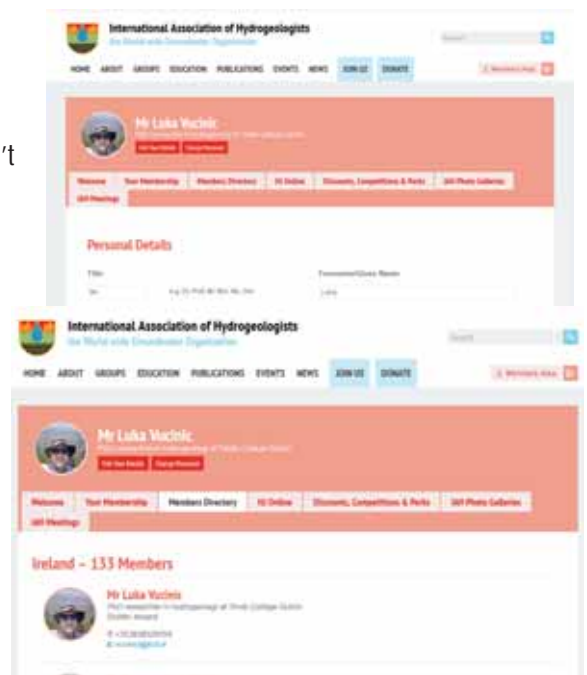
A reminder to update your records as you renew your membership...

Luka Vucinic has very kindly agreed that we may use his records to help remind everyone to check and update theirs. Why? Well...

- For the IAH members' directory (<https://iah.org/members/directory>). While an optional member benefit, the facility is intended for those who want to share their contact details to enable collaborations and more. In other words, the directory allows you to be contactable if you wish, but also for you to find others in your own or other countries or regions. And please don't be shy - take a moment to put up a photo - it further aids potential contact. As well as making you look like the decent humans we know you all are!
- For IAH's communications and planning. It will help us to ensure that you receive the member benefits you are due. Also, by stating your areas of interest we can find out more about what our members might want from our Association and consider potential developments accordingly.

We are now heading into our renewals period. Whether you renew via our centralised system or via one of our incredible, hardworking national chapters, please take a moment to update your details on the central IAH system - <https://iah.org/members/edit-details>. Thank you.

SECRETARIAT



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

Covid-19 and print copies of Hydrogeology Journal

We know that some of our members have experienced delays in receiving their print copies of Hydrogeology Journal because of the disruption that the Covid-19 pandemic has caused to postal services in some parts of the world. Our publisher, Springer, has told us that as postal delivery problems have begun to ease in some countries, they have received feedback from the various societies that they publish journals for that the members had subsequently received several issues all at once. If you have been affected by problems with delivery of your copies of HJ or are still currently affected by any ongoing issues please let us know so that we can investigate further and see what we can do to help. Contact info@iah.org.

SECRETARIAT

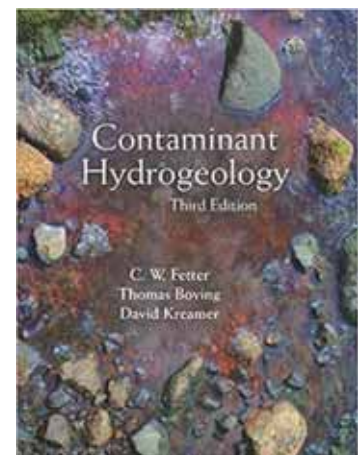


Members' Book Draw

Win a copy of "Contaminant Hydrogeology" by C. W. Fetter, Thomas Boving and David Kreamer

IAH's new President has kindly slipped us a copy of the latest edition of "Contaminant Hydrogeology", which he co-authored with C. W. Fetter and Thomas Boving, to give away to a lucky IAH member in our latest prize draw.

Tremendous progress has been made in the field of remediation technologies since the second edition of Contaminant Hydrogeology was published two decades ago, and its content is more important than ever. Recognizing the extensive advancement and research taking place around the world, the authors have embraced and worked from a larger global perspective. Boving and Kreamer incorporate environmental innovation in studying and treating groundwater/soil contamination and the transport of those contaminants while building on Fetter's original foundational work.



Thoroughly updated, expanded, and reorganized, the book presents a wealth of new material, including new discussions of emerging and potential contaminant sources and their characteristics like deep well injection, fracking fluids, and in situ leach mining. New sections cover BET and Polanyi adsorption potential theory, vapor transport theory, the introduction of the Capillary and Bond Numbers, the partitioning interwell tracer testing technique for investigating NAPL sites, aerial photographic interpretation, geophysics, immunological surveys, high resolution vertical sampling, flexible liner systems, groundwater tracers, and much more.

Contaminant Hydrogeology is intended as a textbook in upper level courses in mass transport and contaminant hydrogeology, and remains a valuable resource for professionals in both the public and private sectors.

To enter to win, complete your details including membership number here:

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

Terms and conditions:

Prize draw closes 11.00pm GMT on Wednesday 31 March 2021. Entry is open to current IAH members only (2021 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 2021 edition of "News and Information".

SECRETARIAT

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

MEMBER MATTERS



New Members

A warm welcome to the following new members, who joined our Association in the period 11 June - 14 October 2020

ARGENTINA

Micaela Virginia MEDINA

AUSTRALIA

Fanar ALOASSAB
Jordin BARCLAY
Aline BARRABES
Giancarlo BONOTTO
Patrick BRINKLEY
Michael CARROLL
Fatma CRONJE
Shaun DAVIDGE
Hailin DENG
Eliza DONALDSON
Meg ENSOR
Zlatko ETEROVIC
Lee FRENCH
Callum GILLIGAN
Michael GUGGENMOS
Alex HANNAN-JOYNER
Petrus JACOBS
Malika KIRCHNER
Jyoti MAGGU
Jeff MORGAN
Israel NAAMAN
Moyez POONAWALA
Douglas ROSA DA SILVA
Christele SARKIS
Elizabeth STANMORE
Guy STOCK
Lisa SUTTON
Andrew TORRENS
Claudio VERGARA SAEZ
Fuli WANG
Jinquan WU
*AQSEPTENCE GROUP
(JOHNSON SCREENS) (c)*
*FORTESCUE METALS GROUP
LTD (FMG) (c)*
REDITUS CONSULTING (c)

BANGLADESH

Sara NOWREEN

BELGIUM

Alan COTTON
Romain DELEU
Tom WYSEURE

BOTSWANA

Piet Kebuang KENABATHO
Opelo LEGOTLHO

BRAZIL

Thaynara CENTURIÃO
Barbara ZAMBELLI

CANADA

Ravi APPANA
Colton BENTLEY
Jonathan CHABOT-GRÉGOIRE
Salma KAHLAOUI
Sabrina PENFOLD
Violaine PONSIN
Mansour SALEK
Jackie SHAW

CHAD

Abdoulahi ABOU

CHILE

Alejandra Andrea CANALES
Erick L. HICKS PERALTA
Bernardo LAGOS
Claudia MARTINEZ

CHINA, PEOPLE'S REPUBLIC

Ri XU

COLOMBIA

Lorenys SANDINO
Wilson VELEZ GIRALDO

CZECH REPUBLIC

Markéta KRAJINOVÁ

EGYPT

Ahmed M. MASOUD
Tamer NASSAR

FRANCE

Antoifi ABDOULHALIK

GERMANY

Sajil K PAZHUPARAMBIL JAYARAJAN

HUNGARY

Victor Gerald NZEUJJI

INDIA

Kalyan ADHIKARI
Debasis BANDYOPADHYAY
Prashant BHAKAR
Mrunal BIRAJDAR
Avinash DAHAKEY
Himanshu GAIKWAD
Prajakta GANDHI
Manish GAUTAM
Anadi GAYEN
Chander Shekhar KHOKHAR
Suresh KUMAR
Nilanchal PATEL
Nageswara Rao PEDDI
Vinit PHADNIS
Ankita PRIYA
Siddharth SARKAR
Kanwar Praduman SINGH

IRELAND

Dana ASPEL
Yvonne MCCARTHY
Ellen MULLARKEY
Mac MURPHY



ITALY

Daniele LEPORE
Claudia MEISINA
Gennaro Maria MONTI
Nicola PASTORE

MALAYSIA

Muhammad HABIBI SYAMSUDIN

MOROCCO

OTMAN EL MOUNTASSIR

MOZAMBIQUE

DINIS JUIZO

NEW ZEALAND

Katie COLUCCIO

NIGERIA

Sunday ADELEYE
Mary ETUK
Francisca FASHE HAMANYE-ADAM
Sunday Ushe HUSSAINI
Aishatu Tani IBRAHIM
ShadrachJ ATAU
Awoibi JOE-UKAIRO
Ehidihamhen Charles OLUMESE
Usman Muhammad YUSUF

NORWAY

Jan SCHNEIDER

PERU

Liberty HERRERA
Juan Jose ZECENARRO CHOQUE

PHILIPPINES

Ma. Teresa COCHING

PORTUGAL

Paulo BORGES

RWANDA

Janvier UWIRINGIYIMANA

SLOVENIA

Mateja JELOVCAN

SOMALIA

Ismail Yasin WARSAME

SOUTH AFRICA

Albert CAROW
Matthew HILLS
Tobiloba ONIPE

SWEDEN

Sandra ANDERSSON

TUNISIA

Salsebil BEL HADJ ALI

UNITED KINGDOM

Matthew ASCOTT
Angélique BUISSON
Karen FITZSIMONS

UNITED STATES OF AMERICA

Teresa BARAZA
Lee Anne BLEDSOE
Scott Barrett DYER
Olufemi FASHUYI
Malcolm FERRIS
Vivek Singh GREWAL
Rachel HOUSEGO
Mitra KHADKA
Luke STEVENS
Susan SWANSON

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

Reminder: check your email address

Are you receiving your regular IAH messages and alerts with HJ link, latest news digests, competitions and initiatives? Ensuring that our members receive their IAH entitlements 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

MEMBER MATTERS

In Memorium

Ernst Zaltsberg was renowned as a talented hydrogeologist in his native Russia and in Canada and USA where he lived and worked the second half of his life. He authored several monographs and numerous publications in national and international scientific journals on regional hydrogeology, ground water balance, and regime evaluation techniques.

However, his greater contribution to the world of hydrogeology was building bridges between the Russian and global professional communities that were separated by a political caprice for decades.

Fellow hydrogeologists may have come across a series of essays written by Dr. Ernst Zaltsberg in Hydrogeology Journal. They were devoted to a constellation of remarkable Soviet (Russian) hydrogeologists whose studies are poorly known to the global professional community, their dramatic personal histories, and the schools they founded. In our pragmatic times it is rare to meet someone who sees utmost importance and devotes life to painstakingly tracing the history of ideas and their authors.

He was a Renaissance man of Russian hydrogeology, accomplished pianist with music degree, writer, and publisher. Ernst Zaltsberg was one of these rare and unheralded people whose impact reaches widely and will last for long time. He died on September 28, 2020; 83 years old.

More reading about Ernst Zaltsberg, his life and essays can be found at: <http://ansdimat.com/download/zaltsberg.pdf>



IAH Prizewinners

Further to our recent round of book draws, we're happy to confirm the following winners:

- "Introducing Hydrogeology" by Nick Robins was won by Oscar Guevara Mansilla from Mexico.
- "Investigating Groundwater" by Ian Acworth - the first copy was won by Marcelo Allende in Ireland. We apologise - we failed to draw for a second book at the time as promised. Rest assured, we still had all the entries held securely to enable us to rightfully pick a second winner at random and the book will be on its way post haste.
- "Coastal Hydrogeology" by Jimmy Jiao and Vincent Post was won by José Manuel Nieto López from Spain and Gebretsadik Mengstu from Ethiopia.
- "Groundwater Vulnerability and Pollution Risk Assessment" edited by Andrzej J. Witkowski, Sabina Jakóbczyk-Karpierz, Joanna Czekaj and Dorota Grabala - the draw for this has taken place and we were in touch with the two lucky winners as this newsletter was being drafted.

As announced on the cover, the winner of our recent photo competition is Charity Kisirisa from Uganda.

Look out for further competitions in 2021 - and if you have any suggestions, or are an author to a groundwater-related book that you'd be happy to offer as a prize, please get in touch - email info@iah.org.

SECRETARIAT



IAH Awards

The 2020 IAH awards were announced during the online General Assembly (Annual General Meeting) of the Association by Antonio Chambel, IAH President.

The Presidents' Award is determined by the current and past presidents. In 2020 the award was given to Professor Bruce Misstear.

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 from IAH members in March of each year; in 2020 we are grateful to our new panel of Richard Carter, Richard, Moshood Tijani and Wendy Timms for their careful considerations – during which they agreed unanimously to award two worthy recipients. The Award for 2020 was presented to: David Ball for his work with refugees and nomads in areas of poor security in the African Sahel and the Horn of Africa and for his early ability to innovate in the absence of modern equipment for drilling, testing and exploration; also Dr Abdel Hafiz Gadelmula for his work in refugee settlements, including in conflict zones, and his participation in projects that have enabled countless numbers of people to normalise their lives and for some to return to their homes after being in displacement camps for many years

The title of Honorary Member is from time to time given to those who have given exceptional services to IAH over a long period. Following a recommendation by Council, the General Assembly voted to approve Ken Howard and Cliff Voss.

Finally, 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 is made by the IAH Executive Committee following consultation. Owing to the Covid-19 pandemic causing the postponement of IAH's Congress in Brazil, the Executive Committee was regrettably unable to consider a recipient for the year. We hope to see its return in 2021!

SECRETARIAT

 <https://iah.org/about/awards>

Mentoring Scheme - latest news

Registration for the mentoring scheme this year was opened from August - early November. Thank you to all those who submitted forms both as mentors and as mentees. We'll be in touch in the upcoming weeks regarding next steps.

SECRETARIAT

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



Report from Marco Petitta and Peter Szucs

The Hungarian Water Research Programme: an example of a modern approach to water management and protection

In 2019, after some years of preparatory work, the Hungarian Academy of Sciences, coordinator of water research institutions, published a strategic document related to the challenges and research tasks for correctly developing the new Hungarian Water Research Programme (HWRP).

The document includes the national strategy for the optimization of research activities aimed at providing the correct input to stakeholders of national and local governments for a modern management and protection of water resources.

The basis of the HWRP is the integration of the necessary multidisciplinary approach for water resources management. With such a comprehensive approach, the contribution of different scientists, covering engineering sciences, ecology, social sciences and of course hydrogeology, will be coordinated in a common and well-defined framework, limiting fragmentations and singular approaches.

This ambitious programme will be implemented under the historical excellence of Hungarian water researchers, due to the richness and relevance of water and groundwater in the Hungarian territory, with compliance to the international policies, as the EU Water Framework Directive and the UN Sustainable Development Goals. Hungarian IAH members play a fundamental role in achieving the goals of this programme.

In detail, the HWRP identified six priority areas, namely "Safe drinking water", "Water quality", "Sustainable water use", "Water management", "Aquatic ecosystems" and "Water-related social conflicts", which have been related to the previously identified key tasks of the National Water Strategy. This modern approach clearly identifies the following aims for scientists and researchers:

- i) build researches targeting knowledge gaps and integrating scientific areas;
- ii) improve networking, information exchange and cooperation activities, also by common databases, among the different water research institutions;
- iii) look at international funding possibilities to flank national grants, with particular reference to transboundary river basins;
- iv) promote scientific excellence at international level;
- v) promote feedback mechanisms for increasing the professional background;
- vi) support direct exploitation and transfer of scientific results.



The members of the governing body of the Hungarian Water Research Programme at MIVIZ Waterworks in Miskolc, Hungary

It can be easily affirmed that this research programme is following the more recent approaches for water management and protection, highlighting the contribution and at the same time the responsibility of the researchers in building a better future, and transferring their capacities and results into concrete actions for society, humans and environment. The modern vision emerging from the HWRP is consequently the added value of this document, to be considered as a relevant example for the whole international community.




The document of the Hungarian Water Research programme can be downloaded from the link below.

MARCO PETITTA, MEMBER OF THE INTERNATIONAL ADVISORY BOARD OF THE HUNGARIAN WATER RESEARCH PROGRAMME, & IAH VICE PRESIDENT FOR WESTERN AND CENTRAL EUROPE

PETER SZUCS, MEMBER OF THE GOVERNING BODY OF THE HUNGARIAN WATER RESEARCH PROGRAMME, PAST PRESIDENT OF THE IAH HUNGARIAN NATIONAL CHAPTER

Ref: Attila Engloner, Márta Vargha, András Báldi, János Józsa (editors) (2019) Hungarian Water Research Programme: challenges and research tasks – Centre for Ecological Research, Tihany.



 <https://mta.hu/data/dokumentumok/Viztudomanyi%20Program/Hungarian%20Water%20Research%20Programme%20Challenges%20and%20Resesarch%20Tasks%202019.pdf>

Unlocking Africa's Groundwater Potential



Unlocking the Potential of Groundwater for the Poor (UPGro), has been a seven-year international research programme (2013-2020), funded by the Department for International Development, Natural Environment Research Council and the Economic and Social Research Council. Nearly 200 of the world's best researchers from more than 50 organisations across Africa and Europe have been focused on improving the evidence base around groundwater availability and management in Sub-Saharan Africa. The goal has been to ensure that the hidden wealth of Africa's aquifers benefit all citizens and the poorest in particular. UPGro projects are interdisciplinary, linking the social and natural sciences to address this challenge.

UPGro's new film tells us about the use and potential of groundwater for Sub-Saharan Africa. Learn about groundwater and the rich research findings from the 7 year research programme.

Check out the film here:

 <https://upgro.org/>



CHAPTER NEWS

Continual progress...

We continue to receive enquiries from members who are interested in establishing national chapters in their own country. IAH Vice President for Middle East and North Africa Region, Joanna Doummar, has reported on progress with establishing a new chapter in Lebanon. Vice President Seifu Kebede Gurmessa has contacted members in Sub-Saharan Africa Region and is encouraging more members to form national chapters across the Region. We have also had enquiries from Georgia, Iran and Nepal, though elsewhere, the pandemic continues to cause problems, with plans for establishing national chapters put on hold for the time being.

The pandemic has had a wide impact on many matters, of course, including meetings and other initiatives, with national meetings deferred or now online. The Colombian National chapter continues to be actively making videos available, some in Spanish and some in English – see <https://www.youtube.com/channel/UCZloCc1JFWo8TzwqTwx8lxw/videos>. The US and Canadian chapters are also launching webinars (see <https://www.iahcnc.ca/webinars.php> in the case of Canada) and GB Chapter's Ineson Lecture is being held for the first time online.

You'll see a few reports from some of our national chapters. In addition, we offer our congratulations to Eduardo Kruse and Santiago Perdomo, who have now taken over as President and Treasurer respectively for the Argentina National Chapter.

We would very much welcome further additions to the IAH family. National Chapters can be formed as a distinct group by people with groundwater interests and could also be hosted by an organisation that already exists in a country. We have several chapters that are hosted by national geological associations, with a groundwater group identified as the IAH National Chapter.

A further option that some have followed is to establish an 'Associated Organisation' based on an existing relevant organisation in a country. Although this is not itself a national chapter, members are Associate Members of the IAH and they receive some of the benefits that IAH membership would bring. We are very pleased to report the signing of a Memorandum of Understanding between the IAH and Oman Water Society. The MoU was signed by the Chairman of Oman Water Society, Ahmed Al Malki, and IAH President Dave Kreamer in November.

Whichever way you would like to consider, being linked to IAH undoubtedly gives an additional level of international support for those in the groundwater community, with a much larger presence and influence globally. The IAH Secretariat would be very happy to help you establish a national chapter in your country! Contact us at info@iah.org.

SECRETARIAT



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





Australia

Presentations and social event

Colleagues in our Australian national chapter branches have been busy organising a number of events - both online and in actual *real life*. In September, the Perth branch held a student presentation night online - we're sure those involved will have welcomed such the experience. In October, for the IAH/NCGRT Distinguished Lecture Series, Wendy Timms presented "Digg'n deeper – the state of mining hydrogeology". As this newsletter was being compiled, the team from Western Australia was planning its annual social event - during which they were selling some pretty fabulous tops - as modelled, right, and had earlier also hosted Alan Puhlovich presenting "Assessment of hydrogeological conditions in a high rainfall environment, Elang Project, Indonesia", and Ian Brandes de Roos presenting "The cost of managed aquifer recharge in Perth".



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



Ireland

Annual field trip

Owing to Covid-19 restrictions, Ireland's annual field excursion was a half-day coastal walk on a September afternoon from Annagassan in County Louth. Following an initial appraisal of the locality's setting, in respect of climate, topography, soils and subsoils, everyone walked along the beach towards the rocky shore of Salterstown at the southeast. There the bedrock outcrops were examined where the type site of the Salterstown Formation crops out. The bedrock is intensely deformed and is the only significant example of exposed sulphide mineralization in County Louth – thus, it has been classified as a County Geological Site and may even be recommended as a Geological NHA. The group then visited the site of St Colmans Well at Salterstown, where we discussed this unusual well, in both it's physical form and hydrochemical signature.

 <https://www.iah-ireland.org/>



Turkey

Webinar

At the end of May Prof. Dr. Mehmet Ekmekçi presented a webinar entitled "Water Resources Management: Approaches and Applications in Turkey". The video is available to watch (in Turkish) on YouTube - see <https://www.youtube.com/watch?v=0bVPIjt0tw>.



 <http://hidroder.org.tr/>

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

Regional Groundwater Flow Commission

A reform of Mexico's National Waters Act based on the Groundwater Flow Systems (GWFS) has been recently approved in Mexico. José Joel Carrillo Rivera (RGFC-IAH) initiated the inclusion of regional groundwater flow systems as a scientific background in the reform proposed to the Act. An interactive Colloquium was organized between scientists and senators by him in the Mexican Senate in November 2015 with the contribution of RGFC-IAH members, Alfonso Rivera (Chairman Transboundary Aquifer Commission of IAH, Canada), Andrew Stone (executive director of American Ground Water Trust, USA), Judit Mádl-Szőnyi (Chair RGFC-IAH, ELTE, Hungary), Xiao-Wei Jiang (RGFC-IAH, University of Geosciences, China), Udo Weyer (WDA, Canada), and Juan Maria Fornes (IGME, Spain). The suggestions derived from the Colloquium were presented to the Mexican House of Representatives and the proposals were implemented into the reform to the National Waters Act. It is important to continue educating decision-makers on the role of GFWS in relation to the water cycle. The RGFC-IAH continues to promote awareness in this topic by developing an ongoing strategy to inform politicians and agencies.

Groundwater, Geoenergy, Hydrothermal minerals blog: This scientific blog intends to inform those who are interested in the underground fluids including groundwater, thermal water, hydrothermal mineral resources, geothermal energy, hydrocarbons and their interrelationships. Stay tuned and follow the blog @ <https://geofluids.blogspot.com>

vEGU21: Gather Online 25–30 April 2021: RGFC-IAH supported sessions are “The role of groundwater flow systems in solving water management and environmental problems” convened by John Molson and co-convened by Daniela Ducci, Jim LaMoreaux, Manuela Lasagna, Judit Mádl-Szőnyi, and “Interacting geofluids systems – Research and innovation” convened by Ádám Tóth and co-convened by Teppo Arola, Gabriella B. Kiss, Corrado Camera, Hanneke Verweij. The call for abstracts opens on 3 November 2020 and the deadline for abstract submissions is 13 January 2021 at 13:00 CET. For more information visit: <https://www.egu2021.eu/>

Save the new date! International Symposium on Geofluids, Budapest, Hungary, 7-9 July 2021: After postponing the symposium owing to the pandemic, abstract submission, registration and all related information will be updated, posted and distributed. The symposium aims to bring together scientists, professionals, stakeholders to share and discuss all kinds of aspects of geofluids, i.e., groundwater, geothermal energy, hydrocarbon, geogenic contamination, and hydrothermal mineral resources, with special emphasis on harmonized exploration and utilization. We, therefore, welcome researchers in all aspects of geofluids' research. Stay tuned @ <http://geofluids2020.hu/> Finally, the Commission is planning to meet in-person next year in Brussels at the 48th IAH Congress, Belgium, and we are also organising special sessions during the week.



<https://regionalgwflow.iah.org/>



Commission on Groundwater Quality

As a newly established Commission we have decided to ask IAH members and commission members what areas of expertise they have in groundwater quality and to find out from the groundwater community what you feel are priority areas for the commission to focus on. We really value your input and participation in this consultation. This questionnaire will help the Groundwater Quality Commission of the IAH to tailor and prioritise activities and will typically take between 3-5 minutes to complete. See <https://gwquality.iah.org/partners-and-projects/consultation-on-groundwater-quality> to contribute.

Groundwater salinity mapping

Natural sources and anthropogenic activities which lead to the build-up of salinity in groundwater constrain its use for drinking water, food production and industry. Salinity is a truly global challenge which reduces access to usable groundwater and risks further deterioration through the impacts of climate change and variability. Building on initiatives led by IGRAC more than a decade ago, the GQC has identified groundwater salinity as an early topic area to focus on, with the aim to produce the first groundwater salinity map for Africa.

We have set out an initial objective to focus on mapping groundwater salinity in Africa, using data from the top 400 metres below ground level, with the goal of undertaking similar activities in other regions in due course or in parallel if there is sufficient interest. To this end we call on members of IAH and others with an interest in groundwater salinity in Africa to join in with this collective effort.

We anticipate this will involve the collation of existing published data sets (i.e. for total dissolved solids and/or specific electrical conductivity), both large regional data sets and those collected from smaller studies. For example, there are several countries for which national or regional scale maps already exist, as well as data sets that have not been published and may be in the grey



literature or elsewhere.

We will use a rigorous approach to document and quality assure the data sets for inclusion, with the aim to publish the first open-access continental-scale map of groundwater salinity in Africa.

If you are interested in participating see <https://gwquality.iah.org/partners-and-projects/gw-salinity-map-of-africa> for further information. We look forward to hearing from you in due course.



<https://gwquality.iah.org/>

Commission on Managing Aquifer Recharge

It's been a long time coming, but the new IWMI-CGIAR publication "Global assessment on the UTFI form of MAR" is now available. Here is the link to a blog about this work: <https://www.iwmi.cgiar.org/2020/09/tapping-into-the-ground-to-counter-floods-and-droughts/>

The link to the report is given within.



We're happy to confirm that the Brazilian organizers of the 47th IAH Congress have kindly included MAR in their program of on-line seminars. Also, the congress WhatsApp group on "Aquifer Recharge Management" keeps advancing well, coordinated by Felipe Berton. Pls, scan the QR code to join. More than 100 members debate on MAR issues. See <https://iah2021brazil.org/>



<https://recharge.iah.org/>

2021: A SPECIAL YEAR FOR IAH CONGRESSES!

As a result of the Covid-19 pandemic we were not able to hold our congress in Sao Paulo in 2020. Instead we will have two congresses in 2021, in Sao Paulo and in Brussels. Brazil and Belgium are coordinating efforts to put forward a unique IAH experience to create an opportunity for many more people to participate worldwide. Watch this space!

SECRETARIAT

47TH IAH CONGRESS, BRAZIL/HYBRID 2021 GROUNDWATER 4.0: CONNECTED, VISIBLE AND ETHICAL

THE 47TH IAH CONGRESS 2021 BRAZIL WILL BE HELD TOGETHER WITH:

- XV Latin American Hydrogeology Congress • XXI Brazilian Groundwater Congress
- XXII Brazilian Meeting of Well Drillers • FENÁGUA – National Water Trade Show

Our decision for the pandemic - it was innovating! Between September 21st and 24th 2020 we realized the first part of our event, ONLINE and FREE! And between September 25th, 2020 and August 20th, 2021, we will have webinars and videos, marketing, technical and scientific, inspirational, professional training themes, among others. All sessions are available for access through the ABAS YouTube channel. Go to <https://www.youtube.com/c/ABASÁguasSubterrâneas/featured>. Then on 22-27 August 2021, the event takes place in São Paulo. It will be hybrid, you can choose to participate in person or online.

The technical discussions have already begun on the WhatsApp groups for the congress. Themes include: Management Aquifer Recharge, Groundwater and Climate Change, Groundwater Flow, Water Cycle and Ecosystems, Karst and Fractured Aquifer, Groundwater and Gender, Geochemistry, Groundwater Pollution and Remediation, Transboundary Aquifers, Emerging Tools and Tech for Groundwater Investigation, Numerical Modelling.

Share the joy and participate in the 2021 Groundwater Congress in Brazil - abstract submission is open!

Organised by Brazilian National Chapter of IAH/Brazilian Groundwater Association (ABAS), Latin-American Groundwater Association (ALHSUD).



 [Brazil Congress website - https://iah2021brazil.org/en/](https://iah2021brazil.org/en/)

48TH IAH CONGRESS, BELGIUM 2021

INSPIRING GROUNDWATER



The very first time the Belgian Chapter's board talked about hosting the IAH Congress was in 2017, but we decided then to launch our candidature for the congress in 2021. Why 2021? Belgium had hosted the 1958 congress - as the 1st President of the IAH was the Belgian Paul Fourmarier - but never since then. Also, IAH will be 65 years old, and our chapter will be 20 years old in 2021. So we thought it would be a good reason to celebrate all together with you, the world hydrogeology community, and put our little country on the water map.

Here we are 4 years later and about 10 months before our grand opening. We are working hard to present you a high level scientific congress on 6-10 September 2021, with more than 350 slots for speakers, 6 keynote lecturers, several meetings of IAH Commissions, Networks and working groups (already confirmed), workshops, 10 field trips, the AGM of IAH and some special guests (VIPs of course), but we also want to let you discover Belgium: our rich culture, our unique comics, our colourful music, our great food and our tasty beers and chocolates.

We also already have partnerships with UNESCO – PHI, with the City of Brussels, with different companies, with the Lufthansa group (including United Airlines and Air Canada). We're seeking more.

The pandemic is impacting us all, it has forced us to adapt our lifestyles, and to change the way we are meeting each other. But we are confident for the future and that we will be able to meet, greet, talk and laugh together. We are confident that we will also share good meals and drinks.

We are planning a real congress, a "new-normal" congress for the 48th IAH Congress in Brussels. We'll apply the eventual requested measures. But we'll be there. Rest assured that the Belgian Chapter is putting all efforts towards this direction, even if we are following the evolution of the pandemic.

And what if things are not evolving the way we all hope? Well, we have a plan B, in order to allow the 48th congress to be a reality in September 2021, whatever happens.

The call for abstracts is already open - check our website and the abstract submission platform. Please register for our newsletter. Please spread the news to your colleagues. We need you to make a success of the 48th IAH Congress.

In a few words : we ARE ready to welcome you in Brussels.



 [Belgium Congress website - https://iah2021belgium.org/](https://iah2021belgium.org/)

2020 - REMAINING

1-17 December – ONLINE EVENT

AGU Fall Meeting – online

Shaping the Future of Science. AGU Fall Meeting will be one of the world's largest virtual scientific conferences, with exciting programming and events. This will be our most diverse, engaging and dynamic Fall Meeting to date. Scheduled from 1-17 December to accommodate over a thousand hours of virtual content to minimize conflicts while maximizing global engagement. Scientific program content will be available on-demand, with pre-recorded oral presentations and virtual posters available for attendees to view and peruse outside of the scheduled live Q&A sessions during the meeting.

<https://geoconvention.com/>

8-10 December – ONLINE EVENT

NGWA Groundwater Week 2020

Join thousands of professionals from all sectors of the industry during Groundwater Week 2020, where you will find the focus is on everything you need to succeed! We will have innovative and fun ways to bring the networking and comradery you expect from Groundwater Week to life in our virtual setting.

<https://groundwaterweek.com/>

2021 - SELECTION

22 March – WORLDWIDE

World Water Day

World Water Day's theme for 2021 is "Valuing Water". Further information to follow. Organised by UN Water and partners.

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

19-30 April – ONLINE EVENT

vEGU21: Gather Online

In 2021, EGU will be hosting vEGU21: Gather Online (#vEGU21), a fully virtual meeting that will be held in place of the General Assembly in Vienna. vEGU21 will provide as full a representation of the experience that EGU members enjoy at the annual meeting in Vienna as possible. Abstract submissions will be accepted until 13 January 2021 at 13:00 CET. More details, including the registration fees, will be announced in the coming weeks.

<https://www.egu21.eu/>

We were not able to hold our congress in Sao Paulo in 2020. Instead we will have two congresses in 2021, in Sao Paulo and in Brussels. The organising committees in Brazil and Belgium are coordinating efforts to put forward a unique IAH experience to create an opportunity for many more people to participate. Details below:

22-27 August – BRAZIL/HYBRID EVENT

47th IAH Congress – IAH 2021 Brazil

GROUNDWATER 4.0: CONNECTED, VISIBLE AND ETHICAL.

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



6-10 September - BELGIUM

48TH IAH Congress - IAH 2021 Belgium

Inspiring Groundwater - We'll be there, ready to host - whatever happens. Will you?

www.iah2021belgium.org



<https://iah.org/events>

For a fuller list of conferences, events and meetings and to submit an event