



AGS NEWSLETTER

ARIZONA GEOLOGICAL SOCIETY, INC., TUCSON, ARIZONA

May 2008

MAY 6, 2008 DINNER MEETING

Adam Schwarz, Resolution Copper Company

Geology of the Resolution porphyry copper-moly system

ABSTRACT—The Resolution deposit is a large porphyry Cu-Mo system of Laramide age located below a minimum of 1000m of post-mineral cover in the Superior (Pioneer) district of Arizona. The deposit was discovered in 1996 by underground drilling from workings of the Magma Mine during exploration for vein-style mineralization. Drilling to date indicates a world-class Cu deposit at depths of 1500m to 2000m below surface. Host rocks of the deposit are varied and comprise: Proterozoic siliciclastic, carbonate, and mafic intrusive rocks, Paleozoic carbonates, a structurally bound sequence of Late Cretaceous sedimentary and volcanic rocks, and Laramide aged breccias and felsic porphyritic intrusions (.65ma) apparently related to the hydrothermal fluids responsible for hypogene sulfide deposition. Several faults with >200m displacement on stratigraphy are present within the area of the deposit, but the bulk of movement is apparently pre-mineral and does not offset mineralization. Hypogene alteration characteristics of the deposit include early potassic and propylitic alteration, as well as skarn development in carbonate rocks, which has been variably overprinted by white phyllosilicate, advanced argillic and skarn destructive alteration. Sulfide mineralization includes abundant early molybdenite, followed by chal-copyrite-pyrite and high sulfidation chalcocite/digenite-bornite-pyrite hypogene enrichment. Supergene effects include a well preserved paleo leached cap, locally >250m thick, which was developed prior to post-mineral clastic and volcanic rock deposition. The Resolution system is low in arsenic and high

in fluorine which is typically hosted in topaz and fluorite found associated with advanced argillic alteration. The Resolution project is currently in pre-feasibility and presents many challenges in drilling and geological/ geotechnical characterization essential for safe, efficient and profitable mine design and development.

2008 CALENDAR OF EVENTS

- | | |
|---------|--|
| 6/3/08 | Mark Myers , Director, USGS: <i>Topic to be determined</i> |
| 7/1/08 | Steve Enders , Newmont, <i>Bridging the gaps in exploration and mining opportunities for research and development across the life cycle of an ore deposit</i> |
| 8/5/08 | Dick Heermance , USGS: <i>Terrace formation and climate change in southern California</i> |
| 9/2/08 | Alyson Thibodeau , UA: <i>The strange case of the earliest extraction of silver by European colonists in the new world</i> |
| 10/7/08 | Mark Barton , UA: <i>Iron oxide copper gold deposits: A Cordilleran perspective</i> |

Dinner Meeting Information — InnSuites, 475 North Granada, Tucson

To reserve your place for dinner, call 520-663-5295 before 5 pm, Thursday, May 1, 2008.

AGS CAN NO LONGER GUARANTEE DINNER SEATING FOR THOSE WHO SHOW UP WITHOUT A RESERVATION.

Cost: Members \$24, Guests \$27 Students \$10 (+\$3 for late registration)
Cash Bar @ 6 pm Dinner @ 7 pm Talk @ 8 pm

For dinner selection, indicate if a low-salt or vegetarian meal is required. Please cancel if you are unable to attend.

AIPG HONORS LEE ALLISON

Dr. Lee Allison, Director of the Arizona Geological Survey and President of the Arizona Geological Society, has been selected as recipient of the John T. Galey, Sr., memorial Public Service Award by the American Institute of Professional Geologist. The awards ceremony will be held on Tuesday, September 23, 2008 at the Museum of Northern Arizona, Flagstaff.

AGS BEST GEODAZE POSTER AWARDED

AGS is pleased to announce that Lisa Molofsky won the \$1,000 AGS award for Best GeoDaze Poster. Her poster was entitled, "Application of U-Pb Geochronology to Questions in Old World Archaeology." This AGS special award was given to the student with the best poster at the recent GeoDaze symposium.

POSITIONS AVAILABLE FOR SUMMER

The AWG Foundation, Association for Women Geoscientists, will again be sponsoring the Geoscientist-in-the-Parks project. The project, designed for experienced graduate students or professionals has three positions available for the 2008 program. Please review requirements on the AWG web site: www.awg.org/.

Application deadline is April 30, 2008

International Conference on Rock Joints
and Jointed Rock Masses
January 4-11, 2009
Tucson, Arizona
www.jointedrock2009.org

Abstract deadline is April 30, 2008

IN MEMORIUM

It is with great sadness that AGS reports the death of Vernon DeRuyters on March 24th, after a 7-year battle with cancer. The Society extends our sincere condolences to his family.

GSN Symposium

May 14–22, 2010, Sparks, NV
Great Basin Evolution and Metallogeny
Co-sponsored by AGS

Please make your dinner-meeting
reservation BEFORE
Thursday, May 1, 2008.
Call 520-663-5295 today!

Announcements

Catalina Metamorphic Core Complex

AGS SPRING FIELD TRIP #2

SATURDAY, April 26, 2008

Leader: Jon Spencer, Arizona Geological Survey

This field trip will begin at 8:00 AM and end at about 3:00 PM. The trip will consist of three stops along the Catalina Highway. High clearance vehicles are NOT needed, and parking will be at designated parking lots. The focus of the trip will be the structural geology of the mylonitic fabrics that have overprint the granitic and gneissic rocks in the range, and the tectonics of uplift of southern Arizona's biggest metamorphic core complex. Special attention will be paid to sense-of-shear indicators.

There will be a **\$10.00** charge for a full-color, bound guidebook. Please respond as soon as possible to Rich Brown so he can add your name to the list. He will stop taking names **APRIL 23rd** in order to get the correct number of guide books printed.

...rbrown@clearcreekassociates.com

FIELD TRIP AGENDA

(times are approximate)

- Breakfast on your own (not included with field trip).
- **8:00 AM:** Depart from Le Buzz Cafe at the shopping center at the northeast corner of Catalina Hwy & Tanque Verde Rd.
- **8:15 AM:** Arrive at Babad Do'ag trail head (elev. ~3600 feet [1100 m]) on Catalina Hwy; begin short walk and examination of mylonitic granitoids, mylonitic quartz veins, and top-SW shear-sense indicators.
- **10:00 AM:** Depart Babad Do'ag; drive on Catalina Hwy to Prison Camp trail head.
- **10:15 AM:** Arrive at Prison Camp trailhead (elev. ~4840 feet [1470 m] (U.S. Forest Service restrooms are located here); begin walk and examination of mylonitic granitoids and top-NE shear-sense indicators (about 1 mile walk and perhaps 200 feet vertical ascent, with a couple hundred yards of off-trail walking – light hiking boots are good!)
- **12:30 PM:** Eat lunch at Prison Camp trail head (Bring your lunch and plenty of water. Lunch is not provided by AGS).
- **1:30 PM:** Depart Prison Camp trail head; drive on Catalina Hwy to Geology Overlook.
- **2:00 PM:** Arrive at Geology Overlook (elev. ~6700 feet [2040 m]); discuss lineation-parallel drainages, Tucson basin geology, and regional tectonics. Enjoy the view.
- **2:30 PM:** Depart Geology Overlook; arrive at Le Buzz about 3:00.

THE PRESIDENT'S COLUMN

BY LEE ALLISON

lee.allison@azgs.az.gov

Debates over Mining

The Arizona Geological Society formed 60 years ago, mostly by mining geologists, and the mining emphasis still runs strong in the organization. AGS runs geologic field trips and symposia, holds monthly dinner meetings with technical talks, and publishes highly-regarded scientific books with a strong bent towards mining topics. A key part of the AGS mission is to promote and support the profession of geology in Arizona. So, in the past few weeks, we have started posting materials on the AGS web site (arizonageologicalsoc.org) about the political fight over uranium mining in the Kaibab National Forest in northern Arizona.

AGS members are engaged in a variety of fields of endeavor, including resource development and environmental protection. The debate over uranium mining is just one of a number of similar controversies around the state that could have profound affect on the careers of our members and the next generation of geologists.

The Congressional hearing in Flagstaff on March 18 about exploration drilling for uranium, offered oral testimony and accepted written testimony, but my experience is that it becomes difficult to impossible to find those materials afterwards. So, after seeing copies of some of the testimony circulating by email, we started gathering everything we could find, including newspaper reports, letters, and links to groups that have taken positions.

Our webmaster, Greta Orris, is doing a fantastic job in quickly posting this information on the AGS website, in an easily-readable format. It's the only place where you can find such a broad collection of resources. I invite all our members to forward other materials that you find about the issue that we can add to our online collection.

AGS Executive Committee Revises Bylaws

The AGS Executive Committee completed a review of the society Bylaws on April 16 and is soliciting member comments on the proposed revisions. The society last updated the Bylaws in 2000.

A summary of the proposed revisions can be viewed on the AGS web site and is provided below. Comments will be accepted by AGS Councilor Cori Hoag (choag@srk.com or 520-544-3688) until the close of business on April 23.

SUMMARY OF MAJOR CHANGES

Article II Item 5. Election and Terms of Office

Currently, the Executive Committee is elected by the members who are present at the September dinner meeting. An electronic ballot is proposed to be made available on the web site to allow voting by those members who wish to vote but who cannot be present at the meeting. Electronic ballots would be accepted until the close of business on the Friday before the meeting.

Article III Meetings of the Executive Committee Item 3. Quorum
If the transaction of business requires approval prior to the next Regular or Special meeting, the transaction may be approved by electronic mail. A majority of the members of the Executive Committee shall constitute a quorum for the transaction of business by electronic mail.

Article IX Members Item 2. Classes of Members

Two new classes of members were added - Honorary Life Members and 50-Year Members.

Article X Committees 1.1 Investment Committee

The Executive Committee may appoint an alternate member who has full power and responsibility of the member they replace or represent.

Article XI General Item 2. Lobbying

New text to clarify AGS role with regard to proposed legislation or regulations that may impact the Society.

Copies of the By Laws with proposed changes also will be provided at the dinner meeting on May 6 when the membership will be asked to approve the changes.

How Long Have You Been a Member of AGS?

The Executive Committee is asking all AGS members to 'fess up to when they joined the Society. There are two reasons for the request. First, the Committee is looking for members with 40+ years so it can offer them free membership (which, of course, they are under no obligation to accept). Second, by knowing the date that each member joined the AGS, the Executive Committee can offer free membership 30 years from now to those who joined 10 years ago—or free membership 35 years from now to those who joined 5 years ago. You get the idea. (It's not likely to be the same Executive Committee that does the offering, however.) Members who joined AGS in the past 4 years have had their inauguration date included with their other membership information so they don't need to respond to this plea. Please send the year you joined AGS to the AGS Secretary, Claudia Stone (cstone@srk.com).



ARIZONA GEOLOGICAL SOCIETY

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FOR INFORMATION
ABOUT THE
ARIZONA GEOLOGICAL SOCIETY
AND UPCOMING EVENTS
VISIT OUR WEBSITE
www.arizonageologicalsoc.org

AGS books and maps are sold at the monthly
dinner meeting and by the
Arizona Geological Survey. Visit the
AZGS website www.azgs.state.az.us
and click on Non-AZGS Publications



As always, please keep us up to date as you move, change jobs, or change your e-mail address.

2008 AGS MEMBERSHIP APPLICATION OR RENEWAL FORM

Please mail check with membership form to: Arizona Geological Society, P.O. Box 40952, Tucson, AZ 85717. Dues (circle one): 1 year: \$20; 2 years: \$35; 3 years: \$50. (Full-time students receive free membership. The newsletter is by e-mail only, and a membership application form must be returned to AGS annually to remain on the membership list.)



Name: _____

Position: _____

Company: _____

Mailing Address: _____

Street City State Zip Code

Work Phone: _____ Home Phone: _____

Fax Number: _____ Cellular Phone: _____

E-Mail: _____

Please send the newsletter by e-mail only by regular mail only by e-mail AND regular mail

If registered geologist or engineer, indicate registration number and state: _____

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