



International Association of Hydrogeologists U.S. National Chapter Newsletter

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Editor: Colin J. Booth, Department of Geology and Environmental Sciences
Northern Illinois University, DeKalb, IL 60115
Phone: 815-753-7933 Fax 815-753-1945 E-mail: colin@geol.niu.edu



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AT THE END OF THE NEWSLETTER , PLEASE READ THE

Proposed IAH/USNC Constitution & Bylaws OR Articles of Association

IAH/US NATIONAL CHAPTER: EXECUTIVE COMMITTEE 2005-2008

Chairman	John M. (Jack) Sharp jmsharp@mail.utexas.edu	University of Texas at Austin 512-471-3317
Secretary-Treasurer:	Todd Halihan halihan@okstate.edu	Oklahoma State Univ. 405-744-6358
Past-Chair:	Leonard F. Konikow (USGS)	lkonikow@usgs.gov
Director:	Colin J. Booth (Northern Illinois Univ.)	colin@geol.niu.edu
Director:	Victor Heilweil (USGS)	heilweil@usgs.gov
Director:	Noel Krothe (Indiana University)	krothen@indiana.edu
Director:	Michael Wireman (US EPA)	Wireman.Mike@epamail.epa.gov

EDITOR'S NOTE

This Fall 2005 issue of the IAH/USNC newsletter is a little earlier than usual so that it can be sent out in advance of the GSA Annual Meeting. Many thanks to the contributors who have provided so much information so quickly.

For some time, the Executive Committee has been struggling with developing a revised Constitution and Bylaws. The old versions go back so far in time (1980's) that they refer to national organizations that no longer exist and operating structures that are no longer viable. Under the umbrella of the parent IAH organization, we have managed to function, but we need to make our structures consistent, up-to-date, and rigorous, particularly as we will likely seek formal incorporation status. We have considered both separate Constitution and Bylaws and a combined Articles of Association format. Please review these at the end of this newsletter. If you have any comments please send them by e-mail to the IAH/USNC Chair, Jack Sharp (jmsharp@mail.utexas.edu). We will discuss the proposals at the IAH meeting at GSA (Sunday, October 16) and the Committee may vote on them at that time or later; however, ultimate ratification of the proposals will require a subsequent mail vote of the membership.

Hope to see you at GSA!

-- Colin Booth

CHAIRMAN'S REPORT

Colleagues,

I hope you have had a rewarding year in the fascinating field of hydrogeology and I would like to welcome you to the next *Meeting of the International Association of Hydrogeologists, U.S. National Chapter (IAH/USNC) Executive Committee*, at the GSA annual meeting in Salt Lake City on Sunday afternoon, October 16. The meeting is open to all IAH members. It is scheduled for 5:15 PM in Room 250A/B, following the topical session *Innovations and New Frontiers in Hydrologic Modeling*, which is being convened by Frank Schwartz and Motomu Ibaraki. We hope to conclude the meeting with plenty of time to join the GSA welcoming party.

I expect that Andrew Skinner, the Executive Manager of IAH, and Ken Howard, North American Vice President, will also attend. The major agenda items are: the status of incorporation as a nonprofit organization; approval of the amended IAH/USNC bylaws and constitution (these are attached for your information); status of the IAH ; IAH/USNC representation at the NGWA's 2006 Groundwater Summit and future GSA meetings (including regional spring meetings); the possibility of hosting an IAH Conference in 2007 or 2008; relationships with sister organizations in Colorado and California; and, as always, the need for members and funds. If any member has comments on the bylaws and our constitution, please contact me or any other member of the Executive Committee (Lenny Konikow, Todd Halihan, Mike Wireman, Colin Booth, Vic Heilweil, and Noel Krothe). Both the bylaws and our constitution are short documents.

Note that we are co-sponsoring one Pardee Keynote Symposium and four topical sessions at the GSA meeting. These are:

Pardee Symposium 7. **The Wasatch Range–Great Salt Lake Hydroclimatic System** (Sponsored by GSA Hydrogeology Division, International Association of Hydrogeologists/U.S. National Chapter,

American Geophysical Union, GSA Quaternary Geology and Geomorphology Division, and Friends of the Great Salt Lake). The conveners are Christopher J. Duffy, Danny Marks, David G. Tarboton, and Craig B. Forster. This broad interdisciplinary session on the dynamic Wasatch Range–Great Salt Lake system examines geologic, hydrologic, and ecologic issues of the water cycle, under pressure today from climate change and resource manipulation.

Topical session T9. **Bedrock Infiltration: Advances in Understanding Vadose-zone Processes, Percolation through Macropores and Shallow Soils, and Recharge to Consolidated-rock Aquifers** (Sponsored by GSA Hydrogeology Division and IAH). The conveners are [Victor M. Heilweil](#) and Lorraine E. Flint. This session focuses on understanding bedrock infiltration and recharge in a variety of climates and geologic settings. The session includes papers on field studies, macropore flow, soil physics, plant dynamics, contaminant transport, environmental tracers, and modeling.

Topical session T18. **Innovations and New Frontiers in Hydrologic Modeling** (Sponsored by GSA Hydrogeology Division, National Ground Water Association, IAH, and GSA Engineering Geology Division). The conveners are [Frank W. Schwartz](#) and Motomu Ibaraki. Models have grown from a mathematical curiosity to indispensable tools for analysis of hydrologic systems. This session examines new developments in groundwater and hydrologic modeling, emphasizing innovations in theory, design, and data handling.

Topical session T21. **Innovative Use of Natural and Artificial Tracers in Mountain Catchments Underlain by Fractured Rocks** (Sponsored by GSA Hydrogeology Division and IAH). The conveners are [Mike Wireman](#) and Mark Williams. This session focuses on the use of natural and artificial tracers to characterize groundwater sources, flowpaths, residence times, and hydraulic connection to surface water beneath mountain catchments underlain by fractured rocks.

Topical session T34. **Springs: Keys to Understanding Geochemical Processes in Aquifers** (sponsored by the GSA Hydrogeology Division, the International Association of Hydrogeologists, and the Karst Waters Institute). The conveners are: [Brian G. Katz](#) and Dorothy J. Vesper. Springs provide unique opportunities to study geochemical processes in aquifers in natural systems and those impacted by anthropogenic inputs. This session focuses on studies that use biogeochemical, hydrologic, and geophysical methods to characterize processes affecting spring-water chemistry.

We plan to have a small exhibit with membership forms at each of the topical sessions.

In September, our Serbian and Montenegrin IAH colleagues hosted a superb conference on ***Water Resources and Environmental Problems in Karst***. IAH/USNC was represented by David Culver (American University), Neven Kresic (Malcolm Pirnie), Jim and Nicole Lamoreaux (PELA Associates), Roy McDonald (Start California), Dick and Estelle Parizek (Pennsylvania State University), and Jack Sharp and student member Adrien Lindley (The University of Texas). The conference had oral sessions both in Belgrade, Serbia and Kotor, Montenegro. The field trips were spectacular with karst springs discharging over 300 m³/sec!



Adrien Lindley and Jack Sharp (standing, left to right) and Jim and Nicole Lamoreaux at the IAH banquet in Belgrade.

I request photos and brief reports from any IAH/USNC members who will be attending the next two IAH-sponsored conferences:

Alicante, Spain, October 4-8: organized by the Spanish National Committee of the IAH and entitled "From data gathering and groundwater modelling to integrated management".

Auckland, New Zealand, November 28 – December 2: organized by the New Zealand Hydrological Society and the IAH Australian National Chapter and entitled "Where the Waters Meet"; this conference deals with surface/atmospheric/ocean/groundwater interchanges.

Future congresses are planned for China (Fall, 2006), Portugal (2007), and Japan (2008). An IAH conference in Dijon, France, May 28 – June 3, 2006 will commemorate both Henry Darcy and the 50-year anniversary of the start of IAH. A list of other conferences can be found on the IAH web site (www.iah.org). Also, I think that the U.S. National Chapter should consider sponsoring a conference or congress again. Our last, in cooperation with the American Institute of Hydrology, was in Las Vegas in 1998. We can also co-sponsor other meetings that revolve around hydrogeology issues, especially those with any international implications.

On membership issues, a strong vital membership is needed by any scientific organization. Mike Wireman is pursuing an arrangement with the Colorado Groundwater Association similar to what we have with the equivalent California group. Please encourage your colleagues and students to join IAH. Our budget is 10% of the international dues.

Finally, congratulations to our own Cliff Voss. Cliff has been awarded the 2005 IAH President's Award for his immense contributions to the editing of the Hydrogeology Journal and its evolution to becoming the premier journal in hydrogeology.

- Jack Sharp

ARTICLES AND REPORTS

U.S. Geological Survey Ground-Water Resources Mission to Cape Verde

Victor M. Heilweil, John D. Earle, Paul M. Messer

The U.S. Geological Survey (USGS) recently completed a mission focusing on ground-water resources on three islands of the Republic of Cape Verde. The work is funded by the Millennium Challenge Corporation (MCC), which is supporting a 5-year-long water, agriculture, and infrastructure improvement program. Cape Verde, a small archipelago off the northwestern coast of Africa, consists of eight inhabited islands and contains a population of about 440,000 people. Water scarcity is of primary concern to the nation. Between 1719 and 1946, 30 extreme droughts caused massive famine, reducing the population by as much as 40 percent. The effects of more recent droughts have been mitigated by international aid. More than 80 percent of the food consumed on the islands is currently imported. Population growth and intensive agricultural activity (farming on steep uplands and overgrazing) is causing substantial environmental damage including decreased water retention, high-velocity flooding, soil erosion, and saltwater intrusion.



Demonstration of water-level measurement on the island of Sao Nicolau

Although the three islands each have unique geologic, morphologic, and topographic constraints, they share common challenges to ground-water development. Pumping and limited natural recharge have caused salt-water intrusion to wells in coastal areas. Steep terrain and limited drilling-depth capability are current barriers to locating wells farther inland. Hydrologic characteristics of the volcanic deposits are

highly variable, and the more permeable units are generally thin and do not provide for large volumes of aquifer storage. The steep terrain, thin soils, and torrential nature of the monsoon rains result in rapid surface-water runoff to the ocean. In order to reduce soil loss, capture surface-water runoff, and enhance ground-water recharge, the MCC project will use simple yet effective locally developed technologies. These include terraces and retaining walls for soil protection, retention dikes with buried drain pipes to capture and transmit flow from ephemeral washes to storage tanks, and cement-lined slopes to collect and funnel rainwater into collection cisterns.

The USGS mission in August 2005 included training and ground-water resource assessment of three ground-water basins: Ribeira Paúl on Santo Antão, Mosteiros on Fogo, and Ribeira Fajã on São Nicolau. The USGS technical training courses and field work on each island were coordinated by the Instituto Nacional de Gestão dos Recursos Hídricos (INGRH). The INGRH is actively involved in collecting hydrologic information and shared their understanding of the hydrogeology of the islands with USGS scientists during the mission. The USGS training focused on the advancement of techniques for collecting ground-water data and setting up hydrologic monitoring networks. Field work included inventories of ground-water wells, spring-discharge measurements, field water-quality measurements, and environmental-tracer sampling. This information will be used, in part, for evaluating the success of the MCC efforts to enhance water resources through the infiltration and recharge-enhancement infrastructure. The USGS is planning a follow-up mission later this year to continue training and collection of baseline ground-water data collection in the three basins.



Retention dike for capturing runoff on the island of Sao Nicolau

ANNOUNCEMENTS

Pat Leahy Named Acting Director of the U.S. Geological Survey

Interior Secretary Gale Norton named Dr. P. Patrick Leahy as Acting Director of the U.S. Geological Survey on June 13. Leahy took over from Dr. Charles G. Groat, who announced his resignation, effective June 17, 2005, to accept an appointment at The University of Texas at Austin. A permanent replacement for USGS Director must be nominated by President Bush and confirmed by the U.S. Senate.

"Pat is a consummate professional with a wealth of scientific expertise and administrative experience on a broad range of issues," Norton said. "He has been with USGS since 1974, and I am confident in his ability to take on this position."

Pat received his doctorate in geology (1979) from Rensselaer Polytechnic Institute, where he specialized in regional ground-water studies and hydraulics. Leahy is a past president of our U.S. National Chapter of the International Association of Hydrogeologists and remains an active member. We wish him the best in his new leadership position.

Earth Science Week

Earth Science Week (ESW) is scheduled for October 9-15, 2005. Visit the web site, www.earthsciweek.org for current listings of events, contests, and activities and to use this geoscience resource throughout the year. The American Geological Institute (AGI) has prepared a special ESW information kit. The contents include:

- *Geoscientists Explore the Earth*: a new Earth Science Week poster with a classroom activity on the back.
- *Careers in the Earth Sciences DVD*: a DVD-video containing 3 short movies that explore career options in the geosciences and the role of the USGS in integrating different science disciplines to understand the Earth.
- *Earth Science Week Activity Calendar*: a 12-month calendar that shows classroom activities and the dates of important geoscience events and milestones.
- *Tsunami Resources*: an educational CD prepared by NOAA.
- *Earth Science Systems Elementary School Curriculum CD*: a resource prepared by NASA.

The kit also includes some additional material and posters. To order kits, contact AGI at 703-836-4357 or visit the web site at www.earthsciweek/materials.

PUBLICATIONS

USGS Releases Report on Ground-Water Use

According to an AGI Press Release, the U.S. Geological Survey released a report entitled "Estimated Withdrawals from Principal Aquifers in the United States, 2000" on August 1, 2005. Major findings highlighted in their press release include that 76.5 billion gallons per day are withdrawn from aquifers for irrigation (about 75% of the total usage), water supplies to homes and businesses and self-supplied industrial uses. California and Nebraska use more ground water for irrigation than any other states: 8,910 mgd in California and 7,050 mgd in Nebraska. About half of the combined ground-water withdrawals are

coming from four principal aquifers: the High Plains aquifer (CO, KS, NE, NM, OK, SD, TX, WY), the Central Valley aquifer (CA), the Mississippi River Valley alluvial aquifer along the lower Mississippi River (AR, LA, MS, MO, TN), and the Basin and Range aquifers predominantly located in the desert Southwest (AZ, CA, ID, NV, NM, OR, UT).

The full report is available online at: <http://pubs.water.usgs.gov/circ1279>

--Lenny Konikow

USAID Creates Natural Resources Library on the Web

AGI reports that the U.S. Agency for International Development (AID) Office of Natural Resources Management (NRM) has developed a clearinghouse of online resource libraries that provide immediate public access to studies of biodiversity, forestry, land management and water from around the world. An interactive map of the world links seamlessly to over 450 project summaries and 3,100 USAID reports assessing natural resource use as it relates to armed conflict, tourism, poverty reduction, and the aid of geographic information systems. The website serves USAID mission staff, contractors and other stakeholders to enhance decision-making and project planning, and to communicate the agency's work to the global community.

The library is accessible through <http://www.nric.net>

- Lenny Konikow

¿Por Qué Ciencias de la Tierra? (Why Earth Science? -- in Spanish)

ALEXANDRIA, VA – The American Geological Institute's publication *Why Earth Science?* promoting the importance of earth science in K-12 education, has been disseminated to more than 100,000 people through geoscience agencies, organizations, and schools. In an effort to address the growing concerns about the health of earth science within the Spanish-speaking community, *Why Earth Science?* has been translated into Spanish.

It was decided to translate the publication into Spanish "to reach a wider, more diverse audience with the message that earth science knowledge is important to all citizens," says Ann Benbow, Director of Education and Outreach at AGI. The geoscience community recognizes that there is a greater demand for minority participation in the sciences, and in the United States, Hispanics are now the largest ethnic minority with a population of more than 40 million.

The publication is designed to help teachers, parents, industry leaders and geoscience advocates explain the importance of earth sciences in today's educational environment. *Why Earth Science?* provides descriptions of the reasons we, as citizens, look to earth scientists to understand and manage our planet, and the importance of earth science education for success in school, careers, informed decision-making and civic engagement.

Copies of the newly translated version, entitled *¿Por Qué Ciencias de la Tierra?* can be obtained by contacting Geoff Camphire (gac@agiweb.org) at AGI. Both the English and Spanish versions are available online at http://www.agiweb.org/education.teachers/online_resources.html.

-- AGI press release.

CONFERENCE AND MEETING NOTICES

For announcements by IAH, please go to the IAH website, www.iah.org

For announcements of conferences and meetings being presented by California GRA, see the GRA section below.

Where Waters Meet:

Joint conference, New Zealand Hydrological Society & IAH Australian National Chapter *November 28 – December 2, Auckland, New Zealand*

The conference theme explores the transition phase where water transforms from one expression to another. Topics include: stream-aquifer interactions, baseflow, seepage faces, tidal zones, seawater intrusion, ASR, Pacific island hydrology, tsunami impacts, conjunctive water management, geothermals resources and springs, protection of springs and groundwater-dependent ecosystems. (Abstract submission deadline was May 30, 2005)

<http://www.hydrologynz.org.nz/society-conferences.html#nzhs05>

also: www.iah.asn.au and www/wrl/unsu.edu.au/iah-auckland

GEOLOGICAL SOCIETY OF AMERICA ANNUAL MEETING

October 16-19, 2005: Salt Lake City, Utah.

See also the Chairman's report above. IAH is co-sponsoring a Pardee Symposium and four topical sessions. In addition, there are more than 25 other sessions related to hydrogeology.

See: www.geosociety.org/

NOTE: The IAH/USNC Executive Committee will be holding a meeting, open to all IAH members, at GSA on Sunday October 16 at 5:15 p.m. in Room 250A/B, following the topical session *Innovations and New Frontiers in Hydrologic Modeling*. The tentative agenda is:

- Annual report of IAH/USNC, including Treasurer's Report
 - Status of incorporation as a nonprofit organization
 - Discussion and possible approval of the amended IAH/USNC bylaws and constitution (attached for your consideration; your comments by e-mail to the Chair are welcome)
 - IAH/USNC representation at the NGWA 2006 Groundwater Summit and future GSA meetings (including regional spring meetings)
 - The possibility of hosting an IAH Conference in 2007 or 2008
 - Relationships with sister organizations in Colorado and California
 - Other business.
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50TH ANNUAL MIDWEST GROUNDWATER CONFERENCE:

Nov. 1-3, 2005, Champaign-Urbana, Illinois

A wide variety of topics related to many aspects of groundwater quality, aquifer and site characterization, water supply sustainability, and other issues.

Information: <http://midwestgroundwater.org>

INTERNATIONAL GROUNDWATER SUSTAINABILITY SYMPOSIUM
January 24-27, 2006; Alicante, Spain

Groundwater is an integral part of most water supply systems worldwide and a key resource for human, agricultural, industrial, and ecological purposes. However, adequate water resources management is often lacking and, as a result, unintended negative ecological, economic, and social consequences have occurred. Achieving groundwater resources sustainability is subject to many interwoven factors, including scientific and technical factors (such as climatic and hydrogeologic conditions and effective data collection and utilization to understand basin wide hydrologic conditions) and also political and socioeconomic factors. Accordingly, while adequate monitoring and information networks are integral to water resources management, it is also necessary to develop institutional arrangements, economic incentives, legal structures, and educational initiatives that will ensure groundwater resources sustainability.

The “International Symposium on Groundwater Sustainability” will bring together experts from different disciplines and regions of the world to discuss challenges and propose solutions to contribute to the long-term sustainability of groundwater resources. This Symposium, organized by the Spanish Geological Survey, the Spanish Ministry of Science and Education, the Universidad de Alicante, and the Spanish Royal Academy of Sciences, is part of the Interacademy Panel’s Water Program for the triennium 2004-2006. Other collaborators include: UNESCO, the National Academy of Sciences of the United States, Brazil and Mexico, and the National Ground Water Association (NGWA).

Complete conference and registration details can be found at
<http://aguas.igme.es/igme/ISGWAS/ing/defaultc.htm>.

SME Annual Meeting and Exhibit & 7th ICARD
March 27-30, 2006, St. Louis, Missouri

Including **International Mine Water Association (IMWA) Symposium**

See: <http://www.smenet.org/meetings/AnnualMeeting2006/Author/icard.cfm>

And: <http://www.imwa.info>

Saltwater Intrusion Meeting
June 12-16, 2006, Cagliari, Sardinia, Italy

The next saltwater intrusion meeting will be held in the city of Cagliari, on the beautiful island of Sardinia, in Italy, on June 12-16, 2006. This meeting will be a joint meeting of SWIM 19 (Salt Water Intrusion Meeting: <http://www.geo.vu.nl/users/swim/>) and SWICA-3 (International Conference and Workshop on Saltwater Intrusion and Coastal Aquifer Management: <http://www.olemiss.edu/sciencenet/saltnet/conf-swica.html>) and will be organized by Prof. Giovanni Barrocu (e-mail: barrocu@unica.it).

IAH ALLIED ACTIVITIES WITH THE GROUNDWATER RESOURCES ASSOCIATION OF CALIFORNIA

By Vicki Kretsinger

The Groundwater Resources Association (GRA) and IAH developed an allied partnership in 2001 and launched a Joint Membership Program beginning in 2002. There have been 156 participants in the Joint Member program with 27 IAH members electing to participate this year. Through the balance of 2005, three upcoming GRA events for which the IAH/USNC is a cooperating organization are described below. Also below is a preview of 12 programs being planned for 2006. As members of a cooperating organization, IAH members enjoy GRA member rates to attend these events.

Workshop: PRINCIPLES OF GROUNDWATER FLOW & TRANSPORT MODELING *November 7-9, 2005; Seaport Computer and Conference Center, Redwood City, CA*

Groundwater resources evaluation, groundwater quality assessment, contamination site assessment and remediation, environmental impact review, and other groundwater related activities frequently rely on computer models as a means of understanding groundwater flow and the fate of contaminants in the subsurface. This GRA course, co-sponsored by the University of California Cooperative Extension Groundwater Hydrology Program and in cooperation with the IAH/USNC, introduces the conceptual principles and practical aspects of groundwater modeling in an intuitive yet comprehensive manner. The course objective is to demystify the use of groundwater models by providing solid understanding of the principles, methods, assumptions, and limitations of groundwater models, as well as hands on experience with the planning, preparation, execution, presentation, and review of a modeling project. The first half of the course reviews the concepts of groundwater flow and transport, and of finite difference and finite element methods. It provides an overview of various software programs for groundwater flow and transport modeling and accompanying pre- and post-processing programs. The second half of the course features hands-on exercises based on the U.S. Geological Survey (USGS) MODFLOW flow model and a compatible transport model. Exercises include site-specific models as well as basin/watershed wide models. Course topics include:

- principles and concepts of groundwater modeling
- overview of groundwater modeling software
- conceptual model development
- data collection and preparation
- model grid design
- boundary conditions: concepts and application
- implementing rivers, lakes, recharge, drainage, and other special situations
- modeling multiple aquifer systems
- sensitivity analysis and model calibration
- contaminant transport modeling
- capture zone analysis
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Course Instructors: Graham E. Fogg, professor of hydrogeology with the Hydrology Program of the Department of Land, Air, and Water Resources, University of California, Davis; Thomas Harter, in

charge of the University of California Cooperative Extension Groundwater Hydrology Program; and Peter Schwartzman, associate at Pacific Groundwater Group in Seattle, Washington.

For more details and to register see <http://www.grac.org/modreg.html> .

25th BIENNIAL GROUNDWATER CONFERENCE AND 14th ANNUAL GRA MEETING
October 25-26, 2005, Sacramento, California

For 50 years, the Biennial Groundwater Conference has provided policy-makers, practitioners, researchers, and educators the opportunity to learn about the current policies, regulations, and technical challenges affecting the use and management of groundwater in California. Sponsors of this year's conference, "**Past Lessons and Future Prospects**," include the University of California Center for Water Resources, California Department of Water Resources (DWR), California State Water Resources Control Board (SWRCB), Groundwater Resources Association of California (GRA), Water Education Foundation (WEF), and U.S. Geological Survey (USGS). Cooperating organizations include the International Association of Hydrogeologists (IAH), California Groundwater Association (CGA), Association of California Water Agencies (ACWA), and the National Ground Water Association (NGWA). Policy and technical sessions will address groundwater resources management and water quality issues at basin-wide, regional, and national scales.

Added Event Features: GRA's Sacramento Branch is holding a monthly Branch dinner meeting and presentation the evening of October 24 immediately preceding the Conference at the Hyatt Sacramento at Capitol Park Hotel. The Branch is pleased to announce the invited guest speaker is Beth Parker, Research Associate Professor of the Department of Earth Sciences at the University of Waterloo, Canada. Her research specializes in field characterization of industrial organic contaminants in fractured and unfractured low permeability geologic environments; her presentation is on "Chlorinated Solvent Plumes in Sandy Aquifers: Opening the Black Box." For more information about the Branch meeting, see <http://www.grac.org>.

Another new Conference feature includes the global water documentary, "Running Dry," produced by The Chronicles Group and in association with the late Paul Simon, former U.S. Senator, which will be shown following the President's Reception on October 25. The documentary is inspired by Paul Simon's 1998 book, *Tapped Out, The Coming World Crisis In Water And What We Can Do About It*. Writer, producer and director, James Thebaut, President of The Chronicles Group, developed the documentary with Paul Simon, until Simon's death in 2003. The documentary provides a powerful, sometimes overwhelming, overview of the evolving world water crisis in Africa, Southern Asia, Northern China, the Middle East, and the American Southwest. Narrated by actress Jane Seymour, the documentary informs us that "in developing countries, children cannot get a basic education because of their around the clock effort to find clean, drinking water." Further, the documentary reminds us of a grim statistic: "worldwide, a child dies every 15 seconds from water-related diseases." For more information about the documentary, see www.chroniclesgroup.org .

Conference Program Information: Visit the University of California Center for Water Resources Center web site, <http://www.waterresources.ucr.edu>, for complete program details and registration information. For more information, contact Julie Drouyor at the UC Center for Water Resources, (951) 827-4327. Information is also posted at <http://www.grac.org> .

**15TH SYMPOSIUM IN THE SERIES ON GROUNDWATER CONTAMINANTS –
DNAPL SOURCE ZONE CHARACTERIZATION & REMEDIATION**
December 7-8, 2005: Ramada Plaza Hotel, San Francisco, California

Effective and efficient dense non-aqueous phase liquid (DNAPL) source zone remediation involves difficult technical issues and as well as policy challenges. This GRA Symposium, presented in cooperation with the IAH/USNC and other organizations, will focus on DNAPL source zones and the technical and regulatory challenges faced by professionals working with these sites. Symposium sessions will cover a variety of topics, including source zone characteristics and characterization, technical issues related to source zone remediation, source controls and remedial technologies, and remediation performance assessment. The combination of invited speakers and experts from key areas of the DNAPL field make this an important event for all professionals involved in decision-making on DNAPL projects. Symposium session topics and registration information are available at <http://www.grac.org>.

PREVIEW OF 2006 SYMPOSIA AND WORKSHOPS

Watch for details at GRA's web site

- Perchlorate Impacts to Water Supply Wells, January 26, 2006, Westin Santa Clara Hotel, CA
- Introduction to Hydrology (short course), February 9-10, 2006, Glendale, CA
- Principles of Groundwater Modeling (short course), March 8-10, 2006, Irvine, CA
- Nitrate and Salinity, April 4-5, 2006, Modesto, CA
- Vadose Zone Modeling (short course), May 10-12, 2006, Redwood City, CA
- Hydrofacies Modeling with TproGS (short course), Spring 2006, location to be determined (TBD)
- Risk Communication and Public Drinking Water, Spring 2006, TBD
- Water Resources in Fractured Rock, June 2006, Tahoe area, CA
- Emerging Contaminants – PDBEs, NDMA, PCPs, EDCs, 1,4-Dioxane, Summer 2006, TBD
- 2006 Annual Meeting and Conference, September 20-22, 2006, Bahia Resort Hotel, San Diego, CA
- Multi-Level Sampling Strategies, Fall 2006, TBD
- Natural Water Chemistry, Winter 2006, TBD

IAH members are welcome to express their interest in assisting with the planning of these events or participating as a session organizer or presenter by contacting GRA. Learn more about GRA, or the programs in which IAH is participating with GRA as a cooperator, on the GRA web site at <http://www.grac.org>, or by telephone, 916-446-3626.

NGWA-AGWSE INFORMATION
Association of Ground Water Scientists and Engineers
division of the National Ground Water Association

- by Vicki Kretsinger, Chair

AGWSE 2006 GROUND WATER SUMMIT

April 23-26, 2006; San Antonio, Texas

Co-sponsored by IAH/USNC

The second annual AGWSE technical conference, the Ground Water Summit, will take place April 23-26, 2006 at the Henry B. Gonzalez Convention Center along the banks of the world famous River Walk in San Antonio, Texas. The Summit engages local, national, and international science partners to facilitate the exchange and dissemination of technical information and new science developments, allow a means for discussing policy and regulatory issues pertaining to groundwater, and promote goodwill among groundwater professionals worldwide. Highlights of the 2006 Summit include: guest speakers (including Deborah Bass, Deputy Project Scientist with the NASA Jet Propulsion Laboratory, who will enthrall attendees with a presentation on “Phoenix Mars Scout Mission and the Search for Extant Water Ice”), professional development courses, Darcy Forum, platform and poster presentations, distinguished lecturers (including 2006 NGWA Darcy Lecturer, Eileen Poeter, and, pending other scheduling and availability, the 2006 GSA Birdsall-Dreiss Lecturer), AGWSE Awards, field trips, student mentoring program, student project presentations, and student awards for platform and poster presentations.

The Summit includes 29 sessions with subject matter that ranges from more environmentally and emerging contaminant-focused topics to water resources systems analysis, management, and policy issues. Co-sponsors include the USNC/IAH, the Geological Society of America’s (GSA) Hydrogeology Division, the Groundwater Resources Association of California (GRA), the US Geological Survey, and the Illinois State Geological Survey. Additionally, field trip sponsors include the Edwards Aquifer Authority and the San Antonio Water System.

Call for Abstracts: Abstract instructions are posted on the NGWA web site on the Ground Water Summit Page at <http://ngwa.confex.com/ngwa/2006GWS/summit/papers/index.cgi> . Abstracts will be received until midnight (EDT) **November 18, 2005**.

Summit session details and other information is provided at <http://www.ngwa.org/e/conf/0604235095.shtml> A few highlights follow:

Darcy Forum

The Darcy Forum launched in 2005 at the first Summit was created to provide perspectives and insights by renowned panelists and prompt an exciting exchange among the panelists and Summit attendees. This year’s topic is:

“What information is needed to better define groundwater resources and protect the quality of these resources for the future?”

Panelists for the 2006 Forum include:

- Michael Barcelona, Chair Chemistry Dept., Western Michigan University
- Scott Bair, Professor and Chair of the Dept. of Geological Sciences, Ohio State University
- Stephen Worthington, Worthington Groundwater

- Donna Myers, Chief, National Water-Quality Assessment (NAWQA) Program

Summit Workshops and Courses

Hydrogeologic Field Methods—standards and guides for the collection and analysis of hydrogeologic field data

- * John E. Moore, Adjunct Professor Metro State College, Denver, Colorado;
- * Michael Wireman, U.S. Environmental Protection Agency, Region 8

Hydrolysis: understanding & predicting the degradation of organic compounds in water

- * Stuart Cohen, Environmental & Turf Services, Inc.

Groundwater Management

- * Tim Parker, Schlumberger; Robert Mace, Texas Water Development Board

Karst

- * Geary Schindel, Edwards Aquifer Authority

Simulation/Optimization (S/O) Modeling – well field optimization in water and environmental management

- * Richard Peralta, Water Dynamics Laboratory at Utah State University

Student Presentations and Awards

Students are especially welcome to submit abstracts for oral and poster presentations. There will be up to four best paper/poster awards of \$250 each given to those students presenting. A panel of judges will be evaluating each paper and poster on the merit of quality, scientific content, and responses to questions. These awards, which are made available through the Robert Farvolden scholarship fund of the National Ground Water Research and Educational Foundation, will be distributed after the completion of the Conference.

MODIFIED PRESS RELEASES FROM NGWA :

JOURNAL ARTICLES AND PROCEEDINGS AVAILABLE ON LINE FROM NGWA

Researchers and groundwater scientists and engineers can now download articles and proceedings from the National Ground Water Association's (NGWA) two scientific journals and key conferences online. This service is free for NGWA members and \$25 per article for non-members. To initiate a search, users must go to <http://www.ngwa.org> and click on Ground Water On-Line ®. From there, users can access the Ground Water On-Line ® database, which contains more than 90,000 citations - and search for abstracts using keywords or an ISBN number. Downloadable articles or proceedings can be acquired through prompts in the abstract. Following is a list of NGWA journals and proceedings that feature abstracts with downloadable PDF files, including:

- Ground Water Journal, 1963-January/February 2005
- Ground Water Monitoring & Remediation Journal, 1981-Fall 2004.
- Petroleum Hydrocarbons Conference, 1984-2004
- Fractured Rock Conference, 2002 and 2004

- MTBE Conference, 2004
- Pharmaceuticals Conference-2004

For questions, contact NGWA Customer Service at customerservice@ngwa.org or 800-551-7379.

NGWA LAUNCHES NEW “GROUND WATER ADVENTURERS” PROGRAM & WEB SITE

The National Ground Water Association (NGWA) has launched a new program “Ground Water Adventurers” that can be found at <http://www.groundwateradventurers.org>. The program, for youths ages K-12th grade, makes an adventure out of exploring the world of ground water with brain ticklers, puzzles, fun experiments, and more. The purpose of Ground Water Adventurers is to raise the younger generation’s awareness of groundwater as the consumers and groundwater professionals of the future. To whet the appetites of Ground Water Adventurers, the program produces *Ground Water Gorp* (gorp = slang for trail mix) - a newsletter that contains a tasty mix of kid-friendly fun, facts and more, accessible on the web site. The Web site also includes Hydroblog- - a "web log" where youths can post messages about groundwater topics and questions. Children of NGWA members can join for free and receive a Ground Water Adventurers T-shirt. Other youths can join for \$10 and receive a t-shirt. All other features of Ground Water Adventurers are freely available on the Web site.

PROPOSED CONSTITUTION AND BY-LAWS OR ARTICLES OF ASSOCIATION

The Executive Committee has discussed two alternative approaches: separate Constitution and Bylaws, or combined Articles of Association. The drafts are presented below:

DRAFT CONSTITUTION

United States National Chapter of the International Association of Hydrogeologists

ARTICLE 1. Name

The name of this association is the U.S. National Chapter of the International Association of Hydrogeologists (IAH/USNC).

ARTICLE 2. Purpose

Section 1. The U.S. National Chapter of the International Association of Hydrogeologists (IAH/USNC) is organized and shall operate within the framework provided by the Rules of the International Association of Hydrogeologists (IAH). The IAH is an international scientific society affiliated with the International Union of Geological Sciences (IUGS) and incorporated as a charitable organization in the United Kingdom.

Section 2. IAH/USNC shall have as its functions the following responsibilities:

- a. To represent U.S. members of IAH in the activities of the parent body and in other international hydrogeological activities, as appropriate.
- b. To promote international activities that further the science and technology of hydrogeology and of water resources science, in general.
- c. To promote research, education, communication, and training in groundwater science.
- d. To stimulate the interest of hydrogeologists in the United States in international hydrogeological activities and to better acquaint hydrogeologists abroad with concepts and techniques developed and used in investigations in the United States.
- e. To coordinate interest and activities among hydrogeologists in the United States with reference to programs of the IAH and to serve as a standing organization capable of providing continuous services to this end.
- f. To maintain liaison with other groups concerned with international water-related activities in general and hydrogeology in particular.
- g. To provide a link between the international groundwater community and hydrogeologists in the U.S.

ARTICLE 3. Membership

The membership of IAH/USNC shall be open to all members of IAH who reside in the U.S. or who are citizens or permanent residents of the U.S. or its possessions temporarily residing in another country.

ARTICLE 4. Management and Officers

- Section 1. The affairs of the IAH/USNC shall be managed by an Executive Committee in accordance with the Constitution and Bylaws.
- Section 2. The Executive Committee shall include at least five and not more than ten elected members of IAH/USNC.
- Section 3. The officers of IAH/USNC shall be a Chair, a Vice-Chair, a Secretary, a Treasurer, and a Past-Chair who are members of the Executive Committee. They shall perform the usual duties assigned to their offices. The positions of Secretary and Treasurer may be combined if deemed appropriate by the Executive Committee.
- Section 4. Nominations for membership on the Executive Committee of IAH/USNC will be made on the basis of the recommendations of a nominating committee appointed by the Chair.
- Section 5. The terms of IAH/USNC Executive Committee members and officers will be four years, except for the Past-Chair, who serves a two-year term.
- Section 6. Election of officers shall occur in the same year that IAH holds elections of their officers.
- Section 7. No member or officer of the Executive Committee shall serve more than two consecutive terms and the Chair may not be nominated for an elected position during the next term of office.

ARTICLE 5. Meetings

- Section 1. The Executive Committee of IAH/USNC shall meet in the year of each General Assembly of the IAH and at such times and places between Assemblies as is necessary to discharge its duties and perform its functions.
- Section 2. Each member of the Executive Committee shall have one vote. A quorum will require at least half of the membership of the Executive Committee, including at least one of the officers. Decisions will be made by a majority vote.
- Section 3. If a quorum cannot be achieved with an in-person meeting, then a meeting of the Executive Committee may be arranged through a conference call or other acceptable electronic means.

ARTICLE 6. Administrative Responsibility

- Section 1. Administrative responsibility for the operation of IAH/USNC rests with the Executive Committee.
- Section 2. The Chair of IAH/USNC, as chief executive officer, shall be responsible for implementing this administrative responsibility.

ARTICLE 7. Changes in the Constitution

- Section 1. Proposals to make changes in the Constitution must be consistent with IAH policy and must be approved by a majority vote of the Executive Committee. Proposals can be submitted to the Executive Committee by any member of IAH/USNC.
- Section 2. Changes in the Constitution may be made upon the affirmative vote of two-thirds of the voting members of the Executive Committee subject to a confirming vote of two-thirds of the membership of IAH/USNC returning the ballot.

DRAFT BYLAWS

United States National Chapter of the International Association of Hydrogeologists

ARTICLE 1. Officers and Members of the Executive Committee

Officers and members of the Executive Committee of the U.S. National Chapter of the International Association of Hydrogeologists (IAH/USNC) must be members of IAH in good standing.

The terms of the newly elected Executive Committee members and officers will begin on January 1 following the election and end on December 31 following the subsequent election.

ARTICLE 2. Nominating and Electing Officers and Members of the Executive Committee

A nominating committee will be appointed by the Chairman of the IAH/USNC at least eight months prior to a vacancy on the Committee or the expiration of the four-year term of the current entire Committee. The nomination process shall be completed within a time period determined by the Chairman.

Nominations should be listed on a ballot submitted to all full, student, and honorary members of IAH/USNC prior to May 1 of the year in which a vacancy will occur. The ballot will include space for write-in nominees and must be returned by a date that is no more than two months after the distribution of ballots. Election will be by nominees receiving a majority of the votes returned. Distribution and return of ballots can be done by e-mail, regular mail, or other means deemed acceptable by the Executive Committee.

Election of ordinary members of the Executive Committee may occur at two-year intervals, including the year that officers are elected. The terms of ordinary members of the Executive Committee will be staggered to provide continuity on the Committee.

ARTICLE 3. Vacancies

Vacancies in any officer's position (unexpired terms) may be filled for the remainder of the unexpired term by appointment of the Chairman of the IAH/USNC. If a vacancy occurs in the Chairman's position, it shall be filled by one of the Directors, approved by a majority of the Executive Committee.

ARTICLE 4. Changes in the Bylaws

Proposals to make changes in the Bylaws may be made by any member of the Executive Committee or by a petition to the Secretary signed by at least five members of IAH/USNC.

Proposals to make changes in the Bylaws must be approved by a majority vote of the Executive Committee.

ARTICLE 5. Finances and assets

No officer or member of the Executive Committee, nor any member of their families, shall receive reimbursement for professional services or for time spent in service for IAH/USNC.

The Treasurer and/or the Chair shall be authorized to disburse normal operating expenses of the IAH/USNC. Reimbursement to officers and members for unusual expenses generated on behalf of IAH/USNC shall require approval of the Executive Committee. All expenditures will be listed in the Treasurer's report presented annually to the IAH/USNC members.

If the US National Chapter of IAH should disband or cease operations, all of its assets, after payment of any outstanding debts, should be donated to the International Association of Hydrogeologists, the charitable parent organization registered in the United Kingdom. If the International Association of Hydrogeologists is not in existence at that time, the assets should be donated to the Geological Society of America Foundation. If the Geological Society of America is also not in existence at that time, the assets should be donated to a charitable or nonprofit organization as determined by a vote of the Executive Committee.

Proposed Articles of Association as alternative to proposed Constitution & Bylaws

DRAFT ARTICLES OF ASSOCIATION

United States National Chapter of the International Association of Hydrogeologists

ARTICLE 1. Name

The name of this association is the U.S. National Chapter of the International Association of Hydrogeologists (IAH/USNC).

ARTICLE 2. Purpose

Section 1. The U.S. National Chapter of the International Association of Hydrogeologists (IAH/USNC) is organized and shall operate within the framework provided by the Rules of the International Association of Hydrogeologists (IAH). The IAH is an international scientific society affiliated with the International Union of Geological Sciences (IUGS) and incorporated as a charitable organization in the United Kingdom.

Section 2. IAH/USNC shall have as its functions the following responsibilities:

- a. To represent U.S. members of IAH in the activities of the parent body and in other international hydrogeological activities, as appropriate.
- b. To promote international activities that further the science and technology of hydrogeology and of water resources science, in general.
- c. To promote research, education, communication, and training in groundwater science.
- d. To stimulate the interest of hydrogeologists in the United States in international hydrogeological activities and to better acquaint hydrogeologists abroad with concepts and techniques developed and used in investigations in the United States.
- h. To coordinate interest and activities among hydrogeologists in the United States with reference to programs of the IAH and to serve as a standing organization capable of providing continuous services to this end.
- i. To maintain liaison with other groups concerned with international water-related activities in general and hydrogeology in particular.
- j. To provide a link between the international groundwater community and hydrogeologists in the U.S.

ARTICLE 3. Membership

Membership of IAH/USNC shall be open to all members of IAH in good standing who reside in the U.S. or who are citizens or permanent residents of the U.S. or its possessions temporarily residing in another country.

ARTICLE 4. Management and Officers

Section 1. The affairs of the IAH/USNC shall be managed by an Executive Committee in accordance with these Articles and the requirements of the International Association of Hydrogeologists parent organization.

Section 2. The Executive Committee shall include at least five and not more than ten elected members of IAH/USNC. Officers and members of the Executive Committee of the U.S. National Chapter of the International Association of Hydrogeologists (IAH/USNC) must be members of IAH in good standing.

Section 3. The officers of IAH/USNC shall be a Chair, a Vice-Chair, a Secretary, a Treasurer, and a Past-Chair who are members of the Executive Committee. They shall perform the usual duties assigned to their offices. The positions of Secretary and Treasurer may be combined if deemed appropriate by the Executive Committee.

Section 4. Nominations for membership on the Executive Committee of IAH/USNC will be made on the basis of the recommendations of a nominating committee appointed by the Chair of the IAH/USNC at least eight months prior to a vacancy on the Committee or the expiration of the four-year term of the current entire Committee. The nomination process shall be completed within a time period determined by the Chairman.

Nominations should be listed on a ballot submitted to all full, student, and honorary members of IAH/USNC. The ballot will include space for write-in nominees and must be returned by a date that is no more than two months after the distribution of ballots. Election will be by nominees receiving a majority of the votes returned. Distribution and return of ballots can be done by e-mail, regular mail, or other means deemed acceptable by the Executive Committee.

Section 5. The terms of IAH/USNC Executive Committee members and officers will be four years, except for the Past-Chair, who serves a two-year term. The terms of the newly elected Executive Committee members and officers will begin on January 1 following the election.

Section 6. Election of officers shall occur in the same year that the International Association of Hydrogeologists parent organization holds elections of its officers.

Election of ordinary members of the Executive Committee may occur at two-year intervals, including the year that officers are elected. The terms of ordinary members of the Executive Committee will be staggered to provide continuity on the Committee.

Section 7. No member or officer of the Executive Committee shall serve more than two consecutive terms. The Chair may not be nominated for an elected position during the next term of office.

Section 8. Vacancies in any officer's position (unexpired terms) may be filled for the remainder of the unexpired term by appointment of the Chair of the IAH/USNC. If a vacancy occurs in the Chair's position, it shall be filled by one of the Directors, approved by a majority of the Executive Committee.

ARTICLE 5. Meetings

- Section 1. The Executive Committee of IAH/USNC shall meet in the year of each General Assembly of the IAH and at such times and places between Assemblies as is necessary to discharge its duties and perform its functions.
- Section 2. Each member of the Executive Committee shall have one vote. A quorum will require at least half of the membership of the Executive Committee, including at least one of the officers. Decisions will be made by a majority vote.
- Section 3. If a quorum cannot be achieved with an in-person meeting, then a meeting of the Executive Committee may be arranged through a conference call or other acceptable electronic means.

ARTICLE 6. Administrative Responsibility

- Section 1. Administrative responsibility for the operation of IAH/USNC rests with the Executive Committee.
- Section 2. The Chair of IAH/USNC, as chief executive officer, shall be responsible for implementing this administrative responsibility.

ARTICLE 7. Changes in the Articles

- Section 1. Proposals to make changes in the Articles must be consistent with IAH policy and must be approved by a majority vote of the Executive Committee. Proposals can be submitted by any member of the Executive Committee or by a petition to the Secretary signed by at least five members of IAH/USNC.
- Section 2. Changes in the Articles may be made upon the affirmative vote of two-thirds of the voting members of the Executive Committee subject to a confirming vote of two-thirds of the membership of IAH/USNC returning the ballot.

ARTICLE 8. Finances and assets

- Section 1. No officer or member of the Executive Committee, nor any member of their families, shall receive reimbursement for professional services or for time spent in service for IAH/USNC.
- Section 2. The Treasurer and/or the Chair shall be authorized to disburse normal operating expenses of the IAH/USNC. Reimbursement to officers and members for unusual expenses generated on behalf of IAH/USNC shall require approval of the Executive Committee. All expenditures will be listed in the Treasurer's report presented annually to the IAH/USNC members.
- Section 3. If the US National Chapter of IAH should disband or cease operations, all of its assets, after payment of any outstanding debts, should be donated to the International Association of Hydrogeologists, the charitable parent organization registered in the United Kingdom. If the International Association of Hydrogeologists is not in existence at that time, the assets should be donated to the Geological Society of America Foundation. If the Geological Society of America is also not in existence at that time, the assets should be donated to a charitable or nonprofit organization as determined by a vote of the Executive Committee.