



GEOLOGICAL SOCIETY OF NEVADA NEWSLETTER

Geological Society of Nevada, 2175 Raggio Parkway, Room 107, Reno, NV 89512
(775) 323-3500 - Hours Tuesday -- Friday, 8 a.m. to 3 p.m. Monday by appointment.
Website: www.gsnv.org • E-mail: gsn@gsnv.org



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CALENDAR OF GSN EVENTS

NO MEETING THIS MONTH! **SO. NEVADA CHAPTER MEETING**

There will NOT be a regular monthly meeting in Las Vegas this week. However Chapter President, Paul Dockweiler has been working hard to put together the So. Nevada Chapter field trip to Clayton Valley lithium deposits and to the Sump area on November 3-5, 2017. Registration is closed for the trip.

Nov. 9, 2017
THURSDAY

Joint Meeting!

WINNEMUCCA & ELKO JOINT CHAPTER MEETING *in Battle Mountain!!*

This 5th annual joint Chapter meeting will be held at the **Battle Mountain Civic Center**, 625 S. Broad St., Battle Mountain NV. Refreshments at 6:30 pm, Talk at 7:30 pm. **Speaker: Simon Jowitt, UNLV Geoscience Professor. Title: "Golden LIPs: Links between Large Igneous Province events and gold Metallogeny"**. **Food, Drinks and Busses Sponsored by: NEWMONT MINING & BARRICK GOLD.** For more info please contact Mark Travis in Elko, mark.william.travis@gmail.com or Matt Fithian in Winnemucca, Matthew.Fithian@ssrmining.com. Details and abstract on page 6.

Nov. 17, 2017
FRIDAY

GSN MEMBERSHIP MEETING (3rd Friday of the month)

The GSN meeting will be held at the Reno Elks Lodge, 597 Kumle Lane, Reno, Nevada. **Social hour begins at 6 pm, Dinner at 7 pm and talk at 7:45 pm.** **Speaker E. Max Baker, Integra Resources Corp. Title: "The DeLamar – Florida Mountain Silver-Gold Epithermal Deposits."** **Drinks Sponsored by ENVIROTECH DRILLING!** Please make dinner reservations with Laura Ruud at: gsn@gsnv.org or call 775-323-3500. Details and abstract on page 3.

Dec. 13, 2017
WEDNESDAY



GSN CHRISTMAS MEETING!

SAVE THE DATE FOR THE GSN CHRISTMAS MEETING, SILENT AUCTION & RAFFLE!! PLEASE DONATE RAFFLE & AUCTION ITEMS TODAY!

The GSN's annual Christmas meeting and Foundation Fundraiser will be held at the Nugget Casino Resort, Sparks, Nevada. **Speaker & Topic to be Announced.** Please make reservations for dinner with Laura Ruud, by emailing gsn@gsnv.org. 775-323-3500. Other Christmas meetings are: Winnemucca—Tuesday, December 12th and Elko, Friday, December 15th.



G.S.N. NOVEMBER SPONSOR!

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FROM THE PRESIDENT
J. Kelly Cluer, GSN President 2017-2018
NOVEMBER 2017

Dear GSN Members:

My summer has been high in chaos. I've missed issuing several President's Messages, but the good news is we've discovered that the Newsletter goes on without them. Thanks Laura!

Christy and I especially want to thank all of the fine GSN members who sent letters, cards and parcels to our grandson Sammy - you all made his last days more tolerable and even enjoyable.

In August we were treated to a fantastic Summer Silver Series lecture by Diane Garrett of Wellgreen Platinum. Diane gave some important insights into the success strategy and tactics for a junior explorer. My take-aways were: integrity, integrity, integrity (i.e. be open and honest with all stake holders and do what you say you're going to do). As per high expectations, Dan Kappes provided the lovely venue and excellent BBQ, and all the other potluck items brought by many members were excellent - it was a first-rate event by all accounts. Thanks Dan and Diane!

More recently we have been honored by inducting two more Nevada super geos into the Honorary Member club: D.D. LaPointe and Jon Price. I can't think of two more deserving individuals to attain this status, both generously helping GSN and indeed many other geo-societal causes. Congratulations!

While work travel and family have taken me out of the loop for significant time, the entire GSN Executive Committee has risen to the occasion and pulled together the last two monthly dinner meetings and arranged speakers on short notice, their work is sincerely appreciated - thank you Steve, Alan, Richard and Laura. I also want to especially thank Jon Price and Richard Bedell for quickly jumping in and giving the monthly dinner meeting talks for September and October, respectively. It's good to be surrounded by people who without hesitation do whatever is needed to keep the society functioning.

Your VP Richard Bedell has been in full-on GSN mode, having just completed the Fall Field Trip "Shallow expressions of Carlin systems" with co-leader Mike Ressel. Bob Morrell, Craig Mach and Jim Essman provided access to and key information at the major stops. Though I didn't get to attend, I've heard excellent feedback. Thanks to all the geos and their respective employers for organizing yet another successful GSN field trip!

For November we have Max Baker lined up to give the first public talk on DeLamar (yup, that one up in Idaho) in two generations; you don't want to miss this one. This is a particularly fine occasion for me as this asset has been moth-balled in the Kinross mine closure group for decades, but is now emerging as an exciting new exploration play.

I'm looking forward to continue serving you this 2017-2018 season and hope if you have any concerns or suggestions about the way we are doing things that you'll give me some direct feedback.

J. Kelly Cluer



Figure 1. Diane Garrett speaking at the 2017 Summer Silver Series event at Dan Kappes' residence, Reno

**The G.S.N. wishes to thank
RUEN DRILLING for sponsoring
the October meeting in Reno!**



GSN MEMBERSHIP MEETING - NOVEMBER 17, 2017



SPEAKER: E. MAX BAKER, INTEGRA RESOURCES CORP.

TOPIC: THE DELAMAR-FLORIDA MOUNTAIN SILVER-GOLD EPITHERMAL DEPOSITS

Social Hour begins @ 6:00 pm; Dinner @ 7:00 pm;

Speaker to Follow @ 7:45 pm

Location: RENO ELKS LODGE, 597 KUMLE LANE (across from the Convention Center)

DINNER COST—\$25.00 per person.

(You will be invoiced if you do not cancel your reservation)

For dinner reservations, please e-mail gsn@gsnv.org or call 775-323-3500

Reservations due by MIDNIGHT on WEDNESDAY, NOVEMBER 15, 2017



The DeLamar – Florida Mountain Silver-Gold Epithermal Deposits

E. Max Baker, Integra Resources Corp.

ABSTRACT:

The first discovery of gold in the Owyhee Mountains was gold placers along Jordan Creek, between Florida Mountain and DeLamar in 1863 by Michael Jordan and his team who were looking for the mythical Blue Bucket placers. In that same year prospectors followed the Jordan Creek placers upstream to War Eagle Mountain missing the outcropping lodes at DeLamar and Florida Mountain. By December of the following year, assays from vein material running \$2,800 in gold and \$7,000 in silver per ton were being reported far surpassing those of the Comstock Lode at that time. Owyhee now joined South Boise as a quartz (precious metal hosting?) area of unbelievable possibilities. After these rich lode discoveries, the district erupted into a period of frantic activity accompanied by so much violence and disorder that federal troops were called in to quell the disturbances in what were referred to as the Owyhee Wars. In February 1868, miners at the Golden Chariot broke into the stopes of Ida Elmore mine, precipitating an armed conflict which by March had escalated into heavy gun fire underground, with support being called in from Nevada with up to 100 armed men being involved in the underground battle. When news reached the Idaho Governor, a deputy Marshall and a number of Indian Fighters were dispatched to settle the dispute, which also included some drunken brawls and attempted lynchings. In March of 1875 a rush to a great new lode discovery at Florida Mountain, in part due to an astonishing \$9,425 per ton assay, led to the development by Joseph R. DeLamar of what eventually became Idaho's largest silver producer outside of the Coeur d'Alene region. Over the next decade the focus of hard rock mining shifted from the small high-grade mines of War Eagle to the larger lodes at Florida Mountain and DeLamar.

Captain DeLamar stowed away on a ship at age six in 1849, after his father a banker in Amsterdam had died. DeLamar worked as a seaman until the age of 20 when he became master of a ship and three years later received a captain's command and later become a submarine contractor during the Civil War. In 1878 DeLamar was struck by mining fever and purchased claims in Leadville, Colorado making a handsome profit which he used to gain control of veins in the DeLamar – Florida Mountain region. Later he sold a half interest for \$2 million to the DeLamar Mining Company of England, subsequently turning his attention to Cripple Creek and eventually Bingham Canyon and Yerington and after that to Sudbury where he organized the International Nickel Company (Inco). His next move was to the Porcupine district in Canada where he became president of Dome Mines Company, becoming one of the wealthiest men in America.

Waldemar Lindgren, one of the fathers of economic geology, visited Florida Mountain and DeLamar in the late 1890s writing an extensive USGS report on the district. He noted that many of the features recognized on site as being typical of low-sulfidation epithermal deposits today including pseudomorphic laminar quartz, adularia and the fissure fill-style mineralization within volcanic flows. It is tempting to speculate that his time at DeLamar and Florida Mountain led him to recognize the shallow-level setting for this mineralization, probably triggering the recognition that deposits could be classified in part by their level of formation. The high-grade underground mines at DeLamar and Florida Mountain finally closed in the early 1900s however by this time they had produced an aggregate of 733,000 ounces of gold and 57 million ounces of silver. The cut-off for these underground mines was reportedly >1/2 oz/t Au, and potential remains for the further exploitation of the earlier mined veins and additional high-grade vein zones which were intersected by drilling for shallow open-pit resources between the mid 1970s to 2000.

(Continued on page 5)

“FACES OF GSN”

MATT FITHIAN

My story begins on a terminal moraine, formed by a glacier’s retreat north approximately 22,000 years ago. The mass of till, which now forms an island protruding 118 miles into the Atlantic, is where my ancestors unpacked their belongings in 1639. For the last 378 years and 12 generations before me, my family has remained in the same village on the east end of Long Island, New York. I grew up on the water, baiting crabs with cracked mussels or chicken heads tied to string. A descendant of baymen and whalers, geology was not a discipline destined for a Bonacker.

But ever since I can recall, I’ve had a curiosity for the world we live on, and the beach was the perfect place to explore. “Where do you think this rock came from? Let’s see how deep we can dig here. Wow, that one looks neat! I wonder what this one is called?” I’m sure almost everyone reading this has asked similar questions at some point in their childhood.



Mining at the Herkimer diamond mine in New York. I’m on the far right, next to my brother Dan and cousins Sam and Griffin. Clearly sometime in the mid-90’s.

These questions probably would have remained mere curiosities, however, circumstance forced my move to Colorado when I was 15 years old. Being new to this beautiful and foreign terrain, I decided there was no need to leave to continue my education. I graduated from the University of Colorado at Boulder, where I spent 4 summers as a geotech with Zonge swinging sledgehammers and dragging a variety of wires throughout the brush of the western U.S.



Fishing on the Kipchuk River, Alaska, during a day off while working with Zonge.

After graduation, I accepted an internship with Antero Resources, an oil and gas company based in Denver. I never had a profound interest in the business, but it was exactly what I needed after 8 months of living in my (Cont. on page 5)

(Fithian, cont. from page 4)

in-laws' basement searching for my first job as a geologist. The Antero folk were good to me, and even allowed me to work half days so I could attend class after I decided to pursue my Master's degree at the Colorado School of Mines.

Despite a \$211/oz plummet in gold price the week my thesis proposal was submitted, I was lucky enough to get my research at the Marigold mine funded by Goldcorp. I moved my family to Nevada two weeks before Christmas in 2014, taking Jim Carver up on his offer to work at Marigold on a one-year contract as I finished the final edits on my thesis. That year was a difficult one, trying to prove my worth in the face of an uncertain future. When Jim came to me looking for a new idea, I said I wanted to drill through an old waste dump to test a structural feature identified by modeling the Valmy surface. The first hole returned 230' of 0.019 opt. Then 180' of 0.056 opt. Then 250' of 0.072 opt. With about 8 weeks left on my contract, Jim approached me in the back room of the Martin after a GSN meeting and said something along the lines of, "Oh, did I ever tell you that you've got a full time job at Marigold?" No, no Jim, you forgot to mention that! I'm pretty sure he just likes to make the young bucks squirm...

That little structural feature we drilled in 2015 is now know as the HideOut deposit, and is my proudest professional accomplishment to date. I've been working at Marigold for 3 years now, and am thankful for the supportive, challenging, and undoubtedly creative exploration team we have there. Perhaps the luck that has gotten me to this point was not luck at all, but the cumulative product of confidence in a relative stranger.

My wife, Katie, and I with our two dogs Floyd and Vector enjoying the Ruby Mountains



(Editor's Note: Matt is currently serving as the GSN Winnemucca Chapter President and was VP last year!)



(Baker Abstract, cont. from page 3)

Open Pit mining along with a 3,000 tpd Agitated Leach Mill was initiated at DeLamar in 1977 by Earth Resource Corporation. In 1981 Earth Resource Corp. was acquired by Mid Atlantic Petroleum Company (MAPCO) and in 1984 and 1985 NERCO Mineral Company successfully acquired a 100% interest in the operation. NERCO was then purchased by Kennecott Copper Corporation in 1993 and two months later Kennecott sold its 100% interest in the DeLamar mine to Kinross, Kinross continued to operate the mine until 1999, when it was closed due to low precious metal prices. The open-pit operation produced 874,500 ounces of gold and 50 million ounces of silver at an average grade of 1.2g/t Au and +75g/t Ag. Mine closure activities commenced in 2003 and was nearly completed by 2014. In November of this year, Kinross sold 100% interest in the DeLamar mine to Integra Resources Corp.

GSN WINNEMUCCA & ELKO CHAPTERS' JOINT MEETING!

THURSDAY NOVEMBER 9, 2017

Location: The Battle Mountain Civic Center,

Time: 6:00 p.m.—Drinks; Food served at 7:30 p.m.—Talk @ 8 p.m.

Speaker: Simon Jowitt, Professor, UNLV Dept. of Geoscience

Title: “Golden LIPs: Links between Large Igneous Province events and gold Metallogeny”

Food and Drinks Sponsored by:



Abstract:

Golden LIPs: Links between Large Igneous Province events and gold metallogeny

Dr. Simon Jowitt, Assistant Professor, Department of Geoscience, University of Nevada Las Vegas

Simon.jowitt@unlv.edu

Large Igneous Provinces (LIPs) represent large volume ($>0.1 \text{ Mkm}^3$; frequently above $>1 \text{ Mkm}^3$), mainly mafic (-ultramafic) magmatic events of intraplate affinity that occur in both continental and oceanic settings and are typically of short duration ($<1 \text{ myr}$) or consist of multiple short pulses over a maximum of a few 10s of myr. LIP events are associated with a wide variety of different mineralizing events associated with the formation of gold-bearing and gold-only deposits that can be condensed into four different relationships:

- (1) Gold mineralization associated with magmatic systems and the formation of orthomagmatic Ni-Cu-PGE sulfides.
- (2) Gold deposits formed as a result of LIP magmas providing energy, fluids, and/or metals to hydrothermal systems, including the formation of iron oxide-copper-gold (IOCG) and volcanogenic massive sulfide (VMS) deposits.
- (3) LIP rocks (particularly sills and dykes) that act as barriers to hydrothermal fluid flow and/or as reaction zones that control mineralizing events (e.g. during the formation of orogenic-type Au deposits).
- (4) Indirect links between LIPs and Au deposits, where major continental breakup events linked to LIPs and distal compression and transpression in the plate tectonic circuit can lead to the formation of orogeny-related Au deposits. In addition, large volume/ short duration LIP events can generate 'barcode' records for Precambrian supercontinental reconstructions, enabling the tracing of gold metallogenic belts between presently separated, but formerly contiguous crustal blocks.

Geological Society of Nevada, Elko Chapter:

SCHOLARSHIP OPPORTUNITY



WHO: This opportunity is for any graduate or undergraduate student who intends to pursue or is currently involved with a research topic related to Nevada geology or regionally related to Nevada geology.

WHAT: The successful applicant will be awarded a tuition scholarship in an amount between \$500 - \$1,500 depending on tuition needs.

WHEN: We will be awarding this tuition scholarship for the 2018 spring semester with a submission deadline of **January 31st, 2018**.

WHERE: Any undergraduate or graduate student with a project that involves Nevada-related geology is eligible to apply for this tuition assistance. Preference will be given to economic geology associated projects within Northern Nevada, but this is not necessary.

WHY: The successful applicant upon completion of their research will be invited give back to GSN Elko in the form of a technical presentation at one of our regularly scheduled meetings to present your research.

HOW: Please submit an application to GSN Elko Executive Committee via mail, email, or online and you will be contacted as opportunities are formalized.

Applications can be found on-line here: <http://gsnv.org/chapters/elko.php>

For more details or to send in applications:
GSN Elko Exec. Comm.
P.O. Box 2591
Elko, NV 89803-2591

Or email –
Chelsea Raley, Secretary
craley@barrick.com



Fall 2017 Field Trip Review

Shallow Expression of Carlin-Type Systems, Alligator Ridge and Emigrant Mine, Nevada

Richard Bedell and Mike Ressel co-leaders

The shallow expression of Carlin systems is not a new topic but I was inspired by Mike Ressel et al's. 2015 GSN Symposium paper on the subject and subsequent presentations by Elizabeth Hollingsworth PhD. work ongoing at UNR through the CREG Program. The more we study Carlin systems the more different they become and different deposit models begin to morph. Models are not static but tools we use to explore and understand these complex systems. It is the hope of this field trip to continue to broaden our understanding of Carlin-like systems.

Oct. 13 head to Eureka Nevada with dinner (Outstanding grilled salmon and tri tip at the Owl Club) and a lecture from Bob Morrell from Kinross on Alligator Ridge.

Oct. 14 went to Alligator Ridge where Nutt and Hofstra (2003) have demonstrated shallow features related to this mineralization and Kinross is actively exploring to expand the resource. Bob Morrell led the tour. John Churchill gave a fantastic review of the first drilling by Amselco on the way.

A sideline of the day was looking at regional tectonics. As a newbie to Nevada in 1993, having work in thrust terranes, I was immediately struck by the thrust tectonic features and then the subsequent extension that opened up these originally compressional structures, many of which host Carlin-type deposits. This was well documented by Muntean et al. (2007) and I expect continued exploration and development will find more examples.

Although this trip focused on the shallow expression, the location of these systems is in part related to very deep penetrative structures. Extensional structural inversion begins in the mantle as flat shears and propagate upwards into listric faults well documented in the Basin and Range. The regional overview will consider some of these features and how this regional architecture might play a role.

Dinner in Eureka (again the Owl Club) followed by a lecture on updated data on the shallow expression of Carlin Systems, particularly in the Pinion Range by Mike Ressel.

Oct. 15 Headed up to Carlin and took the Rain Mine road into Emigrant Mine owned by Newmont. Jim Essman and P.J. Shumway from Newmont Mining led the group. The last outcrop adjacent to the Emigrant Pit was the Rosetta stone. Looking at highly altered and lightly mineralized base of the Eocene Elko Formation conglomerate outcrops. Zircons recovered were about 44.5 Ma. thus proving mineralization in a shallow Eocene basin.

The bus allowed for lots of commentary by all the experts on the bus who commented about features on the way.

A bottle of Tequila was the prize for the best joke (Laura Ruud) and a jar of blackberry cornhusker whiskey for the worst joke (JoAnn Newbury). JoAnn's jokes were not all bad, just one in particular.





John Churchill pointing out his team's discovery hole at Alligator Ridge in his vintage shirt.



Mike Ressel doing a little arm waving

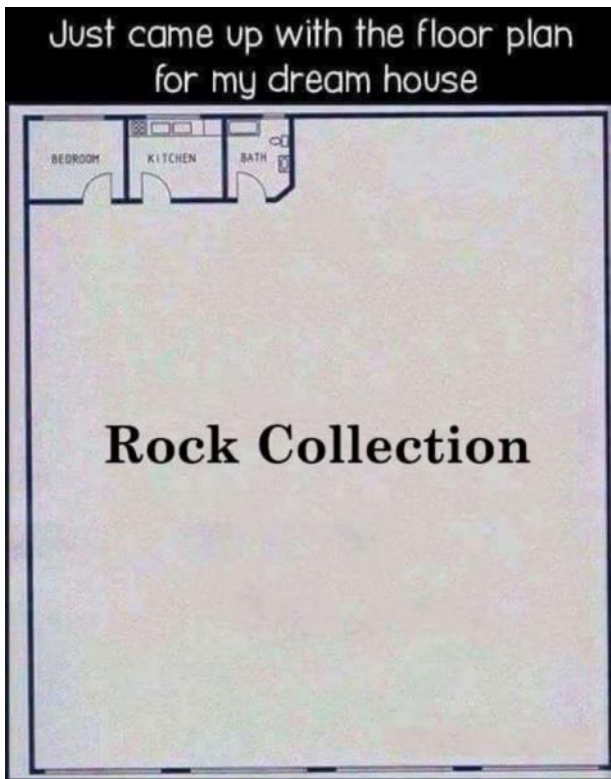


Hiking down into the Yankee Pit on Saturday

THANK YOU AGAIN TO OUR SPONSORS! BOART LONGYEAR, PERSHING GOLD, KINROSS GOLD, NATIONAL GOLD MINING CORP., AMERICAN ASSAY LABORATORIES AND ALS MINERALS.



Thanks to Richard Bedell for submitting the "Dream House Floor Plan for Geologists". The wine and beer storage must be in the cellar on the next level plan!



SAVE THE DATES FOR THE GSN CHRISTMAS MEETINGS!!

**GSN Christmas Meeting in Reno
Wednesday, December 13, 2017**

**GSN Winnemucca Chapter
Thursday, December 14, 2017**

**GSN Elko Chapter
Saturday, December 16, 2017**

**GSN So. Nevada Chapter
To be Announced**

**DONATIONS NEEDED FOR THE GSN FOUNDATION'S ROCK RAFFLE, LIVE AUCTION & SILENTAUCTION!!
NUGGET CASINO RESORT
SPARKS, NEVADA**

(See Foundation article on page 10 for details on how to and where to donate!)

GSN FOUNDATION

NEWS FROM THE GSN FOUNDATION

Cami Prenn, Chair

At the risk of being the broken record that just keeps repeating, I'm asking members to donate one or more items for the Christmas Raffle/Silent Auction/Auction. It's coming up sooner than expected – in just six short weeks; December 13th!

If you're puzzled about what would make a good donation, let me suggest a few categories that might even be fun to shop for. There are a number of new distilleries in town and everyone appreciates a mighty good bottle of spirits. Breweries are in great abundance too and we all know GSN members love a respectable beer. Think of Christmas gifts you'd like to receive! Jewelry is popular, not to mention an original piece of art, silver coins, handmade preserves and candies, or a really special bottle of wine. Our members also like mineral specimens, mining artifacts, field equipment and restaurant gift cards. You really can't go wrong – everybody likes something!

Items can be dropped off at the GSN office and at Mine Development's office or you can call me to pick up your gift; cami@mda.com or 856-5700.



Thank you to our generous sponsors for the Elko Chapter OCTOBER Meeting



**GSN SOUTHERN NEVADA CHAPTER
FALL FIELD TRIP
NOVEMBER 3-5, 2017!**

**Sorry this trip to SILVER PEAK, CLAYTON VALLEY
AND THE SUMP PETRIFIED FOREST AND FOSSIL
AREA IS CLOSED TO REGISTRATION.**

**THANK YOU TO OUR SPONSORS:
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GSN MEMBERSHIP DRIVE 2018

It's past time to renew your GSN Membership Dues for the 2018 fiscal year!

It came to the attention of the GSN Executive Committee that the Constitution actually states that dues are due at the START of the Fall meeting schedule. If you haven't paid yet, please do so now. You will not receive anymore announcements in November if you are not paid up.

RENEW NOW ONLINE AT:

<http://gsnv.org/membership/join-gsn.php>

\$50/year for Individual Members Dues (\$70 if you want a hardcopy newsletter mailed to you)

\$10/year for Nevada Student Members

\$25/year for non-NV Student Members

Only \$1,250 for a LIFETIME Membership!

AIPG EXPLORATION ROUNDUP

Tuesday, December 12th

ATLANTIS HOTEL (new Reno location)

6:00 Open Bar, 7:00 Dinner, 8:00 Program

Companies

NuLegacy, Barrick, Alligent, Rye Patch, Renaissance, Premier, Newmont, Contact Gold

Meeting Sponsor: Boart-Longyear
\$60 AIPG/GSN Members; \$70 Others

(cash, check)

Mackay Students: Free

Reservations: Kel Buchanan

(summitcrk@aol.com)

775-786-4515, fax 786-4324

by December 8th, 5:00 p.m.

Raffle for Mineral Specimens from Mark Stock to Benefit AIPG UNR Club Field Trips



Lowell Program
in Economic Geology

Short Course on Cu, Mo, and Au Porphyry Deposits December 5-14, 2017

*The University of Arizona
Geosciences Department
1040 East Fourth Street
Tucson, AZ 85721-0077*

The **Lowell Program in Economic Geology at the University of Arizona** is pleased to announce the opening of registration for the offering of our Short Course on Porphyry, IOCG, and Alkalic Cu and Au Deposits which will take place December 5-14, 2017, in Tucson, Arizona. We have extended the early bird registration deadline to November 10th. Please let us know if you are planning to attend. We still have a small number of seats available.

The course will have a focus on exploration geology that will include 3½ days of lectures and 2 days of labs in Tucson, and 3½ days of field trips to representative ore systems in Arizona. Field trips will visit accessible examples of a number of these types of systems in southern and central Arizona.

The fee for the short course is US\$3,200 before the early registration deadline on November 10th, 2017, and US\$3,400 thereafter. The cancellation policy provides for participant substitutions or a refund of ½ the registration fee by November 15, 2017. Thereafter, there will be no refund.

To request further information or to register, contact Rocío Brambila by e-mail at brambila@email.arizona.edu.

TAX DEDUCTION

It is the time for gift giving and cleaning your house. GSN and the Tucson Gem and Mineral Society have given over 55,000 books to Universities in Mexico and are looking for people who want a tax deduction and a chance to clean out their offices or homes. Any and all items are welcome and will be greatly appreciated. Contact Clancy if you have anything to donate. Also, anyone who is driving to Tucson, Arizona who has room and would like to help take book to our storage shed please contact Clancy 775-852-2513



PRESS RELEASE FROM AUGUST 28, 2017.

(Good news about one of GSN members at Great Basin College in Elko, NV!)

1500 College Parkway
Elko, NV 89801
www.gbcnv.edu

Contact:
Kayla McCarson
Associate Director, Marketing Communications
775-753-2105
kayla.mccarson@gbcnv.edu

Reinventing Science Education Outreach GBC receives NSF grant for Ruby Mountain research and outreach

(Elko, NEV.) A recent grant from the National Science Foundation (NSF) awarded to Great Basin College, University of Colorado, Boulder, and University of Dayton will lead to accessible educational materials on the tectonics of the Ruby Mountains.

GBC Geology Professor Carrie Bruno Meisner was recently awarded the nearly \$70,000 grant which will uncover the transition from contraction to extension in the Ruby-East Humboldt-Wood Hills Metamorphic Core Complex.

Meisner explained the Ruby Mountains fall within the Basin and Range geological province of the United States, known for its distinct topography pattern of steep mountain ranges alternated with long stretches of flat deserts.

"Rocks exposed in these ranges are some of the oldest rocks in the western United States and represent a thick column of continuous geologic time. Minerals in these rocks tell us a story about the depths and temperatures at which they formed. Using chemical data we collect from the minerals, we will investigate the rate of uplift and extension in the Basin and Range," said Meisner.

Additionally, educational outreach is a required component of many federal funded research grants.

"GBC's portion of the Ruby Mountain NSF grant will focus on outreach, which will include producing interactive fieldtrip guides, Canvas (WebCampus) Modules for a variety of learners, video tutorials, as well as two displays, including a permanent display for the Elko Campus," said Meisner.

"Outreach presents a powerful venue to disseminate science to the public and current and future policymakers. As we see with hot environmental issues, scientists need to revise current communication techniques to improve science literacy. Therefore, we need to reinvent the science educational outreach dynamic."

Meisner believes the most important aspect of this outreach approach is to build the resources with an interdisciplinary team of undergraduates from various GBC Departments.

The current outreach model typically includes undergraduates and graduates already interested in the sciences, however; Meisner said this interdisciplinary approach is more inclusive and allows students in non-science majors to be involved.

"Students from a variety of academic disciplines will participate in the field work, research, and analysis of the science as well as the outreach. We hope to include students in the English, business, and graphic communication programs. Students in these disciplines will lend their knowledge in communication, illustrations, and video editing."

Additionally, these materials will be incorporated into the teacher education method courses that all future secondary educators graduating from GBC will be required to take.

The Ruby Mountain NSF grant is the first NSF grant GBC has directly received.

"GBC's involvement in the prestigious NSF award continues to demonstrate not only that GBC is recognized for its successful outreach efforts but also for the college's ability to attract talented faculty, like Professor Meisner, who are dedicated to the advancement of science as well as how that science is applied to each of us and can affect our quality of life," said GBC President Joyce Helens.

Meisner, along with James Metcalf of University of Colorado and Allen McGrew of University of Dayton, will begin fieldwork in the Rubies for the 3-year long project this Labor Day weekend. The total awarded NSF grant is nearly \$400,000.

Organizations and agencies who are interested in learning more about the community outreach are encouraged to contact Meisner by emailing caroline.meisner@gbcnv.edu.

The information provided is based upon work supported by the National Science Foundation under Grant Award No. 1728274.



GBC Geology Professor Carrie Bruno Meisner

Activity Update

Mike Brady, September 2017

www.activityupdate.com

NEVADA

Northern Empire Resources Corp. announced that recent drill results at the Sterling Project include 80.77-102.11 meters @ 1.01 gpt Au (D17-01); 120.4-167.64 meters @ 1.47 gpt Au (D17-02) and 100.58-182.88 meters @ 1.25 gpt Au (SP17-01). (resource @ Daisy = 3,783,000 tonnes @ 1.13 gpt Au indicated) *Press Release:* September 18

Ramelius Resources Ltd. announced that it acquired an option to earn a 51% interest in the South Monitor Property from Newmont Mining Corp. for \$4,000,000 in exploration expenditures over 4 years. *Press Release:* September 15

Klondex Mines Ltd. announced that recent underground drill results at the Fire Creek Project include 11.6-13.4 meters @ 6.5 gpt Au, 16.3 gpt Ag (FCU-629); 149.4-153.8 meters @ 5.48 gpt Au, 15.0 gpt Ag (FCU-679); 132.5-138.1 meters @ 3.92 gpt Au, 9.9 gpt Ag (FCU-680) and 137.0-146.9 meters @ 10.95 gpt Au, 18.8 gpt Ag (FCU-711). (reserve = 218,200 tonnes @ 44.4 gpt Au, 33.2 gpt Ag proven+probable) *Press Release:* September 14

Fremont Gold Ltd. announced that it acquired an option to earn a 100% interest in the Gold Bar Property from Ely Gold and Minerals Inc. for \$1,000,000 cash over 5 years. (resource = 1,475,000 tonnes @ 2.57 gpt Au inferred) *Press Release:* September 13

NuLegacy Gold Corp. announced that recent drill results at the Red Hill/VIO Zone Project include 99.2-132.7 meters @ 0.65 gpt Au (VIO17-01). *Press Release:* September 13

Freeport McMoRan Nevada LLC. announced that it terminated its interest in the Yerington properties of Quaterra Resources Inc. (resource @ MacArthur = 144,630,000 tonnes @ 0.21% Cu measured+indicated) *Press Release:* September 13

Gold Resource Corp. announced that recent drill results at the Gold Mesa Project include 21.34-

26.01 meters @ 0.82 gpt Au (GMA-142); 0-13.72 meters @ 0.50 gpt Au (GMA-150); 0-9.14 meters @ 1.59 gpt Au (GMA-151) and 13.72-21.34 meters @ 0.95 gpt Au (GMA-157). *Press Release:* August 30

SSR Mining Inc. announced that recent drill results at the Marigold Project include 80.8-147.8 meters @ 1.35 gpt Au (MRA6444); 173.7-213.4 meters @ 0.99 gpt Au (MRA6447); 50.3-114.3 meters @ 0.69 gpt Au (MRA6450) and 161.5-224.0 meters @ 0.81 gpt Au (MRA6452). (reserve = 140,300,000 tonnes @ 0.45 gpt Au proven+probable) *Press Release:* September 5

Klondex Mines Ltd. announced that recent drill results at the Midas Project include 205.1-205.6 meters @ 268.36 gpt Au (DMC-337); 210.5-211.7 meters @ 17.39 gpt Au (DMC-338A); 185.2-185.6 meters @ 35.71 gpt Au (DMC-348) and 252.8-254.8 meters @ 22.2 gpt Au (DMC-350). (reserve = 280,900 tonnes @ 7.95 gpt Au, 306.2 gpt Ag proven+probable) *Press Release:* September 13

Gold Standard Ventures Corp. announced that based on recent drill results at the North Bullion Project, the Sweet Hollow and POD deposits aggregate 2,920,000 tonnes @ 0.96 gpt Au indicated and 3,360,000 tonnes @ 0.43 gpt Au inferred. (no previous data) *Press Release:* September 21

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OTHER UPCOMING EVENTS

2 November: Nevada Petroleum and Geothermal Society Monthly Dinner Meeting. **NEW LOCATION: Tamarack Junction, 13101 S. Virginia St., Reno, NV. Cocktail Reception 6:30 PM; Dinner Served at 7:00 PM.** **SPEAKER:** Dr. Dave Boden, Professor of Geoscience, Truckee Meadows Community College, Reno, NV. **TOPIC:** Geothermal Systems and Mineral Deposits: Similarities, Differences, and Significance. **RSVP By Tuesday, Oct 31 at this Link:** <https://www.123signup.com/register?id=hjqgm>

5-11 November 2017 Alaska Miners Association Fall Convention & Trade Show. Dena'ina Center, Anchorage, AK. Click the link to register: <https://alma.memberclicks.net/2017-convention>

7 November: Arizona Geological Society. Speaker: Lily Jackson presents Andean River Sediments as a Window into the Tectonic History of Ecuador. Sheraton, 5151 E Grant Rd. (& Rosemont), Tucson AZ 85712. More information and online registration: [Lily Jackson presents Andean River Sediments as a Window into the Tectonic History of Ecuador](#)

13 November: Northern Nevada Section of the SME Meeting. Speaker and Topic to be announced. For more information email: NNevSME@gmail.com

16 November: The Grand Junction Petroleum & Mining Club is pleased to announce that **Ms. Kate MacGregor**, Acting Assistant Secretary of Land and Minerals Management of the US Department of the Interior in Washington, DC, will be the guest speaker at their monthly meeting where dinner will be provided. Two Rivers Convention Center, Grand Jct, CO. For electronic dinner ticket purchase please visit their website: www.grandjunctionpmc.com.

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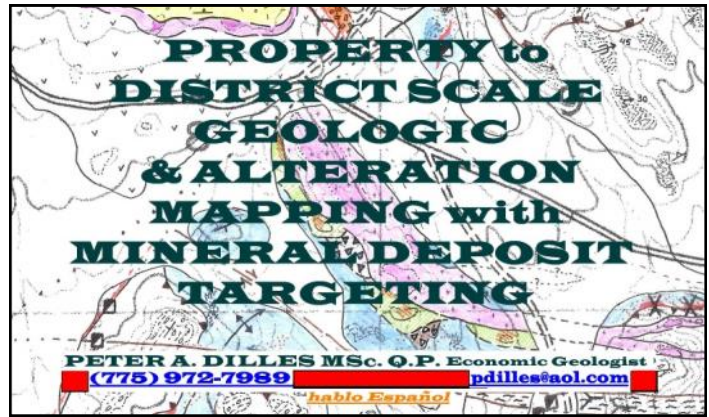
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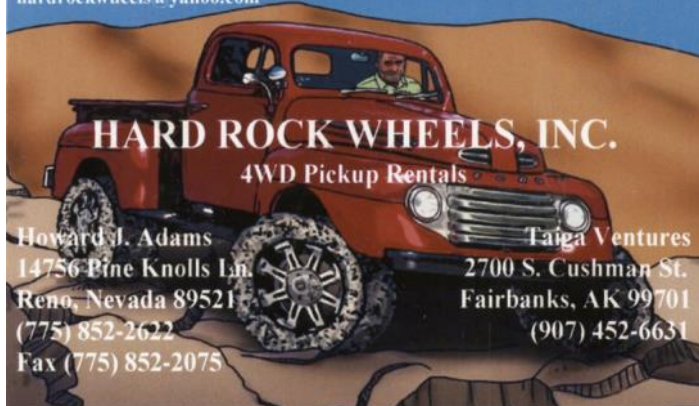
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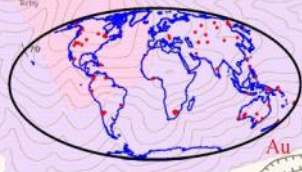
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Ken Krahulec, Utah Geological Survey geo, wears his GSN backpack while hiking at the Antelope Island State Park, Utah



A lone GSN backpack on the GSN Fall 2017 Field Trip in October at one of the Emigrant Mine stops.

