

New
Logo
Coming
Soon!

The Hydrogeologist

Newsletter of the
GSA Hydrogeology Division

Fall 2011
Issue No. 74

Come to Minneapolis! 2011 Annual Meeting



Claes Oldenburg and Coosje van Bruggen
Spoonbridge and Cherry 1985-1988
aluminum, stainless steel, paint
Collection Walker Art Center
Gift of Frederick R. Weisman in honor of his parents, William and Mary Weisman, 1988

related field trips this year, before, during and after the conference. These field trips will highlight the surface water and groundwaters of Minnesota, including waterfalls, springs, caves and karst.

The Hydrogeology Division is a sponsor or co-sponsor of 21 oral and 7 poster sessions. These sessions cover topics from dissolved gases to Arsenic, from glaciated terrain to karst aquifers and from advanced modeling techniques to innovative field investigations. With so many sessions to choose from you

The GSA Annual meeting is fast approaching! The schedule is set for this year's Annual meeting in Minneapolis, Minnesota and, as usual, the Hydrogeology Division has a full schedule of activities. These activities include field trips, presentations, poster sessions and award ceremonies. Be sure to not miss the Darcy (Monday) and Birdsall-Dreiss (Tuesday) Lectures, or the Hydrogeology luncheon and awards ceremony. There are several Hydrogeology

won't be able to attend them all. As such, we've included a session summary on page 9 to help plan your time at the conference.

"Archean to Anthropocene"

**2011 GSA Annual Meeting
October 9-12 2011
Minneapolis, MN, USA
Minneapolis Convention Center**



In This Issue:

Minneapolis GSA Annual Meeting.....	1	Nebraska, Omaha	8
Chair's Corner	2	Minneapolis Hydro Div Tech. Program ..	9
Meinzer Award Announced	3	Bulletin Board	11
2011 Distinguished Service Awards	4	From the Editor	11
Minneapolis 2011 Hydro Div Events	5	Hydrogeology Division Contacts	12
Where in the World	7		

Chair's Corner...



**Ed Harvey, Chair
GSA Hydrogeology
Division**

Hello everyone!

As this is my last edition of "Chair's Corner" during my ending stint as Hydrogeology Division Chair, I want to begin by thanking the elected members of the Division's Management Board – Steve Ingebritsen, Todd Halihan, Scott Bair and Brian Katz in addition to the other appointed members of our working team – Andrea Brookfield, Mike Sukop, Maddy Schrieber and Alicia Wilson for their service to the Division and for their enthusiastic participation in conducting the business of running and managing the Hydrogeology Division this past year. Any success, or accomplishment I have experienced, or achieved in this position I owe directly to them. Thanks everyone!!!

Many exciting things have happened within the Hydrogeology Division over the past year, and several others are currently in the

works. By way of update, and for your benefit, I'd like to offer a brief summary of just a few of them.

We are just weeks away from what will prove to be one of, if not the greatest Hydrogeology technical program at a Geological Society of America (GSA) Annual Meeting in our Division's history. There are many great sessions, fieldtrips, and activities planned and I encourage the membership when you see them in Minneapolis to offer your words of gratitude and support to Maddy, Alicia and to all of the session Chairs and Co-Chairs for planning a great meeting.

Working with the Francis A. Kohout family and their generous gift to the Division, your Management Board has created the Kohout Early Career Award. Upon receiving approval of the GSA Council at their October meeting, the award will be given each year to a distinguished scientist who is either thirty-five years of age or younger, or who is within five years of their highest degree or diploma for outstanding achievement in contributing to the hydrogeologic profession through original research and service, and for the demonstrated potential for continued excellence throughout their ongoing career. Watch for an announcement about this award later this fall, and be prepared to nominate a deserving scientist.

A dear friend of the Division and a valued

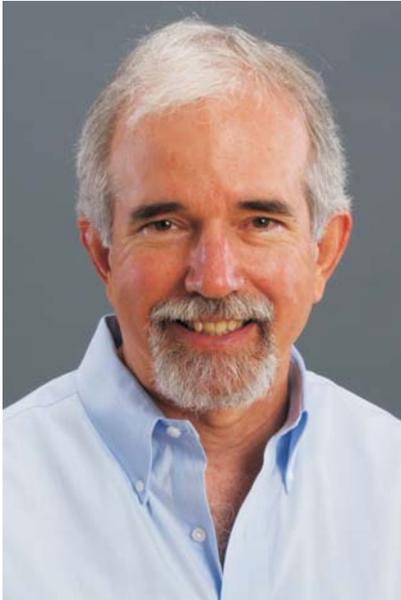
professional colleague Dr. David M. Diodato has generously created a foundation fund to provide GSA annual meeting travel grants to hydrogeology students and to treat each attendee to a cold beer at our annual student reception. Join us in Minneapolis this October for our first toast to Dave at this year's student reception. I want to publically and personally thank Dave for this wonderful gift and express my appreciation to him for all he has done and is doing for our Division.

A new logo is on the horizon. Changes in the GSA logo policy required us to create a new logo. While our first attempt to generate new ideas (see last month's logo contest in the newsletter) was not as successful as we'd hoped it would be, we are moving forward to create a new logo. If you have an idea, it's still not too late to submit it to our editor, Andrea. Once created, we will work with a well-known apparel company (I don't want to spoil the surprise) to make the logo available on a variety of clothing items via a direct link with their website. This way, we don't have to maintain a product inventory and you can select whatever item you want and add our Division logo. Watch for more information on this endeavor in the coming weeks.

In closing, I want to say a special thank-you to the Hydrogeology Division membership for allowing me the opportunity to serve and for entrusting me with the

Please see **Chair** on page 10

Fogg 2011 O.E. Meinzer Award Recipient



Dr. Graham Fogg

The 2011 O.E. Meinzer Award will be presented to Dr. Graham Fogg of the University of California, Davis at the Hydrogeology Division luncheon at the Minneapolis GSA meeting. Dr. Fogg has spent over 30 years researching and teaching about topics that include, amongst others, regional physical hydrogeology, geostatistics

stratigraphic modeling, and groundwater/surface water interactions. Dr. Fogg has produced a large body of impactful papers, from which the award committee recognized three seminal papers as having significantly advanced the science.

In support of Dr. Fogg's Meinzer Award, three papers were cited (see inset). These papers highlight Dr. Fogg's work related to the role of complex geology in hydrogeology. The first paper describes his original work identifying the role of continuity and interconnectedness of high conductivity zones in fluid and solute transport of complex aquifers. Dr. Fogg demonstrated how well-connected zones of highly conductive material among a system of otherwise disconnected zones can completely alter a velocity field, illustrating the importance of geologic information in groundwater models.

The second and third papers illustrate Dr. Fogg's contribution toward important advances in developing tools to better simulate transport processes in complex aquifers. The second paper, which is a collaboration with Dr. Carle, develops a method to simulate complex geological features using readily available core logs with transition probability-based indicator

geostatistics. This paper has served as the foundation for numerous other publications and studies further demonstrating the use of transitional probability geostatistics in hydrogeology.

The third paper is a collaboration with Drs. LaBolle and Tompson. In this work methods to avoid numerical dispersion in random walk particle tracking simulations of solute transport in complex media with sharp interfaces are demonstrated. This demonstrates that unless a proper interpolation scheme is implemented that significant mass-conservation errors will result in media with sharp interfaces separating regions with contrasting hydraulic properties.

These advances have resulted in numerous publications on transport processes, including diffusion limitations to contaminant recovery, convolution of groundwater ages and age-tracer concentrations, anomalous dispersion and tailing of concentrations, and stable isotope fractionation. Given these vital contributions to hydrogeology Dr. Fogg is this year's recipient of the GSA Hydrogeology Division's O.E. Meinzer Award.

Papers Cited For The Meinzer

Fogg, G.E., 1986. Groundwater Flow and Sand Body Interconnectedness in a Thick Multiple-Aquifer System. *Water Resources Research*, v. 22, 679-694.

Carle, S.F. and Fogg, G.E., 1996. Transition probability-based indicator geostatistics. *Mathematical Geology*, v. 28 453-476.

LaBolle, E.M., Fogg, G.E. and Tompson, A.F.B., 1996. Random-walk simulation of transport in heterogeneous porous-media: Local mass-conservation problem and implementation methods. *Water Resources Research*, v. 32 583-593.



Anderson and Diodato Receive the 2011 Distinguished Service Award

The 2011 Award for Distinguished Service is presented to Dr. Mary Anderson and Dr. David Diodato in recognition of their exceptional service to the profession of hydrogeology. The articles below highlight each of their research careers, in addition to their service to the hydrogeology profession.



Dr. Mary P. Anderson
Dept. of Geoscience
University of Wisconsin-Madison

Dr. Mary Anderson received her B.A. in Geology from the University at Buffalo, and her M.S. in Geology and Ph.D. in Hydrology from Stanford University. She then spent two years teaching at Southampton College of Long Island before joining the Department of Geoscience at the University of Wisconsin-Madison where she currently is the C.S. Slichter Professor (Emeritus).

Mary's area of expertise is the numerical simulation of groundwater flow, yet her research interests extend to groundwater/lake systems, recharge, geological heterogeneity and heat as a groundwater tracer. She has over 100 publications and has co-authored two very popular textbooks on groundwater modeling. These textbooks are what Mary is probably best known for as they have benefitted generations of students and the

Please see [Anderson](#) on Page 6



Dr. David Diodato
U.S. Nuclear Waste Technical Review Board

Dr. David Diodato received his B.S. in Geology from the University of Delaware, and his M.S. in Geology and Ph.D. in Geosciences from Penn State. He was a National Research Council postdoctoral associate of National Research Program of the Water Resources Division in the U.S. Geological Survey as well as an assistant environmental scientist at Argonne National Laboratory. He also served as a senior professional staff of the U.S. Nuclear Waste Technical Review Board and in 2009 was appointed Senior Sustainability Officer of the board.

Dave's area of expertise is qualitative and quantitative analysis of hydrogeological and engineered geologic systems, use of probabilistic risk assessment in decision making and public

Please see [Diodato](#) on Page 6

Minneapolis 2011: Hydrogeology Division Events

As in past years, the Hydrogeology Division will continue its tradition of hosting numerous events throughout the GSA Annual meeting to encourage and foster ongoing and new relationships between members. This article highlights some of the most popular Hydrogeology Division events.



The Hydrogeology Luncheon and Awards Ceremony

Luncheon, Awards and Business Meeting

Tuesday, October 11 will be a busy day, starting with the Hydrogeology Division Luncheon and Awards Ceremony beginning at 11:30 am, location TBD. The Business meeting will follow the lunch and awards in the same location. Tickets for the luncheon can be purchased when you register for the conference for \$40.00. The luncheon is an excellent opportunity to meet and network with many of the leading hydrogeologists at GSA.

Birdsall-Dreiss Lecture

Later on Tuesday afternoon is the Birdsall-Dreiss Lecture, given by Jeffery McDonnell, from 4:30 pm to 5:30 pm in MCC Room M100HI.

Student Reception

Following the Birdsall-Dreiss lecture is another chance for students to get together with many members of the Hydrogeology Division to enjoy appetizers, a free drink and get a chance to win a prize at the annual Hydrogeology Division Student Reception. The reception will be held from 5:45 pm

to 7:45 pm in a room TBD.

Darcy Lecture

Tuesday is not the only day with Hydrogeology Division events. On Monday October 10 from 5:00 pm - 6:00 pm Steve Silliman will give his Darcy Lecture in MCC, Room M100DE.



Hydrogeology trivia game during the Student Reception



community by their clear and accessible exposition of both the theory and practice of groundwater modeling.

Mary served on GSA’s council and the Meinzer Award Committee and is currently a member of the Penrose Medal Committee. She is the recipient of the Division’s O.E. Meinzer Award, the M.King Hubbert Award (NGWA), the C.V. Theis Award (AIH) as well as the distinguished service awards from the Wisconsin section of AWRA and the Scientists and Engineers Division of NGWA.

Mary also contributed significantly directly to the education of students through her 34 years as a professor at the University of Wisconsin-Madison. She taught scores of students the ‘mysteries’ of modeling and served as major professor for 49 students producing a total of 36 Master’s and 19 Ph.D. theses. These students have gone to influential positions in academia, government and industry.

One of Mary’s most influential roles in the greater Hydrogeology community was as editor-in-chief of the journal *Ground Water*. It was noted by John Bredeheoff in a guest editorial that Mary had been a master at balancing the interests of practitioners, who desire papers that have immediate application, and academics, who want cutting edge science, both openly and fairly.

The Hydrogeology Division would like to recognize and thank Mary for her many years of service, and for her contributions to the hydrogeology community as a committee member, author, editor, teacher and mentor.



policy, and communication of complex scientific and technical issues to non-technical audiences. Throughout his career he has made ongoing extramural contributions that have advanced the profession technically and in the public eye.

One of Dave’s most important contributions has been in the public distribution of hydrogeologic information. He founded “The Hydrogeologists Home Page” in 1995, which is a source of information on such things as modeling programs, Earth data and professional opportunities. In the 17 years of its operation it received a visitation rate of 30,000 to 60,000 hits per month from all over the world.

Dave also created the Software Spotlight in the journal *Ground Water* which critically evaluates software that is used for solving hydrogeologic problems. This feature continues to appear in each issue as it allows end-users to make informed decisions about purchases and application of the software products.

Dave has always been a strong advocate for the involvement of students within the Division. He would go out of his way to ensure students would feel like part of the Division, and was often found introducing students to more senior members. His establishment of the “Dave Diodato Student Travel and Beer Fund” is another way he continues to support and encourage student participation within the Division.

The Hydrogeology Division would like to recognize and thank Dave for his many years of unique and diverse contributions to the profession and the Society.



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 conferece? An announcement of interest to the hydrological community? If so, why not publish it in *The Hydrogeologist*? Send your submission ideas to andrea@kgs.ku.edu

STUDENTS, WE WANT TO HEAR FROM YOU TOO!

Where in the World?



This edition's photo:

This edition's photo was taken by Todd Halihan. Our current chair, Ed Harvey, had fallen into a soil pipe while carrying cables during recent field work. Any guess where they were doing field work?

Hint: This site is not new to Ed.

Send your guess to andrea@kgs.ku.edu

See page 8 for information about last edition's photo.



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

Then visit our website at <<http://gsahydro.fiu.edu>>

OR

Join the GSA Hydrogeology Division [facebook](#) group

to catch up on the latest events or find out how you can become more involved with our activities

Where in the World? Omaha, Nebraska

Since a picture is worth a thousand words, this edition will feature photos of during and after the 2011 Missouri River flood. It is clear that recovery from this flood is going to take a lot of time.

Congratulations to **Dan Larsen** of the University of Memphis for being the first to correctly identify the location of the photo as Omaha. Additional congratulations to Darryll Pederson of the University of Nebraska-Lincoln for also correctly identifying the location.



Photo of the Omaha skyline, looking over I-29 during the Missouri flood of 2011 (Photo by Larry Geiger).



Photo of I-29 after flood waters receded. (Photo from Iowa Department of Transportation)



Flooded farmland in Nebraska. (Photo by Larry Geiger)



Iowa farmland after the floods. Center pivot for scale. (Photo from therusticchic.blogspot.com)

2011 GSA Annual Meeting Program Schedule

Hydrogeology Division

Sunday October 9th

Poster sessions (all day)

T90. Gas Bubbles and Dissolved Gases in Groundwater

General Hydrogeology posters

AM Oral sessions

Hydrogeology I: Water Resources and Water Balances

Hydrogeology II: Hydrostratigraphy and Water Quality

T90. Gas Bubbles and Dissolved Gases in Groundwater

PM Oral sessions

T80. Environmental Problems in Karst Terranes/Terrains and Their Solutions: In Honor of James F. Quinlan

T86. Groundwater–Surface Water Interaction: Relating Understanding That Spans the Water-Rich Midwest to the Scarcity of the Outback

T92. Buried Valley Aquifers: What Do We Know and How Do We Move Forward for Sustained Groundwater Management?

Monday October 10th

Poster sessions (all day)

T100. Exploration of Karst Aquifer Systems Using New and Innovative Techniques and Methods

T80. Environmental Problems in Karst Terranes/Terrains and Their Solutions: In Honor of James F. Quinlan

T94. Advances in Characterization of Groundwater Flow Processes

AM Oral sessions

T84. Recent Advances in Studies of Dissolved Arsenic and Other Metals in Global Hydrologic Systems I

T79. Analytic Modeling of Groundwater Flow: Advances and Applications

T94. Advances in Characterization of Groundwater Flow Processes

PM Oral sessions

T84. Recent Advances in Studies of Dissolved Arsenic and Other Metals in Global Hydrologic Systems II

T89. Innovative Field Investigations to Assess Natural Attenuation and Engineered Remediation of Subsurface Contamination

T85. Dynamic Gradients in Karst Aquifers

****MON. SPECIAL LECTURE:** Darcy Lecture by Steve Silliman, 5:00 PM-6:00 PM, MCC, Room M100DE

Tuesday October 11th

Poster sessions (all day)

T89. Innovative Field Investigations to Assess Natural Attenuation and Engineered Remediation of Subsurface Contamination

T97. Advances in Understanding at the Groundwater–Surface Water Interface and Challenges for the Future: A Reflection on Tom Winter's Legacy

T123. Small Catchment Hydrology: A Tribute to Owen Bricker

T95. Visualizations in Geology: Advancing the Science Using Digital Tools II (Digital Posters)

Continued on next page

2011 Hydrogeology Schedule Cont'd

Tuesday October 11th cont'd

AM Oral sessions

T81. Springs as Sites of Dynamic Physical, Geochemical, and Ecological Processes

T98. Advancements in Sub-Seafloor Hydrogeology and Variable-Density Systems

T88. Identification and Quantification of Groundwater Flow Using Heat as a Tracer

T97. Advances in Understanding at the Groundwater–Surface Water Interface and Challenges for the Future: A Reflection on Tom Winter's Legacy

PM Oral sessions

NONE.

*****Special Tues afternoon events:**

1. Hydro Division Lunch, followed by Management Board Meeting

2. SPECIAL LECTURE: Birdsall Dress Lecture by Jeff McDonnell, 4:30 PM-5:30 PM, MCC, Room M100HI

3. Student Reception: 5:45-7:45 pm

Wednesday October 12th

Poster sessions (all day)

None.

AM Oral sessions

T123. Small Catchment Hydrology: A Tribute to Owen Bricker I

T96. Carbon and Water Dynamics in Peatlands and Their Relationship to Climatic Change

T99. Hydrogeology of Glaciated Terrain: Linking Glacial Geology, Quaternary History, and Groundwater Research

PM Oral sessions

T83. Pathogens and Fecal Indicators in Soil, Groundwater, and Surface Water

T204. Advances in Characterizing Sources and Release of Naturally Occurring Trace Elements to Aquatic Systems and Groundwater

T123. Small Catchment Hydrology: A Tribute to Owen Bricker II

T82. Impact of Winter De-Icing Chemicals on the Environment

Hope to see you in Minneapolis!



Chair from page 2

position of Chair. I've greatly enjoyed working with the Management Board, the Division membership, and the wonderful staff at GSA headquarters this year and I am truly better for the experience. I will formally turn the reins over to Steve at the luncheon in a few weeks, assuming my new role as past chair, but as this is my last "Chair's Corner" I want to publicly pledge my support to Steve and the incoming Board, and to personally ask and encourage each of you to do the same through your participation, volunteering,

and communication. Our Division is successful because we have a terrific and supportive membership. I hope you will agree - it is a great time to be a hydrogeologist, and that time is made still greater by being an active member of the GSA Hydrogeology Division.

Ed



BULLETIN BOARD

AGU Fall Meeting

The AGU Fall meeting will be held December 5-9 in San Francisco in the Moscone Convention Center. Registration fees will increase after November 1, so register today.

NGWA Ground Water Expo

The NGWA Ground Water Expo will be held November 29 - December 2 in Las Vegas. Registration fees will increase after October 28, so register today!

GSA 2012 Charlotte, North Carolina

Geosciences:
Investing in the Future

November 4-7

Save the date!

GSA Section Meetings

South-Central: Alpine, TX, March 7-9 2012
Northeastern: Hartford, CT, March 18-20 2012
Cordilleran: Queretaro, Mexico, March 29-31 2012
Southeastern: Asheville, NC, April 1-2 2012
North-Central: Dayton, OH, April 23-24 2012
Rocky Mountain: Albuquerque, NM, May 9-11 2012

**PLACE YOUR
ANNOUNCEMENT
HERE**

From the Editor....

Fall is my favorite season. Depending on where you are, the leaves may be turning beautiful colors and the excessive heat of summer may be subsiding. In addition, the arrival of fall also signals that the GSA Annual meeting is approaching. As such, in this edition of the newsletter you'll find program schedules and event listings for this year's meeting.

As per usual, if you have any comments, suggestions or an idea for a column or article please let me know at andrea@kgs.ku.edu.

I hope to see you in Minneapolis!

Andrea Brookfield, Editor
[The Hydrogeologist](#)



Hydrogeology Division Contacts

2011 Management Board

Chair: Ed Harvey (feharvey1@unl.edu)

First Vice-Chair: Steve Ingebritsen
(seingebr@usgs.gov)

Second Vice-Chair: Todd Halihan
(todd.halihan@okstate.edu)

Secretary-Treasurer: Brian Katz
(bkatz@usgs.gov)

Past Chair: Scott Bair (bair.1@osu.edu)

Standing Committees

Technical Program Committee:

Maddy Schreiber - 2011 (Minneapolis)
Alicia Wilson - 2012 (Charlotte)

Nominating Committee:

Scott Tyler (Chair), Carol Wicks, Scott Bair

Meinzer Award Committee:

Mike Edmunds (Chair), Mary Jo Baedecker, Niel Plummer, Don Rosenberry, Bayani Cardenas

Birdsall-Dreiss Lecturer Committee:

Susan Hubbard (Chair), Jeffrey McDonnell, Chunmiao Zheng

Distinguished Service Award Committee:

Ralph Davis (Chair), Ira Sasowsky, Laura Lautz

Ad Hoc Committees

Historical Committee:

Alan Fryar (Chair)

Section Representatives:

Cordilleran - TBD

Northeastern - Todd Rayne

North Central - Maureen Muldoon

South Central - Marcia Schulmeister

Rocky Mountain - Victor Heilweil

Southeastern - Joe Donovan

Representatives to other Societies:

American Geophysical Union - TBD

American Geological Institute - Dave Stephenson

National Ground Water Association - Dave Wunsch

International Assoc. of Hydrogeologists - Jack Sharp & Vickie Kretsinger

Society for Sedimentary Geology - Gary Weissman

Newsletter Editor: Andrea Brookfield

(andrea@kgs.ku.edu)

Web Administrator: Mike Sukop

GSA: Jean Bahr (Past President)

Hydrogeology Division Website: <<http://gsahydro.fiu.edu>>

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://gsahydro.fiu.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 a Word or WordPerfect document is most expedient. **The deadline for the Winter issue is December 15, 2011.**

Andrea E. Brookfield, Editor
The Hydrogeologist
Kansas Geological Survey
1930 Constant Avenue, Moore 414
Lawrence, KS
66047-3726

Voice: (785) 864-2199
Fax: (785) 864-5317
Email: andrea@kgs.ku.edu