



The Hydrogeologist

Newsletter of the
GSA Hydrogeology Division

Winter 2012
Issue No. 75



Minneapolis Meeting

The 2011 GSA Annual meeting was held in Minneapolis from October 9-12. The meeting drew over 6300 registrants, 367 of them were Hydrogeology Division members. The Division sponsored or co-sponsored over 40 oral and poster sessions with excellent presentations that were all well attended.

The Hydrogeology Division held several events throughout the meeting, including a luncheon and awards reception, and a student reception. Articles detailing both of these events are included in this newsletter. In addition, the new Kohout award, approved at the meeting, was announced and details are on page 9.

The 2011 Annual meeting was a great place to network, meet up with old colleagues and meet new ones. Next year the Annual Meeting will be held in Charlotte, North Carolina from November 4-7. Deadlines for this meeting include technical session proposals that are due on January 10, 2012 and short course proposals that are due on February 1, 2012.



Past Chair Ed Harvey (far left) with student awardees Mark Hausner (next to Ed), Colleen Long (2nd from right) and Daniel McInnis (far right) at the 2012 Hydrogeology Division luncheon and awards ceremony.



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**Steven Ingebritsen, Chair
GSA Hydrogeology
Division**

As incoming Chair of the Hydrogeology Division, I'd like to start off by thanking all of you for the opportunity to serve.

Like most of us, I am a member of several professional societies, but as I suspect is the case for many of those who actually read this Newsletter, the GSA Hydrogeology Division is my favorite – my warmest professional home. The Hydro Division is particularly welcoming and inclusive; good at recognizing the contributions of our senior

members while at the same time continually welcoming and encouraging new colleagues. We warmly welcome and value colleagues across the entire spectrum of water science, from those working on fundamental research problems to those working on the immediate and practical problems of water supply.

I'd also like to thank a number of those who contributed to the vitality of the Hydrogeology Division in the past year: in particular, Ed Harvey for his outstanding job as Chair; Maddie Schrieber for managing our Technical Program contributions in Minneapolis, and enticing a record number of Hydro Division-sponsored session proposals (46?!!); Alicia Wilson for accepting the same challenge for the upcoming Charlotte meeting; Andrea Brookfield and Mike Sukop for keeping this Newsletter and our website active and functional; and last but not least Brian Katz, who has served as Hydro Division Secretary/Treasurer for the past 6 years. Brian's institutional memory is invaluable, as the rest of your

Management Board rotates on an annual basis.

Finally I'd like to update you on a couple of issues that Ed Harvey regularly touched on in his Chair's Corner contributions.

First, thanks to the generosity of the Francis Kohout estate (and Ed's efforts) we will indeed present the first Kohout Early Career Award at the Charlotte meeting. Steve van der Hoven is the Chair of the first Kohout Award committee. The nomination procedure is described on our website and the nomination deadline is February 1.

Second, we are stilling trying to finalize a new, GSA-guideline-compliant version of the Hydro Division logo. Please see (and comment on) the candidate logos shown elsewhere in this Newsletter. This will likely be a low-turnout "election", so your comments will carry great weight.

Last but not least – please send your Charlotte technical-session proposals to Alicia Wilson by January 10!

Warm regards,

Steve



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 Fall issue is June 15, 2012.**

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Hydrogeology Division Luncheon and Awards Reception



Hydrogeology Division members waiting in line to attend the sold out Division Luncheon and Awards Reception at the 2012 GSA Annual Meeting.

The Hydrogeology Division Luncheon and Awards Reception was, once again, a well attended event that sold out days in advance. After the luncheon the Division presented several members with awards, including the Meinzer award, the Distinguished Service Award, the Outstanding Student Research Awards and, for the first year, the David M. Diodato Travel Grants.

Hydrogeology students who receive the GSA's Outstanding Student Research Awards also receive the David M. Diodato Travel Grant from the Division. This year four Hydrogeology students received this award: Colleen Long from the University of North Carolina - Chapel Hill (supervisor: Tamlin Pavelsky), Daniel McInnis from the University of Notre Dame (supervisor: Steve Silliman), Peter Zamora from the University of Texas at Austin (supervisor: Bayani Cardenas) and Mark Hausner from the University of Nevada-Reno (supervisor: Scott Tyler).

The 2011 Birdsall-Dreiss lecturer, Jeffery McDonnell was in attendance to speak about his time as the lecturer and to give some highlights regarding his tour. The 2012 Birdsall-Dreiss lecturer, Jay Famiglietti, was also in attendance. Details of his upcoming lecture tour are in page 5 of this newsletter, in addition to information about how to request him to give a lecture at your institution.



2011 Birdsall-Dreiss lecturer, Jeffery McDonnell(right)with EdHarvey



2012 Birdsall-Dreiss lecturer, Jay Famiglietti

Please see [Luncheon](#) on Page 6

Student Reception

By Steve Van der Hoven and Andrea Brookfield

One of the most popular Hydrogeology Division events at the annual meeting is the student reception. Every year well over a hundred students attend the reception to mix and mingle with other students, faculty members and professionals. In addition, they attend to participate in the trivia competition to get a chance to win great prizes donated to the Division by individuals, entities and corporations.

This was the first year of the “David Diodato Beer Fund”, where all students were given a ticket for one glass of beer, compliments of David Diodato. This fund was created to provide beer for all students at this reception, and for all those to come.



Students attempt to answer the hydrogeology trivia questions by ‘buzzing in’ using water level meters.

For yet another year, Todd Halihan served as the MC for the event. Students were divided into teams, depending on their hydrogeological area of interest, and each team was led by a faculty member or professional actively working in that field. Continuing the tradition that began last year, outgoing Division Chair Ed Harvey served as the contest judge. The trivia was all Hydrogeology related, and in order to properly ‘buzz in’ to answer the trivia questions, students had to dip a water level meter into a well cap of water. Once a team correctly answered three questions, they were invited to choose a prize from the prize table.

The student reception is successful due to the hard work of several volunteers, and the prize donors. To make a donation for the 2012 event please contact the organizer, Stephen Van der Hoven at sjvanderhoven@gmail.com.



2011 Student Reception Donors

**Midwest Geosciences Group
NGWA
GSA**

**Patricia Bobeck
Karst Water Institute
AGI**

**National Academy of Sciences
CUASHI**

**Genesis Engineering
Rockware
Jim Butler
Randy Stotler
CRC Press**

**Cambridge Press
IGWMC**

**Golden Software
Henk Haitjema
McGraw-Hill**

**Pearson
Fred Phillips**



Student check out the prize table in advance of the trivia contest. All prizes were donated to the Division.

Famiglietti Tours as the 2012 Birdsall-Dreiss Lecture

By James Famiglietti



James Famiglietti has been selected as the 2012 Birdsall-Dreiss Distinguished Lecturer. The lectureship is given to one person annually by the GSA Hydrogeology Division; Famiglietti is the 34th GSA Birdsall-Dreiss Lecturer.

Professor James S. (Jay) Famiglietti holds a joint faculty appointment in Earth System Science and in Civil and Environmental Engineering at the University of California, Irvine, where he is the Founding Director of the UC Center for Hydrologic Modeling. His research group uses satellite remote sensing to track water availability and groundwater depletion on land, and has been working for many years towards improving hydrological prediction in regional and global weather and climate models. Jay and his research group have published over 80 papers in the peer-reviewed literature. Before joining the faculty at UCI in 2001, Jay was an Assistant and Associate Professor in the Department of Geological Sciences at the University of Texas at Austin, and was the Founding Associate Director of the UT Environmental Science Institute. He is the past Chair of the Board of the Consortium of Universities for the Advancement of Hydrologic

Science, Inc. (CUAHSI), and past Editor-in-Chief of Geophysical Research Letters. He is currently leading the Community Hydrologic Modeling Project (CHyMP) effort in the United States to accelerate the development of hydrological models for use in addressing international priorities related to water, food, economic, climate, and global security. Jay has testified before Congress on his recent work on groundwater depletion in California, which was featured in the New York Times. Jay appears in the upcoming documentary on water scarcity called 'Last Call at the Oasis' in which he discusses much of the research that he will present in his two lectures.

At the request of interested institutions, Jay will present one of the two lectures summarized below. More information and a lecture request for are available at:

<http://gsahydro.fiu.edu/BirdsallDreiss.htm>

LECTURE TITLES AND ABSTRACTS

Water Cycle Change and the Human Fingerprint on the Water Landscape of the 21st Century: Observations from a Decade of GRACE

Over the last decade, satellite observations of Earth's water cycle from NASA's GRACE (Gravity Recovery and Climate Experiment) mission, have provided an unprecedented view of global hydrological change and freshwater availability. Since its launch, the mission has helped to confirm that precipitation, evaporation and continental discharge rates are increasing, that the mid-latitudes are drying while the high and low latitudes are moistening, and that the hydrologic extremes of flooding and drought are becoming even more extreme. Importantly, GRACE has exposed the human fingerprint of water management practices such as groundwater use and reservoir storage, which raises many important issues for climate, water, food and economic security. Moreover, the GRACE mission has enabled us to peer beneath

Please see [Famiglietti](#) on Page 7

Luncheon for page 3

The Division also recognized the 2011 recipients of the Distinguished Service and Meinzer Awards. Two individuals were recognized for the Distinguished Service Award; Mary P Anderson and David M Diodato. Both awardees were introduced by their citationists; Maureen Muldoon (Mary P Anderson) and Ira Sasowsky (David Diodato). Mary Anderson was in attendance to receive her award, and while David Diodato was unable to attend, Richard Parizek accepted the award on his behalf. The 2011 Meinzer Award recipient is Graham Fogg and both he and his citationist, Lenny Konikow were present at the reception.



Richard Parizek (center) accepting the 2011 Distinguished Service Award for David Diodato with citationist Ira Sasowsky (right) and Ed Harvey (left).



2011 Distinguished Service Award recipient Mary P Anderson (right) with citationist Maureen Muldoon (center) and Ed Harvey (left).



2011 Meinzer Award recipient Graham Fogg (center) with citationist Lenny Konikow (right) and Ed Harvey (left).

The 2011 Hydrogeology Division luncheon and award reception was a success, and we look forward to the next reception at the annual meeting in Charlotte, NC in November!



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 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:

Do you know where this photo was taken? Send your guess to andrea@kgs.ku.edu

Famiglietti from page 5

Earth's surface and characterize the worldwide depletion of groundwater aquifers, raising significant concerns about the potential for heightened conflict over transboundary water resources. In this talk I review the basics of how the GRACE mission observes terrestrial and global hydrology, what new information the mission has provided since its launch in 2002, and the implications for the future of water availability and sustainable water resources management.

A Strategy for Accelerating the Development of Hydrological Models: Societal Needs, Observational Requirements and Public Communication

While the development of hydrological and land surface models has progressed rapidly over the last few decades, a significant acceleration in model development is required in order to address critical societal issues of water, energy and food availability and security. In particular, major advances are needed in the areas of observations

(e.g. of water cycle variability and change, of subsurface soils and hydrogeology, and of streamflow and groundwater levels), model development (e.g. of models that integrate the major components of the human and managed water cycles), data assimilation (e.g. of algorithms that can readily incorporate in situ and remote observations of asynchronous space-time frequency) and of a framework for integrating models and data (e.g. for access to data and simulation results, for running models, and for performing analyses). In this presentation we discuss these needs in detail, and highlight recent efforts in California and at the national scale (i.e. with the Community Hydrologic Modeling Platform [CHyMP]) to develop a modeling and data integration framework that can be applied across scales up to continental and global scales. Finally, the responsibility of the hydrologic research community to convey such important observational and simulation needs to resource managers, environmental decision and policy makers, and the general public, is underscored.



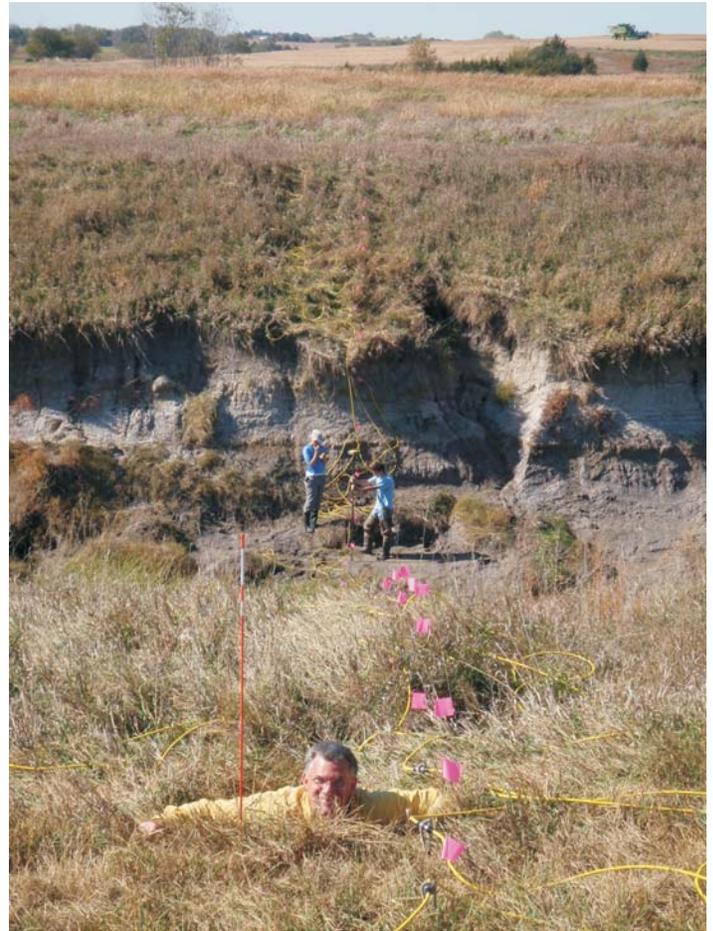
Saline Wetlands of Eastern Nebraska

While this photo elicited several guesses, in addition to a few interesting comments, no one was able to correctly identify this location.

This photo was taken in one of the Eastern Nebraska saline wetlands, north of Lincoln NE, along Little Salt Creek just west of Arbor Lake. These wetlands were once estimated to cover over 20,000 acres and now cover less than 4,000 acres, many of which are degraded. The ecosystems of these saline wetlands are dependent upon ground water, and contain some of the most limited and endangered vegetation communities in the state, making the hydrologic dynamics key for maintaining ecosystem health.

Saline wetlands occur in a variety of settings around the world. Most are found in coastal areas where tides transport sea water to the wetlands or in arid climates where evaporation concentrates solutes within the wetlands. The saline wetlands of Nebraska are groundwater discharge wetlands within the regional discharge zone of the Great Plains (Dakota) Aquifer system. The upwelling of saline groundwater from the Dakota Aquifer, that has migrated for thousands of years, is the source of salinity for the Eastern Nebraska saline wetlands.

There are several hydrogeological questions that arise when determining the stability of the saline wetland ecosystem in Eastern Nebraska. Not the least of which is the uncertainty regarding the extent of the parcel of saline water currently discharging into the wetlands, and the impact that modern development may have on the flow system. It is noted that seemingly small changes in the local hydrodynamics may drastically impact the ecosystem as a water table decline of just a few meters can completely reduce or eliminate the flow of saline water to the surface. In addition, changes to the surface water flow system and geochemistry can interfere with the ecosystem health; the mixing dynamics between the fresh water at the surface and the saline water discharged from the deeper groundwater flow has provided the ideal habitat for the many limited and endangered plants in these wetlands. As such, the saline wetlands of Nebraska continue to be a location of significant scientific research.



Past Chair Ed Harvey after falling into a soil pipe while conducting field work in the salt marshes of Eastern Nebraska.

Past Chair Ed Harvey and First Chair Todd Halihan conduct research at this location, and Ed's little mishap pictured above occurred during recent field work running a series of Electrical Resistivity Imaging (ERI) lines to try to map the subsurface saline porewater movement and mixing dynamics and spring discharge.

References

Harvey, F.E., Ayers, J.F. and Gosselin, D.C. (2007). *Ground Water Dependence of Endangered Ecosystems: Nebraska's Eastern Saline Wetlands*. *Ground Water*, Vol. 45 No 6 pp 736-752.



Kohout Early Career Award

By Stephen Van der Hoven

The Hydrogeology Division is seeking nominations for the inaugural Kohout Early Career Award. The award is made possible by an endowment from the estate of Francis A. Kohout. Kohout's endowment came as a pleasant surprise to the Division, and after much deliberation the Board decided to use the donated funds to create an early career award.

Francis A. Kohout was a long time employee of the USGS who conducted hydrogeologic and marine geologic research primarily along the continental margin of North America. He is probably best known for the so-called "Kohout convection", the geothermally driven circulation of sea water deep into carbonate platforms (as illustrated in the figure below).

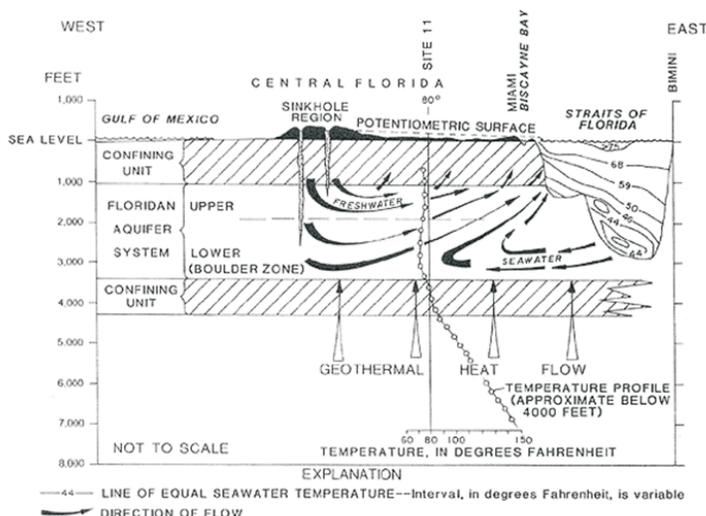


Figure from Kohout, F.A., 1965, A hypothesis concerning cyclic flow of salt water related to geothermal heating in the Floridan aquifer: New York Academy of Sciences Transactions, ser. 2, v. 28, no. 2, p. 249-271.

The award will be presented to an early career scientist (35 years of age or younger throughout the year in which the award is to be presented or within 5 years of receiving 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 career. The nominee does not have to be a member of GSA or hold a Ph.D. Nominations are encouraged from any subdiscipline in hydrogeology.

A complete nomination package must be received by February 1, 2012. The elements of a nomination package are:

- 1) At least one letter of nomination with a description of the significant contributions or accomplishments;
- 2) A copy of the nominee's curriculum vitae with complete bibliography; and
- 3) At least four supporting letters.

If you know of a deserving early career scientist, please consider being a nominator. It is the responsibility of the nominator to ensure that the application is complete by the deadline. The application package should be sent to Steve Van der Hoven, Kohout Committee Chair, by email, mail or fax.

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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

Vote for a logo!

The Hydrogeology Division needs a new logo! We received several entries into the logo competition, and now would like feedback from our members regarding which will be our new logo.

Below are mock-ups of three of the entries, in GSA format. Please let us know which of the three below (ignoring the dotted lines, which are there for GSA purposes) is your favorite by e-mailing andrea@kgs.ku.edu. Colors can be altered in any of the designs below, so suggestions regarding color changes are also appreciated.



(1)

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BULLETIN BOARD

2012 GSA Annual Meeting & Exposition

November 4-7
Charlotte, North Carolina

<http://www.geosociety.org/meetings/2012/>

2012 Cordilleran Section Meeting

March 29-31
Queretaro, Mexico

<http://www.geosociety.org/Sections/cord/2012mtg/>

2012 Southeastern Section Meeting

April 1-2
Asheville, North Carolina

<http://www.geosociety.org/Sections/se/2012mtg/>

2012 South-Central Section Meeting

March 8-9
Alpine, Texas

<http://www.geosociety.org/Sections/sc/2012mtg/>

2012 Northeastern Section Meeting

March 18-20
Hartford, Connecticut

<http://www.geosociety.org/Sections/ne/2012mtg/>

2012 North-Central Section Meeting

April 23-24
Dayton, Ohio

<http://www.geosociety.org/Sections/nc/2012mtg/>

2012 Rocky Mountain - May 9-11
Albuquerque, New Mexico
<http://www.geosociety.org/Sections/rm/2012mtg/>

From the Editor....

Welcome to the Winter 2012 edition of the Hydrogeology Newsletter! In this edition we highlight the events of the past GSA Annual meeting that was held in Minneapolis. It was a successful meeting by all accounts, and the 2012 meeting promises to follow suit. To ensure a successful meeting however, we need session proposals! These are due on January 10th and can be sent to Alicia Wilson at awilson@sc.edu.

If you have any comments, questions, suggestions or ideas for upcoming newsletters please don't hesitate to contact me at andrea@kgs.ku.edu.

Andrea Brookfield, Editor
[The Hydrogeologist](#)



Hydrogeology Division Contacts

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Famiglietti

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