



The Hydrogeologist

Newsletter of the
GSA Hydrogeology Division

June 2000
Issue No. 52

Message from the Chair

Greetings:

Recently, I have been thinking about the role that professional societies and organizations such as GSA play. In doing so, I am reminded of the first day of my high school biology class. The teacher started the class by asking us the following question: "What is the most important thing in science?" Even to a bunch of skeptical high school students, this question became quite intriguing and generated much discussion. The teacher let the discussion go on for quite awhile without giving away his answer to this question, and needless to say, nobody figured it out. His answer was a simple, one-word answer: "communication". I guess the reason I remember this incident so well is that the answer was so unexpected to us, at that time. Years later, when I became a scientist, I remembered what this wise teacher had said, and I realized he was right.

Without communication, the advancement of science would be brought to a near-standstill. Most scientific professional societies have a "Mission Statement" and establish a set of goals based on that statement. GSA's Mission Statement is right on the front page of their web site: "The mission of GSA is to advance the geosciences, to enhance the professional growth of its members, and to promote the geosciences in the service of humankind". This is an excellent mission statement, and it is certainly in line with the general idea of communication. I believe that the fundamental purpose of scientific professional societies is "to promote communication among scientists and engineers, and to help convey the findings of science and engineering to the general public".

The primary way that GSA fulfills the job of promoting communication is through professional meetings and the publication of journals. With this purpose in mind, we can ask ourselves how good a job we are doing in GSA, and in the Hydrogeology Division in particular. In my opinion, we are doing a good job, but we can do better. I believe that our Division is on a cusp, or perhaps at a juncture, where there are some great things going on, but there are some areas that need improvement. The scientific content and quality of our meetings has gotten better every year throughout the '90s, and I have every reason to believe that trend will

continue. The size of our annual meeting has now reached the point where we have at least a few concurrent sessions, forcing people to make a choice. This is good, and brings us into the same league as the Fall AGU meeting. However, the cusp that we are on is that we don't quite have the attendance to properly fill the meeting rooms for our sessions. It would be great if, in a couple of years, a major topic of discussion at the Division business meeting would be: "How do we get more space for our program? The meeting rooms are so full that people can't get in to hear the talks".

How do we create such a happy problem for our Division? In real estate, the answer is "location, location, location". For the Division, I think the answer is "students, students, students". The Division already has in place a number of programs aimed at students that have been very successful in attracting students to the annual meeting. I'm not sure what else we could do at the annual meeting to attract and keep students. So the main area for potential growth is at home. One idea that has been very successful for the American Water Resources Association (AWRA) is the formation of student chapters. In our program at the University of Nevada, Reno, the model works like this: the students form a chapter that is officially sponsored and monitored by AWRA. They do a variety of things to make money for their treasury, such as working concession stands at football games. They use the money from their treasury

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Stephen Wheatcraft
Chair
Hydrogeology Division

to sponsor students to go to national meetings (not just AWRA) and to go on group field trips. The whole thing promotes awareness among the students of the value of professional societies and scientific meetings. I would like to see discussion about this idea, and any others that people may have, at the Management Board meetings this fall and at the Division business meeting after the awards luncheon.

On a final note, the Division Technical Program Chairman, Bob Ritzi, has a truly outstanding program planned for the Reno meeting, and I urge you to read about it in this issue, and plan now to submit an abstract, come to the meeting, and *communicate with your colleagues*.

Visit our web site at
<http://www.uakron.edu/geology/gshydro>

News & Notes

Ingebritsen to serve as Birdsall-Dreiss Lecturer

Steve Ingebritsen has been selected as the 2001 Birdsall-Dreiss Lecturer. Steve received a BA degree in Geology from Carleton College and MS and Ph.D. degrees in Hydrogeology from Stanford University. He has been a member of the USGS since 1980 and is currently Chief of the Branch of Regional Research, Water Resources Division, Western Region. He is author, with Ward Sanford, of the textbook *Groundwater in Geologic Processes* (Cambridge University Press, 1998). Steve will offer two talks. The first describes an ongoing study of crustal permeability done in collaboration with Prof. Craig Manning of UCLA, a metamorphic petrologist. The second relates to a recent U.S. Geological Survey (USGS) Circular on land subsidence, done

in collaboration with Devin Galloway, David Jones, and many others. To arrange a lecture, contact Dr. Ingebritsen directly (Ph. 650-329-4422, Fax 650-329-4463, seingebr@usgs.gov)

The Permeability of the Continental Crust -- The variation in permeability with depth in the crust can be probed indirectly with (1) hydrologic models that use geothermal data as constraints and (2) the progress of metamorphic reactions driven by fluid flow. These data indicate that, in orogenic belts, $\log k = -14 - 3.2 \log z$, where k is in meters squared and z is in km. This relation implies that typical metamorphic fluid-flux values are consistent with fluid pressures significantly above hydrostatic values; that the metamorphic carbon-dioxide flux may be sufficient to affect climate; and that there is a significant capacity for diffuse degassing of Earth in tectonically active regions.

Land Subsidence in the United States -- From the San Francisco Bay Delta to the Florida Everglades and from upstate New York to Houston, illustrative case studies describe three basic mechanisms by which human manipulation of groundwater causes land subsidence: groundwater withdrawal, dewatering and oxidation of organic soils, and dissolution collapse of susceptible materials. In the United States, subsidence due to these mechanisms affects more than 40,000 square kilometers in 45 states and causes at least \$125 million in annual damage. Interferometric Synthetic Aperture Radar (InSAR) is a powerful new tool for assessing and mitigating subsidence.

1999 Annual Business Meeting Minutes

John Van Brahana, Secretary-Treasurer

The 1999 Annual Luncheon, Awards Ceremony, and Business Meeting of the Hydrogeology Division of the Geological Society of America (GSA) was held Tuesday, October 26, 1999. Awards were presented immediately following the luncheon.

Awardees included the following:

Student research--Dr. Mary Jo Baedecker, Division Chair, presented certificates and funding to Elizabeth James (University of Oregon), Kaveh Khorzad (University of Texas), Liz McVay (University of Kansas), Kristin Schultheis (Washington State University), and Timothy White (Washington State University).

Birdsall-Dreiss Lecturer--Dr. Baedecker presented a plaque in recognition of his accomplishments during the past year to Professor Stuart Rojstaczer, Duke University. Professor Scott Bair of Ohio State University was named as the new Birdsall-Dreiss Lecturer for 1999-2000.

Distinguished Service Awards--The Distinguished Service Award Committee selected Warren W. Wood, Research Hydrologist, U.S. Geological Survey, and



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://www.uakron.edu/geology/gshydro/>. 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 via ASCII (text) is most expedient.

Ira D. Sasowsky, Editor
The Hydrogeologist
University of Akron
Akron, OH 44325-4101

Fall Issue Deadline:
September 15, 2000

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Professor Richard R. Parizek, Penn State University for significant contributions over the course of their careers. A brief summary of major accomplishments of each was documented in a brochure provided to all attendees, and Dr. Baedecker presented each with a plaque in recognition of exemplary service to the Division and to hydrogeology.

Carl Mendoza made the citation for the O.E. Meinzer award to Professor Edward A. Sudicky, University of Waterloo, who then gave his response. Division Chair Baedecker presented the Meinzer Bowl and certificate to Ed.

The business meeting convened shortly after the conclusion of the Awards Ceremony. Results of balloting were reported by Chairperson Baedecker, with Steve Wheatcraft elected Chair, Jean Bahr elected 1st Vice Chair, Bill Simpkins elected 2nd Vice Chair, and Van Brahana elected Secretary-Treasurer. A budget report was given.

The newsletter report was provided by Ira Sasowsky, who described significant savings by publishing the newsletter online. We are hopeful that savings in postage will continue, and can be applied to budget needs elsewhere, such as increased student support.

The website report was provided by Dave Diodato, and reflected increased usage, rapid communication with most of our members, and an overall effective means of sharing important information with our members. We will include digital images of this meeting and the upcoming student reception to highlight our accomplishments and our outreach. The U.S. Geological Survey and the University of Akron assist in support of this website.

Chairperson Baedecker recognized Claire Davidson as the donor of an accelerated planned gift. This will allow us to give more annual awards to student recipients, and brings our total Award Fund to \$46,000. The Division and the hydrogeologic community appreciate and applaud the generosity of Claire B. Davidson.

Dr. Baedecker described many of the ongoing changes at GSA, especially with regard to personnel. We invited Karlon Blythe to present a brief summary of the GSA GeoMentor Program at the conclusion of the discussion. Reports from Standing Committee Chairs, Ad Hoc Committee Chairs, Section Chairs, and Representatives from other Societies were succinct, and focused on our continuing search to effectively communicate our science to a broad, diversifying base in a cost-effective manner. The depth and breadth of this technical program, with 27 technical and poster sessions, reflects the vitality of our Division. Our Program Chair for 2000, Robert Ritzi, has already initiated work for an equally diverse program for our Annual Meeting in Reno.

For her final act as Chair, Mary Jo Baedecker turned the gavel over to Chair-elect Steve Wheatcraft, who adjourned the meeting.

Statement of Revenues and Expenses

12 Months Ending December 31, 1999

John Van Brahana, Sect'y-Treasurer

INCOME

Division Dues	\$14,126.00
Transfers In	5,552.72
Contributions	85.00
<u>Total Revenue</u>	<u>\$19,763.72</u>

EXPENSES

Ann. Mtg. - Travel	\$ 1,016.75
Ann. Mtg. - Misc.	100.00
Newsletter and Labels	350.78
GSA Production Costs	218.75
Awards	117.95
Birdsall Lecturer	267.00
<u>Total Expenses</u>	<u>\$ 2,071.23</u>

NET INCOME \$17,692.49

Net Assets , '98 carryover	\$ 9,251.36
Net Assets , '99	17,692.49

TOTAL ASSETS \$26,943.85

The Hydrogeology Division Award Fund, the Shirley J. Dreiss Memorial Fund, and the Birdsall Fund are maintained by the GSA Foundation. Current assets for these funds were not available at press time.

North-Central Update

Bill Simpkins

The 34th Annual Meeting of the North-Central Section of GSA was held in Indianapolis, Indiana, at the Indiana Government Center and Marriott Courtyard, on April 6-7, 2000. A total of six oral sessions and three poster sessions (including an Undergraduate Research Poster Session) focused on some aspect of hydrogeology and environmental geoscience. Of particular interest was the all-day session entitled, "Understanding, Restoring, and Managing Wetland Ecosystems," which featured talks on a variety of coastal and inland wetlands and the techniques used to assess their hydrologic function in the landscape. Two postmeeting, hydrogeology-related field trips were offered. Roger Koelpin from the Indiana Department of Environmental Management led a field trip entitled "Glacial, Hydrological, Engineering, and Other Environmental Perspectives in the Indianapolis Area". Nancy Hasenmueller, Carl Rexroad, John Bassett, and Richard Powell of the Indiana Geological Survey and Mark Buehler from the Department of Geological Sciences at Indiana University led a trip entitled "Geology, Hydrology, and Water Quality of Karst Areas

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of Southern Indiana". Sara Foland, GSA's new CEO, spoke at the All-Convention Presentation on Thursday, April 6, 2000.

Call for Donations

Past Chair Mary Jo Baedecker will be collecting donations (books, software, etc.) to be given away at the student reception in Reno. Please consider if you have any items that you wish to donate. Contact Mary Jo so that she may begin planning for the event (mjbaedec@usgs.gov).

Books Sought

Division member Edwin Harvey would like to acquire the following out of print books:

Groundwater and seepage (1962) by M.E. Harr
The properties of groundwater (1982), by G. Matthes
Groundwater hydrology (1978) by H. Bouwer
Open channel hydraulics (1959) by V.T. Chow

If you know of a source for these, or have a copy that you no longer need, please contact Ed (feharvey1@unl.edu; 402-472-8237)

Reminder - GSA Today

Hydrogeologists, please consider submitting articles to *GSA Today* when the topic is clearly of interest to a broad range of geoscience. This is particularly true if the article deals with "cutting edge developments" in hydrogeology.

Upcoming GSA Meetings

2000 GSA Meeting

Reno, Nevada Nov. 12-16

Robert W. Ritzi, Division Program Chair

The following list includes proposed symposia, topical sessions, field trips, and short courses for the annual meeting. The call for abstracts and full descriptions are in your *GSA Today* April issue. The abstract deadline is July 25 for paper submission and August 1 for electronic submission. The final schedule will be set in August. Based on the quantity and quality of the sessions proposed I think we have the potential for an excellent technical program.

Pardee Keynote Symposium

Nuclear Waste Disposal: Bridging The Gap Between Science and Policy

Hydrogeology Topical Sessions

25 Years of Groundwater Modeling: A Special Session in Honor of Professor Mary Anderson
Application of Electromagnetic Geophysical Methods to Hydrologic Investigations
Application of Hydrologic and Geologic Studies to the Performance of a Potential Geologic Repository at Yucca Mountain, Nevada
Artificial Recharge Through the Vadose Zone
Biologging of Subsurface Environments: Laboratory, Field, and Modeling
Closed Basin Lakes: Hydrogeology, Geochemistry, Water Management, and Environmental Impacts
The Colloidal Chemistry of Natural Waters
Coupled Hydrologic and Geochemical Processes in Mining and Engineered Wastes
Environmental Isotopes in Hydrogeology
Flow in Fractured Aquifers—From Field Characterization to Model Construction
Geosciences: The Dominant Force in Ensuring Correct Environmental Characterization and Remediation with the Integration of Technologies and Disciplines
Groundwater Flow, Geologic Processes, and Climate Change
Groundwater Xenobiotics: Bacterial and Pathogenic Transport, Storage and Viability in Shallow Surface-Influenced Groundwater Systems
Heterogeneity in Granular Hydrogeologic/Reservoir Systems
Innovative Applications In Water Supply and Environmental Investigation, Remediation, and Risk
Integrated Geoscience Strategies Applied To Regional Groundwater Modeling: Death Valley Regional Groundwater Flow System
International and Cross Border Issues Related to Groundwater Management Problems, Conflicts and Strategies
Mining Impacts on Hydrologic Systems
Natural Attenuation Processes
Physical Modeling for Process Understanding and Model Validation in Subsurface Flow and Transport
Phytoremediation of Groundwater and Soil
Postaudits of Remedial Systems
Rare Earth Elements in Ground Water Flow Systems
Redox Manipulation for Groundwater Remediation
Restoring and Sustaining Aquifers for Their In-Situ Values
Solute Cycling in Groundwater and Surface Water
Stress and Strain in Subsurface Flow Systems
Studies on Water Movement and Solute Transport in Arid Regions
Surface Water - Ground Water Connections

Biographies of Officer Candidates

Jean M. Bahr. Born June 1, 1954, New York, NY. Education: B.A. 1976, Geology and Geophysics, Yale University; M.S. 1985 and Ph.D. 1987, Applied Earth Sciences (Hydrogeology), Stanford University. Member of GSA since 1976, elected Fellow in 1996. GSA service: Continuing Education Committee (1996-98), Committee on Committees (1997), Hydrogeology Division Vice Chair (2nd, 1999; 1st, 2000), Hydrogeology Division Meinzer Award Committee (1994-96). Employment: 1998-present Professor, University of Wisconsin - Madison; 1987-1998 Assistant to Associate Professor, University of Wisconsin -Madison; 1980-1986 Research Assistant and Teaching Assistant, Stanford University; 1976-1980 Staff Geologist, Wahler Associates, Palo Alto, CA. Concurrent positions: 1995-present Chair Water Resources Management Graduate Program, University of Wisconsin-Madison; 1984-1986 Hydrologist USGS, Menlo Park, CA; 1982-1983 Hydrogeologist, GTC Ltd., Ottawa, Canada. Service: Associate Editor Water Resources Research (1996-present), Editorial Board Ground Water (1993-95), Books Editor Ground Water (1997-present), Editorial Board Geotimes (1995-1998), Natl. Res. Council (NRC) Board on Radioactive Waste Management (1992-97), NRC Panel on Fluid Infiltration in Fractured Media (1998-1999), NRC Committee on Technical Bases for Yucca Mtn. Standards (1993-94), Vice-chair NRC Committee on Yucca Mountain Peer Review (1995), Ocean Drilling Program (ODP) Sedimentary and Geochemical Processes Panel (1992-94), Editorial Board ODP Leg 156 Scientific Results Volume (1995-97). Awards: Yale College Samuel Lewis Penfield Prize (1976), elected to Sigma Xi (1983), AGU Editors Citation for Excellence in Refereeing (1991). Publications: author or co-author of over 30 refereed articles and over 50 abstracts, contributor to 6 monographs, co-editor of one book. Research interests: Interactions between physical and biogeochemical processes in groundwater; effects of heterogeneity on solute transport; paleohydrogeology.

William W. Simpkins. Born in Granite City, Illinois, on December 15, 1954, has been a GSA member since 1979. Education: Augustana College (Rock Island, IL), B.A. in Geology, 1976; University of Wisconsin-Madison, M.S. degrees in Geology and Geophysics and in Water Resources Management, 1979; University of Wisconsin-Madison, Ph.D. in Geology and Geophysics, 1989. He was a Research Associate with the University of Texas at Austin, Bureau of Economic Geology (BEG), 1979-1985. Research Liaison for BEG to the Salt Repository Project Office at Battelle Memorial Laboratories in Columbus, Ohio, 1982-1983. An Assistant Professor (1989-1995) and Associate Professor (1995-present) of Geology at Iowa State University in Ames, IA, and faculty member of the Water Resources Program. Author or co-author of more than 90 journal articles, conference proceedings, field trip guidebooks, and technical reports. Service to GSA and the Hydrogeology Division includes 2nd Vice Chair (2000), North-Central Section Representative for the Hydrogeology Division, 1990-present; Hydrogeology Liaison to the Management Board, North-Central Section, 1992-present; Penrose Conference Co-Convenor with John Cherry and Dave Mickelson, 1994; Session Co-Chair, 1992 (2); Theme Session Co-Convenor, 1996 (2); Chair, Hydrogeology Division Penrose Conference Committee, 1994-1998; Field Trip Chair and Trip Leader, 1996 North-Central Section GSA Meeting in Ames, IA; Hydrogeology Program Chair for Annual Meeting in Denver (1999); host for 7 Birdsall-Dreiss Distinguished Lecturers; member of GSA Boston (1993) and Denver Mile-High Chorales (1996). Other professional activities: Associate Editor of Ground Water (1996-present); Member of NAS-NRC Board on Agriculture Committee to evaluate the USDA National Research Initiative, 1998-present; Chair and Field Trip Leader for Tri-State Geological Field Conference in Ames, IA, 1993; Geology Alumni Advisory Board, Augustana College, 1990-1992. Member of AGU, NWGA-AGWSE, NAGT, AMQUA, Iowa Groundwater Association, Iowa Academy of Science, and Geological Society of Iowa. Professional interests include the hydrogeology of till, water-quality problems related to agriculture, the hydrogeology of re-established riparian buffers, application of isotopes to hydrogeology, and field methods in hydrogeology.

Robert W. Ritzl, Jr. Born October 25, 1959, Cincinnati, Ohio. Education: Ph.D., 1989, Hydrology and Water Resources, University of Arizona; M.S.; 1983, Geological Sciences, Wright State University; B.A.; 1981, Geology, Wittenberg University. Publications: more than 90 journal articles, book chapters, and technical reports. Professional Experience: Associate Professor, Department of Geological Sciences, Wright State University, 1995-present; Assistant Professor, Department of Geological Sciences, Wright State University, 1989-1995; Director, Center for Ground Water Management, Wright State University, 1995-2000; Associate Director for Research, Center for Ground Water Management, 1992-1995; Concurrent appointments: Environmental Science Faculty, Wright State University, 1994-present; Adjunct Faculty, Air Force Institute of Technology, 1993-1995; Research Appointment, U.S. Geological Survey, 1987-1989; and numerous technical assistance contracts with environmental and engineering consulting firms. Service: Member of GSA since 1980. Hydrogeology Division Young Professionals Committee, Chair, 1998-1999; Program Chair and Joint Technical Program Committee for the 2000 Annual Meeting in Reno, 1999-present. Associate Editor: Hydrogeology Journal, 1999-present; Journal of Ground Water, 1993-present. Other peer review: DOE Subsurface Science Program, GSA Bulletin, NSF, Ohio Journal of Science, Water Resources Research. Member AGU, AGWSE, AEEP, Sigma Xi - president Wright State Sigma Xi Chapter 1992-1993; NSF Committee of Visitors, 1996; US Air Force Environmental Advisory Board, 1994-present. Research interests: characterizing and modeling heterogeneity and evaluating effects on flow and transport in granular aquifer systems, geostatistics, fluid flow in fractured carbonates, and insular hydrogeology.

Ralph K. Davis. Born in Memphis, TN, 3/11/55. BS, MS and Ph.D. University of Nebraska – Lincoln, 1981, 1986, and 1992. Work: District Manager, Big Bend Groundwater Management District, Stafford, Kansas, 1983-1989; Assistant Professor, Department of Earth Science and Physics, University of South Dakota, 1992-1994; Assistant Professor Department of Geosciences, University of Arkansas, 1994-2000; Associate Professor, Department of Geosciences, University of Arkansas 2000-Present. Affiliations: GSA, AGU, AGWSE, Sigma Xi, Arkansas Groundwater Association. GSA Service: Hydrogeology Division Annual Meeting Chair, 1998, Joint Technical Program Committee, 1997-1998. Other Service: President, Kansas Groundwater Management District Association, 1984-1986; Member, Department of Geosciences, Alumni Advisory Board, University of Nebraska, 1998-2000. Research Interests: groundwater sustainability / groundwater declines, contaminant hydrogeology, water-resources management. This includes estimation of artificial and natural recharge to aquifers, contaminant transport in all types of geologic media ranging from low permeability to very open karst systems, wetlands / riparian area delineation and assessment, and source water assessment.

Ballot for Election of Officers for 2001 GSA Hydrogeology Division

Chair	Jean Bahr	<input type="checkbox"/>
	(Write in _____)	<input type="checkbox"/>
First Vice Chair	William W. (Bill) Simpkins	<input type="checkbox"/>
	(Write in _____)	<input type="checkbox"/>
Second Vice Chair	Robert W. Ritzl, Jr.	<input type="checkbox"/>
	(Write in _____)	<input type="checkbox"/>
Secretary -Treasurer	Ralph K. Davis	<input type="checkbox"/>
	(Write in _____)	<input type="checkbox"/>

Instructions:

1. Vote for no more than one officer for each of the positions.
2. Sign, address, and date the opposite side of this form.
3. Fold, staple or tape, and First Class stamp the form.
4. Form must be received at GSA headquarters no later than July 31, 2000.

For a legal vote, this sheet must bear the signature of the voter.

From
Signature
Address

Date

BALLOT

Hydrogeology Division
Geological Society of America
P.O. Box 9140
Boulder, CO 80301-9140

Fold here, and staple or tape

Place
stamp
here

Fold here, and staple or tape

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Volcanic Rock Aquifers: Characterization of Flow and Transport in the Saturated and Unsaturated Zones

Water Quality in the Arid West: Controls on Inorganic Anthropogenic By-Products

Related Topical Sessions (Other Divisions)

Land Subsidence, Earth Fissures, and Aquifer Mechanics

Remote Sensing and GIS in the New Millennium: The Use of RS and GIS in Environmental and Engineering Projects: Case Studies in Evaluation, Remediation, Monitoring and Modeling

Field Trips

Exploring the Lower Truckee River and Pyramid Lake

Hydrology of the Tahoe Basin

Hydrologic and Geologic Characteristics of the Yucca Mountain Site Relevant to the Performance of a Potential Repository

Short Courses

Applications of Environmental Isotopes in Groundwater Studies

Practical Methods in Applied Contaminant Geochemistry: From Characterization to Remediation

Field Methods for Estimation of Spatial Variations in Hydraulic Conductivity: Theory and Practical Ramifications

Nuclear Waste Disposal: Bridging the gap between science and policy

Pardee Symposium

Jean Bahr

The Hydrogeology Division will be a sponsor of one of the Pardee Symposia selected for the 2000 Annual Meeting. The symposium is titled "Nuclear Waste Disposal: Bridging the Gap Between Science and Policy" and it will examine the scientific process of developing confidence in the long-term performance of a repository and how this relates to the policy-making process. Reno is a particularly appropriate venue for this symposium since Nevada is the host state for the Yucca Mountain Project, the only repository under consideration in the US for civilian high-level nuclear waste disposal. Geologic concerns are paramount in deciding whether or not Yucca Mountain should be the Nation's nuclear waste repository.

Symposium organizers Jane Long (University of Nevada-Reno), Jean Bahr (University of Wisconsin-Madison), and Kevin Crowley (Board on Radioactive Waste Management, National Research Council) are in the process of inviting panelists to focus on the two topics outlined below.

Developing confidence in the long-term performance of a repository -- Although the engineering aspects of a repository are reasonably well understood, prediction of the long-term performance is problematic. There is no parallel in human history where we have designed a facility for a lifetime on the order of tens of thousands of years. Many of these issues require geologic analysis in the broadest sense. Critical questions for scientists include: To what extent can long-term geological behavior and long-term repository performance be predicted? How do scientists become confident about long-term behavior of the repository system? How do scientists decide when they have a sufficient understanding of repository system behavior?

The scientific process vs. the policy making process - Policy makers face the dilemma that the scientific uncertainties noted in the first example may drive them to do nothing--especially if scientists do not convey scientific understanding, including scientific uncertainties, on long-term repository system performance in an appropriate and large enough context. This panel discussion will try to identify elements of the appropriate context for evaluation of scientific information and how scientists can communicate the science and its uncertainties to nonscientists--policy makers, regulators, and society at large. This panel discussion addresses the form and method of this communication. The relevant questions include the following: How should scientists in general (and geologists in particular), who have important insights to offer on process rates and time scales) communicate with regulators, policy makers, and with society at large? To what extent do scientists have a responsibility for such communication? How can you explain how safe a repository is to the public? Can they communicate this in a way that allows policy makers to make informed choices? What kind of dialogue is needed? How can it be constructed and what is the scientist's role in the dialogue? How can scientists help to identify and communicate the appropriate scientific context for policy decision making?

Other Upcoming Meetings

Atmospheric, Surface, and Subsurface Hydrology and Interactions

AIH Annual Meeting & Int'l. Conference

This meeting sponsored by the American Institute of Hydrology will be held November 5-8, 2000 at the Sheraton Imperial Hotel and Convention Center, Research Triangle Park, North Carolina. Contact AIH for more information (www.aihydro.org; ph: 651-484-8169).

**International Conference on SaltWater
Intrusion and Coastal Aquifers:
Monitoring, Modeling, and Management
(SWICA-M³)**

L. Konikow

A large proportion of the world's population (about 70%) dwells in coastal zones. In the last half-century, population and economic growth have greatly increased freshwater demands. The lack of good management schemes for coastal water resources has led to the over-exploitation of ground water in many parts of the world. The encroachment of seawater into coastal aquifers has become a common problem.

The SWICA-M³ Conference will be held April 23-25, 2001, in Morocco to bring together researchers, practitioners, and water-resources managers from all over the world to exchange the state-of-the-art knowledge. It is intended to be a multidisciplinary meeting that gathers hydrogeologists, geophysicists, geochemists, numerical modelers, managers, and policy makers in the same room. The idea is to promote integrated approaches that can bridge monitoring, modeling, and management aspects. To achieve these goals, this conference provides not only regular sessions of scientific presentations, but also keynote lectures aimed at an interdisciplinary audience. Prior to the conference (April 18-21, 2001), two 2-day tutorial workshops will provide training on fundamental theories as well as hands-on sessions on computer modeling.

Contributors and participants are encouraged to submit a one-page abstract as soon as possible and no later than the deadline of July 15, 2000.

The Conference will be held in Essaouira, a tourist town 140-km west of Marrakech, by the Atlantic Ocean. There are convenient airline connections from Casablanca.

For more information and the latest details, please visit the Conference Web site.
<http://www.ce.udel.edu/faculty/cheng/saltnet/swica/>

**Karst Frontiers: Florida and Related
Environments**

C. Wicks

A conference, Karst Frontiers: Florida and Related Environments, is being organized by the Karst Waters Institute (KWI). The conference will be held in March 2002. The planning committee is: Jack Hess, Horton Hobbs, Bill Jones, Brian Katz, Jon Martin, Art Palmer, Ira Sasowsky, Will White, and Carol Wicks. The focus of the conference will be the hydrogeology and ecology of the karst aquifers in Florida, while at the same time the planning committee wants to explore connections with similar environments around the world. As with past KWI conferences, this meeting will cross disciplinary boundaries (biological sciences and geological sciences). The tentative schedule is for 2 days of technical sessions (no concurrent sessions are planned) and a full-day field trip. It is planned to have two major tracks, one centered on the geological/hydrological/geochemical karst sciences, and the other centered on the life karst sciences.

Further information will be available on the Institute website as it becomes available (www.karstwaters.org).

Editor's Note

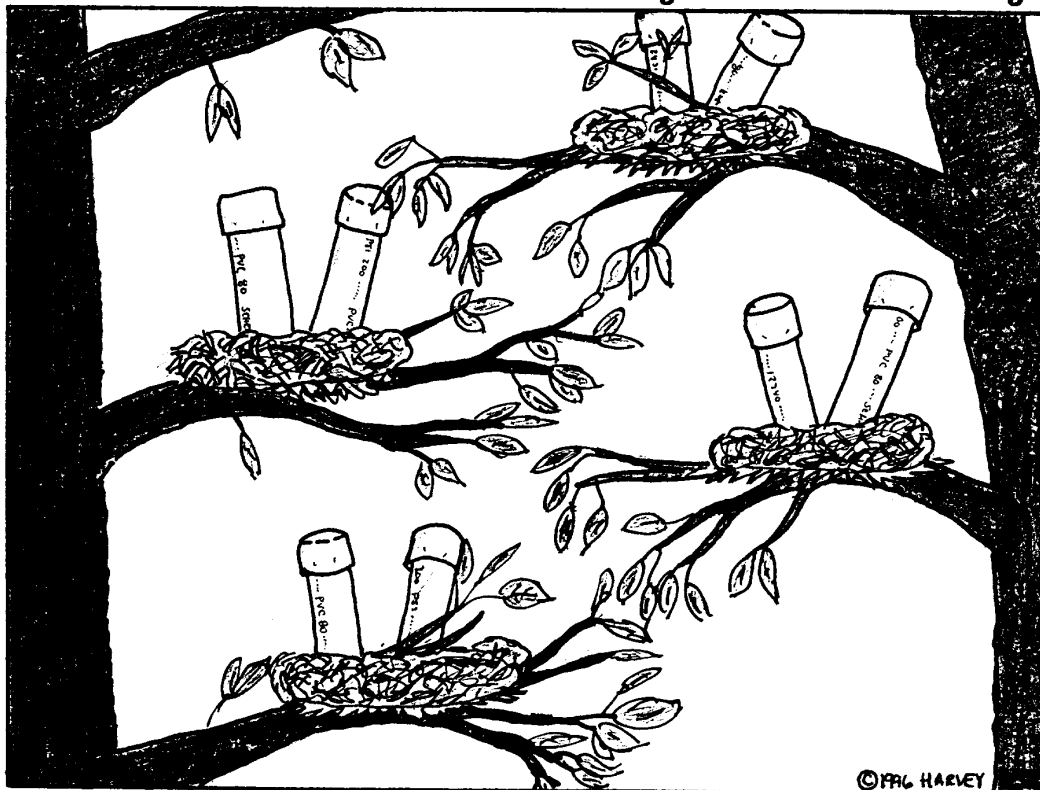
This issue arrives somewhat later than usual, due to a delay in obtaining materials that we considered essential. I give my apologies to the readers for this delay, and my thanks to all those who helped with this issue. In particular the assistance of Darryll Pederson and Rebecca Kempthorne is appreciated.

Ira D. Sasowsky, Editor
The Hydrogeologist



^{il}
GEOLOGICAL

by Edwin Harvey



NESTED PIEZOMETERS

Hydrogeology Division Contacts

2000 Management Board

Chair: Steve Wheatcraft [steve@hydro.unr.edu]
First Vice-Chair: Jean Bahr [jimbahr@geology.wisc.edu]
Second Vice-Chair: Bill Simpkins [bsimp@pop-2.iastate.edu]
Secretary-Treasurer: John Van Brahana [jbrahana@usgs.gov]
Past Chair: Mary Jo Baedeker [mjbaedec@usgs.gov]

Section Representatives

Cordilleran: Kevin Johannesson (khj@nevada.edu)
North Central: Bill Simpkins (bsimp@pop-2.iastate.edu)
Northeastern: Grover Emrich (emrich@aol.com)
Rocky Mountain: Bill Woessner (gl_www@selway.umt.edu)
South Central: Phil Bennett [pbennett@mail.utexas.edu]
Southeastern: David Evans (dave_evans@ncsu.edu)

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