THE GEOLOGICAL SOCIETY OF AMERICA

# The Hydrogeologist

Newsletter of the
GSA Hydrogeology Division

June 2006
Issue No. 64

# Hydro on the Hill

**By David Diodato**

*U.S. Capitol Dome. Photo by Keith Stanley, www.kestan.com. (Used with permission.)*

In East Africa, where an estimated 11 million people are suffering through a severe and prolonged drought, people are killing each other over water. In *Dying for Water in Somalia's Desert* (April 14, 2006, page A1) the Washington Post reported drought-related conflicts in Kenya, Ethiopia, and Somalia. In the Amazon, the ecological consequences of what has been called the worst drought in 50 years are impossible to predict, especially considering how much remains unknown about that habitat and the creatures that dwell in it. In the western United States, southern Nevada is under a "drought alert" (one stage below "drought critical") with Lake Mead water storage at 57% of capacity as of April 30, 2006.

Drought is a normal part of climate for virtually all regions of the United States. To improve drought monitoring and forecasting capabilities, both houses of Congress have introduced the National Integrated Drought Information System Act of 2006. The House version, H.R. 5136, would establish a National Integrated Drought Information System (NIDIS) within the National Oceanographic and Atmospheric Administration. The legislation authorizes $94 million over six years for "a comprehensive system that collects and integrates information on the key indicators of drought, including assessments of the severity of drought and drought forecasts." The Senate version of the authorization, S. 2751, uses essentially identical language, but provides $38 million over six years.[1] At the time of this writing, the appropriations bills that could include NIDIS have not been made public by either House or Senate appropriations subcommittee.

"Managing Drought and Water Scarcity in Vulnerable Environments: Creating a Roadmap for Change in the United States" is a conference that will be hosted this fall by the Geological Society of America (GSA), in

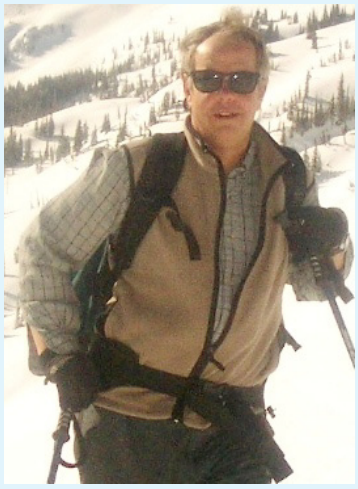
*Please see* **Hydro** *on page 13.*

## In This Issue:



**EDITOR'S NOTE**: A color version of this newsletter is available on the web at [http://gsahydrodiv.unl.edu]

# Chair's Corner...



**Kip Solomon, Chair**
**GSA Hydrogeology Division**

Greetings from the Hydrogeology Division. I hope that you will enjoy this latest addition of our biannual newsletter. The pinnacle Division event of the year will be our Annual Meeting in Philadelphia and I am very excited about the proposed program that Laura Toran and Mark Person have put together (see details later in the newsletter.) I am confident that we will have a truly outstanding technical program as well as field trips, luncheon, etc. I encourage you all to submit an abstract and make plans to attend.

Our Division remains strong and is growing somewhat. As of December 2005 our membership total was 1372, up significantly from a low of 1180 in 2001 (and nearly reaching the 1400+ in the mid 1990s.) Moreover, the number of hydrogeology-related presentations at the Annual Meeting has risen dramatically. At the Salt Lake meeting, 15% of presentations were categorized by GSA as being either hydrogeology or aqueous geochemistry. Yet, only 6.7% of the attendees were members of the Hydrogeology Division. This leads to the realization that many people are participating in Division-sponsored sessions, but are not becoming members. The reasons for this may be varied and complex, but I thought I would take a moment to point out just a few of the important functions that Division memberships supports.

I have been told many times by Division members that having a strong technical program at the Annual Meeting is the top expectation of the Division, and the Technical Program Committee has invested countless hours in this endeavor. We will likely sponsor more sessions at the 2006 meeting than any other Division. The Division continues to support the extremely popular Birdsall-Dreiss Lecture (only about half of the cost is currently covered by a return on the endowed fund.) This year Dave Blowes will present to more than 2000 people promoting the science of hydrogeology. The Division sponsors a student reception at the Annual Meeting, provides support for student research grants, and promotes the history of hydrogeology via our mug series. We also provide recognition of our peers through the Distinguished Service Award and the O.E. Meinzer Award and keep you up to date with our biannual newsletter. All this (and more) for about than the price of 4 gallons of gas!

While all Division functions remain strong, we continue to look for ways to enhance our support of worthy activities such as the Birdsall-Dreiss Lecture. During the annual meeting of Division Chairs, several ideas emerged including a fixed amount of general GSA membership fees going to the Divisions (similar to what happens for GSA Sections), and/or a fraction of the abstract fees for the Annual Meeting being returned to the Division (in recognition that the technical program at the annual meeting is organized to large extent by Divisions.) While these and other

*Please see* **Chair** *on page 5.*


## The Hydrogeologist

The Hydrogeologist is a publication of the Hydrogeology Division of the Geological Society of America. It is issued twice a year, to communicate news of interest to members of the Hydrogeology Division. During 1998, the publication moved from paper-based to electronic media. The electronic version may be accessed at: <*http://gsahydrodiv.unl.edu*>. Members of the Hydrogeology Division who have electronic mail will receive notification of all new issues. Other members will continue to receive paper copies.

Contributions of material are most welcome, and should be directed to the Editor. Submission as Word or WordPerfect document is most expedient.



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**Deadline, Fall Issue**

**August 15, 2006**

# 2005 Annual Business Meeting Minutes

**Reported by Ralph Davis**
**Secretary / Treasurer**
**GSA Hydrogeology Division**

The 2005 Annual Hydrogeology Luncheon, Awards Ceremony and Business Meeting of the Hydrogeology Division of the Geological Society of America (GSA) were held Tuesday, October 18, 2005 at the Hilton Hotel in Salt Lake City, Utah. Chair Janet Herman introduced the Division officers, awardees, and special guests. Awards were presented by Chair Herman immediately following the luncheon.

Student Research Awards were presented to;

*2005 Student Research Award winners (from left to right) - Dennis Newell, Silvia Mancini, and Benjamin Schwartz. Photo by Ed Harvey.*

(a) Silvia Mancini, University of Toronto, Advisor/Supervisor: Dr. B. Sherwood Lollar, Tracking the Rate of Petroleum Hydrocarbon Contamination in Groundwater; (b) Dennis Newell, University of New Mexico, Advisor/Supervisor: Dr. Laura J. Crossey, Hydrochemistry of Travertine-depositing Springs in the Rio Grande Rift; and (c) Benjamin Schwartz, Virginia Polytechnic Institute and State University, Advisor/Supervisor Supervisor: Dr. Madeline Schreiber, A Multi-Method Approach to Characterizing Sinkhole Hydrogeology and Recharge Mechanisms in Agricultural Settings.

The chair recognized the accomplishments of Dr. William Woessner, University of Montana, during his tenure as the 2004-2005 Birdsall-Dreiss Distinguished Lecturer. Dr. David Blowes, University of Waterloo was introduced as the 2005-2006 Birdsall-Dreiss Distinguished Lecturer.

Plaques for the Distinguished Service Award were presented to two hydrogeologists, Dr. Frank Schwartz, The Ohio State University and Dr. Ralph Davis, University of Arkansas, for their contributions to the Hydrogeology Division, the Geological Society of America, and hydrogeology over the course of their careers. Summaries of major accomplishments were documented in a brochure provided for each person attending the luncheon.

The O.E. Meinzer Award was presented to Dr. Donald I. Siegel. Dr. Olaf Pfannkuch was the citationist for Dr. Siegel. Dr. Siegel was presented with a plaque and a miniature of the Meinzer Bowl for his significant contribution to the field of hydrogeology with specific reference to five of his papers (see inset on page 5).

The annual business meeting was called to order at 2:05 p.m. after completion of presentation of awards. Chair Herman presented the state of the division including discussion of the following:

Bylaws change

With strong support from the membership, the Bylaws change went to council on the consent agenda. Henceforth, the BD Lecturer will become an automatic Fellow at the GSA meeting concluding their lecture tour (as long as she or he is a GSA member).

Division Fellows

15 new Fellows recognized for their scholarship and service this year.

*Ralph Davis, 2005 Distinguished Service Awardee.*

*Janet Herman, Outgoing Hydrogeology Division Chair (left) and Don Siegel, 2005 Meinzer Awardee.*

*Frank Schwartz, 2005 Distinguished Service Awardee*

Award committees

Functioned remarkably well. A continuing concern is that the membership needs to step up with nominations for the various awards.

*Membership numbers*

Trends in membership are somewhat concerning. The division sponsors a significant portion of the GSA Annual Meeting but this is not necessarily reflected in the Hydrogeology Division membership. The management board has addressed this question but has not resolved the dilemma. Any suggestions on how to increase division membership would be greatly appreciated.

The Secretary/Treasurer report was presented by R. K. Davis.

For the year July 1, 2004 to June 30, 2005 there was $11,582 in revenue from dues. An additional $3225 in revenues was realized from contributions from continuing education courses sponsored by the Division. The total revenues for the period were $11,807. Expenses include the annual meeting, newsletter, postage, student travel awards, and the Birdsall-Dreiss lecture tour for a total of $12,922. There was net income for the year of ($1,115). The negative net income during the budget period resulted because the costs of the Birdsall-Dreiss lecture series were billed against the general Hydrogeology Division funds in an effort to defray applying these costs against the Birdsall-Dreiss funds which have been heavily impacted by market fluctuations over the last several years. With some stabilization and advances in the market in 2005 it is planned that more funds will be pulled from the Birdsall-Dreiss income to support the lecture series in 2005-2006. The ending balance for the Hydrogeology Division account on June 30, 2005 was $21,092. Three funds managed by the GSA Foundation for the Hydrogeology Division increased over the period as a result of improved markets and significant contributions from Hydrogeology Division Members -**Thank You!!** The Hydrogeology Division Award Fund ended the period with $50,972 an increase of $3,113; the Birdsall Award Fund ended the period with a balance of $87,402 an increase of $15,955; and the Dreiss Award Fund had an ending balance of $48,759, an increase of $15,826. Now that these funds are stable and increasing again they will be leaned on to defray the costs of the Birdsall-Dreiss Lecture series in the coming year with some additional support provided from the Hydrogeology Division's main fund. The

combination of revenues from the Birdsall and Dreiss funds and the main Division fund will provide approximately $8,500 for this year's lecture tour. This is a vast improvement from the past several years but still slightly short of the $10,000 goal that the management board would like to be able to provide in support of the Birdsall-Dreiss Distinguished Lecture series.

## Meinzer Award Papers

Siegel, D.I. and Mandle, R.J., 1984, Isotopic evidence for glacial meltwater recharge to the Cambrian-Ordovician aquifer, north central United States, Quaternary Research, vol. 22, p. 328-335.

Siegel, D.I., 1990, Sulfur isotopic evidence for regional recharge of saline water during continental glaciation, north-central United States, Geology, vol. 18, p. 1054-1056.

Siegel, D.I., 1983, Groundwater and the evolution of patterned mires, Glacial Lake Agassiz Peatlands, Northern Minnesota: Journal of Ecology, vol. 71, p. 913-921.

Siegel, D.I., and Glaser, P.H., 1987, Groundwater flow in a bog-fen complex, Lost River Peatland, Northern Minnesota, Journal of Ecology, vol. 75, p. 743-754.

Siegel, D.I., Reeve, A., Glaser, P.H. and E. Romanowicz, 1995, Climate-driven flushing of pore water from humified peat: geochemical and ecological ramifications, Nature, vol. 374, p. 531-533.

The election results were presented:
Total votes: 222, approximately 17% of the voting members voted.

Officers:
Chair: D. Kip Solomon; 219 yes, 3 abstain.

First Vice-Chair: Scott W. Tyler; 217 yes, 1 write-in, 2 abstain.

Second Vice-Chair: – Edward A. Sudicky 218 yes, 2 write-ins, 2 abstain.

Dr. Joe Donavan provided a report on the status of the Division's program for the 2005 annual meeting which was a fantastic success. There were a wide array of technical sessions sponsored or co-sponsored by the Hydrogeology Division that all appeared to be well attended. Dr. Laura Toran was introduced as the Hydrogeology Division's joint technical program representative for the 2006 annual meeting scheduled for Philadelphia, Pennsylvania.

A newsletter update was provided by Dr. Ed Harvey. The WEB site for the Hydrogeology Division has been hosted by the School of Natural Resources, University of Nebraska for the last several years and has been greatly enhanced under Ed's watch. If you have questions or comments about the newsletter or the WEB page please send Ed a note. He's always looking for new material to add to the newsletter.

Ms. Karlan Blythe reported on the John F. Mann Mentor Program. She encouraged Hydrogeology Division members to become active participants in this program. The program provides interaction between students and hydrogeologic professionals via the annual and sectional meetings of the GSA. Students are provided lunch and have an opportunity during this time to interact with professionals from their region who have volunteered as mentors for the program. It's a great chance for students to see what types of hydrogeology jobs are available and to explore various aspects of what their future careers in hydrogeology might involve.

The final order of business occurred when Chair Janet Herman turned over the chair duties to Kip Solomon. He read the necrology followed by a moment of silence.

The meeting was adjourned at 3:00 pm.

Ralph K. Davis
Secretary-Treasurer
GSA Hydrogeology Division

## Chair *from page 2*

ideas are debated, morphed, etc. I would love to have your thoughts and ideas.

I wish you all a productive field season. Don't forget the July 11 abstract deadline and check back in the fall for updates on Philadelphia.

# The Pursuit of Science: 2006 Annual Meeting in Philadelphia

**By Laura Toran**

When Kip Solomon, Mark Person, and I set out to plan the Philadelphia meeting (Oct 22-25), we wanted to achieve the exciting breadth of coverage for hydrogeology that we saw in the Salt Lake City meeting, with perhaps 25 sessions. At the end of the session proposal period, we topped 35 sessions. People just had too many good ideas. The schedule won't be set until the abstracts flow in (deadline Tuesday, July 11 this year), but when you check out the proposed topical sessions (below) I can't help thinking you'll see plenty that you don't want to miss. Look over the list and get your abstracts in!

In addition to sessions, we have quite a few hydrogeology related field trips before, during, and after the meeting (also listed on the table). You can see that we can offer not only great restaurants (plus or minus the traditional Philadelphia street vendors), historical sites, and museums, but there is also a lot of neat geology to check out too.

Looking forward to seeing you at the meeting!

Program description:
http://www.geosociety.org/meetings/2006/sessions/topical.asp
Abstract submittal:
http://gsa.confex.com/gsa/2006AM/

*Laura Toran*

## Proposed Sessions for the Fall Meeting

T19. Distribution of Arsenic and Related Metalloids in Surface and Ground Waters: Controls and Challenges
T24. Innovations in Groundwater Vulnerability Assessment (Posters)
T25. Water-Quality Issues in Sole-Source and Principal Aquifers in the U.S.
T46. Teaching Hydrogeology in the 21st Century
T65. Detection of Voids, Tunnels and Collapse Features
T66. Emerging and Innovative Approaches to Groundwater Modeling
T67. Flow and Transport in Aquitard-Aquifer Systems
T68. Gradients at Hydrologic Interfaces as Indicators of Key Earth-Surface ("Critical-Zone") Processes
T69. Groundwater Availability and its Sustainability within Regional Aquifer Systems
T70. Groundwater Flow and Contaminant Fate, Transport and Remediation in Fractured Soil, Sediment and Rock
T71. Groundwater's Role in the Survival of Threatened and Endangered Ecosystems
T72. Heat as a Natural Tracer in Hydrologic Systems: Current Understanding, Innovation and Application
T73. Nonpoint Source Pollution: Sources, Processes, Prediction, and Solutions
T74. Pharmaceuticals and Other Emerging Contaminants in the Environment—Transport, Fate, and Effects
T75. Chemical and Hydrological Interactions in the Evolution and Control of Coal and Metal Mine Drainage
T76. Detecting and Characterizing Fluxes of Water and Dissolved Constituents Across the Groundwater Surface-water Interface
T77. Epikarst to Conduits: Quantitative Methods Applied To Monitoring and Modeling of Karst Aquifers
T78. Geochemical and Hydrologic Linkages Between Shallow and Deep Groundwaters
T79. Ground Water Age Dating: Current Issues and Applications
T80. Impact of Past Glaciations on Present-day Subsurface Water Resources: Geochemical, Hydrogeological and Modeling Studies
T81. Physical, Chemical, and Biological Controls on Remediation of Chlorinated Solvents in Fractured Rock
T82. Reactions at Mineral-Water Interfaces: The Role of Solute Adsorption on Contaminant Co-Adsorption, Mineral Dissolution and Colloid Behavior
T83. Salinization Processes and Problems in Coastal and Inland Aquifers
T84. Novel Applications of Tracers to Characterize and Distinguish Multiple Transport Phenomena at Various Scales
T85. New Approaches to Understanding the Cycling of Water in Urban Landscapes
T86. Peatland Patterns and Hydrological Processes: From the Subarctic to the Subtropics
T87. Stream-hyporheic Interactions: Hydrology, Geochemistry, and Biology
T88. Innovative Sensors, Technologies and Strategies for Performance Monitoring of Waste Disposal Facilities and Remediation Approaches
T89. Revolutionizing Hydrologic Systems Observations: Data Needs to Ensure Groundwater Availability
T90. Three-Dimensional Geological Mapping for Groundwater Applications
T91. GPS and InSAR in Groundwater Investigations
T92. Innovations in Characterizing Physical and Chemical Heterogeneity in Sedimentary Aquifers
T93. Recent Advances in Groundwater Solute Transport Modeling: Alternatives to the Classical Advection-Dispersion Model
T94. The Spatial and Temporal Variability of Ground Water Recharge

# 2005 Birdsall-Dreiss Distinguished Lecturer's Report

Bill Woessner

**By William W. Woessner**

I would like to thank the Hydrogeology Division of GSA for this honor and unique opportunity to travel across the country and interact with old colleagues, make new acquaintances, and to talk with geology and hydrogeology students. I received over 70 invitations to speak. I appreciated the interest in my research, and to those who I was unable to visit it is truly with regrets. I arranged my speaking schedule around groups of invitations, my existing and developing travel schedule for non GSA work, family, and within my travel budget. I should take this opportunity to publicly thank my university, The University of Montana, for providing me with additional travel funds and teaching release over the last year. I also thank my wife for her understanding and support as I was on the road over 80 days, and the tolerance of my students.

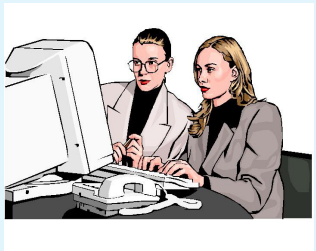
I visited 49 venues, including colleges, universities federal agencies and labs, state hydrogeology meetings, and state geology offices. I gave my rivers/groundwater exchange talk 32 times and my drugs/virus talk 36 times. Over 3,550 persons attended my presentations. I was able to use some international University of Montana funds for other obligations in combination with the Birdsall Dreiss lecture funds to present a talk in Berlin and Zurich last summer. I enjoyed lunches and conversations with the many students I met.

I found that hydrogeology programs were healthy, attracting students to the undergraduate program and often dominating the graduate student population in many departments. For those wishing to pursue hydrogeology, the educational and employment opportunities remain varied and plentiful. However, I found traditional geology departments under transition. In a number of cases these programs felt under attack by university administrators as geology major numbers are and have been falling. It seems many departments are attempting to reinvent themselves with the goal of attracting more majors and graduate students. I can't say that I found anyone I talked with that had the solution clearly worked out. The exception to these conditions were schools traditionally producing geologists for the oil and gas industry located immediately adjacent to the production areas. These programs were diverse.

I will leave you with a question put to me at one of my stops for your discussion and consideration: If you had sizable resources to invest in a hydrogeology program, can you identify a challenge (problem) that could be solved in the next 5 to 7 years that would make a significant contribution to the science?

Selecting me to serve the organization was an honor. The food was great, the conversations informative, and the traveling uneventful (except for those two airplanes that started to take off and then decided not to). It has been a great experience.

William W. Woessner
2005 Birdsall Dreiss Distinguished Lecturer
Regents' Professor



**Want to know what's going on within the GSA Hydrogeology Division?**

**Then visit our website at <http://gsahydrodiv.unl.edu> to catch up on the latest events or find out how you can become more involved with our activities.**

# NGWA and GSA: Collaborative Activities in 2006

**By Vicki Kretsinger, AGWSE Past Chair**

*Vicki Kretsinger*

## NGWA/AGWSE Division Co-Sponsors Three Sessions at 2006 GSA Annual Meeting

***As an Associated Society of the Geological Society of America (GSA), NGWA/AGWSE will be co-sponsoring three sessions at the 2006 GSA Annual Meeting and Exhibition, "The Pursuit of Science — Building on a Foundation of Discovery," October 22-25, 2006 in Philadelphia, Pennsylvania. Co-sponsorship of these sessions by NGWA/AGWSE also furthers collaborative activities that benefit both organizations and is in concert with the additional alliance established when NGWA's Mutual Cooperation Agreement formalized a reciprocal partnership between NGWA and GSA in December 2004.***

One of the co-sponsored sessions at the 2006 GSA annual meeting is "Water-Quality Issues in Sole-Source and Principal Aquifers in the U.S." which is being co-sponsored by GSA's Hydrogeology Division and NGWA/AGWSE and organized by Brian Katz and Mike Focazio of the U.S. Geological Survey (USGS) in Florida and Virginia, respectively. In recent years, concerns have emerged about water quality in many of the 62 principal aquifers in the U.S. In some of these systems, sole-source aquifer designations have been used to protect drinking water supplies especially where few or alternative sources of water exist. This session (Topical Session T25) will highlight research on anthropogenic and natural factors that control water quality in sole-source and principal aquifers in the U.S. Also, the session will encourage presentations on innovative chemical methods (e.g., isotopes and other chemical species) and hydrologic techniques (groundwater flow and transport modeling) that are being used in vulnerability assessments for regional and site-specific investigations of water quality in these aquifer systems. This session will bring together researchers from many different disciplines that use a variety of techniques to study groundwater quality issues in important aquifer systems. The conveners welcome oral and poster presentations. Invited speakers presenting in this session include representatives from the US Environmental Protection Agency and the USGS National Water-Quality Assessment (NAWQA) program.

A second session co-sponsored by GSA's Hydrogeology Division and NGWA/AGWSE is "Emerging and Innovative Approaches to Groundwater Modeling." This session (Topical Session T66) convened by Abe Springer of Northern Arizona University and Linda Zhang of the University of Michigan focuses on the evolution and widespread application of groundwater models and innovative approaches in modeling. The session will explore these innovative approaches in development, application, effective parameter determination, uncertainty of models, or other topics. NGWA's 2006 Darcy Lecturer Eileen Poeter, currently a Professor of Geological Engineering at the Colorado School of Mines and Director of the International Ground Water Modeling Center, will provide her Darcy Lecture "All Models Are Wrong: How Do We Know Which Are Useful?" in coordination with this session. Eileen's lecture details how the groundwater profession today is searching for appropriate approaches to developing conceptual models, evaluating which are useful, and describing the uncertainty associated with their predictions.

The third co-sponsored session is "Revolutionizing Hydrologic Systems Observations: Data Needs to Insure Groundwater Availability," which is being co-convened by Vicki Kretsinger of Luhdorff and Scalmanini, Consulting Engineers and AGWSE Division Past Chair and Bev Herzog of the Illinois State Geological Survey and AGWSE Division Chair. This session (Topical Session T89), co-sponsored by NGWA/AGWSE, GSA's Hydrogeology Division, and GSA's Geology and Society Division highlights the global

need to revolutionize hydrologic systems observations to achieve sustainable resources goals and provide decision makers with the data needed to better assess and manage groundwater resources. The conveners welcome papers on topics that highlight innovative approaches to regional systems analyses, including surface-water and groundwater interrelationships and modeling applications that address complex whole systems analyses. Presentations are also encouraged on: data and analysis limitations for assessing long-term groundwater storage changes and groundwater availability; examples of regional assessments that incorporate new monitoring strategies or basin-scale monitoring technologies, including real-time or telemetered data collection; techniques to determine rates of recharge, runoff, and consumption; and examples of coordinated efforts to advance research, monitoring, and data sharing. Invited speakers presenting in this session include Gene Whitney of the National Science and Technology Council at the White House Office of Science and Technology Policy and chair of the Subcommittee on Water Availability and Quality and T. N. Narasimhan Emeritus Professor at the University of California of Berkeley.

Abstracts for this session (Topical Sessions T25, T66, and T89) must be submitted electronically on GSA's web site at www.geosociety.org (instructions are posted at the site) by July 11, 2005 (11:59 pm Pacific Time). Electronic abstracts will be archived and remain searchable on the site for at least two years. For further information about Topical Session T25, please contact Brian Katz at bkatz@usgs.gov or Michael J. Focazio at mfocazio@usgs.gov . For further information about Topical Session T66, please contact Abe Springer at abe.springer@nau.edu or Linda Zhang at ylzhang@umich.edu. And, for more information about Topical Session T89, contact Vicki Kretsinger at vkretsinger@lsce.com or Bev Herzog at herzog@isgs.uiuc.edu .

**GSA Hydrogeology Division Co-Sponsors AGWSE 2006 Summit**

Many thanks to GSA's Hydrogeology Division as a co-sponsor of the second annual NGWA "Ground Water Summit" occurring April 23-26, 2006 in San Antonio, Texas.

**Distinguished Lecturer Exchange**

The 2006 Summit provided a continued opportunity to recognize the NGWA and GSA distinguished lecturers. The 2006 Darcy lecturer, Dr. Eileen Poeter presented her Darcy Lecture as described above. The 2006 GSA Birdsall-Dreiss Lecturer, Dr. David Blowes (professor at the University of Waterloo, member of the Waterloo Institute for Groundwater Research, and Canada Research Chair in Groundwater Remediation since 2001) gave his lecture on "Permeable Reactive Barriers for Treating Groundwater Contaminated by Dissolved Metals." In keeping with the distinguished lecturer exchange program that began in 2003, Eileen will also be providing her lecture at this year's GSA Annual Conference and Exposition in Salt Lake City.

**2007 Ground Water Summit – Session Proposals Due August 1, 2006**

The call for session proposals is now open for the 2007 Ground Water Summit scheduled to take place April 29-May 3, 2007 in Albuquerque, New Mexico. Planning is underway, and the AGWSE Board and Summit Task Force, including Summit co-chairs Bill Alley of the USGS and Erik Block of Block Environmental, welcome continued session and other event co-sponsorship by GSA. Events being planned for the 2007 Summit and proposed session categories are listed at http://www.ngwa.org/e/conf/0704295095prop.cfm . All session proposals (paragraph description of up to 100 words on the session topic) for the 2007 Ground Water Summit must be submitted in electronic format. To submit online see http://www.ngwa.org/forms/gwsummitform.htm . Session proposals are due **August 1, 2006**.

The AGWSE Board extends many thanks to GSA for embracing continued opportunities for geoscience collaboration! We look forward to more opportunities to demonstrate the value of allied efforts.

**NGWA Promotes Earth Systems Science Education**

NGWA has joined other federal and state groups and geoscience organizations, including GSA and the American Geophysical Institute, in calling for strengthened Earth systems science education as vital to meeting society's needs. (See GSA's policy statement on "The Importance of Teaching Earth Science in Schools" at http://www.geosociety.org/science/govpolicy.htm) and AGI's brochure on communicating how Earth science benefits society (http://www.agiweb.org/education/WhyEarthScience/Why_Earth_Science.pdf .) On February 13, 2006, NGWA's Board of Directors adopted the statement "The Importance of Earth Systems Science Education." To address future environmental and resources challenges, including complex water resources evaluation and

sustainability issues, requires a better understanding of the interrelationships between Earth systems processes.

The National Science Education Standards, published by the National Research Council in 1996, are instrumental for strengthening Earth systems science education. However, as pointed out by Dickerson and Callahan (May-June 2006) in their article "Ground Water is Not an Educational Priority" (*Ground Water Journal* Vol. 44, No. 3), the term "groundwater" is not mentioned in this document. The integral nature of groundwater to Earth systems is reflected in NGWA's statement, which reads, "through Earth systems science education, students learn to understand Earth's complexity...[and] appreciate the significance of wise utilization of the Earth's resources…Earth science education promises to play an ever-expanding role in meeting society's needs. Essentially, Earth systems science education constitutes a core element of students' curriculum."

NGWA's statement calls for increased efforts to elevate Earth science education "across all avenues of society", including:

- Uniting other geoscience organizations in support of Earth systems science education,
- Supporting adoption of the National Science Education Standards by all public and private school systems,
- Promoting Earth science education through NGWA's National Ground Water Awareness Week, Earth Sciences Week, and other science education events,
- Providing examples of applied Earth science to organizations that develop educational training materials and resources,
- Providing opportunities for engaging students and others in interactive learning by creating "outdoor" classrooms with hands-on learning activities, and
- Promoting Earth systems science education at all levels, including necessary collection of data to better understand the complexity of all Earth systems.

**For more information on National Ground Water Association activities, please visit the NGWA web site at <http://www.ngwa.org/>**

## Groundwater Resources Association of California Events Calendar

**September 13-15, 2006**
**Model Calibration and Predictive Uncertainty Analysis Using PEST**
Savoy Hotel, San Francisco, California
Cooperating Organizations Include: IAH USNC
http://www.grac.org/pest.asp

**September 21-22, 2006**
**GRA 15th Annual Meeting: Assessment, Use, and Management of Groundwater in Areas of Limited Supply**
Bahia Resort, San Diego, California
Cooperating Organizations Include: IAH USNC, NGWA
http://www.grac.org/am.html

**October 2-3, 2006**
**Introduction to Groundwater and Watershed Hydrology: Monitoring, Assessment and Protection**
Hilton Hotel, Glendale , California
Co-Sponsored by: University of California Cooperative Extension Groundwater Hydrology Program; IAH USNC
http://www.grac.org/hydrology.asp

**November 14-16, 2006**
**High Resolution Site Characterization Monitoring**
Westin Hotel, Long Beach, California
Cooperating Organizations Include: University of Waterloo, IAH USNC, and NGWA
Watch for details at http://www.grac.org

# New NGWA Robert Storm Award

By Bev Herzog, Chair AGWSE

I am pleased to announce a new National Ground Water Association (NGWA) award—the Robert Storm Award for Interdivisional Cooperation. Vicki Kretsinger, Past Chair of the Association of Ground Water Scientists and Engineers (AGWSE) a division of NGWA, and I initiated this idea almost two years ago as a way to highlight people or organizations that exemplify the cooperation and community spirit that NGWA's Board of Directors has identified as one of the association's core values. William McEllhiney, the first president and one of the primary founders of NGWA, has been immortalized with the National Ground Water Research and Educational Foundation McEllhiney Lecture Series. However, as evidenced in the following passages about McEllhiney from the book NGWA: The First Fifty Years (Swanson, 1999), other individuals, and particularly Robert Storm, were also instrumental in the cooperative spirit that united the groundwater community during the formative years of NGWA. We hope to revive and recognize this spirit of community through this new award.

*Bob Storm*

"*McEllhiney listened to technical experts such as Carl Bays, Ph.D., a geologist and manager (author's note: and one of my predecessors as Groundwater Geology Section head at the Illinois State Geological Survey), McEllhiney and Bays were part of a vocal group within the industry that strongly advocated the formation of a national trade association. There was also Bob Storm of Urbana, Illinois, a geologist who worked for Bays and who was also the publications director for the Illinois Water Well Drillers Association. Storm provided a special communications link between contractors and scientists. 'These men and other ground water industry supporters had one thing in common: they understood the potential benefits that could result from the strength in numbers provided by working together. With hard work and financial support, a diverse group led by McEllhiney, Bays, and Storm formed a trade association to satisfy the needs of an entire industry.'*

*This history also notes, "Robert R. Storm, a young geologist who began working for Dr. Bays in 1944, was responsible for 'keeping the drillers happy.' And Storm did so as he joined the Illinois association and began working part time with it, becoming publications director, editor of The Illinois Well Driller, and later, its permanent secretary. Thus, Storm worked for McEllhiney at the state association as well as for Bays at the Survey office.*"

Nominations are open for this and all other NGWA and AGWSE awards. Information on how to nominate someone can be found at http://www.ngwa.org/awards/awards.cfm. The deadline is August 1. We hope that Bob Storm will be at this year's Annual NGWA Expo in Las Vegas, Nevada, to present the first award in his name. Please help make this new award as meaningful as possible by nominating someone who truly deserves to be recognized for their cooperative spirit.

Do you have an interesting idea for a short scientific article? Perhaps an opinion on a new policy or technique? Any exciting news in your professional life? Upcoming conference? An announcement of interest to the hydrogeological community? If so, why not publish it in ***The Hydrogeologist***? Send your submission ideas to feharvey1@unl.edu.

# Hydro-Happenings - News From Your Colleagues

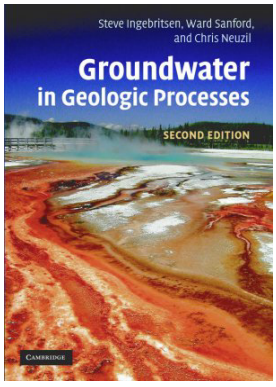
## Campana Appointed Director of IWW at Oregon State University

Dr. Michael E. Campana has been appointed the first Director of Oregon State University's Institute for Water and Watersheds (water oregonstate.edu). He will assume his post on June 1, 2006. The IWW is a campus-wide unit established to promote, facilitate, and support water resources research, teaching, inreach, and outreach at OSU. The IWW concept was developed by the water faculty at OSU and selected as one of six strategic initiatives to be funded by the Provost's Office.

Campana has been at the University of New Mexico since 1989; before that he was at the Desert Research Institute since 1976. At UNM he currently directs the Water Resources Program and is the Albert and Mary Jane Black Professor of Hydrogeology. His specialties are water resources in developing countries, curriculum development, and transboundary water resources management.

He received his MS and PhD degrees in hydrology from the University of Arizona and his BS in geology from the College of William and Mary.

## Groundwater in Geologic Processes (2nd Edition) Available in June




The extensively revised and expanded Second Edition of *Groundwater in Geologic Processes* by Steve Ingebritsen, Ward Sanford, and Chris Neuzil. The second edition of this well-received and widely adopted textbook incorporates significant new findings since publication of the First Edition and includes new chapters on hydromechanics (the coupling of flow and deformation), compaction and diagenesis, metamorphism, and subsea hydrogeology. The book is available in paperback from Cambridge Univrsity Press for $75.00.

## Yu Joins Groundwater Division of Saudi Aramco

Dr. George Haichao Yu has recently joined the Groundwater Division of Saudi Aramco as a senior hydrogeologist and aquatic geochemist. George joined GSA in 1993 and has been a member of the Hydrogeology Division for many years. George previously worked as a senior hydrogeologist in several US consulting companies. Graduated from Indiana University under Professor Noel Krothe, Dr. Yu has been very active in groundwater investigation, modeling, and environmental remediation for the past 13 years. Relocating to Dhahran, Saudi Arabia and working for the largest oil company in the world is a big career change and George is very enthusiastic about the challenges ahead of him. Dr. Yu thinks it is a very unique opportunity for a hydrogeologist to work on some very unique groundwater problems in a country like Saudi Arabia, where there is virtually no surface runoff; no recharge to groundwater, and almost all groundwater resources are considered "fossil water". How to protect grounwater resources while ensuring adequate water supply to support oil production is a tough question that has to be answered. Dr. Yu hopes to be able to share some of his experience in hydrogeology in extreme arid areas with his colleagues at GSA meetings. Dr. George Yu can be reached through e-mail haichao.yu@aramco.com or at P.O.Box 5840, Saudi Aramco, Dhahran 31311, Saudi Arabia"

## Molz Receives Theis Award

At the 2006 annual meeting of the American Institute of Hydrology, Fred Molz received the C.V. Theis Award. This award was established in 1986 to recognize individuals who have made outstanding contributions in ground-water hydrology.

## Ongley Joins Unity College Faculty

Lois K. Ongley has been appointed Associate Professor of Chemistry at Unity College (www.unity.edu) in Maine. Unity College is a small, private college in rural Maine that provides dedicated, engaged students with a liberal arts education that emphasizes the environment and natural resources.

## Colleague Requests Assistance With Finding Reference Papers

Sandun Illangasinghe, a lecturer at Sabaragamuwa University of Sri Lanka, would like to obtain reading materials related to geology and groundwater to use in his courses and with his masters students. He is especially interested in information about thermal springs, soil erosion, river gaging and cosmogenic nuclide techniques. For more information, or if you can provide reference materials, please contact Sandun at the address below.

Sandun Illangasinghe
Department of Natural Resources
Faculty of Applied Sciences
Sabaragamuwa University of Sri Lanka
Buttala, Sri Lanka, 91100

## Hunt Elected President of Austin GS

Mr. Brian Hunt, hydrogeologist with the Barton Springs/ Edwards Aquifer Conservation District in Texas, has been elected President of the Austin Geological Society for 2006-2007.

## Hydro *from page 1*

cooperation with more than 20 organizations. Goals of the meeting are to improve understanding and management of drought and water scarcity in the United States and to create a relevant science policy document that can inform national debate. The meeting will address past, present, and future approaches to drought management, including presentations and discussions on: drought science, new technologies, enhancing the reliability and the usability of scientific information, valuing water, and on policy and management practices from the U.S. and abroad. In addition to elucidating future science needs, the meeting is an opportunity to enhance communication and collaboration between the science and the policy communities, and information needs of decision-makers will be identified and discussed. Invited participants come from academia, industry, the public sector, and local, state and federal government, including the White House Office of Science and Technology Policy. Findings of the conference, based on views expressed at the conference by participants, will be captured and reported in the Roadmap document. More information on the conference is available at http://www.geosociety.org/meetings/06drought/.

The frequency, intensity, and duration of drought can be exacerbated by climate change. The preponderance of climate change empirical data is consistent with the scientific theory that increases in atmospheric greenhouse gas concentration can increase average temperature at the earth's surface. The U.S. Senate Committee on Foreign Relations cited reports of the Intergovernmental Panel on Climate Change (http://www.ipcc.ch/) that were endorsed by the National Academy of Sciences, in S. Res. 312, "Expressing the sense of the Senate regarding the need for the United States to address global climate change through the negotiation of fair and effective international commitments." (A pdf of the resolution is available at <http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=109_cong_bills&docid=f:sr312rs.txt.pdf> or by clicking here.) The resolution recognizes "significant long-term risks to the economy and the environment of the United States from the temperature increases and climatic disruptions that are projected to result from increased greenhouse gas concentrations" and stresses the need to pursue advanced technologies. Introduced May 25, 2006, as a resolution it has no implementation or enforcement authority.

The GSA Geology and Public Policy Committee is drafting a position statement on global climate change. When finished, this position will be posted on the GSA web site at http://www.geosociety.org/geopolicy/.

Water resource issues are steadily gaining visibility at local, national, and international levels. The GSA is actively engaging in discussions regarding water resource issues in furtherance of the Society's official mission to be a leader in advancing the geosciences, enhancing the professional growth of its members, and promoting the geosciences in the service of humankind. This engagement creates an opportunity for hydrogeologists to inform the discussion, and I hope that you will choose to do so! As always, your questions or comments are welcome at any time. Please send them to ddiodato@TheHydrogeologist.com or (703) 235-4473. Thanks!

**Footnotes**
[1]The text of both bills can be retrieved from the Library of Congress at http://thomas.loc.gov/.

# David Todd Dies of Leukemia

David Keith Todd, one of the founders of modern groundwater science, passed away the evening of April 23, 2006 after a very brief but valiant struggle with acute leukemia.

Dr. Todd was professor emeritus of civil engineering at the University of California, Berkeley. Over 30 years, he taught many of today's world leaders in groundwater hydrology, including Jacob Bear, John Cherry, Allan Freeze, T.N. Narasimhan, Iraj Javendal, and Shlomo Neuman. He was widely recognized for his textbook, ***Groundwater Hydrology***, first published in 1959 with subsequent editions in 1980 and 2005. Dr. Todd published more than 115 technical publications, including *The Water Encyclopedia*. He achieved world recognition for his pioneering work on groundwater management, including seawater intrusion, artificial recharge, perennial yield, and groundwater contamination. In 1980, Dr. Todd retired from the university and founded Todd Engineers, an Emeryville, California consulting firm that specializes in groundwater.

Dr. Todd was recognized in 1997 by the National Groundwater Association with the John Hem Excellence in Science and Engineering Award. The American Institute of Hydrology recognized him with Honorary Board Membership and the C.V. Theis Award. In 1999, the Groundwater Resources Association presented him with its Lifetime Achievement Award.

A memorial service took place on June 6th at the University of California, Berkeley. Plans are underway to establish a center for groundwater studies or scholarship in his name at the University of California at Berkeley. Interested parties may contact Todd Engineers at toddengineers.com.

## Physical and Chemical Heterogeneity in Philly

Please consider submitting an abstract for the session titled "Innovations in Characterizing Physical and Chemical Heterogeneity in Sedimentary Aquifers," organized for the 2006 annual meeting in Philadelphia. We would like to attract a broad range of papers which present new insights from field and laboratory work, new understandings of processes, new ideas in mathematics, and new ways of attaining more realistic representations within models. The invited speakers include Tim Scheibe on characterization of chemical and biological heterogeneity, Doug Mackay on characterizing flux and transport parameters, Rosemary Knight on geophysical approaches to characterization, and Chunmaio Zheng on characterizing fine- and larger-scale heterogeneity at the MADE site. Through these and the additional volunteered papers, we hope to have a good mix of those who are working on field characterization, those who are working on modeling, and those who are working at the interface between the two. Abstracts are due July 11 and are submitted through http://www.geosociety.org/meetings/2006/. Please contact us if we can provide any additional information.

Richelle Allen-King, University of Buffalo, SUNY
R.W. Ritzi, Jr, Wright State University

## New Division GSA Fellows Elected

The following Division members were named a GSA Fellow in May, 2006, and will be recognized at the Presidential Address and Awards Ceremony at the GSA Annual Meeting in Salt Lake City, Utah on Saturday, October 15th. Congratulations from your colleagues in the Hydrogeology Division!

David W. Blowes, University of Waterloo
Anne E. Carey, Ohio State University
David M. Diodato, USNWTRB
Andrew T. Fisher, Univ. Calif. Santa Curz
Shaun K. Frape, University of Waterloo
Alan E. Fryar, University of Kentucky
Shemin Ge, University of Colorado
F. Edwin Harvey, University of Nebraska
David W. Hyndman, Michigan State University
Jonathan B. Martin, University of Florida
Fred J. Molz, Clemson University
Donald O. Whittemore, Kansas Geol. Survey
Hongbin Zhan, Texas A&M University
Vitaly A. Zlotnik, University of Nebraska

# The 4th World Water Forum: Amidst a World of Contradictions

**By Erin Alicia Carroll, M.S. Earth & Planetary Sciences, University of New Mexiso**

The 4th World Water Forum (WWF) held in Mexico City in March 2006 resulted in numerous protests and controversial headlines against what is termed the 'comodification of water.' Contrary to what the headlines would lead one to believe, privatization was a prevalent debate within the forum itself and many of the participants adamantly opposed the concept. Attendees with little interest in the commodification of water could attend presentations about indigenous water interests, local water governance, and even a session that fought against the privatization of water and was moderated by the Canadian activist Maude Barlow, the author of *Blue Gold*. This observation does not belittle the fact that the transnational corporations and agencies that advocate privatization were in attendance, because they were, but perhaps it suggests that attempts at privatization have failed to increase potable water coverage and services and that the general attitude is shifting towards local governance.

*Model promoting water flow regulating equipment during the conference.*

Despite the fact that a diverse array of viewpoints existed within the participants of the forum, one can not deny that the primary stakeholders were wealthy corporations and agencies and that many non-governmental organizations (NGO's) and poor citizens were financially restricted from attending and competing with the financially endowed and influential organizations present at the World Water Expo, the World Water Fair, and many of the sessions themselves. Many contradictions existed within the fair. For instance, as some proprietors advocated women's role in alleviating the water crisis, one company that distributes flow regulating equipment entertained a constant crowd of men in business suits by enlisting a bikini model to sell their product.

In analyzing my time spent at the 4th WWF, I am disheartened to see the lack of involvement by United States based organizations (in comparison with those of smaller developed countries, such as the Netherlands) in alleviating the global water crisis. As a graduate student of a state university in the United States, one of my primary purposes for attending the forum was to network and look for employment with water projects in rural Latin America. I found some of the larger US based companies discouraging and disinterested in talking to me when they realized that I was a student seeking employment. By contrast, the Mexicans that I spoke with were at all levels humble and eager to offer their advice and assistance.

My impression of the problem that the human race faces with respect to water was heightened as a result of this international conference. Although no single solution was proposed, it is apparent to me that conferences that bring people together and raise awareness to this important issue (both inside and outside of the conference venue) are crucial for progress. In this manner people can learn from each other's mistakes and rejoice in their successes. Debates can ensure that transnational organizations and policy makers hear the other side of the issue and consider the implications to local environment and policy before implementing their solutions.

# USGS Releases/Updates Ground-water Modeling Programs

GoPhast (Windows, Linux): Version 1.0.1.0 (May 25, 2006) Graphical User Interface for PHAST
http://water.usgs.gov/nrp/gwsoftware/GoPhast/GoPhast.html

GW_Chart: Version 1.9.1.0 (May 16, 2006) Graphing application for MODFLOW, MOC3D, ZONEBUDGET, SUTRA, MT3D, and HST3D. Also draws Piper diagrams.
http://water.usgs.gov/nrp/gwsoftware/GW_Chart/GW_Chart.html

MODFLOW-2005: Version: 1.1 (May 18, 2006)
http://water.usgs.gov/nrp/gwsoftware/modflow2005/modflow2005.html

MF2K-FMP: Version 1.00 new (May 19, 2006)
Estimate dynamically integrated supply-and-demand components of irrigated agriculture as part of the simulation of surface-water and ground-water flow based on MODFLOW-2000.
http://water.usgs.gov/nrp/gwsoftware/mf2k-fmp/mf2kfmp.html

MODFLOW-GUI: Version 4.24.0.0 new (May 16, 2006)
Graphical Pre- and post-processor for use with the MODFLOW, MOC3D, MF2K-GWT, MT3DMS, MODPATH, and ZONEBUDGET models, for use within Argus ONE
http://water.usgs.gov/nrp/gwsoftware/mfgui4/modflow-gui.html

MODOPTIM: Version 1.0 new (May 5, 2006)
A general optimization program for aquifer-test analysis, ground-water flow model calibration and ground-water management with MODFLOW.
http://pubs.usgs.gov/sir/2006/5009/

SEAWAT-2000: A Version of MODFLOW-2000 with the Variable-Density Flow Process and the Integrated MT3DMS Transport Process
version 3.13.00 (updated April 21, 2006)
http://water.usgs.gov/ogw/seawat/

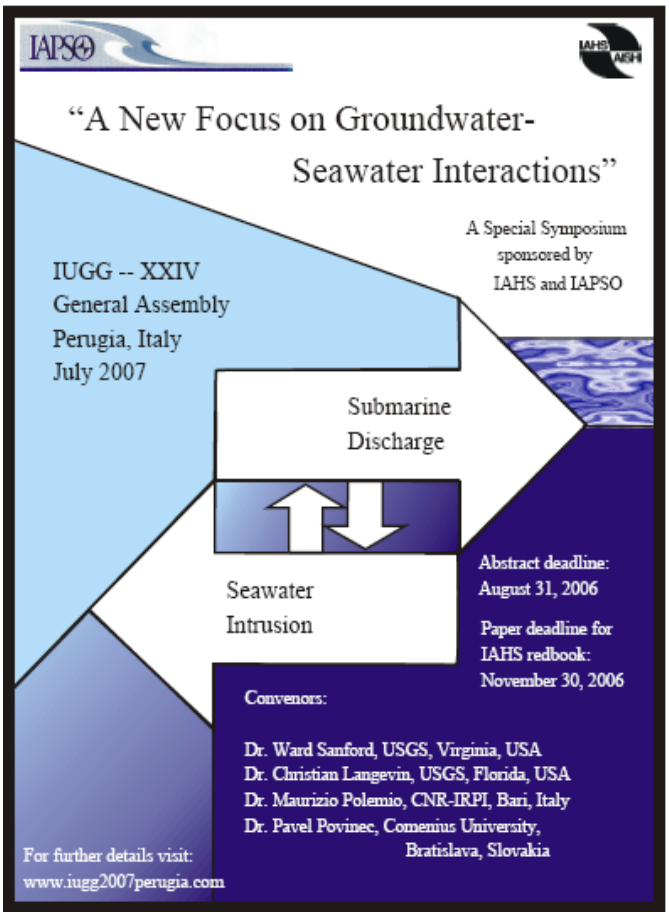
UCODE_2005: (DOS/UNIX) - Version: 1.002 (Apr. 2, 2006) A computer code for universal inverse modeling.
http://water.usgs.gov/software/ucode.html

Utility PIEs: Version: 1.7.6.0 (May 16, 2006)
Programs for simplifying the analysis of geographic information in U.S. Geological Survey ground-water models
http://water.usgs.gov/nrp/gwsoftware/Utility/Utility.html

# Conference Announcements

## International Conference on Karst Hydrogeology and Ecosystems

The International Conference on Karst Hydrogeology and Ecosystems (Karst2007) will be held August 13-19, 2007 at Western Kentucky University. The meeting is hosted by the WKU Hoffman Environmental Research Institute, and this conference is a joint meeting of the four major international karst research groups: 1) the UNESCO International Geoscience Program (IGCP) Project 513: Global Study of Karst Aquifers and Water Resources; 2) The International Association of Hydrogeologists (IAH) Karst Commission; 3) the International Geographical Union (IGU) Karst Commission; and 4) the Union Internationale de Spéléologie Commission on Karst Hydrogeology and Speleogenesis. This follows two successful similar meetings held at WKU in 1998 and 2003. The conference website can be found at http://hoffman.wku.edu/karst2007/k2007.html.To be added to the conference email list, please contact IGCP513 secretary Beth Medley at mailto:karst2007@gmail.com.




## Second Appalachian Karst Symposium

A symposium on Appalachian Karst is planned for September 12-15, 2007, to be hosted by East Tennessee State University (ETSU) in Johnson City, Tennessee. Information will be available and updated at: http://www.etsu.edu/physics/appkarst/

Following the success of the 1991 Appalachian Karst Symposium, this symposium will foster communications and exchange ideas about scientific studies and environmental conservation in the Appalachian karst region.

If you are interested in attending or contributing a paper, please help us estimate the number of potential attendees by sending an e-mail to <appkarst@etsu.edu>. Please use the following format:

Name:
Address:
Phone Number:
Email:
Level of Interest in Attending: (see scale below)
Level of Interest to Contribute an abstract/paper: (see scale below)

(1, high) = Definitely plan to attend; (2, med) = Likely to attend, but not definite yet; and (3, low) = Interested in further information, but not sure yet whether will attend.

**AMERICAN WATER RESOURCES ASSOCIATION**
*Community, Conversation, Connections*

**2006 Summer Specialty Conference**
**Adaptive Management of Water Resources**

**Holiday Inn Missoula Parkside**
**June 25-28, 2006**
**Missoula, Montana**

**For Information please visit the website at:**
**<http://www.awra.org/meetings/Montana2006/index.html>**

# BULLETIN BOARD

### GSA Philadelphia Meeting Approaching Fast

Don't forget to submit your abstracts for the upcoming GSA Annual Meeting in Philadelphia, PA. The online abstract deadline is midnight, Pacific Daylight Time, **July 11, 2006**. Please visit the GSA Webpage <http://www.geosociety.org/meetings/2006/index.htm> to review the list of this year's sessions.

### PLACE YOUR ANNOUNCEMENT HERE!

### 2006 NGWA Ground Water Expo

This year's NGWA Ground Water Expo - Better Together! will be held in Las Vegas, Nevada on December 5-8. For more information visit the NGWA webpage at <http://www.ngwa.org/>.

### 2006 AWRA Annual Water Resource Conference

When: Nov 6-9
Where: Baltimore, MD
For more information visit the AWRA webpage at <http://www.awra.org/>.

### AGU Fall Meeting Deadlines Draw Near

Abstracts for the AGU 2006 Fall Meeting (December 11-15) in San Francisco are due on September 7. For information on sessions see the AGU web site at: <http://www.agu.org/meetings/fm06/>.

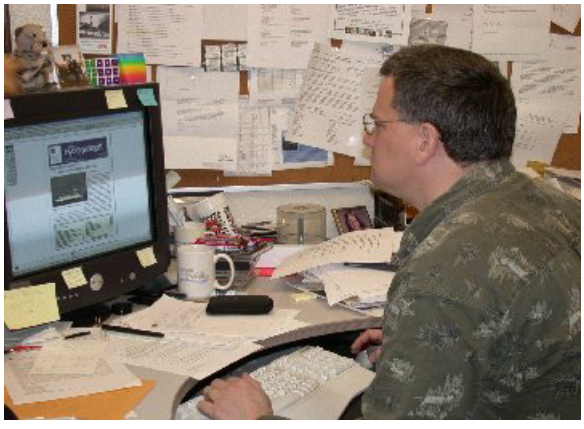
### 21st Century Ground Water Systems Conference

When: Oct 12-13
Where: Costa Mesa, CA
For more information visit the NGWA website <http://www.ngwa.org/>.

## From The Editor...

I want to thank everyone who contributed an article, commentary, announcement, photo, etc., to this issue. The newsletter would not be possible without each of you. If you have comments, suggestions, or an idea for a column or article, please contact me at <feharvey1@unl.edu>.

F. Edwin (Ed) Harvey, Editor
The Hydrogeologist



# University of Minnesota Hydrogeology Field Course


Some of the 2005 Hydrogeology Field Course students and Don Rosenberry(left), a guest instructor from the USGS, investigating groundwater-lake interactions near our field site in north-central Minnesota.

The annual University of Minnesota (UMN) Hydrogeology Field Course is held from July 12 through August 1, 2006, this year. There are still some openings left, mostly for undergraduate students but also for graduate students and interested professionals. The 3-week course consists of 1 week field and laboratory exercises on the Minneapolis campus and 2 weeks of field and analysis exercises at the Department of Geology and Geophysics' dedicated field site in the USGS IRI site near Williams Lake, MN. Participants stay on campus for week 1 and at Deep Portage Conservation Reserve for weeks 2-3 (no camping involved). Students earn course credits usually applicable to their degree at their home institution.

This is an intensive, hands-on, and very applied hydrogeology field, lab, and analytical methods course, useful for careers both in industry and in academia. It is taught by 2 to 3 hydrogeology faculty members from UMN and a hydrogeology research scientist simultaneously. In addition there are typically guest lecturers from the USGS-Denver and the Minnesota Geological Survey. The typical number of students ranges from 15 to 24. Therefore, there are about 4 to maximum 8 students per instructor).

For more information about this course, exercises and topics to be covered, costs, credits, application procedures, testimonies from previous participants, photos, FAQs, faculty profiles, description of facilities, and more, please visit our Hydrocamp Web Site at:

http://www.geo.umn.edu/orgs/camp/hydrocamp

Applications will be accepted until all hydrocamp openings are filled. Questions can be sent to Martin Saar (saar@umn.edu). Hope to see you at Hydrocamp 2006!

# Hydrogeology Division Contacts

## 2006 Management Board

**Chair:** Kip Solomon (ksolomon@mines.utah.edu)
**First Vice-Chair:** Scott Tyler (tylers@unr.edu)
**Second Vice-Chair:** Ed Sudicky (sudicky@sciborg.uwaterloo.ca )
**Secretary-Treasurer:** Ralph K. Davis (ralphd@mail.uark.edu)
**Past Chair:** Janet Herman (jherman@virginia.edu )

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Northeastern - Todd Rayne
North-Central - Maureen Muldoon
South-Central - Todd Halihan
Rocky Mountain - Robert Sterrett
Southeastern - Joe Donovan & Brian Katz

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American Geological Institute - Dave Stephenson
National Ground Water Association - Vicki Kretsinger
International Assoc. of Hydrogeologists - Jack Sharp
Water Science Policy Liaison - Dave Diodato
Society for Sedimentary Geology - Gary Weissmann

**Newsletter Editor:** Ed Harvey (feharvey1@unl.edu)

**Web Administrators:** Ed Harvey, Duane Mohlman

**GSA Student Research Grants:** Carol Wicks

**GSA Council:** Jean Bahr

**Hydrogeology Division Website: <http://gsahydrodiv.unl.edu/>**