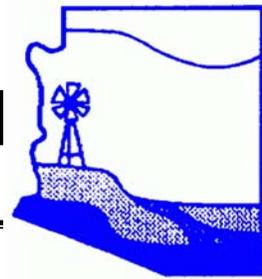


NEWSLETTER



Viewpoint: The Hope of Audacity

It's Springtime: flowers are bursting upwards across the desert, children are bustling with energy (look for the article on our AzSEF winners), and the Salt-Verde system is full for the first time in a long time. Because we had a year of healthy precipitation levels, many people have forgotten that the semi-arid Southwest is still in the grip of long-term drought. But those of us who think about water constantly realize we are still faced with the challenges of populations and water supply portfolios that are not growing at the same rate.

All over the Southwest there are groups springing up like desert flowers to discuss water resources. Many are local, like those in the Verde Valley or in the San Pedro Valley, or the Coconino Plateau Water Advisory Commission. Some are broad in scope, like the State-Wide Advisory Group at ADWR, which also hosted the Governor's Water Commission talks a few years ago. Some are more narrowly focused, like the ADD Water group at the Central Arizona Project, or the Sustainability Stakeholders' Group at AMWUA. Even Pima County and City of Tucson are talking about cooperation. Many groups are focusing on water supply issues—I can't list them all.

In all of these forums, people who dare to think that they can influence the future are coming up with new ideas on water supply, allocation, access, costs and conservation. Emboldened people have hope. Because they have hope, they are willing to seize onto new ideas and explore them. Whether the water is from a "new bucket" or recycled water or water transported from somewhere else, they hope that water will be available in sufficient quantities to sustain the region's economic health. You can tell, as you listen to these people (most of whom are not hydrologists), that hope burns deepest in those with the freshest ideas, and those people have no fear about expressing their thoughts.

It is a good thing to be audacious in matters of water and the future. Bold people can come up

with a fresh take on existing challenges. No single concept will carry us forward; it will take many ideas and new twists on old thinking. But we are talking about the continuity of civilization itself, and we have to be audacious in advancing our ideas and we have to make sure that the water future contemplated is hydrologically sound.

If you are thinking this is a call to boldly step forward and offer fresh ideas on future water resources wherever the opportunity presents itself, you're right. As hydrologists and water resources professionals with knowledge of the realities of water, we ought to be the ones coming up with new ways of approaching the challenge. We should be leading the way. Only by speaking out can we make a difference as the future is shaped. So if you see a chance to attend one or more of these groups discussing water issues, do so. And speak up!

Alan Dulaney
AHS Corporate Board President 2008



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Member information

2008 MEMBERSHIP DUES

If you have not renewed your 2008 AHS Membership by March 30th you will no longer be able to access the Members Only area of the Web site.

Your membership is very important to us and we hope you will consider renewing promptly.

Dues, payable to AHS (\$45.00, \$15.00 for students) should be sent to:
Arizona Hydrological Society
Jeanie Merideth, Association Manager
PMB 139; 3305 N. Swan Road #109
Tucson, AZ 85712
Phone: (520) 299-6787

Dues may also be paid using our "Online Payment" system.

Go to

www.azhydrosoc.org

And click on "Join or Renew Online" and have your credit card ready. AHS accepts Visa, MasterCard and American Express.

DON'T DELAY-DO IT TODAY!

How to visit the AHS Members Only area:

- Go to: www.azhydrosoc.org
- Located on the far right side of your screen click on Members Only
- Type in your username and password: Your username is the first initial of your first name and then your last name (i.e. Flo Waters would be FWaters). Your password is your zip code (that we have on file for you).

Once there you have access to documents that are not available on the public site.

REMEMBER you must be a currently paid member of AHS to have access.

Announcing the AHS 2008 Annual Fall Symposium

Changing Waterscapes and Water Ethics for the 21st Century

American Institute for Professional Geologists Annual Meeting
Arizona Hydrological Society Annual Symposium
3rd International Professional Geology Conference
September 20 -24, 2008
High Country Conference Center at NAU and Radisson Hotel
Flagstaff, Arizona

For more information:

<http://www.aipg.org/2008/AIPG-AHS-3IPGC.htm>

2008 Annual Symposium

Changing Waterscapes and Water Ethics for the 21st Century Global Geoscience Practice, Standards, Ethics, and Accountability



CALL FOR ABSTRACTS

American Institute of Professional Geologists
Arizona Hydrological Society

3rd International Professional Geology Conference

September 20 – 24, 2008

Flagstaff, Arizona, USA

<http://www.aipg.org/2008/AIPG-AHS-3IPGC.htm>



CALL FOR ABSTRACTS

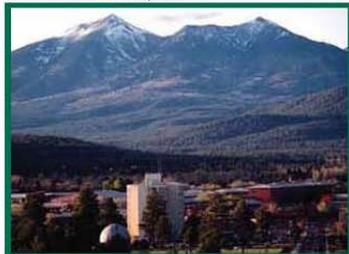
Important Dates

April 15, 2008Abstracts due
May 15, 2008.....Authors notified
July 1, 2008.....Final abstracts/
papers due

You are invited to participate in the symposium on **Changing Waterscapes and Water Ethics for the 21st Century and Global Geoscience Practice, Standards, Ethics, and Accountability**. This milestone event is organized by a committee of the American Institute of Professional Geologists (AIPG), Arizona Hydrological Society (AHS), and the 3rd International Professional Geology Conference (3rd IPGC). Sponsors include: AIPG, AHS, AESE, AAPG-DPA, ASBOG, CCPG, EFG, IYPE, NAU, NGWA, and USGS.

The symposium will be held in Flagstaff, Arizona from September 20-24, 2008. Presentations and Poster Sessions will be held September 22 and 23, 2008.

The symposium Steering Committee is lead by General Chairperson Barbara Murphy, RG, CPG, Clear Creek Associates, and Vice Chairmen Dr. Aregai Teclé, Professor of Hydrology, School of Forestry, Northern Arizona University (NAU), and Dr. David Best, Professor of Geology, College of Engineering and Natural Sciences, NAU.



Northern Arizona University Campus and the San Francisco Peaks

Location

The symposium itself will take place at the High Country Conference Center at the Northern Arizona University campus and the Radisson Hotel in picturesque Flagstaff. Field trips will be offered to the Grand Canyon, the San Francisco volcanic field, the Jerome mining district, to the red rocks of Sedona, Walnut Canyon Anasazi cliff dwellings, and many more exceptional geology and cultural sites.



Arizona
Hydrological
Society



Grand Canyon

Symposium Highlights

The symposium includes technical sessions, poster sessions, workshops, welcome reception, technical tours, and field trips.

How to Submit an Abstract

To have your abstract considered for a presentation or poster session, please submit a one-page abstract and the Abstract Submittal Form by April 15, 2008. Abstracts must be typed, in WORD, single-spaced, 12-point type and should not exceed one page. Please include the presentation title and primary speaker/author at the top of the abstract and submit with the Abstract Submittal Form. Select two abstract subject areas under which you would like to have your abstract considered. Authors will be notified of abstract acceptance by May 15, 2008.

**Abstracts must be received no later than
April 15, 2008.**

For more detailed information or to register for the symposium please go to:
<http://www.aipg.org/2008/AIPG-AHS-3IPGC.htm>.



Lake Mead / Hoover Dam

Abstract Subject Areas

ARR	Artificial Recharge
AQR	Aquifer Restoration
CRB	Colorado River Basin Climate, Hydrology and Ethics: Past, Present and Future
ENE	Energy
EWE	Energy/Water/Ethics: Moderated Discussion
EWM	Ethics of Water Use in Mining: Case Studies
EWP	Ethics vs. Water Policies
FWM	Forest Watershed Management
GIS	GIS and Water Resources
GIE	Groundwater Issues and Ethics
GR	Groundwater Restoration
HEN	Human vs. Ecosystem Needs
ICP	International Cooperative Programs and Practice Issues
MDE	Models, Data and Ethics
PE	Professional Ethics
PUW	Politics of Urban Water Management
QLE	Quality of Life vs. Ethics of Water
RTA	Re-Use Technologies and Approaches
REC	Riparian Ecosystems in Changing Waterscapes
SUB	Land Subsidence
SWP	Southwest Water Policy Issues
SWG	Surface Water – Groundwater: A Shared Resource
TWP	Tribal Water Practices, Policies, and Ethics
URW	Urban and Rural Water Policies and Practices
WEC	Water Ethics in a Changing Global Climate
WEM	Water Ethics in the 21st Century: Moderated Discussion
WKN	Water Knows No Boundary: Border Conflicts
WL	Water Law
WOP	Water Ownership: Public vs. Private
WQM	Water Quality of Mining Operations: Old Problems - New Solutions
WQS	Water Quality: Science, Policy, and Ethics
WSP	Water Supply vs. Public Policy: Ethics Under Pressure

2008 Annual Symposium Cont.

Changing Waterscapes and Water Ethics for the 21st Century

Global Geoscience Practice, Standards, Ethics, and Accountability

Abstract Submittal Form

Use this form or submit online at
<http://www.aipg.org/2008/AIPG-AHS-3IPGC.htm>



American Institute of Professional Geologists
Arizona Hydrological Society
 3rd International Professional Geology Conference



September 20 – 24, 2008
Flagstaff, Arizona, USA



High Country Conference Center and the Radisson Hotel

Submit a one-page abstract with this completed form by **April 15, 2008.**

Submittal can be made via fax, e-mail, or mail:

Cathy Duran
 Professional Services Manager
 AIPG
 1400 W. 122nd Ave., Suite 250
 Westminster, CO 80234
 Phone: (+ 1) 303-412-6205
 Fax: (+ 1) 303-253-9220
 E-mail: cld@aipg.org

Presentation/
 Paper Title: _____

Submitted for: Oral Presentation or Poster Presentation

Subject Area: 1st Choice: 2nd Choice:

[Use the 2 or 3-digit Abstract Subject Area Codes listed on the Call for Abstracts]

Primary Speaker/Author: [All Symposium-related correspondence will be directed to this individual]

Name: _____

Title: _____

Organization: _____

Address: _____

Phone: _____ Fax: _____

E-mail: _____

Co-authors: _____

Will this or a similar paper be published or presented before September 2008?

No Yes If yes, where:

Date this work/project/program will be completed: _____

Agreement

By submitting an abstract, a potential presenter agrees to prepare an oral presentation or poster presentation, if selected. Selected presenters are encouraged to prepare an extended abstract or paper for publication in the conference proceedings. If not selected for an oral presentation, you will be encouraged to prepare a poster for the poster sessions. Individuals must meet all deadlines to have a paper or extended abstract included in the symposium proceedings.

Please visit the web site for many sponsor opportunities:
<http://www.aipg.org/2008/AIPG-AHS-3IPGC.htm>

TUCSON CHAPTER NEWS

KARTCHNER CAVERNS FIELD TRIP

In lieu of a March meeting, we took a field trip to Kartchner Caverns State Park on March 22nd, 2008. Kartchner Caverns is located approximately 10 miles south of Interstate 10 along the Highway 90 in the foothills of the Whetstone Mountains. The tour was attended by 25 members and guests, and though the tour was not intended for profit, the Tucson Chapter did end the tour \$186.5 in the green.

The theme of the tour was "So what?" We were encouraged to question how the information we received could be applied to our specific field of study in an attempt to make "cross discipline connections." It was amazing to see, for example, how ecology can be used to estimate depth to water in certain areas, or spot faults.

We began the morning with a surface hike lead by Dr. Robert Casavant (AZ State Parks Research and Science Manager and Cave Resource Manager), Joanne Roberts (AZ State Parks – Resource Ecologist) and Dale Armstrong (Golder and Assoc, Hydrogeologist/Economic Geologist). The surface tour consisted of an approximately 2 mile hike, and lasted about 3 hours. During the tour, surface signs of subterranean void space were pointed out by our benevolent guides. We learned that both ocotillo and "shin diggers" are good indicator plants, and occur commonly in the vicinity of cave systems.

There are two tours available at Kartchner Caverns: The Rotunda/Throne Room tour, and the Big Room tour. This year our group attended the Big Room Tour. The Big Room closes from April 15th – October 15th when the cave become a nursery for approximately 1000 female cave myotis bats and their young, so the timing of our tour was fortunate. Some of the unique formations in the Big Room are: the world's most extensive formation of brushite moonmilk, the world's first reported occurrence of "turnip" shields, and the first cave occurrence of "birdsnest" needle quartz formations. And that is just the Big Room. We still

have the Rotunda and Throne rooms to explore! Note that the English language or pictures could NEVER do justice to any of these formations. They must be experienced!

Various paleo-fossils have also been discovered in Kartchner Caverns, including an 86,000 year old Shasta ground sloth, a 34,000 year old horse, and an 11,000 year old bear. So there you have it: Kartchner caverns has debunked the myth that the Spanish introduced horses in the 17th century. It turns out that the Spanish re-introduced horses to their once native land! Pretty neat.

There is still much to learn about the cave system, and hopefully future research and exploration will yield more interesting surprises. Thanks so much to Dr. Bob Casavant, JoAnne Roberts, and Dale Armstrong for taking the time to guide our tour. For more information about Kartchner Caverns, or to reserve a spot on one of the cave tours, go to: <http://www.pr.state.az.us/parks/parkhtml/kartchner.html>

Tucson Chapter Monthly Meeting

April 8, 2008

7:00 Social half-hour

7:30 speaker

Location: Offices of Errol L. Montgomery & Associates, Inc
1550 E Prince Rd, Tucson, AZ

Speaker: Dr. Jennifer McIntosh
Topic: Identification of Recharge Pathways in the Middle San Pedro River

This should be a very interesting talk, as most research that has been done on the San Pedro has focused on the Upper Reaches. Its time for a talk on the San Pedro River that you haven't heard before.

Water Facts: Interviews with Arizona water experts on Access Tucson TV

In Tucson: Monday nights 6:30 pm Comcast: Channel 72 (every other week is replay)

Outside of Tucson: Watch on Internet Mondays 6:30 pm
www.accesstucson.org (every other week is replay)

Tucson Chapter cont.

Tucson Chapter Officers

President (General Chapter Information)	Jeff Gawad Errol L. Montgomery & Associates (520) 881-4912 jgawad@elmontgomery.com	Chapter Director (Chapter records and web page)	Dan Guido Errol L. Montgomery & Associates (520) 881-4912 dguido@elmontgomery.com
Vice-President (Monthly speaker organization)	Robert McGill hydroGEOPHYSICS (520) 647-3315 rmcgill@hgiworld.com	Tucson AHS Corporate Board Representatives:	
Secretary (Monthly meeting records)	Marla Odom Errol L. Montgomery & Associates (520) 881-4912 modom@elmontgomery.com	Corporate Treasurer	Michael Geddis Water Management Consultants, (520) 319-0725 mgeddis@watermc.com
Treasurer (Chapter finances)	Mike Mahan Arizona Geological Survey (520) 770-3500, ext. 211 mmahan@email.arizona.edu	Corporate Board Member	Nick Melcher U.S. Geological Survey (520) 670-6671, ext. 221 nickpaulame@msn.com



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Call (520) 917-2467 to Reserve your Spa Session and Choices



SARSEF Award Winners

SOUTHERN ARIZONA REGIONAL SCIENCE AND ENGINEERING FAIR

By Jeff Gawad
Errol L Montgomery and Associates

On March 18th, 2008, the Tucson Chapter of AHS again participated in the Southern Regional Science and Engineering Fair (SARSEF) held at the Tucson Convention Center. The Tucson Chapter presents monetary awards totaling \$600 to hydrology-related science fair projects at SARSEF. In 2008, nine \$50 awards, two \$25 awards, and one \$100 award were presented.

The following is a brief summary of the winning projects. In some cases, the student's name was not listed on the project. Since the prizes are administered by SARSEF, and the students were not present during the AHS judging, information on the individual winners may not be complete. For more information about SARSEF, see their website www.sarsef.com

Grades K-2: Students in grades Kindergarten through second grade were judged more heavily on their ability to form a hypothesis, conduct an experiment, and make a conclusion based on the experiment than on the hydrological content of the experiment.

Grades 6-9

Lu Juen Pepentacos, a 6th grader from Dodge Middle School performed an experiment to determine which type of grey water would be best suited for plant growth. She compared tap water to wash and rinse water used with Tide and Biokleen laundry detergents. Plants watered with Tide wash water grew best, followed by Tide rinse water, with Biokleen wash water taking 3rd. Feed your plants laundry water! Its better of them!

Hayden Garber, a 7th grader at Booth-fickett Math/science charter school, reacted to her grandmothers dogs kidney stones with science. She was looking for which water would contribute least to the formation of new kidney stones. She analyzed her grandmothers tap water, tap water from her home, spring water and purified water for chlorine, alkalinity, and acidity. She compared results from her analysis with reported values from Tucson Water. She concluded that purified water would be best.



Krysta Pavlika, an 8th grader from, Old Vail Middle School, analyzed the filtration effects of different soils on grey water. She filtered water through potting soil, native soil, commercial top soil, and no soil. She then tested water for pH, hardness, nitrate, nitrites, sodium, and chlorine. She found that native soil worked the best by far at removing contaminants.

Jeanne Wilkening, an 8th grader from Richard B. Wilson Middle School, analyzed the effects of different urban surfaces on the chemical quality of runoff. She collected runoff from 10 locations around Tucson, and compared the amounts of grease and residue present. She concluded that there is indeed significant spatial variability in the amount of grease residue in runoff around Tucson.

Nick Barraza, from Tucson Magnet School, did a correlative analysis on snow water equivalent with maximum average temperature and elevation. He demonstrated that maximum average temperature is inversely related to snow water equivalent above a site specific elevation. Below an elevation threshold, the correlation becomes spurious because not much snow collects at lower elevations. We were so impressed by Nicks analysis that we awarded him \$100. Congratulations Nick!

PHOENIX CHAPTER NEWS

March Meeting Summary

Our March speaker was Mr. Trevor Hill President and CEO of Global Water Resources. Mr. Hill shared with the Phoenix Chapter an overview of his company's activities and vision. Mr. Hill emphasized the importance of *scarcity management* as a guiding principal in his business. Demographic forecasts show a steady trend of population growth in Arizona and the rest of the arid Southwest. The Southwest continues to grow at a pace greater than any other part of the US. Mr. Hill noted that population projections for Arizona suggest 14-16 million people by 2050 and as many as 40 million by 2100! Water supplies on the other hand are finite and possibly diminishing. Tree ring studies suggest that the long-term average flow on the Colorado River is more like 13.5 million acre-feet as compared to the 16.5 million acre-feet which has been allocated on the river. And this is without consideration of climate change. Even total conversion of all agricultural uses to municipal and industrial uses will not meet this growth in water demand. Therefore, some kind of *demand management* will be required to meet the water needs of these future populations. Mr. Hill noted that if future development continues while ignoring these probable futures is like "driving your Hummer until the last drop of fuel."

In order to combat these trends and allow for future safe development in Arizona, Mr. Hill's company is making significant investments in Total Water Management. This philosophy calls for a paradigm shift from supply side management to demand side management. A critical part of the demand side management will be water recovery and reuse. His firm advocates for *water recycling*. Not only does the term appeal to the general public (he notes the term *effluent* and even *water reuse* elicit significant negative reaction), it reflects on many of the important elements of his firm's water management systems. Wastewater treatment plants are now *water recycling factories* which are factories that produce an important and valuable commodity.

His firm is in the process of developing water recycling factories and the infrastructure to sup-

port them for a large part of Pinal County around Maricopa. A system of distributed water recycling factories will be created on a township (6 mile x 6 mile) basis. His company is also making big investments in water conservation marketing, lobbying for greater acknowledgment of water scarcity in state and local government, and support of new building code that allow for dual water systems in residential and commercial buildings. Mr. Hill notes that this trend is happening all over the world. Global Water has an office campus in Maricopa where some of these water recycling and dual use methods can be seen in action. Also check out their website at www.gwresources.com.

We'd like to thank Trevor for sharing his time, experience, and vision with the Phoenix Chapter. The group found his talk provocative, stimulating, and encouraging. We look forward to hearing more from Global Water at future AHS functions.

April Meeting Announcement

Our speaker will be Kirk Creswick. He will be discussing subsurface site characterization using electromagnetic methods. Kirk will present the results of some EM-31 surveys – one of an 1890-1910 era dump and another which identifies pits used for disposal of small arms munitions.

Please join us April 8th at El Penasco at Mill & Broadway in Tempe. Hope to see you there!

Location: El Penasco Mexican Kitchen
19 E. Broadway Road
Tempe, AZ 85282

Speaker: Kirk Creswick, EEC
Subsurface Characterization using Electromagnetic Methods

Chapter Board Meeting: 4:30 PM – 5:40 PM
Happy Hour & Dinner: 5:45 PM – 7:00 PM
Dinner Speaker: 7:00 PM – 8:00 PM

Cost: \$15 member, \$20 non-member, \$5 student

All chapter members (and non-members) are welcome to attend the board meeting too!

(Continued on page 9)

Phoenix Chapter continued

(Continued from page 8)

Venue Selected for 2009 AHS Annual Symposium & Dates Confirmed

The 2009 Annual Symposium will be held at The Westin Kierland Resort & Spa August 30 through September 2, 2009 in Scottsdale. For those of you who enjoyed the 2007 Symposium at the La Paloma Resort, that too was a Westin property. We are planning to meet and hopefully exceed that excellent experience. The event will be a joint symposium with the 2009 national conference of the American Institute of Hydrology (AIH). We have also selected a theme – “Managing Hydrologic Extremes”. With the help of AIH and all our AHS volunteers and participating sponsors, we hope to put on a fabulous, successful event at a super venue. We are also planning to organize a published volume of the proceedings papers. AIH normally produces published proceedings and we are looking to continue their tradition for 2009. So if you or someone you know is interested in seeing their paper in print, here’s your chance. Start thinking of those paper ideas now! Look for more details as the 2009 planning continues...

Planning for 2009 Symposium continues

Planning for the 2009 AHS Symposium continues and we will be meeting regularly to hammer out details of program, speakers, sponsorship, marketing, proceedings, workshops, field trips, etc. If you are interested in helping with the planning process or just listening in, please contact Ted Lehman at ted@jefuller.com or 480-222-5709, Lee-Anna Walker at LeeAnna.Walker@arcadis-us.com or Christie O’Day at coday@acstempe.com or 480-894-5477.

Bouwer Intern Hosts Sought

The Phoenix Chapter is seeking hosts for the winner of this year’s Herman Bouwer Internship. The goal is for the 2008 Herman Bouwer Intern winner to work, learn, and experience the business and vocation of hydrology. Past years’ recipients have evolved into excellent future employees! Here’s your chance to test drive a prospective new employee and have AHS foot the bill! How can you resist? Hosts receive the service of the intern for 2 to 3 weeks. If you are interested in becoming a

Bouwer Intern host don’t pass up this great opportunity. Please contact Steve Acquafredda at sacquafredda@dswa.net or (602) 217-1038 for more information.

Third Annual AHS-AEG Student Night

AHS plans to jointly host the 3rd Annual Student Night with the Arizona Chapter of the Association of Engineering Geologists. The event will take place on Thursday evening April 17th at the University of Arizona Memorial Union. The event will bring together students and professionals to share interests, network, and discuss employment opportunities. The event will feature a social networking hour followed by dinner and then the main event, presentations by students of their work. The best presenter(s) will receive cash in recognition of their efforts! Last year the event attracted over 20 students, 4 presentation teams, and 14 corporate sponsors. Awards totaling \$350 were given to the speakers. Thanks to our sponsors we even made a few dollars after expenses and awards. We are looking forward to another successful event this year with AEG. If you are interested in attending, sponsoring a student, or participating in the mini-career fair, please contact Ted Lehman at ted@jefuller.com or 480-222-5709. See also our web site at www.azhydrosoc.org.

Surface Water Issues Workshop

The Phoenix AHS Chapter will be hosting its second Technical Session in two years on May 15, 2008 at the Arizona Department of Water Resources in Phoenix. The session will focus on Surface Water Issues. Specific speakers and topics are still being confirmed, but so far we expect to hear from:

- Lisa Logan – ADWR - Discussion of Arizona surface water rights and claims and legally available water supplies
- Lisa Spahr – EEC
 - SWPPP MS4 current permitting issues
 - Construction General Permit Changes
- Tom Carr – ADWR – Colorado River Compact update

(Continued on page 10)

Phoenix cont.

(Continued from page 9)

- Michael Ford (Attorney) - Bryan Cave, LLP
 - "Water Quality Improvement Grants" from ADEQ of over \$700G to help a charity/owner donated the site clean up a century of mining impacts by removing 100G tons of ore/waste rock, and installing a permeable reactive barrier
 - "The Carlota Decision" and its implications for NPDES permitting
- Ken Houser - SWCA - Developments in the Clean Water Act
- Nick Melcher - USGS Retired - Stream Gauging Field Methods
- USGS speaker TBD – Grand Canyon Experimental Flood #3
- Dr. Hari Sundararaghavan - JE Fuller Hydrology and Geomorphology – Sediment transport modeling
- Dr. Roland Wass – Wass-Gerke + Associates – Salt River restoration overview
- Charlie Ester – Salt River Project - Reservoir Calculations and Predictions
- Jeanmarie Haney – The Nature Conservancy – Environmental flows

The technical session will be a full day event (8:00 – 4:30) and will include lunch. Registration is \$75 per person. Registration can be made online at www.azhydrosoc.org or by mail. Registration will be limited to 50 participants on a first come-first serve basis. Last year's session sold out quickly! So register now!

We are also seeking sponsors. For a \$200 donation, sponsors will receive recognition at the seminar and one complimentary registration. The proceeds from the session will all go to support the Herman Bouwer Internship program. Last year we raised over \$2,000 on behalf of the Internship program.

Lee-Anna Walker is spearheading this effort and would be delighted to have your help, input, or sponsorship. Lee-Anna can be reached at LeeAnna.Walker@arcadis-us.com or (602) 659-3230.

2008 Event Calendar

- April 8th - Kirk Creswick - Subsurface Characterization using Electromagnetic Methods
- April 17th - AHS-AEG Student Night
- May 13 - Doug Wolfe – Dinosaur Fossils in the Zuni Basin
- May 15 – Surface Water Issues Seminar, ADWR
- June 10th - Bruce Robinson, ATC – Perchlorate contamination – health and economic issues - the bigger picture

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AzSEF Winners

AzSEF

The Arizona Science and Engineering Fair (AzSEF) was held at the Phoenix Convention Center on March 18 through 21, with judging on March 20, 2008. The convention hall was filled with science and engineering projects from students from elementary to high school from around central Arizona. The Phoenix Chapter and the Central Arizona Project (CAP) have sponsored awards to outstanding student projects each of the last five years. This year \$400 was awarded in three age divisions: Senior, Junior High, and Elementary. Six total awards were given this year including two honorable mentions. The winners were:

Senior Division:

First Place - \$200

Smitha Ramakrishna

Analysis of the Chemical and Biological Degradation of Sucralose in Synthetic Wastewater

Smitha and her project were very impressive, and she is getting her results published in a major environmental toxicology journal. Sucralose appears to be an excellent tracer for wastewater transport, as she demonstrated that it does not break down in the wastewater treatment process. Smitha has been honored at the White House with the President's Environmental Youth Award (PEYA), presented by EPA.

Second Place - \$100

Shannon Force

A Study of Water-Borne Illness and Water Quality

Shannon's project evaluated water quality, illness and socio-economic status and presented some interesting findings.

Junior High Division:

First Place - \$50

Kishan Patel

Water and Conductivity Level

Using taste as a guide, Kishan was able to

demonstrate that the conductivity of the water (and hence TDS) was an important factor in determining the taste. By the way, City of Phoenix water won this competition over other major cities.

Honorable Mention

Cecilia Rodriguez and Alyssia Lawson

Why Does the Water Look Different in Different Parts of Rio Salado

Cecilia and Alyssia looked at different algae types and amounts to show why parts of Rio Salado looked different.

Elementary Division:

First Place - \$50

Alexandria Clark

Drink This

Alexandria looked at differences in the water chemistry among bottled waters and found some interesting results.

Honorable Mention

Amiyra Stanford

Mudslide

Amiyra's project demonstrated how mudslides form and what happens as water saturates sediments. Needless to say, they wouldn't let her demonstrate this at the event.

In addition to checks, the winners also received nice color certificates, and a letter from Mr. Lehman. The awards were given in a big formal ceremony for all the students and parents on Friday Mar. 21st at the Convention Center.

The Phoenix Chapter would like to thank CAP for matching the award monies again this year. We'd also like to thank Chapter members Paul Plato and Herb Schumann for helping with the judging and selection of the winning projects. All of the volunteer judges confessed what an unexpectedly good time they had interviewing students and talking with them about their projects. Congratulations again to the winners and our volunteers.



FLAGSTAFF CHAPTER

Flagstaff Chapter Officers

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Corporate Board Representative:
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Corporate Board Member at Large:
Margot Truini

ARIZONA HYDROLOGICAL SOCIETY 2008 ANNUAL SCHOLARSHIP

ANNOUNCEMENT

The Arizona Hydrological Society (AHS) and the AHS Foundation will award three \$3,000.00 student Scholarships in 2008. The purpose of the award is to encourage full time students in hydrology, hydrogeology, or any other water resources related fields at any Arizona university, or college to excel in their area of study. Any junior, senior or graduate student who fits into this category is qualified to apply for the Scholarship. Applications for the Scholarship must be submitted to Dr. Aregai Tecle at the address below by April 30, 2008. The Scholarship will be awarded during the Annual Symposium of the Society that will be held at the High Country Conference Center at Northern Arizona University on September 22, 2008.

The Scholarship award will be based upon the following criteria:

- 1. Grade Point Average based on at least two full-year courses work**
- 2. Strength of Recommendation letters (at least one)**
- 3. Application letter describing the applicant's interests and career goals in hydrology and water resources**
- 4. Background in hydrology and water resources related activities (provided in the applicant's resume), and**
- 5. Degree of need explaining the need & how the scholarship would help Meet the need.**

The Scholarship application must include at least the following documents to be considered:

- 1. Application letter**
- 2. Official transcripts (graduate & undergraduate for graduate applicants)**
- 3. Confidential recommendation letters (at least one)**

Mail all Scholarship applications for consideration by April 30, 2008 to:

Professor Aregai Tecle
Northern Arizona University
School of Forestry
P. O. Box 15018
Flagstaff, AZ 86011-5018

Announcement

The Looming Water Crisis and Sustainable Development in the Middle East

Dr. Eilon Adar

Director, Zuckerberg Institute for Water Research
Blaustein Institutes for Desert Research
Ben-Gurion University of the Negev
Sede Boqer Campus, Israel



Friday April 4, 2008, at 1:30 p.m.

Brickyard Orchid House, Room 175
21 E. 6th St., Suite 126B, Tempe

Since the Biblical Era, water crises in the Middle East region have been a trigger for international conflicts. This is due to a basic shortage of available water resources and an increasing demand for water for national development. Quantitative assessment of groundwater fluxes and sources of recharge is essential for the common utilization of the local groundwater resources in groundwater basins with transboundary aquifers. Mutual groundwater management that includes a firm control of water exploitation and maintenance of groundwater quality must be obtained in order to guarantee safe groundwater exploitation for years to come. Each partner should utilize the groundwater reservoir in such a way that will preserve its original water quality. If groundwater quality is expected to change, all partners must be aware of the fact and agree upon a common management policy. The only way to maintain or control the quality of a mutually exploited aquifer is qualitatively and quantitatively to identify all sources of recharge, as well as the flow pattern, including the magnitude of groundwater fluxes into and within all water bearing layers. Common hydrological models cannot be used due to a lack of hydrogeological information and scarce hydrological data. This eliminates the possibility of achieving a firm compilation of regional groundwater flow patterns, balance, and quality distribution. A quantitative knowledge of the above-mentioned hydrological elements is necessary for joint management and sustainable groundwater exploitation of transboundary groundwater basins.

This presentation elaborates on the complexity of water utilization, policy, and management of cross-border water resources for complex arid basins in the Middle East characterized by scarce hydrological resources (with applicability to other similar basins around the world).

Dr. Adar's main research activities are associated with quantitative assessment of groundwater flow systems and sources of recharge in complex arid basins with puzzling geology and scarce hydrological information. He holds a Ph.D. in Hydrology from the University of Arizona.



ARIZONA STATE UNIVERSITY

This lecture is presented by Arizona State University, the Global Institute of Sustainability and the Decision Center for a Desert City.
For more information, please contact Estella O'Hanlon at (480) 965-3367 or Estella.ohanlon@asu.edu.

Announcements

Donations to AHS Foundation are considered charitable 501(c)(3) for tax purposes.

Donations of any amount may be sent to the AHSF Treasurer or the AHSF President.
AHS Foundation
A. Michael Geddis,
Treasurer
2253 E Mitchell St.
Tucson, AZ 85719

The AHS web site has a new document posted for your information. "A Strategy for Federal Science and Technology to Support Water Availability and Quality in the United States". The document was prepared by the Executive Office of the President of the United States.

Did you know that AHS has a

JOBS

page on our web site? Visit:

Www.azhydrosoc.org and then click on JOBS to view the most recent postings. If you would like to post an opening just email it to jgmerideth@aol.com and Jeanie will post it for you.

Call for Papers - CAP Award for Water Research

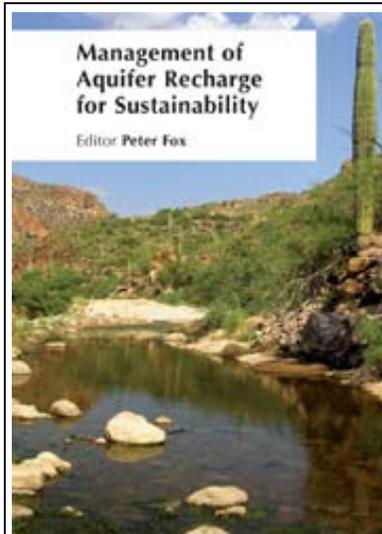
First Place Award: \$1,000
Second Place Award: \$500

Papers are now being accepted for the CAP Award for Water Research. Papers should focus on water issues that affect central and southern Arizona and the Colorado River, including legal, economic, political, environmental, or water management issues, as well as any other issue that might be of interest to CAP or Arizona water users. Winners will present their research at the Arizona Hydrological Society's annual symposium.

The CAP Award is available to students at any college or university in the State of Arizona. To apply, submit your complete paper online at www.cap-az.com.

Deadline: June 1

Get more information on the web at www.cap-az.com



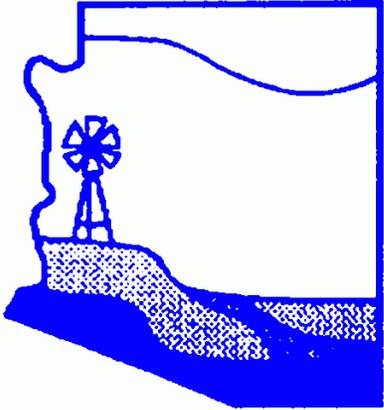
ISMAR6 –

The AHS-sponsored International Symposium for Managed Aquifer Recharge was held in Phoenix in October 2007.

The Proceedings of ISMAR6 *Management of Aquifer Recharge for Sustainability* is available through the publisher at www.acaciapublishing.com.

This is a 660-page hardbound book with articles submitted by presenters at ISMAR6.

MEMBERSHIP APPLICATION



Arizona Hydrological Society

Jeanie Merideth
Association Manager
PMB #139; 3305 N. Swan Rd. #109
Tucson, AZ 85712
(520)299-6787
Fax: (520)299-6431
azhydro@comcast.net

www.azhydrosoc.org

ARIZONA HYDROLOGICAL SOCIETY c/o Jeanie Merideth Association Manager
PMB #139; 3305 N. Swan Rd #109, Tucson, AZ 85712
Membership Application (Dues: 1 year \$45, \$15 for students)

Name: _____ Position: _____

Company: _____ Email: _____

Mailing Address: _____

Work Phone: _____ Home Phone: _____ Fax: _____

In addition to my dues, I am enclosing

\$ _____ Herman Bouwer Intern Scholarship fund (Phoenix),
\$ _____ Leonard C. Halpenny Intern Scholarship fund (Tucson),
\$ _____ for the SARSEF Scholarship fund,
and/or \$ _____ for the state-wide AHS General Scholarship fund.

Total amount enclosed: \$ _____

Chapter Affiliation:

_____ Tucson

_____ Phoenix

_____ Flagstaff