



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.
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CALENDAR OF GSN EVENTS

Sept. 8, 2016
Thursday

**NOTE
CHANGE!!**

SO. NEVADA CHAPTER MEETING will be on the 2nd Thursday in September instead of the traditional 1st Thursday.

The monthly meeting will be held at the Las Vegas Natural History Museum at 900 N. Las Vegas Blvd. **Speaker and Topic: TO BE ANNOUNCED!** Contact Paul Dockweiler for more info. or if you'd like to sponsor or present a talk! paul.dockweiler@cardno.com.

Sept. 14, 2016
Wednesday

WINNEMUCCA CHAPTER MEETING (2nd Wednesday of the month)

The Winnemucca meeting will be held at The Martin Hotel, Railroad St., Winnemucca, NV. **Speaker: Sandra J. Wyld, PhD. Title: "The Elusive Fencemaker Thrust: Just One Part of a Broader East Pershing County Jurassic Deformation Belt". Food & Drinks Sponsored by: CGS MULE.** For more info please contact Matt Fithian at MFithian@silverstandard.com. Abstract and details on page 7.

Sept. 15, 2016
Thursday

ELKO CHAPTER MEETING (3rd Thursday of the month)

The Elko meeting will be held at the Western Folklife Center, Commercial St. BBQ begins at 6:00 p.m. **Speaker: Carson Richardson, University of Arizona. Title: "Extensional deformation in the Hilltop district and vicinity, northern Shoshone Range, Nevada: Current paradigms, open questions, and practical applications". Food & Drinks Sponsor REDCOR DRILLING.** For more information, please contact Mark Travis, mark.william.travis@gmail.com. Abstract and details on page 6.

Sept. 23, 2016
Friday

**NOTE
CHANGE!!**

GSN MEMBERSHIP MEETING will be on the 4th Friday in September instead of the traditional 3rd Friday due to a conflict with the Elks Lodge. 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: Bridget Ayling, NBMG, Director, Great Basin Center for Geothermal Energy. Title: Engineered Geothermal Systems: The Habanero Project (Australia) and the FORGE initiative (USA). Drinks Sponsored by BOART LONGYEAR! Dinner cost is \$25/each.** Please contact Laura Ruud at the GSN Office for dinner reservations. gsn@gsnv.org or 775-323-3500. Abstract and details on page 3.

OCT. 14-16,
2016



GSN FALL 2016 FIELD TRIP

We will spend 3 days touring the Gabbs magnesite operation, the Rawhide Mine and the Wind Mountain Mine! This will be a great trip and we expect it to fill up fast. **Details and a sign-up form are on page 9!!**

G.S.N. SEPTEMBER SPONSOR



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FROM THE PRESIDENT
Alan R. Coyner, GSN President 2016-2017
SEPTEMBER 2016

Greetings to all our GSN members wherever you may be! As the heat of summer begins to wind down, I hope that you enjoyed your summer whether you were doing field work, travelling, home projects or whatever. Now that September has come we resume our regular schedule of monthly meetings in Reno, Winnemucca, Elko, and Las Vegas. **Please remember that due to a scheduling conflict we have moved the Reno September meeting from our normal third Friday to the fourth Friday (September 23).**

The Reno GSN enjoyed two wonderful activities during the summer months. On July 29 approximately 120 of us enjoyed the 5th annual **GSN Reno Aces night**. We want to give a big thank you to National EWP for sponsoring this event. On August 11 we had our 14th annual **Silver Summer Series** and approximately 150 came to the event. We wish to thank Dan Kappes for once again hosting us at his house and our other sponsors including Kappes, Cassidy and Associates, Mine Development Associates, CGS Mule, and Hunsaker, Inc. We enjoyed a thought-provoking talk by Dr. John Scire on energy policy and we thank him for speaking to us.

As fall approaches school season is upon us and I want to share an **earth science education** story with you. I recently travelled to Cleveland, Ohio for my 50th high school reunion. I took time to visit my old high school where in 1964 I took an earth science class from Jim Pike. Mr. Pike was an enthusiastic young teacher and took us on fossil-hunting expeditions all around the Cleveland area. That was the spark that put me on a career path in geology and took me to where I am today. Perhaps many of you had the good fortune to have a similar mentor.

Earth science classes are few and far between in today's education system. However, here in Reno there is a new initiative at **Bishop Manogue High School** called the **Miner Academy**. The mission of the academy is prepare students for Earth Sciences, Earth-based Engineering, and Technology fields, through targeted coursework and partnerships with the University of Nevada Mackay School of Earth Sciences and Engineering, local professionals, and the Nevada mining industry. I am pleased to report that the first year results from the program are very impressive! 58 students enrolled in the Miner Academy last year and 105 students have enrolled this school year. Courses are being taught in CAD, Engineering, and Geology. The GSN Foundation is helping with this important work and so can you by joining the Miner Academy Committee. Call Danielle Lacombe, Miner Academy Coordinator at Bishop Manogue (336-6073) to join the committee and visit their webpage at: <https://www.bishopmanogue.org/admissions/special-programs/miner-academy/>.

According to Vice-President Kelly Cluer, the **GSN Fall Field Trip** is on track for October 14, 15, and 16. We will be visiting Wind Mountain, Rawhide, and Gabbs Magnesite. Watch your GSN Newsletter for the opportunity to sign up. This trip will fill up fast!

It is not too early to start thinking about **Earth Science Week** which is October 9 to 15. The **Nevada Bureau of Mines and Geology** will again be leading one-day field trips for the general public to sites of geologic interest on October 8 and 9. It really helps to have some geology professionals along on the trips to answer people's questions. Why not do a little mentoring and **volunteer** to accompany the NBMG folks on one of the field trips? You will also want to attend the 3rd annual NBMG open house at the Great Basin Science Sample and Records Library on October 15.

Past-President Elizabeth Zbinden spoke often last year about the importance of involvement. Remember, the best way to get involved is to **volunteer!**

***The G.S.N. wishes to thank KAPPES, CASSIDAY & ASSOCIATES,
MINE DEVELOPMENT ASSOCIATES, CGS MULE & HUNSAKER, INC.
for sponsoring the "SILVER" SUMMER SERIES in August!!***

GSN September 23, 2016 Membership Meeting!

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

by 5:00 p.m. on WEDNESDAY, SEPTEMBER 21, 2016

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)

Guest Speaker: Dr. Bridget Ayling

**NV Bureau of Mines & Geology Associate Professor
and Director, Great Basin Center for Geothermal Energy**

**Title: Engineered Geothermal Systems: The Habanero Project (Australia)
and the FORGE initiative (USA)**

Abstract:

Engineered Geothermal Systems (EGS) have the potential to significantly contribute to our baseload clean-energy needs. After the first R&D project to test the EGS concept was initiated at Fenton Hill (New Mexico) in the 1970's, there have been several initiatives within the USA and internationally, to evaluate the viability of EGS and develop the technologies required to make EGS economic. The key technical challenges associated with EGS center on creating and maintaining reservoir permeability.

I will present an overview of the Habanero EGS project in the Cooper Basin, central Australia, including my involvement in a geochemical tracer study at the site. Managed and developed by Geodynamics Limited, the Habanero project is one of the deepest, hottest and most challenging EGS sites developed anywhere in the world to date, and was operated as an active test site from 2002 to 2015. The project demonstrated proof-of-concept in 2013, when a 1 MWe pilot plant was operated at the site for 5 months during a closed-loop circulation test between a well doublet.

I will also introduce the US Department of Energy's FORGE initiative (Frontier Observatory for Geothermal Energy) and the Fallon FORGE site in Nevada. FORGE aims to develop a site for the operation and testing of EGS technologies. Phase 1 of the FORGE initiative was completed in June 2016, and the successful candidates that will proceed to Phase 2 include the Fallon FORGE site (Nevada) and the Milton FORGE site (Utah).

Bio:

Dr. Bridget Ayling recently joined the Nevada Bureau of Mines and Geology and the College of Science at the University of Nevada, Reno as an Associate Professor and new Director of the Great Basin Center for Geothermal Energy. Dr. Ayling is a geologist and geochemist with over 9 years of combined experience in the geothermal and unconventional gas sector. Dr. Ayling has worked in both conventional and unconventional (i.e. Engineered Geothermal Systems (EGS)) geothermal settings in Australia and the USA, contributing to regional geothermal resource assessments, surface heat-flow measurement, characterization of reservoir fracture mineralogy, geochemical tracer studies, and conducting numerical modelling to understand reservoir fluid flow regimes. Her current research interests center on reservoir characterization and integration of multi-disciplinary datasets to understand the dynamics of geothermal systems at the reservoir and basin scale.

FACES OF GSN

Patricia Capistrant, Geologist

My 29th birthday concluded with a warm beer on a hot night in rural Zambia eating tough eggs that likely went bad a couple of days before. I *should* say that it was a pretty crummy birthday, but anyone in the exploration business knows that you sign up for all of the highs and lows.

The day had started promptly at 6am. I downed some coffee, one of my last few Clif bars, and I headed out the door of the Mumbwa guest house to do some sampling. At the time, First Quantum Minerals was trying out hydrogeochemical sampling. The idea was to get the metal signature of an area with fewer samples and less effort than a large campaign of soils. The project I was working on was in Zambia... rural Zambia. My work for the last month had consisted of finding the least offensive

guest house in an area (plus or minus running water) to base ourselves out of, and then driving to rural villages we had discerned from Google Earth images to sample their locally-constructed water holes. The work was tedious and repetitive, often laboriously chatting with Bimba-speaking farmers who were obviously trying to figure out whether I was a boy or a girl. My field partner, Rob, liked to make matters worse by sometimes telling the farmers I was unmarried in order to see how many goats he could barter for me.

This morning, though, was particularly trying because the power had shut off the night before and had not yet come back online. The biggest problem with water sampling in Zambia is that, of course, you have to keep the samples cool. In order to keep your samples cool, you need to have electricity to power the portable cooler, or you need a superfluous amount of ice. Unfortunately for us, the Zambian government had recently instigated daily rolling blackouts, and furthermore, the rural areas were receiving the fewest hours of power of any part of the country. We decided to pick up some ice on the way out of town.

Without any luck in the local village, we decided to head to the nearest town with a grocery store – 50 miles away. Checked the large grocery store, no ice. Checked all of the petrol stations, no ice! I put my hands up in the air and let out a heavy sigh, and one of the fuel attendants came out to greet me. He pointed to a collection of rickety shanties tucked away behind the main buildings of the street, and told me that if I ventured in I would definitely find some ice. I looked at Rob, who was sitting in the driver's seat shaking his head as if to say, "no way in hell". The problem was, if we didn't find some ice, our sampling program would be shot – not just for today, but possibly for the previous few days as well since the samples back at the guest house were rapidly warming up in the unpowered refrigerator. With an abundance of trepidation, I headed into the marketplace. Eyes were on me immediately. Aside from being the only mizungu (light-skinned person), I was also aimlessly wandering through the windy pathways looking for what?! I guess a neon sign that flashed, "ICE!" Twenty minutes passed, I had still not found what I was looking for, and I was definitely lost. A Zambian man wearing a Playboy bunny t-shirt approached me and told me that he would take me to the shop with ice. Any normal westerner would have seen the red flags in this situation, but instead I simply nodded and followed him. Around the corner, through an alley, deep into the heart of the marketplace... and to a hair dresser. I raised my hands as if to say, "what is this?", but he motioned me inside. After a brief conversation, she went into the back and came back bearing two 5 gallon buckets frozen over – ICE! (Cont. on page 5)



Meeting with the local chief (center), and his family in Himba country, northern Namibia.

(Capistrant, Cont. from page 4)

She successfully ripped me off with a deal of 100 Kwacha (~9 USD) for the two buckets. I energetically agreed, took the buckets, and left. Thankfully, my guide showed me the way back out of the market-place – I left him with a generous 50 Kwacha tip, to thank him, but mostly because he remains to this day the most pleasant person wearing a Playboy bunny t-shirt I have ever encountered.

Rob, who had been keeping himself cool in the air conditioned truck, got out and helped me load up the ice into a couple of coolers, then we headed out to collect the days' samples. It wasn't until the end of day, as we were driving back to the guest house, that I remembered it was my birthday. It may not have been a typical birthday, but at least I had had an adventure.

I finished working in southern Africa in December of 2015 in an effort to break into the Great Basin scene. After a little bit of downtime and a lot of effort, I am now doing exploration work with Pershing Gold Corporation in the Relief Canyon area. Nevada is beautiful country, and I am having so much fun! I am sure there are more adventures out there waiting to happen, and I plan to be a part of as many as I can.



The ice that we tracked down. If you look closely, you'll see some black hair frozen in the mix.



Saying hello to a group of kids we met in the bush.



Taking notes on the mountain top, Northwest Territories, Canada.



A Zambian couple proudly standing behind their hand dug well. To keep the water fresh, make sure it is covered with a rusty sheet of metal!

GSN SOUTHERN NEVADA CHAPTER

FIRST MEMBERSHIP MEETING OF THE 2016-2017 YEAR!

THURSDAY, SEPTEMBER 8, 2016

Location: Las Vegas Natural History Museum, 900 Las Vegas Blvd. North

Time: Pizza & Drinks @ 5:30 p.m., Talk begins @ 6:30 p.m.

SPEAKER & TITLE: To Be Announced

For more information, please contact GSN Southern Nevada Chapter President:

Paul Dockweiler @ paul.dockweiler@cardno.com

GSN ELKO CHAPTER MEMBERSHIP MEETING

THURSDAY, SEPTEMBER 15, 2016

Location: The WESTERN FOLKLIFE CENTER, ELKO, NEVADA

Time: Refreshments/Appetizers @ 6:00 p.m., Talk @ 7:00 p.m.

SPEAKER: CARSON RICHARDSON, University of Arizona

TITLE: “Extensional deformation in the Hilltop district and vicinity, northern Shoshone Range, Nevada: Current paradigms, open questions, and practical applications”

Food and Drinks Sponsored by:



ABSTRACT:

Carson A. Richardson and Eric Seedorff, Lowell Institute for Mineral Resources, Department of Geosciences, University of Arizona, 1040 East Fourth Street, Tucson, Arizona 85721, (e-mail: carichardson@email.arizona.edu)

Recent mapping in Hilltop district of rock types, structure, and hydrothermal alteration and associated geochronology shed additional light on possible relationships between intrusions and hydrothermal systems prior to structural dismemberment. The Hilltop district, located along the Battle Mountain-Eureka trend and between the Cortez and Battle Mountain districts, exposes rocks of the Roberts Mountains allochthon, windows into the autochthon, the Antler overlap sequence, sedimentary rocks of various Cenozoic ages, ~41-37 Ma intrusive rocks and ore deposits, ~36 Ma dacitic ash-flow tuff of Mount Lewis, and ~16.5-15 Ma basaltic andesite of the northern Nevada rift.

The Hilltop district, in the center of the range, consists of historic small vein mines (Ag ± Au-Cu-Pb-Zn), the structurally controlled Hilltop gold deposit, and weak disseminated porphyry-style mineralization. Total tilting in the district is ~35-40° as indicated by flattened pumice fiamme of the tuff of Mount Lewis. New mapping has identified a previously unrecognized system of west-dipping, ~25° normal faults in the Maysville Canyon-Hilltop-Park Saddle area that have contributed to extending the district ~50% and tilting the ore deposits, their host rocks, and the nearby tuff of Mount Lewis. Preliminary structural restorations show relatively small offsets (<500 m on average) with ~20-30° of tilting related to the low-angle normal faults. Previous work focused on ore deposits in the northern Shoshone Range has suggested that <10-20° of tilting is due to higher angle faults, such as the Corral Canyon fault and its splays in Whirlwind Valley and the Malpais Rim. (Continued on Page 8)

GSN WINNEMUCCA CHAPTER MEMBERSHIP MEETING

WEDNESDAY, SEPTEMBER 14, 2016

Location: The MARTIN HOTEL, WINNEMUCCA, NV

Time: Drinks @ 6:00 p.m., Appetizers @ 6:30 p.m., Talk begins @ 7:00 p.m.

SPEAKER: SANDRA WYLD, PhD., Geologic Consultant, Maptect, LLC

TITLE: “The Elusive Fencemaker Thrust: Just One Part of a Broader East Pershing County Jurassic Deformation Belt”.

Food and Drinks Sponsored by:



Abstract:

THE ELUSIVE FENCEMAKER THRUST: JUST ONE PART OF A BROADER EAST PERSHING COUNTY JURASSIC DEFORMATION BELT

Sandra J. Wyld, PhD., Geologic Consultant, MapTect, LLC.,
providing mapping, structural analysis, and regional interpretation for northern Nevada's resource industries

The Fencemaker thrust, a structure defined in the 1970's and 1980's, is typically depicted as the most prominent expression of the Jurassic Luning-Fencemaker fold thrust belt (LFTB) in northwest Nevada. Its published trace is curvilinear and extends from the northwesternmost East Range to the western margin of the Humboldt Range, south of which it bends eastward between the Humboldt and West Humboldt Ranges. This trace largely parallels a zone of known gold enrichment (Sierra mining district in the East Range; Florida Canyon, Standard, and Rochester mines in the western Humboldt Range; and Relief Canyon mine near the boundary between the Humboldt and West Humboldt Ranges), and the thrust and structures associated with it have likely had some influence on the location of gold deposits in this part of Nevada. It is thus of interest to have a thorough understanding of the Fencemaker thrust and related Jurassic structures in the East, Humboldt, and West Humboldt Ranges.

As originally defined by J. Oldow, R. Speed, M. Elison, and F. Heck, the Fencemaker thrust forms the frontal thrust of the LFTB in NW Nevada, and places deep marine Triassic strata of the basinal (or Jungo) terrane (e.g., Raspberry Formation) over shallow marine to subaerial Triassic strata of the shelf (or Humboldt) terrane (e.g. Koipato, Star Peak and Auld Lang Syne Groups). The thrust is interpreted to be a major structural boundary separating strongly deformed, shale-dominated, upper plate rocks of the basinal terrane from much less deformed lower plate rocks of the shelf terrane. A minimum of 50-70% shortening, via folding, foliation development, and thrust faulting within the LFTB, is now well documented in rocks of the basinal terrane. The Fencemaker thrust is interpreted to have been a basal thrust to this deformed terrane, which ramped upward and partly over the continental margin (e.g. shelf terrane) during the final stages of LFTB deformation. Only limited shortening is interpreted to have affected the lower plate shelf terrane, and these structures are not generally included in a map showing the extent of LFTB deformation in NW Nevada, although they affect the rocks in which gold deposits are found.

As I will show in this talk, several of the critical geologic relations described above appear to be in error, and a revision of structural interpretations for this part of Nevada are thus required.

1) It is no longer clear that a frontal, terrane-bounding Fencemaker thrust actually exists in NW Nevada. New mapping in the NW East Range shows that rocks previously interpreted to be part of the deep marine basinal terrane of the Fencemaker allochthon are actually shallow marine clastics and carbonates of the Auld Lang Syne Group (shelf terrane). Likewise, in the western Humboldt Range, rocks that have at times been interpreted to be part of the Fencemaker allochthon are, in fact, shallow marine clastics and carbonates of the Auld Lang Syne Group. Farther south, in the southern Humboldt Range, the fault boundary previously interpreted to be part of the Fencemaker thrust (Relief fault) is now known to be a high angle normal fault, and it does not appear that any deep marine strata of the basinal terrane are found here. Based on these relations, the Fencemaker thrust, if it exists as a major structural boundary between the basinal and shelf terranes, is nowhere exposed along most of its inferred length.

2) There is evidence for significant deformation associated with LFTB development in the shelf terrane of the East and Humboldt Ranges. Structures identified include polyphase folding, thrust faults, and foliation. These structures do not differ significantly from structures found in basinal terrane rocks of the West Humboldt Range. In addition, in the East Range, we have documented the presence of a ductile shear zone along the western margin of the range and a sub-vertical ductile tear (strike-slip) fault (previously mapped as the 'Willow Creek thrust'). All of the principle structures in the shelf terrane reflect vergence toward the shelf terrane and away from the basinal terrane. It thus appears that LFTB deformation extends a significant distance into the shelf terrane, lending further credence to the concept that a Fencemaker thrust is no longer a useful concept in defining the eastern margin of the LFTB. Developing a better understanding of LFTB structures in the shelf terrane is needed, and may assist in gold exploration along the 'Fencemaker trend'.

Recent U-Pb geochronology (C. A. King, unpublished) demonstrates that the major intrusive bodies in the range (Granite Mountain [40.6 ± 0.7 Ma], Park Saddle [37.8 ± 0.8 Ma], Tenabo [39.9 ± 0.7 Ma]) are the result of temporally discrete magmatic events, and not one prolonged magmatic event. The present hypothesis is that the Hilltop gold deposit ($^{40}\text{Ar}/^{39}\text{Ar}$: ~ 38.5 - 39.7 Ma of Kelson et al., 2008) is unrelated to the nearby Park Saddle pluton. This is supported by: 1) structural restorations, coupled with the new U-Pb geochronology of the igneous rocks, and 2) the Park Saddle pluton is dominantly altered to Na-Ca assemblages, whereas the Hilltop gold deposit is sericitically altered, and would likely restore to different structural levels in the paleo-hydrothermal system.

This work supports the previous conclusion of Colgan et al. (2014) that the flattened pumice fiamme in the tuff of Mount Lewis are evidence of post-depositional, fault-related tilting – with this generation of low-angle, west-dipping normal faults now documented throughout the northern Shoshone Range. Many of the original spatial relationships of the ore deposits and magmatic rocks are obscured by faulting, and there are few piercing points that would tightly constrain structural reconstructions. Multiple, seemingly disparate, lines of evidence yield insights into the paleo-architecture of the range and suggest that fault offsets and tilting must be accounted for during exploration for gold deposits in the lower plate of the Roberts Mountains allochthon.

**Thank you to the WINNEMUCCA CHAPTER
SUMMER BBQ SPONSORS
for AUGUST 2016!**



**THANK YOU TO THE ELKO CHAPTER
AUGUST 2016 SUMMER BBQ SPONSORS**



*Thank you to our generous
donors in August*

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SIGN UP TODAY FOR THE GSN'S FALL FIELD TRIP BEING HELD ON OCTOBER 14-16, 2016!

The field trip will take us to Gabbs magnesite on Friday, Rawhide Mine on Saturday and Wind Mountain Mine on Sunday. This is going to be a great trip and we expect to sell out quickly. Get your seat reserved now!!



**Geological Society of Nevada (GSN) Fall 2016 Field Trip
Friday, Saturday & Sunday, October 14-16, 2016**



"Gabbs Magnesite, Rawhide Mine & Wind Mountain Mine"

Friday, October 14, 2016: (TENTATIVE SCHEDULE)	8:00 a.m. - Bus departs from GSN office for Gabbs magnesite 12:00 Noon - Sack lunch provided 6:00 p.m. - Drinks, Dinner and Speaker at Fallon Convention Center Overnight at Comfort Inn, Fallon, Nevada
Saturday, October 15, 2016: (Breakfast on your own) (TENTATIVE SCHEDULE)	8:00 a.m. - Bus departs Fallon, NV for Rawhide Mine Tour Rawhide Mine 12:00 Noon - Sack Lunch provided 6:00 p.m. - Drinks, Dinner and Speaker at Churchill County Museum Overnight at Comfort Inn, Fallon, Nevada
Sunday, October 16, 2016: (Breakfast on your own) (TENTATIVE SCHEDULE)	8:00 a.m. - Bus departs Fallon, NV for Wind Mountain Mine 12:00 Noon - Sack Lunch provided 2:00 p.m. - Bus returns to Reno

ALL PARTICIPANTS WILL NEED PPE - Steel-toed boots, hard hat, safety glasses, orange/lime safety vest! (Loaners will be available)



THANK YOU TO OUR GENEROUS SPONSORS!

(We still have lunch and snack sponsorships available so please contact the GSN office if your company would like to SPONSOR.)



Lodging: Single Double No Room

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Cell Phone: _____

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- \$120 - Spouse staying with Single Member Registrant (No Guidebook)
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Email: _____

Person to contact in case of Emergency:

*NON-MEMBER COST:

Name: _____

- *\$370 - Single Room (2 nights)
- *\$280 - Double Room (2 nights)
- *\$190 - No Room needed in Fallon

Phone: _____

**Payments must be made by Friday, September 30, 2016
No refunds after Friday, September 30, 2016**

*Non-members are encouraged to become members of the GSN in order to take advantage of the reduced Member Rates - Annual Dues are \$50/year.

Total amount included with this form: _____

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 Reno, NV 89512
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Winnemucca Chapter BBQ—A Really Fun Time!

Laura Ruud

The 2016-2017 GSN Officers in Winnemucca continued the tradition started last year to have a game at their annual BBQ at Highland Park on August 10th. Jim Carver and Robert Thomason brought out a bunch of hula hoops, rock hammers and rubber mallets for this year's game. I was happy when they laid the hula hoops out on the ground as targets for the hammer throw rather than a hula-hoop contest! About 50 GSN members tried multiple times to get those hammers to land inside the hoops to win fabulous prizes. Turns out it's REALLY HARD to get those hammers to bounce just the right way! Later they changed the game up a little bit and attempted tossing the hula hoops onto the hammers standing up out in the grass. Not much easier! Four members eventually won the coveted "special book" prizes. (You'll have to ask Jim about the titles if you're curious!) Fun was had by all and big thanks go to **ALS Minerals** and **Boart Longyear** for their sponsorship of the BBQ and beverages again this year!



Past Winnemucca VP Juan Contreras looks on as current Winnemucca VP, Matt Fithian throws a rock hammer towards its target.



Winner Winner Chicken Dinner!



Group Hammer Toss!



GSN Winnemucca Treasurer, Peter O'Byrne's geo-technique



GSN Winnemucca President Jim Carver handles the hula hoops!



Winn. Officers: Wilson Bonner, Curt Johnson & Peter O'Byrne



Kim Craig and Jon Carlson

GSN 14th ANNUAL SUMMER "SILVER" SERIES

Laura Ruud

Dan Kappes and Kappes, Cassiday & Associates again hosted another very successful evening of the GSN's Silver Summer Series. Over 150 GSN Members and guests gathered in Dan's backyard in Reno, NV to listen to Dr. John Scire, Adjunct Professor of Energy and Policy at UNR, give a riveting talk about U.S. Foreign Policy and the Middle East. John included a detailed history of the region from World War I to the present, touching on many highlights that have changed the relationships between the U.S. and players in the Middle East over the years. Attendees went home with food for thought about the necessity of importing oil from the Persian Gulf and the need to have a military presence in the region (or not?).

The GSN wishes to thank once again our sponsors for the Series: **KAPPES, CASSIDAY & ASSOCIATES** for supplying the BBQ and venue; **MINE DEVELOPMENT ASSOCIATES** for supplying the very delicious and ice cold Great Basin Brewing Co. kegs; **CGS MULE** for supplying the nice variety of wine; and **HUNSAKER, INC.** for supplying the other drinks, water and lots of ice!

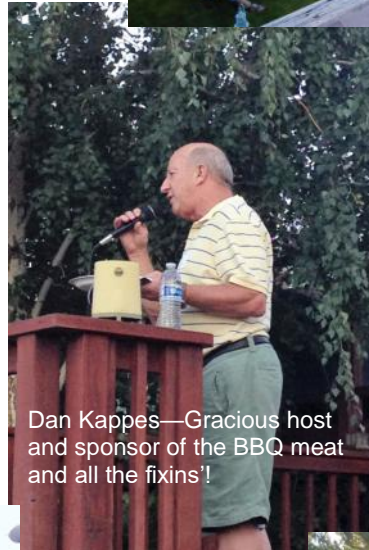
I also want to thank a few people who went over and above to help with the heavy lifting, setup AND cleanup! Ruth Buffa, Molly Hunsaker, Steve Weiss, Dan Kappes, Eric Ruud and Jim Estes... THANK YOU for all you did to make this event great!



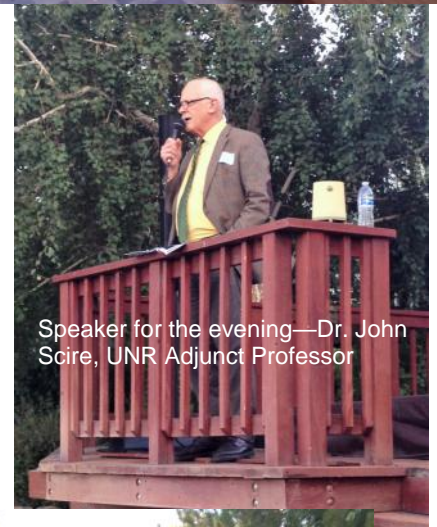
Linda Brady, Larie Richardson, Dennis Bryan and Sharon Maginnis enjoying some of the incredible food at the event! (Not pictured: Mike Brady who was probably standing in line for dessert? beer? Or more fabulous BBQ?)



Garry and Scott Richardson (along with their Dad, Larie) drove over from Arcadia, CA to attend the event!



Dan Kappes—Gracious host and sponsor of the BBQ meat and all the fixins'!



Speaker for the evening—Dr. John Scire, UNR Adjunct Professor



Food lines well worth the wait!!



Activity Update

Mike Brady, JULY 2016

www.activityupdate.com

NEVADA

Colombian Mines Corp. announced that it acquired an option to earn a 100% interest in the Pamlico Property from private interests for \$4,000,000 cash over 4 years. *Press Release: July 19*

Barisan Gold Corp. announced that it acquired an option to earn a 100% interest in the Railroad Valley (Li) and Black Canyon, Arizona (Li) properties from DG Resource Management Co. for \$100,000 cash and 20,668,600 shares. *Press Release: July 18*

Columbus Gold Corp. announced that recent drill results at the Eastside Project include 178.3-195.1 meters @ 0.21 gpt Au (ES-112); 211.2-227.4 meters @ 0.25 gpt Au (ES-113); 136.3-150.0 meters @ 0.69 gpt Au (ES-114) and 44.2-56.4 meters @ 0.23 gpt Au (ES-115). *Press Release: July 18*

Wildcat Exploration Ltd. announced that it acquired an option to earn a 100% interest in the Dixie Valley (Li) Property from Nevada Energy Metals Inc. for \$1,450,000 cash and 6,000,000 shares over 3 years. *Press Release: July 15*

Logan Resources Ltd. announced that it acquired an option to earn a 51% interest in the Drum, Griffon, Antelope, Sandy, Easter, Brik, Stateline, Viper and Anchor properties from Pilot Gold Inc. for \$1,000,000 in exploration expenditures over 1 year. *Press Release: July 7*

NuLegacy Gold Corp. announced that recent drill results at the Iceberg Project include 149.4-184.5 meters @ 0.52 gpt Au (RHB-72); 132.6-213.4 meters @ 0.32 gpt Au (RHB-73); 115.9-149.4 meters @ 0.58 gpt Au (RHB-76) and 126.5-138.7 meters @ 0.74 gpt Au (RHB-79). *Press Release: July 21*

Nevada Zinc Corp. announced that recent drill results at the Lone Mountain Project include 50.29-56.39 meters @ 6.83% Zn, 3.04% Pb (LM16-39); 33.53-44.2 meters @ 2.09% Zn, 0.33% Pb (LM16-41); 25.91-33.53 meters @ 11.18% Zn, 4.37% Pb (LM16-42) and 24.38-35.05 meters @ 11.38% Zn, 1.12% Pb (LM16-44). *Press Release: July 5*

Klondex Mines Ltd. announced that it acquired an option to earn a 100% interest in the Holister Property and Esmeralda Mine from Waterton Nevada Splitter LLC. for \$63,000,000 and a promissory note of \$17,000,000 over 4 years. (reserve = 952,700 tonnes @ 26.96 gpt Au, 162.1 gpt Ag proven+probable) *Press Release: July 25*

OBITUARY

DR. M. LEE ALLISON (1948-2016)

Dr. M. Lee Allison, State Geologist and Director of the Arizona Geological Survey, passed away Tuesday, August 16th, at noon after suffering a critical head injury from a fall at his home on Saturday.

Lee's passing is a tragic loss for his wife, family, staff of the Arizona Geological Survey, the geologic and geoinformatics communities, and Lee's broad circle of friends, colleagues, and acquaintances around the world.

He was an incredibly dynamic leader of our agency, and a world-wide leader in many areas that were important to him. We mourn his passing, and will do our best to carry on his legacy.

There will not be a memorial service. Lee's family has requested they not be contacted. Any messages of condolence can be addressed to AZGS team members; we will pass them along to his family.

Lee's wife, Ann, suggested donations be made to the Association for Women Geoscientists/Salt Lake Chapter or to a scholarship fund that will be established at UMass to honor Lee.

Words of Emily Dickinson aptly apply:

Because I could not stop for Death, he kindly stopped for me. The carriage held but just ourselves and immortality.

We miss you Lee.



ROCK TALK

Prospector Strikes Gold: a \$190K Chunk of It

'I thought it was rubbish at first,' he says of 9-pound Aussie discovery

(Reprinted from Newser.com. By [Jenn Gidman](#), Newser Staff, Posted Aug 25, 2016 9:54 AM CDT)

NEWSER) – Wednesday saw what could be the world's largest-ever pearl; Thursday, a massive gold nugget weighing in at around 9 pounds. Found in central Victoria's Golden Triangle in Australia by an explorer who wishes to stay anonymous, per ABC.net.au, the gleaming chunk of precious metal, estimated to be worth up to \$190,000, was found 12 inches below the surface using what Gizmodo Australia calls a \$7,600 Minelab metal detector known as the "next level of gold detection." "I thought it was rubbish at first, maybe an old horseshoe," says the prospector, who's been scouting for buried treasure in his spare time for 10 years with a group of friends, per 9News. But as he dug deeper, the finder of the nugget now being called "Friday's Joy" realized he hadn't just stumbled across some junkyard-worthy detritus.

The prospector, who had found a 9-ounce gold nugget the previous day, initially wasn't sure what to do with this substantially larger find—discovered, incidentally, in a location that had already been "worked over," a Minelab rep tells AustraliaMining.com—so he rinsed it off with water, wrapped it in tinfoil, and stuck it in his oven for the night. For now, the gold piece remains secure in a bank vault until it can be sold at auction, and the prospector, who has promised to split the proceeds with his metal-detecting group, is planning to use his share to buy a van so he can travel around his home continent. His lucrative new lucky charm is still far from being the world's biggest: Per the Discovery Channel, that honor goes to the 158-pound "Welcome Stranger" nugget found in Dunolly, Victoria, in 1869.



Whoa. ([Minelab](#), via [ABC.net.au](#))

It's time to renew your GSN Membership Dues for the 2017 fiscal year!

RENEW NOW ONLINE AT: <http://qsnv.org/membership/join-qsn.php>

Dues are still only \$50/year for Regular Members

(add \$20 if you want a hardcopy newsletter mailed to you)

\$10/year for Nevada Student Members

\$25/year for non-Nevada Student Members

And ONLY \$1,250 for a LIFETIME MEMBERSHIP IN THE GSN!

If you would rather fill out the paper and submit it by email with a credit card or mail the printed form in with a check or credit card, I have attached the renewal form along with this emailed newsletter also!

ROCK TALK



GSN backpacks travel the world! In this photo provided by Ruth Carraher and Paul Muto, you see two GSN backpacks from the 2010 Symposium on a safari in Botswana. (Note the elephants!) Rumor has it that a 2015 Symposium backpack was also on the trip! (Feel free to submit your GSN backpack photo and we'll put it in the newsletter if there is space.)

Every American Born Will Need...



3.125 million pounds of minerals, metals, and fuels in their lifetime

©2016 Minerals Education Coalition

Learn more at www.MineralsEducationCoalition.org

The Society of Mining & Metallurgical Engineering's Minerals Education Coalition has updated their informational "baby" cartoon. It depicts just how many minerals, metals and fuels that each human will need in their lifetime!

4th Annual Great Basin Rendezvous

September 16-18, 2016

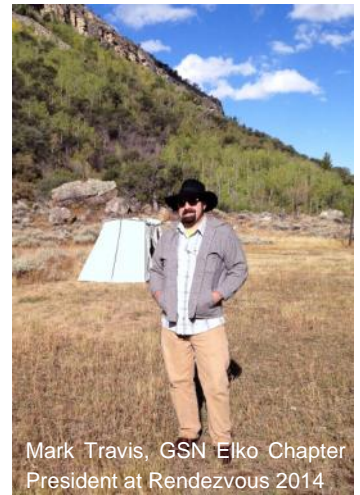
Come join your fellow explorers and their families at Camp Lamoille in the beautiful Ruby Mountains of Elko County for our *Fourth* time around!!

Hosted by: Nevada Mineral Exploration Coalition, 2016 Great Basin Rendezvous Committee (Warren Thompson, Dave Shaddrick and our contributors)

You can partake in activities like field trips and hikes, and enjoy great entertainment (Southwind) and outstanding breakfasts and BBQ dinners as in previous years.

REGISTER ONLINE NOW AT: <https://www.nvmec.org/gbrregistration>.

Contact Dave Shaddrick @ dshaddrick@aol.com for more info.



Strategic Resource Estimation for Mining short course

Sept. 24- 25 in Las Vegas at UNLV

Gain practical knowledge of best practices in mining resource estimation. Learn about risks and opportunities associated with resource estimation in typical exploration and mining projects. The international codes (such as 43-101 and JORC) for reporting mineral resources will also be discussed.

Instructor: Abani Samal, Ph.D.

Acknowledged expert in advanced geostatistics and mineral deposit evaluation with nearly 20 years of international industry experience.

Dates: September 24-25, 2016; 8 AM to 5 PM

Hours: 14.00 **CEUs:** 1.40

Location: UNLV Paradise Campus (PAR) Room 400

More details: <http://ced.unlv.edu/mining>



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DRILLER JOB OPPORTUNITY

Peloton Minerals Corporation needs a driller with experience operating small surface core rigs and willing to operate a small Termite core rig on a project north of Wells, Nevada in September - early November. The rig is new and has been modified by the manufacturer for surface work as it is originally designed for underground. The drill rig and accessories are stored in Elko, Nevada.

If interested please contact Criss Capps at:

Phone: [706.993.1567](tel:706.993.1567)



OTHER UPCOMING EVENTS

27 August–4 September: [35th Session of the International Geological Congress](#) (35th IGC), Cape Town, South Africa

1 September 2016 Nevada Petroleum & Geothermal Society, Reno, Nevada monthly meeting. *Cocktails at 6:30 PM, Dinner at 7:00 PM, Ramada Reno Hotel; 1000 East 6th St., Reno NV 89512. Speaker: Rod Prosceno, Grant Canyon Oil & Gas LLC. TOPIC: Nevada—EOR Projects—Grant Canyon and Blackburn Fields. Please make reservations by Tuesday, August 30, 2016 by using the following link: https://docs.google.com/forms/d/1dZwpq2P5ELdkfVqeRqEghiLQWUCWIHFIRRqCo3jFeaQ/viewform?c=0&w=1&usp=mail_form_link*

6 September: Arizona Geological Society meeting, Keith R. Long, U.S.G.S., presents “No Bonanza from Cheap Oil”. 6 p.m. to 9 p.m. at the Sheraton, 5151 E Grant Rd. (& Rosemont), Tucson, AZ To register click on the link: [Keith R. Long Presents No Bonanza from Cheap Oil](#)

7-10 September: Nevada Mining Association Convention’16

The 2016 Nevada Mining Association Annual Convention and golf tournament will be held September 7-10 at the Hard Rock Hotel, Lake Tahoe. [Click here to register](#)

16-18, September: the NMEC (Nevada Mineral Exploration Coaliton) is hosting its 4th Annual Great Basin Rendezvous at Camp Lamoille near Elko, NV. Contact Dave Shaddrick, Dave@dshaddrick.com or Warren Thompson wthompson@klondexmines.com, for more information.

18–24 September: Association of Environmental & Engineering Geologists, [AEG 59th Annual Meeting](#), Kona, Hawaii.

22–23 September: [2nd Virtual Geoscience Conference](#), Bergen, Norway.

25-28 September: SEG 2016 Conference: Tethyan Tectonics and Metallogeny, Çeşme, Turkey.
Website: www.seg2016.org

25–28 September: [2016 GSA Annual Meeting & Exposition](#), Denver, Colorado, USA.

AAPG
Pacific + Rocky Mountain
Joint Meeting
2-5 October 2016 | Paris Las Vegas Hotel
Early Registration ends
September 5th!
More Information at www.psaapg.org/2016convention

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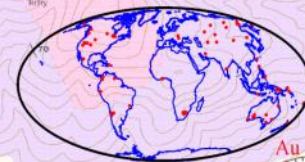
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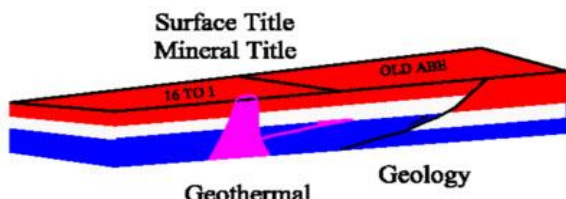
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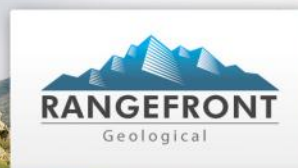
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