



# Arizona Geological Society Newsletter

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MAY 2012

## May 1, 2012 DINNER MEETING

**Who:** **Dan Lynch** will be our featured speaker. See abstract below.

**Where:** Sheraton Tucson Hotel and Suites, 5151 East Grant Road, (at intersection of Grant and Rosemont on the North side of Grant in the Sabino Ballroom (enter at northwest corner of the building) and follow the sign to the meeting room.

**When:** Cash Bar at 6 p.m.—Dinner at 7 p.m.—Talks 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, April 27 or reserve on the AGS website ([www.arizonageologicalsoc.org](http://www.arizonageologicalsoc.org)).** Please indicate regular (tri-peppercorn crusted flank steak with sautéed mushrooms), vegetarian, or cobb salad meal preference. Please cancel if you are unable to attend—no shows will be invoiced. Meals for walk-ins may be available (with a \$3 surcharge), but cannot be guaranteed.

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## ABSTRACT

### Remember me when I am dead: A geologist looks at gravestones

By Dan Lynch

This discussion of “grave” matters is not a scientific lecture. As geologists, we are surrounded by the science of our stones but the last one will be aesthetic. This is a brief tour through the stones of New England with no regard for the Appalachian Orogeny, the Taconic line, or the dinosaur tracks of the Connecticut River Valley. Grave markers record history as well as they memorialize the dead.

The first monument for a poor person has not been documented but the 1600s was a century when stones began to appear on the graves of people who were not royalty. Most people’s graves got boards at the head and foot to show the grave digger the occupied ground.

Around 1670, artisans began to sand and carve soft slate in New England. Within a few years, artistry exploded across the region and the local burial grounds began to fill with slate markers. Other rock types that could be worked into slabs, schist and sandstone, joined the slates but none of the markers were inexpensive.

Invention of the wire saw around 1800 made marble quarried in New Hampshire and Vermont cheaply available providing stones for the less well off. The skills of carving proliferated and eventually master carvers were working for journeyman wages. Granite was sawn and polished in the 1830s and the marble once sawn into slabs was carved into elaborate statues in the Victorian era.

Photographs appeared on gravestones soon after M. Daguerre invented his process. Today, photographs are written onto stones with computer-controlled sandblasting machines.

## Student Poster Session Night

Fifteen students from University of Arizona and Arizona State University presented posters describing their research at the April AGS dinner meeting, competing for \$850 in prize money. The posters were displayed on the walls of the meeting room, and attendees circulated around the room to view the posters and chat with the student researchers. Later, each student gave a three minute oral presentation while the poster was projected on a screen at the front of the room. The quality of the work was excellent, and the judges had their work cut out for them. The first place winner was **Sarah Truebe** (University of Arizona) for her presentation titled, “How important is isotopic equilibrium for paleoclimate records from caves? A case study from southern Arizona.” **Devon Orme** (University of Arizona) won second place with “Basin evolution and exhumation of the Xigaze Forearc, southern Tibet: Insight from field stratigraphy and thermochronology,” and **Nicholas Randle** (University of Arizona) won third prize with “Modeling groundwater capture from reduced agricultural return flows within the Tongue River Basin, Wyoming.” Each student presenter received a “Geologic Highway Map of Arizona” in appreciation of the hard work that was put into the presentations.



**Sarah A. Truebe (UA) receives the \$500 first prize from AGS President Jeff Cornoyer.**

**Devon Orme (UA) is awarded the \$250 second place prize for her presentation.**



## ANNOUNCEMENTS

### FIELD TRIPS

AGS announces the **Fall Field Trip** will be held at the **Vulture Mine and Anderson Mine Project in the Wickenburg area** on the weekend of **October 6-7, 2012**. We will visit the historic Vulture Mine (led by geologist Mike Smith, Vulture Peak Gold, LLC) and visit interesting outcrops in the surrounding Wickenburg area on Saturday with a cowboy steak barbeque in the evening. The next morning we'll drive 43 miles northwest of Wickenburg to visit Uranium Energy Corp's Anderson Mine Project and hear about the deposit geology and current exploration work from UEC Sr. Geologist, Rick Edge. Uranium mineralization found in outcrops of tuffaceous and calcareous mudstones, lignite, chert, and sand lenses and in the pit floor at the old Anderson mine has been reported by the U.S. Bureau of Mines in Salt Lake City to be in the form of tyuyamunite ( $\text{Ca}(\text{UO}_2)_2(\text{VO}_4)_2 \cdot 5-8\text{H}_2\text{O}$ ). Carnotite ( $\text{K}_2(\text{UO}_2)_2(\text{VO}_4)_2 \cdot 3\text{H}_2\text{O}$ ) and a rarer silicate mineral, weeksite ( $\text{K}_2(\text{UO}_2)_2\text{Si}_6\text{O}_{15} \cdot 4\text{H}_2\text{O}$ ), have also been reported from outcrop samples. Carnotite mineralization occurs as fine coatings and coarse fibrous fillings along fractures and bedding planes and has been noted in shallow drill holes as well as surface exposures.

A joint **AGS-AIPG Centennial Tour** led by ASU geology professor, Stephen Reynolds, will be held on **Saturday, November 10<sup>th</sup>**. The tour will focus on urban geology seen in the Phoenix basin.

More details to follow on both trips in the newsletter and posted on the AGS website.

#### 48th Annual Forum on the Geology of Industrial Minerals

The Arizona Geological Society will co-host the 48th Annual Forum on the Geology of Industrial Minerals with the Arizona Geological Survey, Arizona Rock Products Association, and the Arizona Mining Association. The event will take place on May 1-5, 2012 in Scottsdale at the Scottsdale Cottonwoods Resort and Suites. The annual forum is generally field-trip oriented, and this year will be no exception.

Full registration for the 3-day conference is \$250. Go to <http://geologyofindustrialminerals.org> for more information and to register online.



*AGS is seeking sponsors for our monthly dinner meetings. Sponsorship helps to offset costs and is a great way to get the word out about your company or organization. For more information, please contact AGS VP of Marketing, Ann Pattison.*

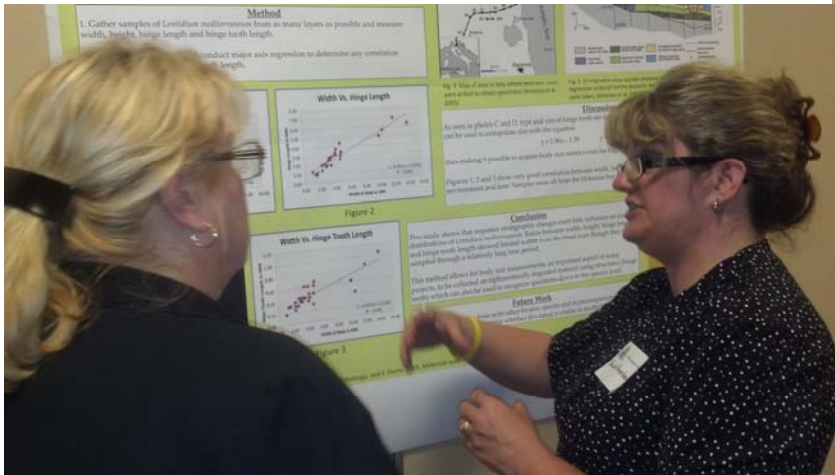
### Grand Canyon Geology Raft Trip—2013

Alison Jones is leading another Grand Canyon Geology Raft trip on July 29-August 5, 2013. The outfitter, Hatch River Expeditions will guide the inflatable, motorized rafts from Lee's Ferry to Whitmore Wash during the 8 day trip. The \$2950 cost includes guide books, hotel the night before launching, all meals and camping equipment, helicopter flight out of the canyon on the last day, and plane flight back to Marble Canyon or Las Vegas. Participants will get an up close look at the geology, from the Precambrian Vishnu Shist to modern landslides, debris flows, and lava flows. We will be hiking and swimming every day, surrounded by the most spectacular scenery on Earth! The 2011 trip was a huge success, thanks to many AGS participants. Although the trip is geology-oriented, it is NOT just a trip for geologists. Please call Alison at 520-622-3222 or email her at [ajones@clearcreekassociates.com](mailto:ajones@clearcreekassociates.com) for more information.

Below: Rachel Feuerbach (right) discusses her poster presentation with Greta Orris at the April dinner meeting. Rachel's poster was titled, "Does size matter? A comparison of body size with length of hinged teeth in *Lentidium mediterraneum*."



Above: AGS President Jeff Cornoyer presents a plaque to Greta Orris at the April dinner meeting in appreciation of her service as AGS President in 2011.



**2012 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: \_\_\_\_\_

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**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.