International Association of Hydrogeologists, U.S. National Chapter

Fall 2014 Newsletter

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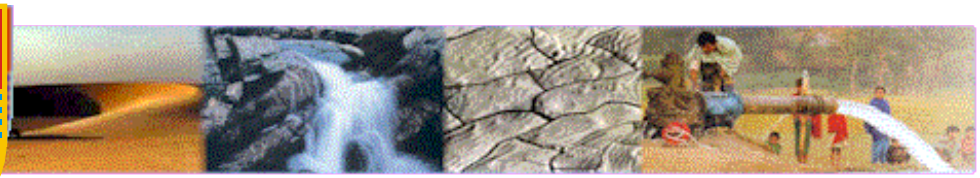

International Association of Hydrogeologists
U.S. National Chapter
Fall 2014 Newsletter

Editors: Suzanne Pierce/ Dave Kreamer

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IAH/US NATIONAL CHAPTER: EXECUTIVE COMMITTEE 2012-2015

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IAH U.S. National Chapter Board Meeting at the 2014 Groundwater Summit in Denver, Colorado.

A Note From The Chair

2014 is shaping up to be a very active year for the US National Chapter. For starters, our members have been playing an unprecedented role in organizing scientific meetings and technical sessions. This includes Mike Wireman, past USNC Chair, who co-chaired the 2014 NGWA Groundwater Summit, and, along with past board member Bill Alley, held the one-day NGWA "Characterization of Deep Groundwater" conference. And Jack Sharp, past-past USNC Chair, gave a Keynote presentation on September 16th during the 2014 IAH Congress in Marrakech, Morocco. On October 20th, Andy Manning, our GSA Liaison, along with Grant Ferguson, Chair of the Canadian Chapter, will be convening a coveted Pardee Keynote Symposium entitled "Energy Resource Development" at the GSA Meeting in Vancouver. Alan Fryar, another of our members, is the current GSA Hydrogeology Division Chair and playing a key role in putting together the hydrogeology-related technical program for GSA 2014. Devin Galloway, as Chairman of the UNESCO Working Group on Land Subsidence published a featured interview article on 'The Current Situations and Developing Trend of International Land Subsidence Research' in Shanghai Guotu Ziyuan (Shanghai Land & Resources) Journal, and is co-chairing a session on "Anthropogenic Land Subsidence Accompanying the Exploitation of Groundwater Resources" at the Fall AGU Meeting in San Francisco, December 15-19, 2014. Dave Kreamer, our North American Vice President, will be chairing the next University Consortium on Water Resources Conference in Las Vegas June 16-18, 2015. All of these activities illustrate the stature and professional leadership of our USNC members. I am sure I've left out many other important events – please contact me with your recent or upcoming involvement in similar activities that could be shared with our membership.

Please join us for the next USNC meeting, which will take place during the 2014 Annual GSA Meeting in Vancouver. We will be gathering in the Kensington Room of the Hyatt Regency Hotel in Vancouver, BC, on Sunday October 19th from 5:00 – 6:30 pm. A group of us will also be going to dinner on Tuesday October 21st - we plan to meet around 7:00 pm just outside of Ballroom C of the Vancouver Convention Center (several of us will be attending part of the GSA Hydrogeology Division Student Reception). All our welcome, but please RSVP so we can reserve an adequate table.

Many thanks to Dave Kreamer for editing this issue of our Newsletter. Please let Dave, Suzanne, or I know if you are interested in helping with future issues. We could always use some additional assistance.

Vic Heilweil
IAH-USNC Chair
heilweil@usgs.gov

A Note from the Vice President for North America
Dave Kreamer

I hope this note finds you well, happy and engaged with your science. For academics, this is the beginning of a new semester, with classes and research, and for federal agencies the end of the fiscal year approaches, with hopes for better budgets, and compelling and interesting projects. For those in private industry, this season brings its share of RFPs, and the chance to move in new directions. But for all hydrogeologists, through our individual and collective efforts, we can make the world a better place.

There are many interesting upcoming meetings and workshops in the coming year. The IAH Congresses seem to always have terrific, beautiful venues, and the next few years are no exception, from the 2014 Congress this September in Marrakech, Morocco, to the 2015 Congress next year in Rome, Italy, to the 2016 Congress in Cartagena de Indias, Columbia. The National Ground Water Association will have its Annual Expo in Las Vegas in December, and its 2015 Summit in San Antonio in March. The Universities Council on Water Resources /National Institutes for Water Resources will hold their Annual Meeting jointly with the Consortium of Universities for the Advancement of Hydrologic Science, Inc. in Las Vegas June 2015, along with many co-sponsoring organizations. All-in-all, the coming months look to be an interesting time for hydrogeologists everywhere!

Treasurer's Report – *Vicki Kretsinger Grabert*

2014 U.S. National Chapter (USNC) Memberships

As of August 2014, we have about 273 renewed and/or new USNC members, including 31 honorary members and 26 sponsored members. This is approximately the same as last year at this time. In addition, individual members in the USNC are sponsoring 11 developing country memberships and the USNC is sponsoring 5 developing country and 3 student members this year.

2014 USNC Financial Status

Regarding our general funds, we currently have about $14,000 in our JPMorgan Chase checking account and about $37,700 in our Vanguard Mutual Fund Account (Total Stock Market Index Fund). Separately, we have about $21,000 in our Endowment Fund, split evenly between two Vanguard Funds (STAR and Extended Market Index). **Good news – we reached our goal of establishing an Endowment Fund total of at least $20,000!** We will continue to add additional contributions and let these funds grow. The USNC Endowment Fund is for purposes such as sponsoring students and developing country memberships, supporting national chapters in developing countries, and promoting international activities that further the advancement and application of hydrogeology, including research, education, outreach, and training. The US Chapter's Finance Committee, in coordination with the Executive Committee, will be identifying specific ways to begin using these funds for their intended purposes.

If your 2014 membership renewal slipped your attention and you are missing your subscription to the *Hydrogeology Journal* and other IAH benefits, renew online or send checks to: Vicki Kretsinger Grabert, USNC Treasurer, 500 First Street, Woodland, CA, 95695.

Hydrogeologic Studies and Scientific Ocean Drilling Research

Margo Morell, Asst. Director, Ocean Drilling Programs
Consortium for Ocean Leadership, Washington D.C.

Containing approximately two-thirds of the Earth's groundwater systems, the upper oceanic crust is the largest aquifer on the planet. Thanks to research conducted during the past five decades as part of the Deep Sea Drilling Project (DSDP, 1968-1983), the Ocean Drilling Program (ODP, 1983-2003) and the Integrated Ocean Drilling Program (IODP, 2003-2013) we have a much better understanding of fluid-rock interactions as well as hydrogeologic properties in the oceanic crust, however, many questions are still unanswered.

Some marine hydrogeologic investigations were initiated during DSDP on the research vessel (R/V) *Glomar Challenger*, but it was primarily in ODP and IODP that these studies were greatly extended. This was accomplished in part by having an improved drilling platform, the R/V *JOIDES Resolution*, as well as the establishment of long–term subseafloor observatories known as Circulation Obviation Retrofit Kits or CORKs. In addition to using CORKs for monitoring and sampling purposes, these systems have been used in controlled, cross-hole testing to help explain how the many sections in the largest aquifer on the planet are connected and interact.

Among the geographical areas that are part of a long–term experimental program that began in ODP with the purpose of investigating the formation–scale hydrogeologic properties within the oceanic crust, is the northeast Pacific Ocean. ODP Leg 168, for example, deployed four CORKs and focused on characterizing the hydrothermal regimes that occur on the eastern flank of the Juan de Fuca Ridge, which is located about 200km off the coast of Oregon, Washington, and British Columbia. Later during IODP, Expedition 301 penetrated deeper into the crust at the eastern end of the ODP Leg 168 transect and focused on quantifying hydrogeologic, lithologic, biogeochemical, and microbiological properties, processes, and linkages in basaltic crust of this area by deploying two CORKs and replacing one in an existing hole. The most recent IODP expedition to the Juan de Fuca Ridge (Expedition 327) deployed a CORK system that differed from earlier models. This improved CORK system, which includes instruments for seawater sampling and microbial studies, measures short–term formation pressure responses to packer experiments and has a two–packer system that ensures the seal will last for several years.

Recognizing that little is still known about the hydrogeologic processes in subseafloor environments, additional studies in marine hydrogeology will most likely also be conducted as part of the International Ocean Discovery Program, the successor to IODP and the latest international collaboration in exploring Earth's history and dynamics using various ocean research platforms. For more information about this marine research program, visit www.iodp.org

Additional information about CORKs or hydrogeologic studies during DSDP, ODP, and IODP can be obtained by contacting Drs. Keir Becker (kbecker@rsmas.miami.edu) and Andy Fisher (afisher@ucsc.edu)

USGS Helps Assess Water Resources in Afghanistan

A news release from the U.S. Geological Survey (USGS) indicates that for the past decade, scientists from the USGS have shared their expertise with the Afghanistan Geological Survey (AGS) in efforts to build an inventory of Afghanistan's water resources. A new fact sheet (http://pubs.usgs.gov/fs/2014/3068/pdf/fs2014-3068.pdf) details how these efforts help the country quantify and monitor its water resources. In 2004, USGS and AGS initiated plans to rebuild Afghanistan's capacity for various geologic sciences including hydrology. USGS accomplished the goal with teaching scientists from AGS to apply modern techniques for use of global positioning systems, field hydrology, water-quality sampling, and by developing water-resource databases.

The first efforts of the partnership were to inventory groundwater and surface water resources in Afghanistan's capital city, Kabul. After inventorying about 150 wells in the first year, data from a subset of wells were monitored over ten years and indicated that water levels were decreasing in the city of Kabul. The water samples collected and analyzed for physical, chemical, and microbiological properties formed the basis of the first joint hydrologic investigation in Kabul.

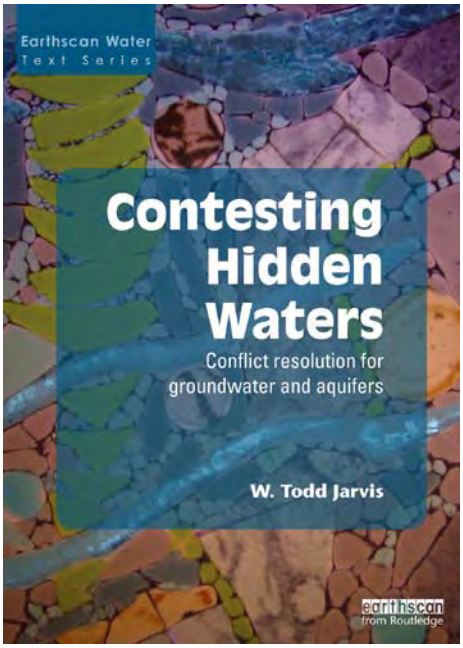
Villagers lining up for water at a community well near Kabul, Afghanistan (source: USGS Fact Sheet 2014-3068)

"Now after 10 years of groundwater-level monitoring, recent analysis of the data shows an improved understanding of groundwater resources and its sustainability in Kabul," said Thomas Mack, USGS hydrologist. "AGS engineers have established similar groundwater monitoring networks in other major cities across Afghanistan, which are critical for understanding current conditions and water availability at other population and economic centers."

The hydrogeologic field investigations and water quality sampling conducted by AGS hydrologists provide valuable data needed for assessing water resources in Afghanistan's mineral resource areas.

Contesting Hidden Waters: Conflict Resolution for Groundwater and Aquifers

A Book By W. Todd Jarvis



Todd Jarvis, one of our own IAH US National Chapter members, has recently (2014) published the book "*Contesting Hidden Waters: Conflict Resolution for Groundwater and Aquifers*" that will be of great interest to hydrogeologists and spans a wide range of issues regarding shared use of groundwater resources from the community level to international transboundary aquifers. This is part of the "Earthscan Water Text" series, published by Routledge (The Taylor and Francis Group). Other books in this series include "*Water Security*" edited by Lankford et al., "*Water Ethics*" by David Groenfelds, and "*The Right to Water*" edited by Sultana and Loftus.

The following are excerpts from the website:
http://www.routledge.com/books/details/9780415632935/

"*The world increasingly relies on groundwater resources for drinking water and the provision of food for a growing population. The utilization of aquifer systems also extends beyond freshwater supply to include other resources such as heat extraction and the storage and disposal of substances. Unlike other books about conflict resolution and negotiations over water resources, this volume is unique in focusing exclusively on conflicts over groundwater and aquifers. The book describes the various issues surrounding the governance and management of these resources and the various parties involved in conflicts and negotiations over them. Through first-hand accounts from a "pracademic" skilled in both process and substance as a groundwater professional and professional mediator, the book offers options for addressing the challenges and issues through a trans-disciplinary approach."*

We asked Todd the following questions about his motivation for writing his book.

1. **What inspired you to write this book?**

"The book chronicles my experience as a "volunteer" tapped by policy makers to assist with managing groundwater resources. Few of us are trained in professional communication or conflict management. And these are the areas where we sometimes get into messy situations, sometimes even serving as the source of conflict over water resources. While there is a robust literature on conflict resolution and transformation over river basins, there is not much available for the groundwater professional to draw upon for "lessons learned". So, I decided to draw upon my own experiences while working as a groundwater professional who became enlightened in process skills late in my career."

2. **What makes conflicts over groundwater different than surface water?**

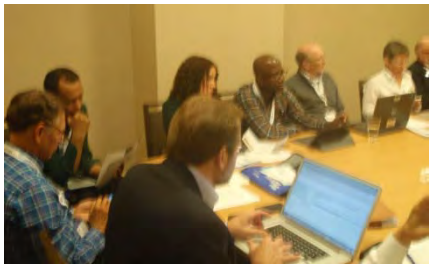
"Groundwater is a spiritual resource – some cultures consider groundwater as a divine gift. While doing research for the book I learned that folks that live in rural settings consider groundwater a "right to life" protected under the US Constitution. I learned that groundwater is part of the narratives in mythology and our fundamental texts. I think most groundwater professionals would agree that groundwater and aquifers are mysterious to most people outside of our profession. That mystery leads to conflicts over issues that are difficult to quantify even within the profession, sometimes leading to dueling expert situations that frustrate policy makers."

3. **What are some recent developments in international groundwater resources to help address potential conflicts?**

"The 1997 UN Convention on the Non-navigational Uses of International Watercourses will probably come into force later this year because Vietnam just became the 35th party to the Convention (35 countries were necessary for its ratification; the US has not yet signed on). The provisions of the Convention apply to shared aquifers that have some connection with surface water. While this international instrument is important for transboundary water management, it only applies to the water stored in aquifers as opposed to the storage of the aquifer. The "Draft Articles of the Law of Transboundary Aquifers" that is now annexed to a United Nations General Assembly Resolution is the result of a 10-year global effort. In this law, utilization is more broadly defined to include the storage and extraction of water, heat and minerals, and storage and disposal of any substance. The Draft Articles, therefore, address all aquifers (confined and unconfined), and other uses of aquifers such as for storage of managed aquifer recharge (MAR), carbon sequestration, and recovery of geothermal energy, among other minerals and resources. Currently, most coastal aquifers and subsea aquifers are not covered by either instrument, but the existing UN Law of the Sea is being considered by the legal community as one potential instrument for these aquifers."

IAH U.S. National Chapter Meets in Denver

The IAH-USNC met in Denver at the Ground Water Summit in May. It was a great meeting and fun was had by all!



Hydrogeology in Italy, and Next Year's Rome IAH Congress

The preparations for the 2015 IAH Congress in Rome, Italy are coming along very nicely. The venue is absolutely stunning, and is minutes away from major tourist attractions like the Coloseum and the Roman Forum. We are hoping for a large USNC-IAH turnout.

Hydrogeology is very rich in Italy. Each summer, Italian hydrogeologists gather for an annual meeting; "Flowpath" was held in June in Viterbo, Italy at the University of Tuscia. The technical program was very broad and interesting, including topics on groundwater contamination, modeling, dewatering, thermal waters, water quantity, water dating and tracing, and many other topics.

Hydrogeologists in Italy are quite interdisciplinary and varied in their work. Marco Pettita, from the University of Rome, Sapienza (with 110,000 students!), will be Chairing the 2015 IAH Congress. His work ranges broadly from the Italian equivalent of our "Superfund" sites, to water supply and sustainability. Dr. Vincenzo Piscopo (University of Tuscia) and Dr. Francesca Lotti organized this year's Flowpath conference. Among many other activities, Dr. Piscopo serves on his nation's committee for the environment, while Dr. Lotti is a world-class groundwater modeler. Another very active hydrogeologist is Dr. Allessandro Gargini, from the University of Bologna (80,000 students), which is the oldest university in the western world, founded in 1088. Among many other diverse research projects, Dr. Gargini studies groundwater dependent ecosystems.

Dr. Marco Pettita

Dr. Vincenzo Piscopo, and graduate student Claire Archer (University Nevada) sample San Susanna Spring in Reitis Basin, Italy

Regarded by some as the "father of Italian hydrogeology" is Dr. Walter Dragoni, University of Perugia. Dr. Dragoni, like many Italian counterparts, has worked on wide-ranging studies, including landslides, evaporation/ transpiration, and spring-flow regression to calculate aquifer parameters.

Italian hydrogeology is alive and well, and the Rome Congress should be great next year!

Dr. Alessandro Gargini

Dr. Walter Dragoni and graduate student at Lake Trasimeno

New IAH Commission on Governance of Transboundary Aquifers: International & Domestic Aquifers Crossed by Provincial Boundaries

Shaminder Puri, Secretary General, International Association of Hydrogeologists

BACKGROUND

In December 2010, the international conference "Transboundary Aquifers: Challenges and New Directions", held in UNESCO Paris, brought to culmination ten years of work by the Internationally Shared Aquifer Resources Management (ISARM) initiative, which arose out of the IAH Commission on Transboundary Aquifer Resource Management (TARM) that was established by the IAH Council in 1999 at the Bratislava Congress. The 740 pages of proceedings of the December 2010 Conference (see http://www.isarm.org/publications/397) are a testimony of the success of the decade long IAH Commissions work and indicative of the global reach of the initiative.

THE IAH TARM COMMISSION (1999 – 2010)

The ISARM-TARM initiative succeeded in establishing a very wide ranging network of professionals engaged in the subject, with backgrounds and specializations that include hydrogeologists, lawyers, social scientist and to some extent socioeconomists. There were 300 hundred participants at the 2010 Conference with 112 technical presentations and 36 posters.

Over the life of the IAH-TARM Commission, regular reports were provided to the IAH Members through the News & Information (see IAH Newsletter, N&I Issue 9, Dec 1991, p4), where some of the early activities were reported. In addition, a significant amount of literature has been produced, addressing the five focal areas of TARM's concern the science, that is, the environmental implications, the law, the institutional aspects, and the socio-economics of transboundary aquifer systems.

ACHIEVEMENTS OF THE IAH TARM COMMISSION

In summary, the achievements of the IAH-TARM Commission include:

- The establishment of ISARM networks in most regions of the world (e.g. ISARM Americas, ISARM-SADC, ISARM-IGAD, ISARM-Balkans, ISARM-UN ECE, ISRAM-ESCWA, etc).
- The completion of a worldwide inventory of transboundary aquifers (http://www.isarm.org/publications/324) and a global map of transboundary aquifer systems (WHYMAP - see http://www.whymap.org/whymap/EN/Downloads/Global_maps/spec_ed_2_map_pdf.pdf;jsessionid=3B79DCE2B78E8CA3B2668C750D4FFD19.1_cid284?__blob=publicationFile&v=3)
- The recognition by the UN's International Law Commission that there existed a gap in international water law to address the issue of transboundary aqiufers as a vital shared natural resource, as encapsulated in the Draft Articles on the Law of Transboundary Aquifers
- The recognition by the UN's General Assembly of the Draft Articles and the encouragement to UN Member States to take note of them in their cooperation over shared natural resources

REJUVENATION OF IAH COMMISSIONS – NEXT STAGE FOR IAH-TARM (post 2014)

The IAH-TARM Commission closed down its activities in June 2011, when all IAH Commissions were closed down for revamping with most re-opening in July 2011. Because TARM had achieved all of its objectives as set in 1999, there was a need for a "breather" from 2011 till 2013 while the scope of a possible new Commission was being discussed in line with a number of significant global developments, such as the closure of the International Year of Water Cooperation (2013) and the adoption in the UNESCO International Hydrologic Program (IHP) of a new set of work plans, discussed in their Inter Governmental Council of February 2014. (see https://en.unesco.org/events/50th-session-bureau-international-hydrological-programme-ihp).The UNESCO IHP Resolution no XX-3 "International Initiative on Transboundary Aquifer Management" is one such significant marker that sets the stage for the new IAH Commission on transboundary aquifers.

CONCORDANCE WITH WORLDWIDE INTEREST ON TRANSBOUNDARY AQUIFERS

The IHP Resolution XX-3 was further discussed at the IHP Bureau Meeting in March 2014, and as recorded in the Final Report of the meeting the "forthcoming IAH Commission on the governance of transboundary aquifers

would be the vehicle for implementing the UNESCO Resolution. In line with these discussions a draft application for setting up the IAH Commission was submitted to the IAH Executive for initial discussion in February 2014. This draft was further discussed by the IAH Executive in June 2014 in advance of a formal submission to the IAH Council in September 2014.

DISCUSSION ON THE SCOPE OF WORK OF THE NEW IAH COMMISSION

The scope of the work of the new Commission on transboundary aquifers has to evolve from the achievements of the TARM Commission and the profuse number of activities by many other organizations that have sprung up, such as the Global Environment Facility (GEF) funded Transboundary Waters Assessment Program (TWAP) projects, the Swiss Government's support (connected to the GEF TWAP), the initiatives by several universities (Texas A&M University Law School, Strathclyde UPGrow, University of Oregon, University of London-SOAS, etc.) as well as international organizations (UNESCO IHP, WWC, IWMI). While the new IAH Commission will maintain a wide ranging network, its primary objective will be to provide multi-disciplinary support and guidance, drawing on the expertise of the members of the IAH, as well as many others, whose input on law, socioeconomics and institutional development are integral parts to the sound governance of transboundary aquifers.

'TRANSBOUNDARY AQUIFER GOVERNANCE' OR 'GROUNDWATER GOVERNANCE'

In the course of developing this application there has been some debate about whether it should focus on 'groundwater governance' (as an IAH follow up on the GEF Groundwater Governance project) and whether it should be limited to 'transboundary' considerations alone. Dealing with the 'groundwater governance issue' first; as developed within the GEF Project, the Vision of governance primarily relates to actions, relations and responses within a national jurisdiction (see extensive discussion on water governance, e.g., on the Stockholm International Water Institute (SIWI) website http://www.watergovernance.org/whatiswatergovernance) – trans jurisdiction issues are not highlighted. As is so often repeated, groundwater source utilization being a local issue, governance issues can be addressed under a national constitution. Further IAH has a number of Commissions that are already engaged with actions, relations and responses on national groundwater resources (e.g., Groundwater, Development & Climate Change, Regional Groundwater flow, Network on Groundwater & Ecosystems). A Commission dedicated to groundwater governance could very well replicate many aspects of the work of these existing IAH activities.

TRANSBOUNDARY - ACROSS COUNTRIES? ACROSS PROVINCES? – BOTH !

One aspect that is missing from the scope of work of the existing IAH commissions and networks is the governance of transboundary aquifers be they transboundary between countries or transboundary across national jurisdictions. While recognizing that national 'trans jurisdictional' (across provincial boundaries) can be resolved under the national constitutions, there still remains a need for guidance to be developed for the latter (e.g., in situations such as Brazil, India, etc). As for guidance on transnational boundaries, while the science and the hydrogeology do not change, all other aspects of transboundary aquifer governance are still in their infancy. Governance as used here, is understood to cover among others, issues such as the following in transboundary context:

1. Principles such as equity and efficiency in water resource and services allocation and distribution, water administration based on catchments, the need for integrated water management approaches and the need to balance water use between socioeconomic activities and ecosystems.
2. The formulation, establishment and implementation of water policies, legislation and institutions.
3. Clarification of the roles of government, civil society and the private sector and their responsibilities regarding ownership, management and administration of water resources and services.

Consequently, the IAH Commission that is now proposed will address the governance of transboundary aquifers using the title of Governance of Transboundary Aquifers: International and Domestic Aquifers Crossed by Provincial Boundaries.

INTERIM DIRECTOR & CO-DIRECTORS (PROPOSED)

Director – Shammy Puri, Co Director – Gabriel Eckstein, Co Director – Karen G Vilholth

The first meeting of the new Commission will take place in the IAH's XLI Congress to be in Marrakech in September 2014, when calls will be put out for election of the officers of the Commission.

International Association of Hydrogeologists

Groundwater & Ecosystems Network: Call to Action

Joe Gurrieri, Director, IAH Groundwater & Ecosystems Network

A Call to Action

The Groundwater & Ecosystems Network, as a subgroup of the International Association of Hydrogeologists (IAH), provides a forum for scientists to network and exchange ideas and is dedicated to improving our understanding of the relationship between groundwater and ecological resources. One of our main goals is to communicate our message to other organizations, associations, scientific societies, and research centers dealing with groundwater, ecology, and environmental sciences. IAH, as a community of concerned scientists and citizens, can encourage organizations to take a proactive role in sustaining the long-term health of protected and unprotected groundwater dependent systems.

A core mission of IAH and the Groundwater & Ecosystems Network is to foster awareness of groundwater's important role in sustaining ecosystems while at the same time fulfilling societal needs for water. We are at a juncture where unwise use of groundwater may not only deplete aquifers but may also destroy dependent ecological systems as well. It is thus essential that wetland and water managers understand how groundwater systems function in relation to specific groundwater-dependent ecosystems (GDEs). New knowledge and techniques are now becoming available to support improved quantification of the hydrological and ecological links between aquifers and their associated dependent ecosystems. Without this understanding, managers risk making uninformed decisions on water and GDE management.

The Ramsar Convention, an important IAH partner, is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources and is responsible for designating and protecting Ramsar sites. The Groundwater & Ecosystems Network is working toward meaningful engagement with Ramsar on groundwater issues.

Therefore, the Groundwater & Ecosystems Network requests that this letter be distributed to your IAH members, in particular to those working on the issue of GDEs and those members that have any interactions with Ramsar sites. We encourage these members to:

1) Interact with Ramsar site management to offer help in review or provide hydrogeological input on issues related to groundwater, and
2) Share their hydrogeological characterizations of Ramsar sites with the Groundwater & Ecosystems Network.

A Key Role for IAH members

To directly assist the Groundwater & Ecosystems Network in its efforts to partner with the Ramsar Secretariat, we ask willing members to share their hydrogeological characterizations of Ramsar sites. Documentation can consist of published literature or a short write up. Please respond to Joe Gurrieri at joe.gurrieri3@gmail.com. To locate the Ramsar Convention Administrative Authority within your country, please inquire at this web site www.ramsar.org.

The complete Call to Action is posted on the IAH USNC web site at: www.iahusnc.org .

Some Americans at the 41st IAH Congress in Marrakech,

Morocco

September 2014

Pictured in Photos: Alan Fryar, Abe Springer, M.C. Durham, Adam Milewski, Nick Robins (British), Jack Sharp, Art Becker and spouse.

Hydrogeology Journal – Open Choice Has Arrived

IAH's *Hydrogeology Journal* is a premier journal for groundwater professionals, with eight issues totaling around 1650 pages per year. Since its inception in 1992, it has acquired a large readership worldwide.

Until recently, authors submitted articles at no cost, with our journal's full content being only available to members of IAH. We are pleased, however, to now be able to offer a choice to authors:

1. Pay our publisher, Springer, a publication fee so that all readers have full and permanent (i.e., open) access to the article, or

2. Publish the article by the usual no-fee route, in which case only journal subscribers and IAH members will have full access.

With either route, the article will be handled in exactly the same way in terms of processing, scientific review, presentation, publicity and author support.

Springer's fee for Open Choice is usually €2,200/US $3,000, but authors who are IAH members will pay a reduced fee of €1,200/US $1,600, provided they remain a member of IAH through the review period. Hydrogeology Journal authors wishing to become IAH members to benefit from this discount will be most welcome to join. Where there is more than one author, both the lead author and corresponding author must be IAH members to enjoy this substantial discount.
Find out more at:

http://iah.org/hydrogeology-journal

SpringerLink – Hydrogeology Journal

(full information regarding the journal, including its editorial board, Editors' Choice, manuscript submission and instructions for authors)

Upcoming Meetings

The Geological Society of America is meeting in Vancouver, Canada this year. IAH events include:

- **Sunday October 19, 5:00 pm:** Please join us for the next USNC-IAH meeting, which will take place during the 2014 Annual GSA Meeting in Vancouver. We will be gathering in the Kensington Room of the Hyatt Regency Hotel in Vancouver, BC, on Sunday October 19th from 5:00 – 6:30 pm.
- **Monday October 20:** Andy Manning, our GSA Liaison, along with Grant Ferguson, Chair of the Canadian Chapter, will be convening a coveted Pardee Keynote Symposium entitled "Energy Resource Development."
- **Tuesday October 21, 11:30 am**: The GSA Hydrogeology Division Luncheon, Awards, & Business Meeting will be Tuesday, 21 Oct., 11:30 am-3 pm, VCC-West. It is a ticketed event through GSA ($48).
- **Tuesday October 21, 5:30 pm:** GSA Hydrogeology Student Reception, at the VCC-West, Ballroom C, 5:30-8pm, Tuesday Oct.21.
- **Tuesday October 21, 7:00 pm:** Join the informal gathering of the US National Chapter of IAH for dinner on Tuesday October 21st, (everyone will pay for their own dinner). We plan to meet around 7:00 pm just outside of Ballroom C of the Vancouver Convention Center (several of us will be attending part of the GSA Hydrogeology Division Student Reception). All are welcome for this fun gathering, but please RSVP so we can reserve an adequate table at a local restaurant.

Hope to see you there!!

IWRA
International Water Resources Association

The Scottish Government

World Water Congress XV
Call for Abstracts

Edinburgh, Scotland 25-29, May 2015

Call for Abstracts: September 19, 2014 (may be extended)

Global Water, a Resource for Development: Opportunities, Challenges and Constraints

In an increasingly complex world, water management is at a critical juncture at present. Even when it has to fulfil essential roles in promoting development, reducing poverty and conserving environment at the national and sub-national levels, water is often scarce, contested, polluted, mismanaged, misgoverned and poorly allocated. A main handicap has been that water management has often been considered as an end by itself, and not as a means to an end, the end and the opportunity being to achieve overall development, economic prosperity, improvement of quality of life and environmental conservation.

Both developed and developing countries are confronted with the urgent need to support the increasing water-related demands of growing populations and of the energy, industrial and agricultural sectors, as well as to respond to environmental concerns with sources of water that are scarce, over-exploited or too polluted for the intended uses. In spite of its relevance in terms of security, water is often not regarded as a key determinant for development, absent from many political agendas.

This congress seeks to explore Global Water as a resource for economic, social and environmental development. Hosted in Edinburgh capital of Scotland the Hydro Nation where recent legislation puts water at the heart of the national development agenda. The XVth World Water Congress and Exhibition that will be held in Edinburgh, Scotland, 25 to 29 May 2015, and that will be hosted by the Scottish Government, will be a continuation of this trend.

The XVth World Water Congress will provide a platform for open discussions and debates among scientists, practitioners and policy makers from both developed and developing countries and from different disciplines and sectors. In collaboration with Scotland´s Water, the IWRA Congress will promote in-depth discussions on the complexity of water policies, management, development and governance practices at the local, national, regional and global levels in a rapidly changing world as the fast evolving global landscape is driving decisions in the sectors´ policies, performance and prospects.

We invite the water and related communities to be part of this ongoing discussion to manage water efficiently, equitably and cost-effectively so that desired ends are met successfully.

See details at: http://worldwatercongress.com/

Call For Abstracts!

UCOWR/NIWR/CUASHI Conference

June 16-18, 2015

UNIVERSITIES COUNCIL ON WATER RESOURCES

Universities and Organizations Leading in Education, Research and Public Service in Water Resources

NIWR

CUAHSI
UNIVERSITIES ALLIED FOR WATER RESEARCH

A university consortium sponsored by the National Science Foundation

University Council on Water Resources,

National Institutes for Water Resources,

Consortium of Universities for the Advancement of Hydrologic Science, Inc.

Water is Not for Gambling: Utilizing Science to Reduce Uncertainty

For Information on Abstract Submittal, Registration, and Hotel Accommodations, etc. go to http://www.ucowr.org/

Green Valley Ranch Resort, as Vegas (Henderson), Nevada

Co-sponsors: The International Association of Hydrogeologists – U.S. National Chapter, The Brookings Institute, Nevada Water Resources Association, Southern Nevada Water Authority, Arizona Hydrologic Society, Groundwater Resources Association of California, Universities Water and Sanitation/Hygiene Network, Southern Illinois University, University of Nevada, Las Vegas

Presentations are Welcomed on These and Related Topics

- Water Resources Management Under Climatic and Environmental Change
- Irrigation Efficiency and Management
- Environmental Flows, Pulse Flows, Multispecies Protection
- Water Resources Policy, Planning, and Legal Challenges
- Human Dimensions of Watershed Management
- Remote Sensing and Water Resources
- Water Transactions, Banking, Pricing
- Water Quality, Remediation, and Management
- Deep Groundwater, Fluid Injection, and Hydraulic Fracturing
- Water, Sanitation, and Health (WASH) in the Developing World and Hydrophilanthropy
- Urban Water Management
- Drought
- Colorado River
- Invasive Species
- Flood Management
- Transboundary Water Issues
- Gulf Hypoxia
- Water Reuse and Conservation
- Emerging Contaminants
- Agricultural Best Management Practices
- Food, Energy, Security, and Water Resources

Deadline for Abstracts: January 16, 2015.
For more information contact Jackie Crim, UCOWR Headquarters,ucowr@siu.edu, (618) 536-7571

Other Conferences

- **21-26 Sep 2014 – Lisbon, Portugal – International Water Association (IWA) World Water Congress & Exhibition 2014, Shaping our water future. http://www.iwa2014lisbon.org/**

- **8-10 Oct 2014 – Thessaloniki, Greece - 10th International Hydrogeological Congress with emphasis on Groundwater depended ecosystems http://www.hydrogeologycongress.gr/**

- **15-16 Oct 2014 – Sacramento, California - Groundwater Resources Association of California 23rd Annual Conference and Meeting, 2014 – The Year of Groundwater.**

  2014 is shaping up to be a landmark year in California's water history, and groundwater is the focus. As groundwater levels decline and the land surface subsides during one of the worst series of droughts the state has experienced, Governor Brown's administration is proposing to provide legislative and other support to local entities to improve groundwater management. Recent hearings held by the state on groundwater sustainability also indicate that industry associations, grower groups and the state are evaluating efforts to preserve and protect local control over groundwater management, and also to allow for state intervention where local efforts are unsuccessful or nonexistent. GRA's 23rd Annual Conference and Meeting will focus on this topic with targeted sessions on the administration's efforts, associated legislation, and the perspectives of local organizations.
  http://www.grac.org/ skline@grac.org

- **10-13 Nov 2014 – Porto Alegre, Brazil - First International Conference on Fractured Rock Hydrogeology of Central and South America**

  Sponsored by International Association of Hydrogeologists (IAH), IAH Commission on Fractured Rocks Hydrogeology, Hydraulic Research Institute, Federal University of Rio Grande do Sul and ALHSUD - Asociación Lationoamericana de Hidrologia Subterránea para el Desarrollo. Abstracts invited.

  Organised by Uwe Tröger, Technische Universität Berlin; Sandor Arvino Grehs, Fundação Luiz Englert / UFRGS, Porto Alegre. http://frhgconference2014.org/

- **17-18 Nov 2014 – Introduction to Groundwater and Watershed Hydrology: Monitoring, Assessment and Protection,** Buehler Alumni Center, University of California, Davis, **http://www.grac.org/hydrology.asp**

  This short course will review the fundamental principles of groundwater and watershed hydrology, water quality, and water contamination in an intuitive, highly accessible fashion. It will then provide an overview of the most common tools for measuring, monitoring, and assessing groundwater and surface water resources. And it will review current local, state, and federal programs dealing with groundwater, groundwater management, and watersheds

- **15-19 Dec 2014 – American Geophysical Union Annual Meeting, San Francisco** **http://fallmeeting.agu.org/2014/**

- **Feb 2015 – California Oil, Gas and Groundwater, Southern California, http://www.grac.org**

  Hydraulic fracturing has been utilized for oil and gas production in California for decades. While it has proven vital in developing the nation's underground energy sources and the nation's economy, concerns have been expressed as to the impacts fracking activities may have on natural resources, specifically water quality. The purpose of this conference is to provide an open forum for the transfer of knowledge between regulators, water agencies, consultants, oil and gas stakeholders, and scientific experts to discuss the innovative strategies and techniques oil and gas companies use in managing the water quality and quantity component of the oil and gas production cycle. This will help clarify the potential impact, real or perceived, hydraulic fracking may have on California's water resources in local and regional aquifers and watersheds.

  The conference program tracks may include topics such as:

  - Water Supply for O&G Production
    - Survey of current sources
    - Regulation of supply
    - O&G water demands
  - Produced Water Management
    - Monterey produced water quantity and quality
    - California produced water disposal
    - Produced water recycling
  - Water Quality Monitoring
    - Current monitoring programs
    - Baseline groundwater monitoring
  - Coexistence with Stakeholders
    - Competition for water in CA
    - O&G as a good neighbor
    - O&G water management case studies
  - Water Transportation and Disposal
    - Transportation regulations
    - Disposal options

Contributions for the Spring 2015 IAH Newsletter are Welcomed!!

Contact Suzanne Pierce at: **sawpierce@gmail.com**