



Arizona Geological Society Newsletter

OCTOBER 2012

October 2, 2012 DINNER MEETING

- Who:** Dr. Karl Flessa will be our featured speaker. See abstract below.
- Where:** Sheraton Tucson Hotel and Suites, 5151 East Grant Road, (at the intersection of Grant and Rosemont on the North side of Grant in the *SABINO BALLROOM* (enter at northwest corner of the building) and go upstairs to the meeting room.
- When:** Cash Bar at 6 p.m.—Dinner at 7 p.m.—Talk at 8 p.m.
- Cost:** Members \$24, guests \$27, Students free with online reservation (\$10 without).

RESERVATIONS are REQUIRED: CALL 520.663.5295 by 5 p.m. by Friday, September 28 or reserve on the AGS website (www.arizonageologicalsoc.org). Please indicate regular (grilled chicken with ginger lime sauce, potatoes, and green beans), vegetarian, or cobb salad meal preference. Please cancel by Monday, October 1 at 8 a.m. if you are unable to attend—no shows and late cancellations will be invoiced. Meals for walk-ins may be available (with a \$3 surcharge), but cannot be guaranteed.

The September dinner meeting is sponsored by:



AGS is grateful for the sponsorship, which helps us to offset dinner meeting costs. Learn more about Ajax at www.ajax-ltd.com

Past, present and future of the Colorado River delta

Karl Flessa, Ph.D.

Director, School of Earth and Environmental Sciences, University of Arizona

The Colorado River no longer reaches the sea. The U.S. diverts about 90 percent of the river's flow for use in agriculture and cities; Mexico uses its small share for its farms and cities. Because no baseline studies of the delta were ever conducted, we used paleoecological and geochemical techniques to reconstruct delta environments in the "pre-dambrian" era. Since upstream dams and diversions, the estuary's circulation has reversed, salinity has increased, productivity has decreased, species composition has changed, trophic pathways have altered, and early growth rates in endangered and commercially important fish have decreased. Stable isotopes in mollusk shells and fish otoliths indicate that approximately 10 percent of the river's virgin flow is needed to restore critical estuarine habitats. The response of riparian vegetation to rare flood events suggests that two to five percent of the river's flow is needed to sustain the existing riparian corridor. A binational effort to sustain a Mexican wetland supplied with water from the U.S. has established a precedent for cross-border environmental flows. The delta is not dead. Collaborative and creative efforts to restore and protect habitats are gaining momentum even as societal demand for water increases and drought continues.

ABOUT THE SPEAKER

Dr. Karl Flessa is Director of the School of Earth and Environmental Sciences at the University of Arizona. He also directs a binational network that focuses on how natural and human-caused variation in water supply affects the biotas and landscapes of the Colorado River Delta. He works with water agencies, NGOs and academic partners. A paleontologist by training and a conservation biologist by choice, he has been “putting the dead to work” on Colorado River Delta conservation and restoration since 1992. He recently co-edited *Conservation of Shared Environments: Learning from the United States and Mexico*. Karl Flessa received his Ph.D. from Brown University. He has been a Humboldt Fellow, a program officer at the National Science Foundation, president of the Paleontological Society, visiting professor at the Universidad Autónoma de Baja California and at Cornell University and visiting scientist at the Sonoran Institute.

ANNOUNCEMENTS

Applications for the J. Harold Courtright Scholarship are due by October 26, 2012. Graduate students working towards a degree in geological sciences at University of Arizona, Arizona State University, and Northern Arizona University are eligible to apply. Please go to the AGS website (www.arizonageologicalsoc.org) for more information and an application.

AGS is seeking sponsors for our monthly dinner meetings. Sponsorship is a great way to get the word out about your organization, help support our student members, and offset the costs of the dinner meetings. For more information, please contact Ann Pattison, VP of Marketing, or any AGS Executive Committee Member.

FIELD TRIP UPDATE

Centennial Field Trip to the Wickenburg-Vulture Mine and to the Anderson Mine Project

There's still time to sign up for this 2-day trip to be held on **October 6-7**. Participants will travel to Wickenburg late Friday afternoon or early Saturday to join the group in Wickenburg. Our stops on Saturday will be to look at the regional geology and tectonics on the way to the Vulture Mine (Steve Reynolds, ASU and Jon Spencer, AZGS) and to review the geology and recent work at the Vulture Mine (Bill Feyrabend, CPG and Mike Smith, Vulture Peak Gold LLC). We'll have a barbeque dinner Saturday night at the Coffinger Park in Wickenburg and perhaps enjoy some remarks by a local historian. Sunday, we'll regroup to visit the Uranium Energy Corp Anderson Mine project with UEC Senior Geologist Rick Edge. Trip fees are flexible to cater to all budgets, including options to sign up for a guidebook and AGS transportation (\$60-\$150). Students are \$20. All trip participants receive snacks/water, two lunches, and one dinner. Hotel and other meal arrangements are the participant's responsibility. Carpooling will be coordinated for those coming from Tucson or Phoenix. For additional information contact Cori Hoag at choag@srk.com. Visit <http://www.arizonageologicalsoc.org/field-trips/octft> to register and pay by secure site online or by mail.

On **November 10**, you are invited to attend a joint AGS-AIPG field trip, led by Steve Reynolds, Professor of Geology at Arizona State University. The trip will take place in the Dreamy Draw area of the Phoenix Mountains to examine aspects of Proterozoic evolution. In the afternoon, we'll head into the South Mountains to visit spectacular exposures related to mid-Tertiary extension.

Thanks to the following AGS members for their generous donations to the Courtright Scholarship Fund:

Larry Dykers

Robert Waiwood

Bill Feyerabend

Welcome New AGS Members

Jim Bruneio, National Exploration, Well and Pumps, Gilbert, AZ
 Thomas Roberts, National Exploration, Well and Pumps, Gilbert, AZ
 James Stephens, National Exploration, Well and Pumps, Gilbert, AZ
 David Bardsley, National Exploration, Well and Pumps, Gilbert, AZ
 Jon Morris, National Exploration, Well and Pumps, Gilbert, AZ
 Elliot Blair, Graduate Student, Cal Berkeley, El Cerrito, CA
 Rachel Cajigas, Student, University of Arizona, Tucson, AZ
 Trevor Cole, Arizona Geological Survey, Tucson, AZ
 Jack Gibbons, Graduate Student, University of Arizona, Tucson, AZ
 Erin Harris-Parks, Student, University of Arizona, Tucson, AZ
 Dan Lynch, Tucson, AZ
 Diane Thompson, Research Assistant, University of Arizona, Tucson, AZ

Yadi Wang, Student, University of Arizona, Tucson, AZ
 Josh Spinler, Graduate Student, University of Arizona, Tucson, AZ
 Andrea Stevens, Graduate Student, University of Arizona, Tucson, AZ
 James Melland, Melland Engineering, Inc, McPherson, Kansas
 Eric Rice, Black Rock Drilling, LLC, Spokane Valley, WA
 Clayton Loehn, Arizona Laserchron Center, Tucson, AZ
 Joey Lopez, Student, Chandler, AZ
 Mariel Schottenfeld, Student, Canton, MA
 Jerry Waegli, Freeport-McMoRan, Oro Valley, AZ
 Jeff Gerwe, Freeport-McMoRan, Oro Valley, AZ
 Dan Aiken, Tucson, AZ
 Lily Jackson, Tucson, AZ

Fall Field Trip Report – Rosemont Copper Project, Sept. 15, 2012

by Cori Hoag

Superb late summer weather was the icing on the cake for a great trip to the **Santa Rita Mountains and the site of the proposed Rosemont Copper Mine**. Thirty trip participants, including members of the Society of Economic Geologists student chapter at UA, had an overview at the Hidden Springs core logging facility of the site geology from AGS President and Rosemont Copper Sr. Geologist, **Jeff Cornoyer**. We examined new drill core and representative selections of the major rock types at the deposit, toured the solar test facility, and got to watch reclamation studies being monitored in the field by UA students. We then had lunch at the Rosemont Ranch facility, visited outcrops in the area of the proposed open pit, and ended the day at Gunsight Pass overlooking the western flanks of the Santa Rita Mountains. Kudos go to VP Field Trips, **Doug Shakel**, for organizing the trip and compiling the guidebook. Thanks go to Jeff and Rosemont Copper for providing van transportation and lunch. Thanks also go to Doug for preparing an introduction and road log for the guidebook and to **Jeff, Jan Rasmussen, Cori Hoag, Bill Peachey, and Kevin Horstman** for preparing new articles and illustrations. Copies of the new guidebook are available for \$25 at the dinner meetings or by mail with postage added. Please contact Cori Hoag, choag@srk.com or Coleen Brown, colleen.b1@cox.net if you would like to purchase a copy.

Right: Jeffrey Cornoyer showing a cross section through the deposit.



More on this field trip on pages 4 and 5.

Rosemont Copper Project Field Trip



Right: High-grade bornite-bearing ore.



Left: Kim Wilson and Bruce Kilpatrick examine core.



Left: The solar power test facility.

Right: UA students working on the reclamation test plots.



Left: A shady-looking character—AGS member, Claudia Stone.

Arizona Mining Alliance Meeting

The Arizona Mining Alliance held their monthly meeting at Granite Construction on September 14. The group was formed to help strengthen the mining industry in Arizona. Anyone who supports the mining industry is invited to attend the meetings, which generally take place on the second Friday of the month from 11:30 a.m. to 1 p.m. at Granite Construction's conference facility.

State Senator Al Melvin opened the meeting with a few words about the purpose of the group, and about the financial importance of the mining industry to Arizona. Candidates for public office who are supportive of the mining industry comprised a large part of the audience. In attendance were: Al Melvin, Ally Miller (running for Pima County Board of Supervisors), Tanner Bell (running for Pima County Board of Supervisors), Gabrielle Saucedo Mercer (who is running for the U.S. House of Representatives against incumbent Raul Grijalva), Mark Napier (running for Pima County Sheriff against incumbent Clarence Dupnik), Ethan Orr (running for State Representative of District 9), and a spokesperson for Representative Jeff Flake. Each of these candidates expressed that the election in November is one of the most important to take place in Arizona in a long time. Most of them made a request for campaign donations.

Rod Pace gave an update on the Rosemont Copper project. He said that Rosemont expects to have all of the permits for the project in place by February 2013.

Other speakers included State Geologist Lee Allison, who spoke on the resurgence of gold mining in Arizona, and Glenn Hoffmeyer of CURIS Resources who provided status updates regarding permits for CURIS's in-situ copper project in Florence, Arizona.

2012-2013 AGS MEMBERSHIP APPLICATION OR RENEWAL FORM

Please mail check with membership form to: Arizona Geological Society, PO Box 40952, Tucson, AZ 85717

Dues (check box) 1 year: \$20; 2 years, \$35; 3 years: \$50; full-time student (membership is free)

NEW MEMBER or RENEWAL? (circle one) Date of submittal _____

Name: _____ Position: _____

Company: _____

Mailing Address: _____

Street: _____ City: _____ State: _____ Zip Code: _____

Work Phone: _____ Home Phone: _____

Fax Number: _____ Cellular Phone: _____

E-mail: _____ Check this box if you do not have an email address

All newsletters will be sent by email. If you do not have an email address, we will mail a hard copy to you, but we cannot guarantee timeliness.

If registered geologist/engineer, indicate registration number and State: _____

Enclosed is a _____ tax-deductible contribution to the J. Harold Courtright Scholarship Fund.