



**International Association of Hydrogeologists
U.S. National Chapter**

Newsletter

Vol. 34, no. 1: June 2005

**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**



IAH/U.S. NATIONAL CHAPTER: EXECUTIVE COMMITTEE 2005-2008

| | | |
|----------------------|--|---|
| CHAIRMAN | John M. (Jack) Sharp <i>jmsharp@mail.utexas.edu</i> | The University of Texas at Austin 512.471.3317 |
| SECRETARY-TREASURER: | Todd Halihan <i>halihan@okstate.edu</i> | Oklahoma State University 405.744.6358 |
| PAST-DIRECTOR: | Leonard F. Konikow (U.S. Geological Survey) | <i>lkonikow@usgs.gov</i> |
| DIRECTOR: | Colin J. Booth (Northern Illinois University) | <i>colin@geol.niu.edu</i> |
| DIRECTOR: | Victor Heilweil (U.S. Geological Survey) | <i>heilweil@usgs.gov</i> |
| DIRECTOR: | Noel Krothe (Indiana University) | <i>krothen@indiana.edu</i> |
| DIRECTOR: | Michael Wireman (U.S. EPA) | <i>wireman.mike@epamail.epa.gov</i> |

CONTENTS

EDITOR'S NOTE - *Colin Booth*
CHAIRMAN'S REPORT – *Jack Sharp*
SECRETARY-TREASURER'S REPORT – *Todd Halihan*
NEW POSITIONS WITH IAH/ HYDROGEOLOGY JOURNAL - *Jack Sharp*

REPORTS

A BRIEF HISTORY OF THE IAH AND THE FORMATION OF THE U.S. CHAPTER - *Leonard A. Wood & John E. Moore*
AWARDS MADE BY THE ANN CAMPANA JUDGE FOUNDATION – *Michael Campana*

ANNOUNCEMENTS

AGI GOVERNMENT AFFAIRS ADVISORY COMMITTEE MEETING – *Lenny Konikow*
WHITE HOUSE REPORT ON FRESH WATER AVAILABILITY – *Lenny Konikow*
CONGRESS TACKLES WATER SUPPLY ISSUES– *Lenny Konikow*

PUBLICATIONS

THE PUBLIC FOUNTAINS OF THE CITY OF DIJON (HENRY DARCY, 1856) - TRANSLATION BY PATRICIA BOBECK

CONFERENCE NOTICES

IAH CONFERENCES
SECOND OR LATE NOTICES: ABSTRACT SUBMISSION DEADLINES PASSED
GEOLOGICAL SOCIETY OF AMERICA ANNUAL MEETING
50TH ANNUAL MIDWEST GROUNDWATER CONFERENCE

IAH ALLIED ACTIVITIES WITH THE GRA OF CALIFORNIA

25TH BIENNIAL GROUNDWATER CONFERENCE AND 14TH ANNUAL GRA MEETING
October 25-26, 2005: Sacramento, California
GRA GROUNDWATER RESOURCES SERIES: BASIN YIELD AND OVERDRAFT: SCIENTIFIC AND LEGAL PERSPECTIVES:
September 15-16, 2005; Hilton Hotel, Pasadena, CA
September 14, 2005: Field Trip – Basin Yield and Management in a Local Adjudicated Basin
15TH SYMPOSIUM IN THE SERIES ON GROUNDWATER CONTAMINANTS – DNAPL SOURCE ZONE CHARACTERIZATION & REMEDIATION: Dec. 7-8, 2005: San Francisco, California
GRA PUBLISHES CALIFORNIA GROUNDWATER MANAGEMENT BOOK: 2ND EDITION – *V. Kretsinger*

NGWA-AGWSE INFORMATION

NGWA ANNUAL EXPO – December 12-14, 2004, Las Vegas, NV
FIRST ANNUAL GROUNDWATER SUMMIT: GROUNDWATER IN DEVELOPING COUNTRIES: APPROPRIATE TECHNOLOGY, SUSTAINABILITY AND SELF-SUFFICIENCY – April 17-20, 2005, San Antonio, TX

IN MEMORIAM

FRANK (LARRY) DOYLE
WAYNE VAN VOAST

EDITOR'S NOTE

Welcome to the Spring, 2005 newsletter of the U.S. Chapter of IAH, and thanks to those who have contributed material for it. As you can see, I'm still editing, at least for a while, even though the other Secretary-Treasurer responsibilities have passed on to Todd Halihan. Much as I appreciate having transferred that workload, I do miss the regular contact with members that I used to have, and I'm feeling a little "out of the loop" compared to previous years. So this time I'll keep this note short and leave the major news to Jack and Todd. However, I'm attaching the photo (taken by Ken Howard, North American VP) of the various people who attended the open committee meeting at GSA last Fall, so you can put faces to names. Have a good summer, everyone.

- Colin Booth



Left to Right: Seated: Todd Halihan, Lenny Konikow, Mike Wireman.

Standing: Yoram Eckstein, Jack Sharp, Van Brahana, Noel Krothe, Colin Booth, Vicki Kretsinger, Pat Tucci.

CHAIRMAN'S REPORT

Welcome to another exciting year for the International Association of Hydrogeologists. There have been a number of changes both for our National Chapter and the International association, including relatively major turnovers in officers; and we have set several goals for our organization.

The new Executive Committee for the U.S. Chapter includes me as Chairman, Todd Halihan as Secretary-Treasurer, Leonard Konikow as Past-Chairman, Noel Krothe, Vic Heilweil, Mike Wireman, and Colin Booth as Directors. Lenny and Colin are continuing from the previous Executive Committee to provide the needed continuity. Special thanks to Colin for drafting the newsletter again, and kudos to the previous officers for 4 years for a job well done. Besides Colin and Lenny, outgoing officers were Yoram Eckstein and John Harsh. The new Executive Committee had its first meeting at GSA last fall and then, in April, Lenny, Vic, past-IAH President John Moore, and I had an impromptu gathering at the 2005 Ground Water Summit in San Antonio in April. The next meeting of the Executive Committee and open to all IAH members will be at GSA next fall in Salt Lake City.

For IAH, the new Council was elected and met at the 2004 Congress at Zacatecas City, Mexico. Those elected are Stephen Foster (UK) as President; Miran Veselic (Slovenia) as Secretary General; Jack Sharp (USA) as Treasurer; Jiri Krasny (Czech Republic) as Scientific Programme Member; and the following Vice Presidents: Ian Acworth (Australia) for Australasia and the Pacific, Shivendra Rai (India) for Asia, Florian Zamfirescu (Romania) for Eastern Europe, Willi Struckmeier (Germany) for Western Europe, Ahmed Khater (Egypt) for the Middle East and North Africa, Segun Adelana (Nigeria) for Sub-Saharan Africa, Ken Howard (Canada) for North America, and Emilia Bocanegra (Argentina) for Latin America and the Caribbean. The first four are on the Executive Committee that met in Paris in January with several UNESCO scientists and IAH headquarters staff, Christine Watson and Andrew Skinner. Andrew was formerly the long-term Secretary General and is now IAH Executive Manager; many of us know Andrew well and how valuable he is to IAH.

The U.S. Executive Committee has set several goals for the chapter over the next few years. These include registering/incorporating as a non-profit organization, increasing our visibility within the US, increasing membership (professional, corporate, and student), and increasing U.S. participation at IAH congresses and conferences. Non-profit status is desirable because it improves the accounting procedures and also allows us to earn interest on our funds – we have approximately \$30,000 in the bank from dues (we retain 10% of the annual dues) and, primarily, profits made on the Tucson Conference held two decades ago. It will also allow the U.S. Chapter to obtain donations which can be used for scholarships, travel for international hydrogeologists to attend meetings in the US. etc. If we incorporate, it will probably be in Colorado or Virginia, the corporate sites of GSA and AGI.

Of course, we hope to increase our membership. Vicki Kretsinger's help has been great in California with our cooperative agreement with the California Groundwater Resources Association. Mike Wireman is investigating a similar agreement in Colorado. Currently, the five largest national chapters are: Australia (441), USA (416), Spain (364), Canada (276), and the UK (238). I would also like to draw your attention to our corporate/institutional members: the USGS, the Florida Geological Survey, P.E. Lamoreaux and Associates, and Geomatrix. Corporate memberships allow 5 members of these organizations to receive full individual memberships. IAH is considering 2 levels of corporate membership – one for non-profit organizations and one for corporate sponsors, who would receive recognition in the Hydrogeology Journal and at IAH events. Your comments on this possible change are welcome.

In terms of visibility, IAH doesn't seek to have separate national meetings (there are already plenty of them), but rather to focus on international events AND cosponsor sessions and events with our sister national organizations. For instance, at the 2005 Ground Water Summit sponsored by the National Ground Water Association, a session on "Ground Water Education- Field vs. Classroom" was sponsored by the Education and Training Commission of the IAH. These are usually staid sessions, but this one ended with vigorous debate and with some new ideas expressed on groundwater education. We would like to co-sponsor more next year. IAH is co-sponsoring a number of sessions at the 2005 GSA meeting in Salt Lake City. These include:

- A Pardee Symposium on "The Wasatch Range–Great Salt Lake Hydroclimatic System"

and topical sessions on:

- Bedrock Infiltration: Advances in Understanding Vadose-zone Processes, Percolation through Macropores and Shallow Soils, and Recharge to Consolidated-rock Aquifer
- Innovations and New Frontiers in Hydrologic Modeling
- Innovative Use of Natural and Artificial Tracers in Mountain Catchments Underlain by Fractured Rocks
- Springs: Keys to Understanding Geochemical Processes in Aquifers

This year we also had exhibits at 4 sectional meetings of the GSA. I exhibited at Southeast and South-Central, Noel Krothe at North-Central, and Mike Wireman and John Moore at the Rocky Mountain sections. The Cordilleran Section was too pricey and we couldn't get to Northeastern this year. We'll keep you posted on our success or lack thereof. I urge all IAH members to consider attending some of the forthcoming conferences. This year IAH is running 3 conferences in 2005:

- **September 14-19**, Belgrade, Yugoslavia. International Conference on Environmental (Geoecological) Problems in Karst. Organized by the Serbia and Montenegro Committee of IAH. For information: E-mail jemcov@ptt.yu; Web: <http://www.cvijic-karst2005.org.yu/>. The next meeting of IAH Council will be held in Belgrade on Wednesday 13th September immediately preceding the Karst 2005 conference. The General Assembly of IAH will also be held in Belgrade on 15 September from 1730 to 19.00 hours.
- **October 4-8**, Alicante, Spain. International Workshop "From data gathering and groundwater modelling to integrated management". Organized by the Spanish National Committee of the IAH. For information: Web: <http://www.fcihis.org/PUB/INFO/AIH-GE.HTM>
- **November 28-December 2**, Auckland, New Zealand. Joint conference organized by the New Zealand Hydrological Society and the IAH Australian National Chapter. For information: Details shortly on <http://www.hydrologynz.org.nz/society-conferences.html#nzhs05>

Future congresses are now planned for China (2006), Portugal (2007), and Japan (2008), and an IAH conference in Dijon, France, is planned for 2006. A list of other conferences can be found on the IAH web site (www.iah.org). I would like the U.S. National Chapter to consider sponsoring a conference or congress again. Our last, in cooperation with the American Institute of Hydrology, was in Las Vegas in 1998.

Finally, changes noted below are being planned for the Hydrogeology Journal. We'll be seeing an expanded journal and your contributions are encouraged.

- Jack Sharp

Secretary-Treasurer's Report

News

Thanks to all that have assisted with my transition to secretary-treasurer. Colin Booth has provided a lot of assistance and Di Wilcock in the home office in Britain has been tremendously helpful. I am hoping that we can make good progress this year on some of the initiatives that the U.S. Chapter is working on to make our chapter more effective. The most important from the treasurer point of view is incorporating the U.S. Chapter. This will allow us the ability to collect interest (income) and to provide the engine for the financial vehicle of the organization.

Sorry about the late arrival on the Hydrogeology Journal that some have experienced. IAH is changing their process and there were some bumps in the road. I am hoping that all of the dues paying members have got their copies now.

Dues

Our dues process was somewhat jagged this year with a change in secretary-treasurers. We now have 277 paid members for the year, but we have 213 members from last year that have not yet paid their dues. Many of these are long time members who just haven't written that check or gone online yet. Please send in your dues!

The dues process will be going online this next year. Some people that have paid this way have found some problems in getting properly connected to the system in Britain. Some of the smaller chapters have gone to an online dues statement and payment this year, and hopefully it will run smoothly for next year.

If you haven't sent in your dues for this year, your choices are:

- 1) Send a check to the secretary-treasurer for \$79 made out to: IAH/USNC and send to:
IAH/USNC
c/o Dr. Todd Halihan
Oklahoma State University
School of Geology
105 Noble Research Center
Stillwater, OK 74078
- 2) Or go online to: <http://www.iah.org/payonline/>. It is a secure server run through a third party service and is a pretty easy way to do it. The only issue is that you are paying your dues in Euros and the exchange rate varies (i.e. you will likely pay more this way with the current bad exchange rate).

If you have any questions, drop me a line at halihan@okstate.edu.

New positions with IAH/ Hydrogeology Journal

IAH is planning significant changes to the way it manages the production, with its publisher Springer, of Hydrogeology Journal (HJ). The changes are being made because of the planned increase in size of the Journal and to fit with changing technologies more efficiently.

The immediate effect is that IAH will have managing editors and a new technical editorial assistant.

Managing Editors (ME) of academic or professional standing ready to undertake the assessment of manuscripts submitted to the Journal and to liaise with the volunteer Associate Editors who manage the reviews of the papers, leading to a decision of suitability for publication. This is not a salaried post but IAH does pay an annual stipend to compensate the Editors for the work done and for the incidental costs incurred. This is a significant change from the role previously done by MEs and does not involve any copy editing or direct liaison with the publishers.

Technical Editorial Assistant (TEA) to act as the interface between the MEs and the publisher, responsible for ensuring that articles published in HJ are sound both technically and in their quality of English. This is a salaried post and will organizationally be part of the IAH International Office, although most work will be done electronically and the location is not a constraint. The TEA will be qualified in hydrogeology and will be a native English speaker.

IAH is moving rapidly to fill these positions, but we are still open for volunteers. Expressions of interest in the positions of Managing Editor should be made to Cliff Voss, Executive Editor Hydrogeology Journal (cvoss@usgs.gov). Expressions of interest in the position of Technical Editorial Assistant should be made to Andrew Skinner, Executive Manager IAH (askinner@iah.org).

REPORTS

A Brief History of the IAH and the Formation of the U.S. Chapter

By Leonard A. Wood and John E. Moore

A newsletter from E. Romijn, Secretary General AIH/IAH, listing the officers in 1984, available publications, and Chairmen of the Commissions, contained the following:

The origin and organization of IAH

In 1948, during the 18th Session of the International Congress in London, a group of hydrogeologists thought it opportune to create an association. The idea was developed and during the following Session, in 1952, in Algiers, a Provisional Organization Committee was formed under the presidency of G. Drouhin. In 1956 during the Session in Mexico, the hydrogeologists present became the founding members of the International Association of Hydrogeologists and P. Fourmarier was elected President.

The March 1980 newsletter of the U.S. Committee contained the following:

The U.S. Committee of IAH (now called the U.S. National Chapter) was organized in 1972 (by Callahan, LeGrand, Heindl, LaMoreaux, and Stringfield) as a Subcommittee of the U.S. National Committee on Geology. The officers of the U. S. Committee of IAH have been chosen by the membership and they have served the four years from one General Assembly of the IAH and IGC to the next.

The General Assemblies are held each four years in the summer. However the IAH meeting is not always held the same year as the IGC General Assembly and may be delayed one year (example: The 1977 IAH Assembly in Birmingham was held one year after the IGC General Assembly). Leo Heindl was the first Chairman of the U.S. Committee when it became operational in 1973-74. He suffered a fatal heart attack October 18, 1978. Phil LaMoreaux, President of IAH, asked me (Leonard Wood) to take on the job of Chairman in November 1978 at the GSA Meeting. I agreed to do so if John Moore could be the Secretary-Treasurer. The General Assembly of the IGC and the IAH was held in Paris, France, July 7-19, 1980 and was attended by John Moore who became Chairman of the U.S. Committee at the close of the Assembly.

| OFFICERS OF THE U.S. CHAPTER OF IAH | | |
|--|---------------------------------|----------------------------|
| <i>YEARS</i> | <i>CHAIR</i> | <i>SECRETARY-TREASURER</i> |
| 2005-2008 | Jack Sharp | Todd Halihan |
| 2000-2004 | Leonard Konikow | Colin Booth |
| 1996-2000 | Pat Leahy | John Harsh |
| 1992-1996 | Joe Rosenshein | Pat Leahy |
| 1988-1992 | E.S.Simpson | Pat Leahy |
| 1984-1988 | Larry Doyle | E. S. Simpson |
| 1980-1984 | John E. Moore | Larry Doyle |
| 1978-1980 | Leonard A. Wood | John E. Moore |
| 1974-1978 | Leo Heindel | Robert Schneider |
| 1972-1973 | <i>U.S. Committee organized</i> | |

U.S. MEMBERS WHO HAVE HELD INTERNATIONAL OFFICE IN THE IAH

| | |
|--|---|
| Phil LaMoreaux: | was elected President of IAH 1977-80 |
| John Moore: | was elected Vice President of IAH 1985-93 and President of IAH 1993-96 |
| Jack Sharp: | was Vice President of IAH 1996-2000 and was elected Treasurer of IAH 2004 |
| Eugene Simpson: | was the founder and first editor of the Applied Hydrogeology Journal, 1992. |
| (A list of International officers 1956-1989 is found in Applied Hydrogeology Journal 0/1992) | |

The U.S. Committee has hosted three IAH Congresses:

- 1998** 27th Congress “Gambling on Ground Water,” Las Vegas
- 1985** 17th Congress “Hydrology of Low Permeability Rock,” Tuscon
- 1975** 12th Congress “Karst Hydrogeology,” Huntsville

AWARDS MADE BY THE ANN CAMPANA JUDGE FOUNDATION

*You may recall that in our previous newsletter (October 2004) we had a report by Michael Campana and Lenny Konikow on the Ann Campana Judge Foundation. **Mike Campana** has sent us information on five new projects that were funded by the ACJF at about \$4,000 each for various periods in 2005-2006. Two of these are by student groups. We are happy to summarize here the information about the Foundation and about the new projects it has supported.*

The Ann Campana Judge Foundation honors the life and memory of Ann Campana Judge, murdered by terrorists when they crashed American Airlines flight 77 into the Pentagon on September 11, 2001. The Ann Campana Judge Foundation was created to promote, undertake, support and fund philanthropic projects in and relating to developing countries, especially those projects focused on water, health, and sanitation. The ACJF will conduct projects on its own, but also makes grants to individuals and other non-profit organizations. Philanthropic projects of the following types will be supported by the ACJF: (1) community water supply development, especially those projects emphasizing relief, training and self-sufficiency; (2) community sanitation and health; (3) community-level economic self-sufficiency; and (4) those projects in the aforementioned areas that emphasize student involvement. Visit www.acjfoundation.org for more information. All donations are tax-deductible to the fullest extent of the law. At the present time, the ACJF funds projects only in response to RFPs.

Togo, Africa – Hand Pump Repair

Lifewater International: <http://www.lifewater.org/>

Principal Investigators: John Nadolski and Garon Harris (john@lifewater.org)

...For parts and supplies to assist in the repair of 25 hand pumps in rural villages in the Northern Area of Togo. Diarrheal diseases caused by unsafe water kill one child every fifteen seconds. In Togo, about one in seven children never reach their fifth birthday. Most of these deaths are due to water related disease. Lifewater is sending a pump repair team to Togo to respond to this problem. Thousands of rural people in Togo rely on hand pumps for their family’s drinking water supply. During the 1980s, great efforts were made by relief and development organizations to provide safe drinking water by drilling wells in Togo. Today, many of these water sources are unused because of broken hand pumps and the need for basic maintenance. Training national teams to repair these wells can utilize an abundant, readily available source of safe water at a greatly reduced cost. Lifewater’s training provides the tools and the know-how for nationals to restore and rehabilitate broken pumps. Where water wells have already been drilled, this is the most cost-effective means to providing people in need with the *Gift of water... Gift of Life*. We expect that this project will improve access or restore safe water to more than 8,000 rural poor in Northern Togo. Based on past experience, the participatory approach we utilize will enable the local communities to maintain the repaired wells for many years to come.

Community Water and Sanitation Project for Masicales, Honduras

Northlake Church of Christ (www.northlake.org)

Principal Investigator: Ron Hudson (elkomanga@lycos.com)

...For a community water and sanitation project in Masicales, Honduras.

Most residents currently collect drinking water from a shallow river polluted with pathogenic bacteria and parasites. Sanitation in the community is another problem, with most having no latrines. The project will provide drinking water and flushing toilets to the community's 35 homes (280 people) through the collaborative efforts of the residents, Mission PREDISAN (a medical NGO), and Northlake. The water system will operate by gravity flow. A small dam constructed up gradient from the community will divert water from a spring-fed stream. The diverted water will flow through a buried pipeline to a 5000-gallon storage tank. Chlorine will then be added as a water treatment from a smaller tank. A buried distribution system will pipe the chlorinated water to each home. The flushable latrines will basically consist of a toilet bowl that drains into a concrete vault and leach field. To insure that the project is sustainable on the long term, a series of meetings will be held to educate the community on the importance of maintenance and why safe water and sanitation are important for good health. Project sustainability will also be insured by establishing community ownership as a result of residents donating their labor, the formation of a water cooperative with an elected governing board, and the collection of maintenance fees.

Chiapas - Evaluation and Implementation of Rural Sanitation Alternatives

Engineers for a Sustainable World, University of Texas - Austin (<http://www.engr.utexas.edu/esw/>)

Principal Investigator: Greg Landreth (gwlandreth@mail.utexas.edu)

Mexico's southern states, in particular Chiapas, suffer from conditions of extreme poverty, characterized by lack of access to basic services such as water supply and sanitation, particularly in rural areas. While state and federal programs are slowly addressing critical water supply needs for rural communities, accompanying efforts in sanitation have greatly lagged. The town of Damasco obtained piped water through a state government project in 1998, but sanitation solutions have not been provided. Some community members use pit latrines, which fill with water and are prone to caving in during the rainy season, requiring excavation of new latrines. Others defecate in the open, exposing themselves and their community to significant risk for vector-borne disease. A rural community sanitation project is proposed, to consist of the identification of the most appropriate latrine design and subsequent construction of latrines for and with the 71 households of Damasco. The project is an opportunity for an engineering student from UT-Austin to collaborate with a Mexican civil society organization and an indigenous Tzotzil community to identify and implement the most appropriate solution to the community's sanitation needs.

Well Rehabilitation and Latrine Project in Poza Azul, Nicaragua

El Porvenir (www.elporvenir.org)

Contact person: Elisabeth Merritt, Co-Director (jemerritt@elporvenir.org)

Project Director: Oneida Hernandez (epsauce@ibw.org.ni)

The project responds to the need for potable water year-round and the need for family latrines in Poza Azul, a rural community located 6 miles outside of El Sauce, Nicaragua. In the village of Poza Azul, there are two water sources for 45 homes with 160 inhabitants. One is a well built with the help of a sister city organization that is in need of renovation; the other is a community spring capture that dries up in the summer months. The proposed water project would consist of improving the well; there is no way to improve the spring. Nine families (45 individuals: 19 adults, 26 children) propose the deepening of the well and replacing the deteriorated rope pump. Of the 45 latrines, built many years ago, in the community, only 19 are still in good condition. The community is vulnerable to disease because of the lack of sanitary facilities; the community asks for 26 new latrines to replace the ones no longer usable. These 26 latrines will benefit 112 individuals (57 adults, 55 children). Poza Azul has requested the help of El Porvenir. They have elected a project committee and agreed to provide the labor voluntarily as well as locally available materials. The community will begin the latrine project after the new year in January 2005; following the latrine project, they will begin rehabilitating the well and expect to complete both projects by the end of February 2005. The expected outcome of the projects is improved health for the residents of Poza Azul, a reduction in cases of diarrhea and dysentery, and decreased infant mortality. Through the project process, communities also have increased confidence as well as pride in their accomplishment.

El Porvenir is a non-profit organization that enables poor people in rural Nicaragua to improve their health, environment, and standard of living through sustainable community development projects. These goals are achieved through the construction of water, sanitation, and reforestation projects. Since its founding in 1990, El Porvenir has supported over 400 water, sanitation and reforestation projects in three regions of Nicaragua.

Rabondo, Kenya - Well Drilling and Hygiene Education Project

SAIWI (Univ. of Nevada – Reno) (<http://www.unr.nevada.edu/~saiwi/>)

Graduate Programs of Hydrologic Sciences

PI's: Ron Peterson and Richard M. Redd : (rpete1220@yahoo.com or redr@unr.edu)

...To provide funding for Phase 2 of the Rabondo, Kenya Water Project to be conducted by the Student Association for International Water Issues (SAIWI) from the University of Nevada Reno, led by Cathy Fitzgerald. Phase I involved a project by 5 SAIWI students in June 2004 that included successfully drilling a water well using the LS-100 drill rig, testing the water quality of a hand-dug well, teaching a hygiene education and hydrology program to the primary and secondary school students as well as community members, and conducting a geophysical survey to determine optimal locations for future wells. The community of Rabondo, located in southwest Kenya, has approximately 5,000 people who are currently using one drilled well, one hand-dug well, and surface water to provide all of their water needs. The major water sources for the community are a contaminated river and tributary streams that collect rain water and are shared with the local livestock. In 2004, IDM sampled water quality from both the river and tributaries finding dangerously unsafe levels of fecal coliform bacteria. The cultural tradition in Rabondo is for the women (specifically the girls) of the community to provide the families with water on a daily basis. The community of Rabondo has been very proactive in teaching and empowering their women to seek more reliable and safer water for daily use. However, the amount of time and energy expended daily in water acquisition by women and young girls has prevented many of them from obtaining the education they need or caring adequately for their families. SAIWI proposes to return to Rabondo in June 2005 to accomplish the following tasks:

1) to drill another water well using the LS-100 drill rig, 2) provide training in the construction of a hand dug well for those areas in the community where the terrain is unsuitable for the LS-100, 3) construct a rain water harvesting system for the clinic, 4) provide additional hygiene education training with emphasis on sanitation and water purification, using the SODIS method, and 5) to repair the surface seal on an existing hand dug well.

ANNOUNCEMENTS

AGI Government Affairs Advisory Committee Meeting

I attended the subject meeting on behalf of IAH/USNC. The meeting was partly a review of AGI's numerous activities in government affairs and geo-policy. AGI provides valuable services in representing the geoscience community before Congress and in the legislative process, among other things. Some highlights:

- AGI provides written testimony to various appropriations committees and other Congressional committees while recommending funding levels to various agencies that support earth science studies. They pay particular attention to USGS, NSF, NASA, and DOE geoscience programs and budgets. For example, the President's budget proposed cutting the USGS mineral resources program in half, and Congress restored it to last year's level of about \$54 million (of course, the specific weight of AGI's effort in that recision is impossible to quantify--but AGI's goal was achieved). They also monitor NSF's budget, and AGI seems to recommend increases every year.
- In extreme cases they will issue "alerts" that request people to write to their representatives in support of (or in opposition to) particular bills or issues (depending on the nature of the issue).
- AGI supports and sponsors Congressional Fellows and interns. They have recently proposed an Endowment named after Dr. William L. Fisher to support Congressional Fellowship.
- They are very strong in monitoring the education world related to proposed changes in various states related to teaching evolution and creationism or "intelligent design." What's going on in some states is very disturbing.
- They maintain a series of web pages documenting all of this.

All the society representatives present were given a chance to describe their society's role and interests in lobbying, policies towards government affairs, etc. I described the nature of IAH and how it (and the USNC) differ from most of the other societies affiliated with AGI. I also indicated that IAH tends not to (or does not) make policy statements or take political positions. Nevertheless, I indicated that most of our U.S. members have a strong interest in international affairs and activities (or they probably wouldn't have joined IAH), and that some feel strongly about the issue of providing safe, clean, and reliable local water supplies in third world countries where poverty and water shortages are prevalent.

- *Lenny Konikow*

White House Report on Fresh Water Availability

An AGI news release states that a subcommittee of the White House Office of Science and Technology Policy (OSTP) has publicly released its report on "Science and Technology to Support Fresh Water Availability in the United States". The report attempts to answer the question, "Does the United States have enough water?" According to subcommittee chair and USGS Assistant Director for Water Bob Hirsch, the short answer is "We don't know." Hirsch describes the report as an examination of "what is known about our nation's fresh water supply, what we don't know about it, and the ramifications of our current state of knowledge. It also describes high-priority science and technology efforts needed to provide adequate information for decision makers and water managers." White House Science Advisor John H. Marburger III said the report "provides a clear statement of need for coordinated science and technology efforts to understand the supply, human demand, and environmental requirements for fresh water in the United States." The report is available online at:

http://www.ostp.gov/NSTC/html/swaqreport_2-1-05.pdf .

At the request of OSTP, as a follow-up to the White House report, the CENR Subcommittee on Water Availability and Quality is now developing a 10-year strategic plan for Federal science and technology research and development to support freshwater availability and quality. The committee will be holding town hall type meetings across the country. To stay informed of opportunities to comment, please email gpatter@usgs.gov with the subject, "add to swaq review list".

- *Lenny Konikow*

Congress Tackles Water Supply Issues

According to a recent news release from the American Geological Institute (AGI), Natural Resources Committees in the House and the Senate took up the daunting question of how to solve water supply shortages, particularly in western states. First, on April 5, 2005, the Senate Energy and Natural Resources Committee invited 22 groups to offer their "bold and innovative solutions" for water resource issues and for improving the federal water bureaucracy. Through four panels of expert testimony, Committee members probed the witnesses on the costs of desalination and purification technologies and the role the federal government should play in advancing these projects. Several panelists urged increased funding for federal agencies that conduct water research and emphasized that monitoring programs must be central to our water policy. "We don't need another national policy commission, but there is a role for the federal government, and that is to provide research and data," said Melinda Kassen with Trout Unlimited. On April 13, 2005, the House Resources Committee hearing focused on the best approaches to improve water storage capacity in Arizona, California, and Wyoming. Water Resource managers who testified offered varied suggestions, from urging the federal government to support large dam projects to encouraging congress to consider policies that are based on more short-term, innovative solutions.

Full hearing summaries can be viewed at:

http://www.agiweb.org/gap/legis109/water_hearings.html

- *Lenny Konikow*

PUBLICATIONS

Note: We do not publish ads for for-profit services and products. However, the following is a unique publication for which IAH Corporate Member Geomatrix provided the funding for translation and publishing, and does not receive any profits on the sale.

The Public Fountains of the City of Dijon by Henry Darcy, 1856

English translation by Patricia Bobeck
Published by Kendall/Hunt Publishing Company

For the first time, *The Public Fountains of the City of Dijon* by Henry Darcy has been translated from its original French to English. This book is a full-length translation of Henry Darcy's account of the water supply system he built in Dijon, France in 1840. According to publisher Kendall/Hunt's press release:

"Darcy's 12-km aqueduct and cast-iron pipe distribution system supplied free spring water to more than 100 street fountains located throughout Dijon. Darcy not only did away with Dijon's meager supply of pestilential well water, but the water he provided was so pure and abundant that Dijon suddenly ranked second only to Rome in water quality and quantity. Written in 1856 as an engineer's guide to water and the construction of water supply systems, the book is an encyclopedia of mid-19th century knowledge of water, wells, springs, pipe-making, and other topics. In an appendix devoted to water filtration, Darcy describes the experiments that led to the formulation of the law of water movement through sand that we know as Darcy's Law."

From the foreword by Dr. Jack Sharp, Jr. of the University of Texas, "Patricia Bobeck's wonderful translation opens a window into the engineering science of the early 19th century, its challenges, and its modern implications. Scientists, engineers, policy analysts and the well-read general public will find this a most intriguing volume. . . ."

This translation contains 28 plates of Darcy's engineering drawings that were originally published as a companion volume to the 647-page French text.

This book is now available from the publisher at the price of \$100, plus shipping and local sales tax:
Kendall/Hunt Publishing Company: orders@kendallhunt.com

CONFERENCE 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.

IAH CONFERENCES

International Conference on Environmental (Geocological) Problems in Karst

September 14-19, 2005: Belgrade, Yugoslavia.

Organized by the Serbia and Montenegro Committee of IAH. For information: E-mail jemcov@ptt.yu; Web: <http://www.cvijic-karst2005.org.yu/>. The next meeting of IAH Council will be held in Belgrade on Wednesday 13th September immediately preceding the Karst 2005 conference. The General Assembly of IAH will also be held in Belgrade on 15 September from 1730 to 19.00 hours. (Abstract submission deadline was May 1, 2005)

International Workshop:

From data gathering and groundwater modelling to integrated management

October 4-8, 2005: Alicante, Spain.

Organized by the Spanish National Committee of the IAH. (Abstract submission deadline was May 30, 2005).

For information: Web: <http://www.fcih.org/PUB/INFO/AIH-GE.HTM>

Where Waters Meet:

Joint conference, New Zealand Hydrological Society & IAH Australian National Chapter

November 28 – December 2, Auckland, New Zealand (Middle Earth)

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, geothermal 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: <http://www.iah.asn.au> and <http://www.wrl.unsw.edu.au/iah-auckland>

SECOND OR LATE NOTICES: ABSTRACT SUBMISSION DEADLINES PASSED

International Mine Water Association: Ninth Congress

September 5-9, 2005: Oviedo, Spain.

(Abstract submission deadline was February 25, 2005)

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

Evaporite Karst: special session, Sixth International Conference on Geomorphology

September 7-11, 2005, Zaragoza, Spain

A special session on evaporite karst (EK) will be held as part of the **Sixth International Conference on Geomorphology** that will be held at Zaragoza (Spain) in September 7-11, 2005. (Abstract submission deadline was March 1, 2005)

<http://wzar.unizar.es/actos/SEG>.

Tenth Multidisciplinary Conference on Sinkholes and the Engineering and Environmental Impacts of Karst: September 24-28, 2005 DoubleTree Hotel San Antonio, TX

Sponsored by the Geo-Institute of ASCE, P.E. Lamoreaux & Associates, Inc., Edwards Aquifer Authority, and Southwest Research Institute. Topics include: Geology & Origin of Sinkholes & Karst; Karst & Sinkholes in Evaporites; Karst Hydrology & Dye Tracing; Geoenvironmental Engineering in Karst; Modeling Groundwater Flow in Karst; GIS, Databases, and other Computer Applications for Karst; Legal Issues and Governmental Programs Related to Karst; Geophysical

Applications to Investigating Karst; Foundation and Geotechnical Engineering in Karst; Prevention and Remediation of Sinkholes & Karstic Settlement; Karst Hydrology of the Edwards Aquifer. (Abstract deadline was February 21, 2005)
<http://www.asce.org/conferences/karst2005>.

SISOLS 2005: 7th International Symposium on Land Subsidence

October 23-28, 2005: Shanghai, P.R. China.

UNESCO, the Center for Land Subsidence of the China Geological Survey, and the Municipal Government of Shanghai, China, jointly invite you to attend SISOLS 2005, a forum to scientists from all over the world to discuss problems related to land subsidence, to present technological innovations and achievements, and to exchange ideas, information, and results, and to discuss a sustainable approach to land subsidence, intended to seek a compromise between the use of natural resources and mitigating negative subsidence effects caused by their exploitation. Issues will also include distinguishing naturally occurring subsidence from anthropogenic causes of subsidence, predicting potential hot spots, in particular those located in coastal and low-lying flat areas, and transforming scientific information into intelligent policy management and environmental control. (Whole paper deadline was March 30, 2005) <http://www.sigs.com.cn/sisols2005.htm>.

7th ICARD: International Conference on Acid Rock Drainage and SME Annual Meeting & Exhibit: March 27-29, 2006, St. Louis, Missouri

The 7th ICARD is held in conjunction with the 2006 SME Annual Meeting & Exhibit. Registered attendees may attend sessions for both the SME Annual Meeting and the 7th ICARD. (Abstract deadline was February 22, 2005)
<http://www.smenet.org/meetings/AnnualMeeting2006/Author/icard.cfm>.

GEOLOGICAL SOCIETY OF AMERICA ANNUAL MEETING

October 16-19, 2005: Salt Lake City, Utah. Abstract deadline: July 12, 2005

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/

50TH ANNUAL MIDWEST GROUNDWATER CONFERENCE

Nov. 1-3, 2005, Champaign-Urbana, Illinois Abstract Deadline: June 30, 2005

Topics include:

Ground Water Quality and Monitoring: Pesticide metabolites and their potential health effects; Arsenic; Contaminated site characterization and remediation; Karst issues; In-situ ground water chemistry; Combined hydrologic and biologic monitoring; Wetlands hydrology and restoration;

Ground Water Quantity: Aquifer characterization, modeling and visualization tools; Ground water management issues and strategies; Ground water/surface water interaction; Water supply Sustainability; Quantification of public and domestic use.

Government data: Poster session about what is available and how to access it.

History of hydrogeology.

Information: <http://midwestgroundwater.org>

Paper copy of call for abstracts: <mailto:mwggw@isgs.uiuc.edu>

IAH ALLIED ACTIVITIES WITH THE GRA 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 153 participants in the Joint Member program with 24 IAH members electing to participate so far this year. Through the balance of 2005, upcoming GRA events for which the USNC/IAH is a cooperating organization include:

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.

Session topics include:

- Septic system discharge issues
- Groundwater management plans – local examples
- Salinity issues – past practices and future strategies
- Modeling California's groundwater
- Unregulated contaminants in groundwater
- Groundwater's role in stream systems and renaturalization efforts
- Groundwater tracers and age dating
- Groundwater law and policy
- Groundwater quality and recycled waste
- Emerging issues in groundwater resources – regional examples
- Climate change and California's water resources

Call for Posters (Abstracts Due August 1, 2005): The Conference Planning Committee invites you to submit abstracts for Poster Presentations. See abstract submittal instructions at <http://www.waterresources.ucr.edu>. Submit abstract and submittal form by email to: Julie Drouyor, UC Center for Water Resources at cwres@ucr.edu.

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

GRA GROUNDWATER RESOURCES SERIES

BASIN YIELD AND OVERDRAFT: SCIENTIFIC AND LEGAL PERSPECTIVES

September 15-16, 2005; Hilton Hotel, Pasadena, CA

September 14, 2005: Field Trip – Basin Yield and Management in a Local Adjudicated Basin

The concepts of overdraft and safe yield are ingrained in industry, yet in many basins of California, there is insufficient information or a lack of coordinated data exchange to determine the “state of the basin.” This workshop will provide a technical forum where local, state and federal public and private sector technical professionals will meet to discuss and debate the appropriate and acceptable approaches and methods for conducting hydrological trend analyses and evaluating the yield of a groundwater basin. The workshop will also include technical, policy, and legal discussions on overdraft and perennial yield. This two-day technical workshop is co-sponsored by the U.S. Geological Survey (USGS), California Department of Water Resources (DWR), Association of California Water Agencies (ACWA), and GRA and in cooperation with the USNC/IAH and other cooperating organizations.

Sessions topics include:

- Implications of safe yield and overdraft
- Defining overdraft technically and the legal translation
- Methods to determine basin yield
- Purveyor perspectives for actively managed basins
- Perennial yield and sustainability
- Hydrologic trend analysis and climate variability
- Tools and technology to get the information: old and new
- Basin management policy issues, economics and benefits of collaboration

The program will be posted soon on GRA’s web site at www.grac.org . For more information contact the workshop co-chairs Steve Bachman (Chair of ACWA Groundwater Committee) steveb@unitedwater.org, Eric Reichard of the USGS egreich@usgs.gov or Tim Parker of the California DWR tparker@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. Numerous recent academic papers and regulatory documents underscore the ongoing interest in techniques and technologies for characterization, removal, and more effective management of DNAPL source zones, including chlorinated solvents, creosote, and coal tar. There is also growing interest among many groundwater researchers, consultants, and regulators in exploring the potential advantages of evaluating the effectiveness of source zone remediation based on reductions in the rate of contaminants emanating from the source (referred to as contaminant mass discharge or mass flux) rather than concentration reduction. Since no DNAPL remediation technology has been proven to remove 100% of the contaminant mass in a DNAPL source zone, partial mass removal is a topic of intense debate among academic researchers and policy makers alike.

This GRA Symposium, presented in cooperation with the USNC/IAH and other organizations, will focus on DNAPL source zones and the technical and regulatory challenges faced by professionals working with these sites. Symposium sessions include:

- DNAPL source zone characterization techniques
- Dissolution and diffusion effects on source zone composition
- Source controls and remedial technologies
- Modeling advances

- Pros and cons of partial mass removal
- Regulatory and legal issues
- Mass flux determination/implications
- Remediation performance assessment
- Case studies/lessons learned

Abstracts due August 26, 2005. GRA welcomes submittals of abstracts for papers and poster presentations on the topics listed above. Please feel free to contact Bettina Longino (510-663-4213) or Sarah Raker (510-622-2377) if you would like to discuss your presentation topic or if you have any questions.

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.

GRA PUBLISHES CALIFORNIA GROUNDWATER MANAGEMENT BOOK – 2ND EDITION

By Vicki Kretsinger

The Groundwater Resources Association of California's (GRA) *California Groundwater Management, Second Edition* (2005) is now available at www.grac.org . California along with other states, particularly those in the southwest, are encountering increasingly complex water management issues. GRA's book is designed to provide public officials, water district directors, managers and staff, city and county planning managers, geologists, engineers, attorneys farmers, agricultural water users and anyone in a groundwater basin who might be affected by a management plan with current information on the complexities of California groundwater management, examples and suggestions for workable solutions.

Reviewers of the pre-print of the *Second Edition* have the following comments. According to Michael Campana, Albert & Mary Jane Black Professor of Hydrogeology at the University of New Mexico, "*California Groundwater Management* is an excellent resource that will find wide acceptance, not only in California but elsewhere as well." David K. Todd, Professor Emeritus of Civil Engineering, University of California, Berkeley, indicates, "The second edition of *California Groundwater Management* published by the Groundwater Resources Association of California provides an indispensable guidebook for organizations and agencies desiring to provide a sustainable water supply from groundwater resources. Except for institutional and legislative actions unique to California, most of the book is generally applicable elsewhere and therefore deserves wide national attention by all personnel concerned with this increasingly important water source."

NGWA-AGWSE INFORMATION

**Association of Ground Water Scientists and Engineers
division of the National Ground Water Association**

- by Vicki Kretsinger

Co-Sponsored Groundwater Sessions at 2005 GSA Annual Meeting

The AGWSE division of NGWA is co-sponsoring two sessions at the 2005 GSA Annual Meeting and Exhibition, "Science – Learning – Colleagues," October 16-19, 2005 in Salt Lake City, Utah. One session, "**Innovations and New Frontiers in Hydrologic Modeling**," also co-sponsored by GSA's Hydrogeology and Engineering Geology Divisions and the U.S. National Chapter of IAH. The Topical Session (T1) is being organized by Frank Schwartz of Ohio State University and Motomu Ibarki of the University of Waterloo, and will explore how

models have grown from a mathematical curiosity to an indispensable tool for analysis of hydrologic systems. It will also examine new developments in groundwater and hydrologic modeling, emphasizing innovations in theory, design, and data handling. Invited speakers include Ed Sudicky of the University of Waterloo, Al Woodbury of the University of Manitoba, and Zhongbo Yu of Ohio State University.

The other sponsored session is “**Groundwater Quality and Quantity Interconnections: The Effects of Natural and Anthropogenic Contamination on Groundwater Availability**”, which is being co-convened by Mike Moran of the U.S. Geological Survey (USGS) and Vicki Kretsinger of Luhdorff and Scalmanini, Consulting Engineers and AGWSE Division Chair. This Topical Session (T15) will focus on the interconnections between groundwater quality and quantity, including the effect that quality can have on the volume of groundwater that is effectively available for present and future human and ecological needs. Invited speakers presenting in this session include Graham Fogg of the University of California at Davis, Kevin Dennehy of the USGS, Jean Moran of Lawrence Livermore Laboratories, and Paul Squillace of the USGS. The conveners welcome papers on topics such as: understanding the vulnerability of groundwater systems to quality/quantity degradation, identifying criteria for assessing the quality/quantity of ground water; and water quality/quantity management objectives and methods for sustainability.

Abstracts due July 12. *Abstracts must be submitted electronically on GSA’s web site at www.geosociety.org by July 12, 2005. For further information about Topical Session T18, please contact Frank Schwartz at frank@geology.ohio-state.edu. For further information about Topical Session T15, please contact Mike Moran at mjmoran@usgs.gov, or Vicki Kretsinger at vkretsinger@lcse.com.*

AGWSE 2005 AND 2006 GROUND WATER SUMMIT

- Vicki Kretsinger

At the AGWSE (division of the National Ground Water Association) new annual technical conference, the “Ground Water Summit,” launched April 17-20, 2005 in San Antonio, Texas, the AGWSE, IAH, and GSA’s Hydrogeology Division co-sponsored a very informative session on “Ground Water Education: Field vs. Classroom.” This session, co-convened by Richard Laton of the California State University at Fullerton, Vicki Remenda of Queen’s University, and Alan Dutton of the University of Texas at San Antonio, included presentations on the interactive learning methods instructors have developed and employed in the field and the classroom to engage students in the educational process and stimulate their enthusiasm for learning.

2006 Ground Water Summit -- Call for Conveners. The second AGWSE Ground Water Summit will again be in San Antonio, Texas in Spring 2006. Planning is underway, and the AGWSE Board welcomes continued session and other event co-sponsorship by IAH. Check the NGWA web site at www.ngwa.org for the Call for Conveners; session proposals (paragraph description of up to 100 words on the session topic) are due August 1, 2006.

IN MEMORIAM

Wayne Van Voast

As we reported in a separate e-mail earlier in the year, member Wayne Van Voast died unexpectedly on December 14, 2004 of complications following surgery. Wayne would have been well known to many of our members. The following is summarized from his full obituary in the Billings Gazette, available at:

<http://www.billingsgazette.com/index.php?id=1&display=rednews/2004/12/18/build/obits/voast.inc>

Wayne earned a BS in Earth Sciences in 1961 and an MS in Geomorphology in 1964 from Montana State University. Wayne's passion, intuition and talent for geology earned him respect and international recognition during a rich, rewarding career, which included work for the United States Geological Survey in St. Paul, Minn., and most recently as the Chief of Research Division for the Montana Bureau of Mines and Geology in Butte. Wayne's recent accomplishments and recognitions include the 2004 Water Legend Award where he was cited as the "Father of Montana Coal Hydrogeology" from the American Water Resources Association, the Distinguished Researcher Award for lifetime excellence in research from Montana Tech, and was published by the American Association of Petroleum Geologists in 2003 for his research on "Geochemical signature of formation waters associated with coal bed methane." Throughout his career, he wrote 40 publications on hydrology, co-wrote college textbooks and was referenced as an expert in many other writings. Wayne is survived by his sons Brett Van Voast of Bakersfield, Calif., Todd Van Voast of San Francisco, Calif.; and by his brother's family, Greg and Doris Van Voast of Helena and their sons Sheldon, Jeff and Kenneth, and by his partner in life Carol Cooper Ferguson.

Frank (Larry) Doyle



Frank "Larry" Doyle, a retired U.S. Geological Survey hydrologist (1960-65), passed away February 26, 2005, in San Antonio, Texas, from complications of leukemia. A professional groundwater hydrologist with an internationally renowned career spanning more than 50 years. Larry was Secretary Treasurer and Chairman of the U.S. Chapter (1980-88) of the International Association of Hydrogeologists (IAH). He played a major role in organizing the 12th IAH Congress in Huntsville, Alabama (1975), the 17th IAH Congress in Tucson, Arizona (1985) and the 22nd International Geological Congress. After serving in the Army and Air Force he attended the University of Texas and received a BS in Geology (1950), a MS from Louisiana State University (1955), and PhD from the University of Illinois (1958).

Larry's areas of interest and expertise were geomorphology, remote sensing, and groundwater protection. He explored for groundwater in Panama and Algeria and for geothermal resources in Nicaragua. He planned geologic and hydrologic research for the high-level waste program while he was at the U.S. Nuclear Regulatory Commission.

Larry began his career with the USGS in 1960 and worked in Arizona and Colorado. He taught at St. Mary's University in San Antonio, State University of New York, and the University of Connecticut in Storrs. Larry had a varied career working for Geological Survey of Alabama, Dames and Moore, Metcalf and Eddy, Senior Hydrologist U.S. Nuclear Regulatory Commission, U.S. Department Interior Office of Project Review, and MITRE Corporation (Brooks AFB). He carried out geologic and hydrologic investigations in Panama, Nicaragua, Algeria, and Spain. When he retired in 1993, he opened an environmental consulting firm in San Antonio (HydroGeology International).

Larry was a registered geologist/hydrologist in California and Texas and a member of the American Geophysical Union, National Ground Water Association, American Institute of Professional Geologists and the American Institute of Hydrology. He was a Fellow of the Geological Society of America, a U.S. Public Health Service Scientist, and a member of the American Association of Petroleum Geologists (50-year pin). He edited two books and authored more than 20 technical papers. Larry is survived by his wife Giovanna and son Mike. It was a privilege and honor to have him as a friend and colleague.

By John E. Moore and Phil LaMoreaux