

Inland Geological Society

January 2014

Newsletter of the Inland Geological Society

Volume 30 No. 1

This Meeting:
Thursday,
January 9th

Time:
Social: 6:00pm
Dinner: 6:30pm
Lecture: 7:00pm

Location:
LSA Associates
1500 Iowa Ave
Suite 200
Riverside, CA
92507
(Map on Pg. 4)

Coming to
Dinner?
Please RSVP:
By Monday 1/6
(951) 784-2168
dixie.lass@att.net

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January Speaker:

Christina Velaquez

Engineering Geologist, Lahontan Regional Water Quality Control Board,
Victorville, CA

Geochemical Classification of Placer and Lode Gold Deposits within the Northern Dome Rock Mountains of the Quartzsite Mining District, AZ

Abstract

Gold from the Quartzsite Mining District, Arizona has a variety of unique geochemical and mineral inclusion signatures that facilitate a study of the placer gold provenance. Between 2008 and 2010, samples of placer gold and associated heavy minerals were recovered from locations around the district using a vibro-static dry washer. An estimate of placer grade, based upon recovery rate, was made at each location. Placer gold grains were separated from the “black sand” heavy minerals, photographed, and mounted in one-inch epoxy rounds for elemental analysis. Electron backscatter images show that many of the gold grains have silver-depleted rims, likely a result of weathering and leaching of silver from the outer surface of the grains. Geochemical analysis of both placer and lode gold determined that unique populations have elevated amounts of

(Continued on page 2)

tellurium, tungsten, and bismuth. The combinations of these elements can be used as a “classification” to link placer gold to probable lode sources. Placer gold grains were also observed to contain mineral inclusions of unusual tellurium, tungsten, and bismuth minerals that are also characteristic of specific lode deposits. Rare inclusions of brittle and readily oxidized minerals within the placer gold grains suggest that the native gold formed within a hydrothermal lode source at medium to high temperatures, and suggests that the specific chemistry of the gold may be used to classify the original lode source. This study shows that the use of geochemistry and specific inclusions as tracers can provide some information on potential lode sources for the placer gold in this district.

Biography:

Christina Velasquez holds undergraduate and graduate degrees in Geology and Environmental Geology from California State University, San Bernardino. She has been with the Lahontan Regional Water Quality Control Board (LRWQCB) since August 2013; prior to that she was with AECOM Technical Services, Inc. As a consultant, Christina gained experience in construction management, surface water and groundwater investigations. As an Engineering Geologist with the LRWQCB, Christina works on military and private cleanup sites.

**The 28th Annual Desert Symposium
Environmental Monitoring and Reconstruction:
Linking Causes and Biological Consequences**

Information/Call for Papers/Registration

April 18-21, 2014 at the Desert Studies Center, Zzyzx, California

Abstracts & Posters: 15 minute presentations in geology, paleontology, geomorphology, anthropology, archaeology, botany, ecology, zoology, history and multidisciplinary studies in or related to the California deserts and surrounding provinces. Abstract and paper form information can be found at <http://biology.fullerton.edu/dsc/pdf/papersubmission.pdf>

Abstracts are due by January 30, 2014. Send your contributions to Bob Reynolds (rreynolds220@verizon.net) as an MS Word attachment to your e-mail. Abstracts will be reviewed. Abstracts for poster presentations will be published after review, but are not required.

Student Awards: The Bob and Bobbe Adams Student Research Paper/Poster award is presented to the outstanding student presentation or poster (undergraduate/graduate students). The presentation must be a student as first author paper or poster. A cash award of \$50 is presented at the banquet.

Registration: Registration must be received by Friday, April 11, 2014. Visit <http://biology.fullerton.edu/dsc/school/symposium.html> for more information.

Upcoming Meetings/Events

Rock & Gem Shows—Various locations

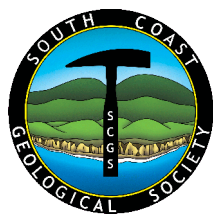
Various rock and mineral shows will be throughout So. California. To find one near you, visit www.rockngem.com/showdates.asp

AEG—So. California Chapter Meeting



The meeting details for the next meetings for the AEG-Southern California Chapter and the Inland Empire Chapter are to be announced. For more info., visit the So. California Chapter at www.aegsc.org/calendar/ and the Inland Empire Chapter at their site at www.aegsc.org/chapters/inlandempire/.

South Coast Geological Society Meeting



Antony Martin, P.G.P. will be presenting a talk on the "Application of Surface and Borehole Shear Wave Geophysical Techniques to Engineering Investigations" on Monday, January 6, 2014 at the Club DoubleTree Hotel in Santa Ana, CA. For more info., visit them on Facebook and www.southcoastgeo.org.

Los Angeles Basin Geological Society



The LABGS generally holds their monthly meetings on the 4th Thursday of each month (there will be no December meeting). Visit their website for the future meetings (www.labgs.org).

GRA Conference

Groundwater Resources Association of California will be having their GRA Conference on Groundwater Issues and Water Management in Sacramento, CA on March 4-5, 2014. For more info, visit www.grac.org/

28th Annual Desert Symposium

The 2014 Desert Symposium will be at the Desert Studies Center in Zzyzx, CA on April 18-21, 2014. For more info, visit <http://biology.fullerton.edu/dsc/school/symposium.html>

IGS Meeting Schedule

February 6, 2014 (Thursday)
CSUSB Geology Department-Joint Meeting (IGS-SME-AEG)

March 5, 2014 (Wednesday)
Robert G. Taylor, USFS
US Forest Service Burned Area Emergency Response (BAER) Program using Local 2013 Fire (Hathaway and Mountain) Examples

April 9, 2014 (Wednesday)
Dr. Rufus D. Catchings, USGS
USGS Open-File Report 2008-1197—Structure of the San Bernardino Basin Along Two Seismic Transects: Rialto-Colton Fault to the San Andreas Fault and Along the I-215 Freeway (I-10 to SR30)

May 1, 2014 (Thursday)
Ian Gilbert, Student at UCR
Microfossils of the Middle Cambrian

June 4, 2014 (Wednesday)
Bob Reynolds, Retired
San Timoteo Canyon—Huge Bonanza and the Geologic Implications



SDAG's January meeting will be on Wednesday, January 15, 2014. For more info, visit www.sandiegogeologists.org

IGS MEETING LOCATION:

LSA Associates, Inc.
1500 Iowa Ave, Suite 200
Riverside, CA 92507

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