



GEOLOGICAL SOCIETY OF NEVADA NEWSLETTER

Geological Society of Nevada, 2175 Raggio Parkway, Room 107, Reno, NV 89512
(775) 323-3500 - Hours Monday -- Friday, 9 a.m. to 4 p.m.
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SEPTEMBER 2021 ISSUE, Vol. 37, No. 7

Published monthly except June and July

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SEPT. 8, 2021

WEDNESDAY

GSN WINNEMUCCA CHAPTER MEETING

The Winnemucca Chapter will hold their in-person meeting at the Martin Hotel, 94 W. Railroad St. **Speaker is: Robbie Anderson, Gold Bull Resources. Topic: Sandman Au Project.** Sponsor: To Be Announced. For questions, please contact Chapter President Chad Peters at: cpeters@ridgeline minerals.com. Details on pg. 6.

SEPT. 9, 2021

THURSDAY

VIA ZOOM!

GSN SO. NEVADA CHAPTER MEETING

The So. Nevada Chapter meeting will be held at 6:30 pm via ZOOM only. Log-in Details will be disseminated the week of the meeting. **Speaker: Josh Bonde, Nevada Science Center. Title: "Nevada Has Dinosaurs!"** For more information, please contact President Josh Bonde at: joshua.bonde@nvscicenter.org.

SEPT. 16, 2021

THURSDAY

GSN ELKO CHAPTER MEETING

The GSN Elko Chapter will kick off their fall meeting schedule in person at the Western Folklife Center, 501 Railroad St. **Speaker: Mark W. Travis, First Majestic Silver Corp.. Title: "Structural Modeling at Jerriitt Canyon for Near-Mine Targeting and Development". Sponsor: NATIONAL DRILLING.** Please contact Elko President Justin Milliard: justin.b.milliard@gmail.com for more information. Details on page 7.

SEPT. 24, 2021

FRIDAY

GSN REGULAR MEMBERSHIP MEETING

The GSN regular meetings will resume in-person! New venue: Reno Aces 250 Lounge, 250 Evans Avenue. **Speaker: Dr. Matthieu Harlaux, UNR. Title: "Tourmaline in Magmatic-Hydrothermal Ore Deposits: Garbage Can Mineral or Sensitive Mineral Probe?". Sponsor: BOART LONGYEAR.** Dinner cost is \$35 at the new venue. Please register for dinner online and send RSVPs to Laura Ruud, gsn@gsnv.org. Dinner link coming soon!

September 30th!

Abstracts are due to the GSN Symposium Technical Committee by September 30, 2021. Details can be found on page 14. Please visit the website for more information about the GSN 2022 Symposium! www.gsn Symposium.org

OCT. 2-3, 2021

SAT. & SUN.

GSN FALL FIELD TRIP

The 2021 GSN Fall Field Trip will visit three exploration projects, all former producers, as well as the Tonopah Historic Mining Park. All the properties are easily accessible from the Highway # 95 corridor. Details can be found on page 10. Link to register will be sent soon!

GSN SEPTEMBER RENO MEETING SPONSOR!



**BOART
LONGYEAR™**

FROM THE PRESIDENT
Patsy Moran, GSN President 2021—2022
SEPTEMBER 2021

August proved to be a nice change of pace with many opportunities to see other members in person. Our Winnemucca Chapter had another successful BBQ at Highland Park where members enjoyed a relatively smoke-free event and a beautiful sunset. Here in Reno, a little afternoon rain made for a comfortable evening for the Silver Series in Dan Kappes's backyard. Our Elko Chapter proved their adaptability by moving the BBQ outside to the City Park for another fun event with live music and games. Hard to believe that it's September 2021 and we still have Covid-19 restrictions. GSN will continue to follow County, State and CDC requirements/guidelines and adjust as needed but I'm optimistic that Mary Stoltenwerk will be our only "Pandemic President".

When attending these events, I'm encouraged by how inclusive GSN is thanks to our members. I'm always treated like an old friend when I arrive and know our members go out of their way to welcome others. We don't care if you're a student or CEO, at the peak of your career or retired, independent or fulltime at a mine, you're always invited to attend GSN events for good conversation, drinks, and a technical presentation. No need to be a member but we'll work to convince you to become one: you've been warned!

In September, GSN chapters across Nevada are returning to regular monthly membership meetings. Updates from each GSN chapter are provided throughout this newsletter. I'm especially looking forward to hearing one of our Directors, Mark Travis, speak about the Jerritt Canyon Mine at the Elko Chapter meeting on Thursday September 16th. Our Vice-President, Kel Buchanan, is working hard on the fall field trip, which is planned for October 2nd and 3rd. Make sure to register quickly since this one is certain to sell out. With all these great events this year don't forget about the GSN Symposium next May! Abstracts are still being accepted and are due by September 30, 2021 (www.gsnsymposium.org).



Sunset at the Winnemucca Chapter BBQ (Photo credit: Laura Ruud)

GSN REGULAR MEMBERSHIP—SEPTEMBER MEETING*

Guest Speaker: Dr. Matthieu Harlaux, Univ. of Nevada, Reno

Title: “Tourmaline in magmatic-hydrothermal ore deposits: garbage can mineral or sensitive mineral probe?”

Date: Friday, September 24, 2021

Time: Drinks @ 6:00 pm, Dinner @ 6:30 pm, Talk @ 7:30 pm

Link to pay for dinner online will be live soon!

<https://www.gsnv.org/events/gsn-regular-membership-meeting-reno-nv/?date=1632441600>

Where: Reno Aces Ball Park, Upstairs at the 250 Lounge/Good Hops

Abstract:

Tourmaline is a common mineral in many hydrothermal ore deposits and has long been referred to as a garbage can mineral due to its complex crystal chemistry that accommodates many major and trace elements. In the last years, many studies reinvestigated the potential of tourmaline as a recorder of ore-forming processes and as an indicator for mineral exploration. In this talk, I will show how a careful study of tourmaline can yield valuable information on magmatic-hydrothermal processes based on recent results obtained on the world-class San Rafael Sn-Cu deposit (Central Andean tin belt, southeast Peru). San Rafael is currently one of the largest and highest-grade primary tin deposits in the world, with total resources >1 Mt Sn. Mineralization at San Rafael consists of quartz-cassiterite-sulfide veins and breccias hosted by an upper Oligocene (ca. 25 Ma) peraluminous S-type granitic complex and by Ordovician metasediments. Tourmalinization is abundant at the deposit scale and three major generations of tourmaline are distinguished based on petrography and geochemistry: (i) late-magmatic tourmaline found in peraluminous granites as nodules and disseminations; (ii) pre-ore hydrothermal tourmaline formed during post-magmatic alteration and veining-brecciation; and (iii) syn-ore hydrothermal tourmaline forming microscopic veinlets and overgrowths, locally intergrown with cassiterite. In situ analysis of trace elements and oxygen and boron isotopes in tourmaline reveals the evolution of magmatic-hydrothermal fluids, exsolved during early degassing of the magma chamber and, subsequently, their mixing with modified meteoric waters triggering cassiterite deposition. These results demonstrate that tourmaline is a powerful mineral probe for understanding dynamic fluid processes in magmatic-hydrothermal systems and opens new research perspectives for studying tourmaline-rich deposits in Nevada.

Speaker presentation:

Matthieu Harlaux is assistant professor of economic geology at the University of Nevada, Reno (USA) within the Nevada Bureau of Mines and Geology since 2019. Matthieu received his MS and PhD degrees in economic geology at the University of Lorraine in Nancy, France in 2012 and 2016, respectively. During his PhD, Matthieu worked on granite-related tin-tungsten deposits in the Variscan French Massif Central with a specific focus on direct dating of ore minerals and trace element geochemistry and fluid inclusion study of wolframite. From 2017 to 2019, Matthieu joined the University of Geneva, Switzerland, where he did a two-year postdoc working on the trace element and multi-isotopic analysis of tourmaline from the world-class San Rafael tin-copper deposit, Peru. His main research topic focuses on better understanding ore-forming processes in magmatic-hydrothermal systems by using trace element geochemistry, fluid and melt inclusions study, and in situ stable isotopes to trace fluid and metal sources, with current research projects in the Central Andes and in Nevada.



**GSN will continue to follow County, State and CDC Covid-19 requirements/guidelines and adapt as needed. At the time of this publication, face coverings are required in counties with substantial or high community transmission rates while in public indoor spaces regardless of vaccination status. All counties that host GSN events are currently considered to have substantial or high community transmission rates. The Executive Committee urges its members to strictly adhere to CDC guidelines and recommendations, such as receiving the vaccine as soon as eligible and wearing masks at all indoor GSN gatherings. Please do not attend GSN events if you feel sick or have a known Covid-19 exposure. For more information please visit: <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html>*

“FACES OF GSN”

Kelsey Sherrard

Reno, Nevada

I was born in Reno, NV and raised in Graeagle, CA. Like other geologists, I have always been interested in the world around me, and I spent all my childhood playing outside. I'd go on archaeological digs in my hometown through abandoned mining camps to find old lanterns, plates, the apothecary, etc. When I was 10 my parents took me on a fossil dig with the Peccary Society of the Raymond M. Alf Museum of Paleontology, the paleontology museum associated with my dad's high school. We traveled to Pioche, Nevada and I had the most wonderful time finding trilobites, gastropods, and a crinoid stem that I was told was of museum quality which they planned to display at the museum after our dig. I grew up thinking I would be an archaeologist or paleontologist.



Havasupai Falls, Havasupai, AZ

When I went to college, I declared environmental science. I attended a very small (1600 students) liberal arts school in Indiana and my advisor was a Geologist. She encouraged me to take her Geology 101 class. I took the class, got hooked, was already sick of looking at horned coral at the outcrops around campus, and decided to move back closer to home to attend a school that was less expensive, had a hard rock geology program, and bigger mountains. I really missed the mountains when I was in the Midwest. I enrolled at the University of Nevada, Reno (UNR) and declared Geology as my major. Soon after, someone from the college called me to ask me about my major. I wish I could remember who I spoke to, but they said are you sure you're going to be a Geology major, I said yes, and she said OKAY great, we want to give you some money for that! I thought this was the best thing since I didn't

even have to apply for a scholarship or fill out paperwork of any kind. Being a female in the geosciences alone got me some tuition money, I was excited and grateful. During my time at UNR I began to attend the GSN meetings.

After graduating UNR I began my career as a geologist first as a contract geologist with Newmont working at the Copper Basin Project in Battle Mountain, NV. I lived in a motorhome I bought myself since I couldn't find housing. I was the only girl in the RV Park. I logged rock chips for about 6 months, this was in 2012. Then I worked for WesternGeco Schlumberger on a magnetotelluric survey for a geothermal project in Williams, CA for a couple months. I moved on to log core for Klondex Mines at the Fire Creek Project in a warehouse in Sparks, NV with 27 other geologists working in shifts to complete 30,000 feet of back logged core. With this logging experience, I moved my motorhome to Southern Nevada to work for Corvus Gold and started my first stint as a geologist in



Logging chips at Copper Basin

Beatty, working on the North Bullfrog Project. During this time I found the first specimen of visible gold at the North Bullfrog Project. They called it the "Kelsey Vein" which unfortunately petered out to not be much. I learned then that I hope no other geology related item would ever be named after me.

After a while I was ready to try a different side of geology and went into the environmental field. I moved from Beatty, NV to Oakland, CA, taking a job with Terraphase Engineering. I worked all over the Bay Area but (continued on page 5)

spent a lot of my time as the soil manager of the Highway 1 and Highway 101 reconstruction project on the Presidio Project in San Francisco. I loved the work but didn't love living in a highly trafficked area. I'm a small-town girl and I can't stand traffic. I stayed with Terraphase for a year then moved to Arizona. I worked for an environmental firm for a minute in Tempe, AZ and quickly moved back into economic geology, obtaining a job with Resolution Copper, living, and working in Superior, AZ. I then worked for National Exploration, Wells, and Pumps in client services to try another side of the industry. While living and working in Superior I joined the Chamber of Commerce as their youngest board member to date (I think this is still true, someone fact check me if you really care). I also helped work on the trail systems on the board of the Legends of Superior Trails.



Logging soil at a fuel spill in Oregon

In the middle of 2017, my dad's business lost all its employees in the same week, and he asked me if I'd like to move home and take over things for him. He has a landscape and maintenance business. Although it wasn't geology it was still work that kept me outside, dealing with people, and I could still play with rocks when I wanted. I was home for about 2 months when my dad decided he didn't want to retire yet. He's still working today; I don't think he'll ever retire.



GSN Field Trip 2020

Luckily, Mark Reischman from Corvus Gold emailed me right around this time needing help with their Mother Lode Project. With my dad's business back at capacity, I decided to go back to Beatty this time without the motorhome (sold when I moved to AZ). I really enjoyed working in Beatty again. Corvus treated me very well and I learned so much as the Assistant Project Manager. Beatty will always have a special place in my heart.

However, if you haven't noticed, I'm a repeat

offender and when Terraphase called me in late 2018 to see if I would like to open an office for them in Reno, I couldn't refuse. I went back to the environmental world, and I am still there today. I currently work as a Project Geologist for Terraphase in their Reno office that I helped open in 2019. I work on a variety of projects throughout the country, and I really like the diversity. I serve on the executive committee for GSN as the membership chair and I'm also the vice chair of the AEG Great Basin Chapter.

I love geology but I've come to realize that I love the people that I've met throughout my journey just as much. I enjoy finding a sense of community wherever I go. When I'm not working, I enjoy mountain biking, hiking, kayaking, fishing, skiing, reading, crafting, and listening or playing music. Since the pandemic I've moved back to Graeagle full time, and I love being back in the woods. I get outside every day to enjoy nature.

I look forward to seeing those who can make it to our in-person membership meeting in September. See you soon!



Halibut fishing, Anchor Point, AK



GSN WINNEMUCCA CHAPTER MEETING

WEDNESDAY, SEPTEMBER 8, 2021

5:00 p.m.—8:00 p.m.

Speaker: Robbie Anderson, Gold Bull Resources

Title: Sandman Au Project

Food and Drinks Sponsored by: To Be Announced



ABSTRACT

Gold Bull Resources Corp. recently acquired 100% interest in the Sandman Au project from Newmont in December 2020. An updated NI43-101 mineral resource estimate was completed in January of 2021 on the four known, pit-constrained Au resources for a total of 21.8 Mt at 0.7gpt—containing 494,000 oz Au. Several of the resources remain open and additional areas of mineralization have been identified within the project area. Exploration and drilling activities are currently ongoing with encouraging results.

Located ~12 miles northwest of Winnemucca, Nevada, Sandman lies along the north-northwest trending eastern margin of the Kings River Rift. This regional aeromagnetic and gravity linear high strikes south from the ~16.4 Ma McDermitt Caldera at the Idaho-Nevada Border through the previously producing Sleeper Au-Ag mine—14 miles to the north—and undeveloped Goldbanks Au deposit—30 miles to the south. These low-sulfidation, quartz-adularia epithermal deposits are contemporaneous with mid-Miocene rifting, with Ar/Ar dating of adularia at Sandman returning ages of ~16.2 to ~16.5 Ma.

Mineralization at Sandman is hosted predominantly within mid-Tertiary volcanic, volcanoclastic, and fluvial rocks and lesser basement Triassic metasedimentary rocks and late Mesozoic intrusions. The deposits with established resources include North Hill, Silica Ridge, Southeast Pediment and Abel Knoll, with additional epithermal mineralization/alteration recognized at Adularia Hill, Rembrandt, K8 and Ten Mile.

Hosted entirely by mid-Tertiary volcanics—mineralization at Adularia Hill, North Hill, Silica Ridge, and Southeast Pediment is both structurally and stratigraphically controlled. Abel Knoll is hosted by a mid-Tertiary diatreme composed of andesite, basement phyllites and tuffaceous wall rocks with mineralization also stratigraphically controlled in adjacent Triassic metasedimentary rocks. Au at Rembrandt is associated with structurally controlled rhyolite dikes intruding metasedimentary rocks while at Ten Mile, mid-Miocene epithermal mineralization overprints late Mesozoic mesothermal Au-Ag + base-metal mineralization that is structurally controlled and hosted predominantly by a late Mesozoic granodiorite stock and associated hornfels. Mineralization at the K8 target is hosted entirely by Mesozoic granodiorite cross cut by mafic dikes of an inferred Miocene age.

Excluding the Ten Mile deposit and K8 target, mineralization at Sandman occurs along north to north-northwest extensional structures along the margins of an Early to Middle Miocene structural graben. Intersections with older east and northeast structures and the presence of Early Miocene mafic dikes, sills and flows also played a critical role as fluid conduits. Post-mineral structural offset has affected all deposits to some degree.

Subtle topography limits outcrop exposures of mid-Tertiary rocks to capping mafic flows within the Basalt and Little Basalt Hills and more resistant quartz-adularia altered ridges occurring in the northwest of the project area. Additionally, extensive Quaternary deposits of the Crescent Dune Field cover much of the northern part of the property.

Outcrop and trench mapping combined with data from drill core and reverse circulation chip logging has led to the recognition of three (+) distinct tuff units within the Sandman stratigraphic section allowing for correlation of variable stratigraphy from deposit to deposit and providing regional context. Petrography, trace element geochemistry, and radiometric age dating has been utilized to create detailed stratigraphic columns for the project area. This work provides a detailed summary of Oligocene to Middle Miocene Tertiary rocks within an area of overall poor exposure, documents the furthest north occurrence of the regional Nine Hill Tuff, and establishes the presence of a major Oligo-Miocene paleo-drainage. This stratigraphic context is helping to unravel the pre-, syn, and post-mineral structural context of the Sandman project area and advancing exploration targets under cover and at depth.

BIO

Robbie Anderson began his path as a geologist two decades ago at the University of Georgia. While pursuing a business degree, a Geology 101 “Rocks for Jocks” class changed that all. The following year he was interning with the US Army Corp of Engineers monitoring spoil piles for dredging operations along the coastal waterways—and collecting phenomenal Miocene marine fossils. Following field school and subsequent summer internship with the Idaho Panhandle National Forest mapping Miocene placer garnet deposits, he fell in love with the geology of the west and realized the possibility of a career in the minerals (cont. on page 7)

industry. After graduation from UGA in 2006, he headed to Alaska to work as an underground mine geologist at the world class Greens Creek VMS deposit. One of the most rewarding positions he's held, the winters of SE Alaska called him to seek warmer, and drier, opportunities. Landing in Nevada in 2010, he began a M.Sc through the Ralph J. Roberts Center for Research in Economic Geology at the University of Nevada. Here this research focused on the mid-Miocene Sandman low-sulfidation epithermal Au deposit under exploration by Newmont at the time.

Graduating from UNR in 2013, Mr. Anderson was fortunate to work on both the Fire Creek and Goldbanks low-sulfidation Au systems before the Au market downturn later that year. Switching gears, he spent two years working in Upper Plate barite deposits throughout Nevada before experiencing yet another commodity crash and returning to Au exploration. 2015-2019 he returned to Newmont working with various production and exploration projects throughout Nevada and Utah before moving on to a position at the Coeur Rochester Ag-Au mine 2019-2020. Having come full circle, Mr. Anderson is now consulting for Gold Bull Resources to advance the Sandman Au project and other opportunities for the company within the Great Basin.

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**ALSO! The 2nd Annual Brian Morris Memorial Trap Shoot** is on Sept. 18<sup>th</sup> from 11:30 am to 5:00 pm at the Winnemucca Trap Club, 5001 E. Second Street in Winnemucca.

2-Buddy Team cost is \$150 which includes shooting, ammo, food and drinks! Non-shooter tickets are \$25 including lunch. See flyer on page 11 and watch for an email blast to the GSN membership! Click here to [\*\*REGISTER NOW!\*\*](#)

If you have any questions please contact Chad Peters at: [cpeters@ridgeline minerals.com](mailto:cpeters@ridgeline minerals.com)

## **GSN Elko Chapter—September 2021 Update**

The Elko GSN Chapter is excited to host our first speaker, Mark W. Travis of First Majestic Silver Corp. He will be speaking on new insights at Jerriitt Canyon. The event is graciously hosted by:  
**National EWP.**



The event will be held at the Western Folk Life Center on the regular day (3<sup>rd</sup> Thursday) September 16<sup>th</sup>.

**Food and drinks @ 6 pm and talk to begin at 7 pm**

**Presenter: Mark W. Travis, Senior Geologist, First Majestic Silver Corp.**

**Title: "Structural Modeling at Jerriitt Canyon for Near-Mine Targeting and Development"**

**Abstract:**

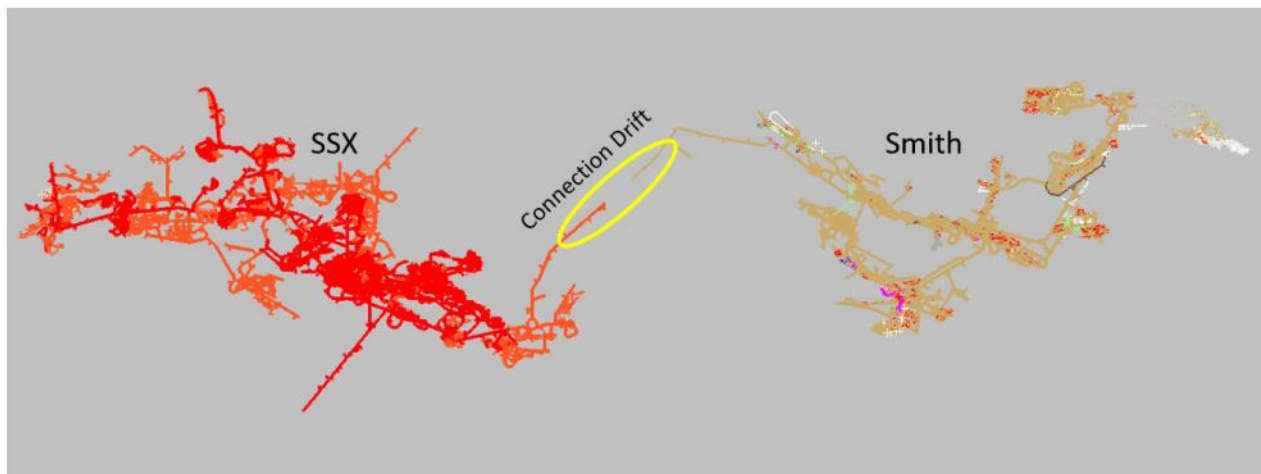
The Jerriitt Canyon District (located 70 km/45 miles North of Elko, NV) has been in production since 1981 and has yielded 9+ million ounces of gold from numerous surface and underground operations. During that time subsequent companies have carried on the work of producing and exploring for gold within an area greater than 100 square miles encompassing nearly all the Independence Mountains of Elko County, Nevada. Previous operators created structural models on a prospect-by prospect basis, but not on district scale. A comprehensive district-wide (cont. on page 8)

3D structural model opens previously unrealized opportunities within a well-trodden yet still relatively unexplored district.

The Independence Mountains is an antiformal North/South trending horst block that has a complex structural history overprinting Paleozoic marine sediments. The primary host-rocks for gold mineralization are the Devonian to Silurian Roberts Mountain Formation and Silurian to Ordovician Hansen Creek Formation. These host rocks are exposed within the district as erosional and tectonic windows of the Roberts Mountain Allochthon. Initial North-West trending extensional faulting and andesitic dikes (324 Ma) post-date the Antler orogeny during Pennsylvanian time. Subsequent orogeny, magmatism, and extension within the Jerritt Canyon District continued until Eocene time with North-east trending basin and range normal faulting and mineralized basalt dikes (40.8 Ma). Due to the complex structural geometry gold mineralization is structurally and stratigraphically controlled at intersections of North-West and North-East oriented faults and along structurally influenced dike trends throughout the district.

This report highlights the start of an on-going comprehensive 3D structural model of district-wide faults and dikes that was initially centered on the current producing underground mines (Smith and SSX). Utilizing all available geologic data, the subsurface expression of horst/graben defining features were generated within 3D space. Cross-cutting dike trends were modeled, as well as subsequent secondary faults associated with local, near-mine structural corridors. This 3D modeling work yielded favorable magmatic/structural corridors for near-mine exploration and development. However, the full potential use of the comprehensive structural model has yet to be realized with numerous district-scale exploration targets yet untested.

Applying comprehensive structural modeling to near-mine exploration, Jerritt Canyon is positioned to expanded upon known deposits and discover new mineralized zones adjacent to current workings or further afield. Current development has already exploited an opportunity to follow a North-East structural corridor connecting the Smith and SSX underground mines. This drift has already encountered favorable, mineralized dikes within untested ground. As with any model, as more data becomes available it will be refined and updated to direct future efforts. (continued on page 8)



**Please see their websites for more information**

#### **First Majestic Silver Corp.**

First Majestic owns 100% of four producing mines: the San Dimas Silver/Gold Mine, the Jerritt Canyon Gold Mine, the Santa Elena Silver/Gold Mine and the La Encantada Silver Mine.

The Jerritt Canyon Gold Mine is located in Elko County, Nevada. Jerritt Canyon was discovered in 1972 and has been in production since 1981 having produced over 9.7 million ounces of gold over its 40-year production history. The operation has one of three permitted gold processing plants in Nevada that uses roasting in its treatment of ore. The processing plant has a capacity of 4,500 tonnes per day ("tpd") and is currently operating at an average rate of approximately 2,200 tpd due to limited ore production from two underground mines. The property consists of a large, underexplored land package consisting of 30,821 hectares (119 square miles). First Majestic has identified several opportunities to enhance both the cost and production profile of Jerritt Canyon as well as near-term brownfield potential between the SSX and Smith mines and long-term property wide exploration potential.

[www.firstmajestic.com](http://www.firstmajestic.com)

#### **National EWP**

NATIONAL combines cost-effective drilling services with very technical capabilities and an unparalleled safety culture. We are a company of experienced drillers from the top down. We combine our team of highly skilled drilling experts with the best equipment in the industry to make each project successful and efficient.

<https://www.nationalewp.com/>



## GSN SILVER SUMMER SERIES

The GSN was honored to again have Doug Silver be the guest speaker at the summer event that bears his name, the “Silver Summer Series”! As always he entertained the 100+ people in the crowd with his “Independent” thoughts about the craziness of the world today, backed up by a lot of research and data.

We got lucky with the weather cooling off slightly and lighter smoke from forest fires in the sky, making for a beautiful evening. As usual, **Dan Kappes (Kappes, Cassiday & Associates)** was a most gracious and generous host, providing a wonderful catered BBQ dinner and his park-like backyard for the event. Thank you DAN!!

We also would like to thank **RESPEC** for donating the Great Basin beer kegs again and **CGS Mule** for donating a great selection of wines for the evening. Please always keep in mind that the event wasn’t “free” but was paid for by our generous host and sponsors!

Another highlight of the evening was being able to FINALLY honor our outgoing President from the 2019-2020 fiscal year, **Dennis Bryan**. He was thanked publicly for his 3 years of service to the GSN and presented with an engraved gold pan award.

The GSN Board of Directors also took the opportunity to honor **Camille Prenn** with an engraved gold pan award. She served **six** 3-year terms on the Board of Directors in addition to serving as GSN Treasurer for 8 years and still serving as the GSN Foundation Chair! She did all this while co-running her company, Mine Development Associates. Thank you Cami for all your years of past, present and future service to the GSN!



# GSN FALL FIELD TRIP – OCTOBER 2-3, 2021

## “The Silver State and More”

Kel Buchanan, GSN VP and Field Trip Leader

The 2021 GSN Fall Field Trip will visit three exploration projects, all former producers, as well as the Tonopah Historic Mining Park. All the properties are easily accessible from the Highway # 95 corridor.

The first tour stop will be at the Candelaria property owned by Silver One Resources, about a 3/12 hour drive south of Reno. The Candelaria mine has a long history of production dating back to the 19<sup>th</sup> century. Kinross was the last operator, producing 18 M oz (soluble) Ag and 65,000 oz (soluble) Au, prior to ceasing production in 1997. A drill program is planned by Silver One to commence in early September, according to Raul Diaz, of Silver One.

After the Candelaria, tour, we will travel a short 45 minutes to Tonopah, where we have scheduled two hours at the Tonopah Historic Mining Park. The park covers more than 100 acres and encompasses portions of four of the original mining companies' claims including the Silver Top head frame.

After checking into either the Mizpah or Belvada hotels, we will dine at the Mizpah and have as our featured dinner speaker, Bill Howald of Blackstone Silver. Bill will discuss recent developments on their property and if I am right, will make a few wry comments that should keep us well entertained.

After breakfast on Sunday morning, we will walk through the tombstones of Tonopah – Blackstone Silver's property is that close to town. Bill will continue to lend us his expertise while we examine core.

Our final stop of the day will be Pathfinder's Hall copper/molybdenum property, 10 miles north of Tonopah. John Mears of Pathfinder will provide pickup access to the open pit area while other tour members look at core, and at some point in the early afternoon, we will swap.

The field trip will commence at 7:00 AM from the DRI parking lot behind the GSN office on Raggio Parkway. We will overnight in Tonopah and will return to Reno, arriving about 7:00 PM. We have chartered a forty-eight passenger bus for this field trip. Hard hats and steel-toed boots are mandatory for liability issues.

The Covid issue may still be with us. Please note the GSN policy statement on Covid; stay safe and have a great time.

Please contact Laura Ruud at the GSN office, either by phone or e-mail, to save a spot. A link to register online will be emailed to everyone soon!



Tonopah Historic Mining Park. Photo by L. Ruud






12 GA. AMMUNITION PROVIDED

*Buddy Shoot Format*



*Brian Morris Memorial*



# TRAP SHOOT

SECOND ANNUAL

SEPTEMBER 18, 2021

AT THE WINNEMUCCA TRAP CLUB  
5001 E SECOND STREET, WINNEMUCCA NV



to register your team or for info  
on sponsorship please email

[briantrapshoot@hotmail.com](mailto:briantrapshoot@hotmail.com)





## **NEWS FROM THE FOUNDATION**

By Cami Prenn, GSN Foundation Chair

The Foundation has been busy over the summer with the Scholarship funds; taking applications, choosing recipients and sending out checks. These are the students who received funding:

### **GSN DD LaPointe Scholarship - \$10,000 Awarded**

Daniel Chafetz – 2<sup>nd</sup> year student in his Master's program in Geological Engineering. His project is ioneer's Rhyolite Ridge Li-B project with respect to its unconventional Li-clay mineralogy. His research is done as a collaborative effort with CREG, USGS and ioneer.

Sean Ingersoll – 2<sup>nd</sup> year student in his Master's program in Geology. His topic is spectral imaging as a vector for exploration of epithermal low sulfidation deposits in the Walker Lane.

Grant McKnight – 1<sup>st</sup> year student in his Master's program in Geology. His topic is Ar/Ar and U/Pb dating of altered and unaltered rocks to establish the currently unknown number of alteration events and temporal relationships between deposits and host rocks in the Monitor-Mogul mining district in Alpine County, CA.

Sarah Shapley – 2<sup>nd</sup> year student in her Master's program in Geology. The focus of her thesis is to link field observation and petrography to the chemistry of the fluids of the Cove Deposit.

Lindey Smith – Undergraduate as a 2<sup>nd</sup> year student in Geological Engineering. She grew up in Elko rockhounding with Grandfather and interned with NewFields during the 2021 Summer.

### **GSN Great Basin Scholarship - \$10,000 Awarded**

James McNeil – 2<sup>nd</sup> year in his PhD program in Geology concentrating on Neotectonics. His topic is the role of various fault systems withing the Basin and Range and Walker Lane to understand how strain can be accommodated on fault systems located hundreds of kilometers inland of an active plate boundary.

### **Brian Morris Scholarship - \$2,000 Awarded**

Neal Mankins – 2<sup>nd</sup> year student in his Master's program in Geology. His focus is to document intrusion-related gold mineralization by establishing the spatial and temporal relationships between intrusions, veins and alteration types in the Robertson deposit, formerly known as Tenabo, in the northern Shoshone Range.

Sean Ingersoll – 2<sup>nd</sup> year student in his Master's program in Geology. His topic is spectral imaging as a vector for exploration of epithermal low sulfidation deposits in the Walker Lane. This award was in addition to the GSN DD LaPointe Scholarship.

We look forward to seeing these students in person at GSN meetings and perhaps hearing a talk about their research projects. Thank you to all the donors to these Scholarship funds – your dollars are going to work!

# ***MORE NEWS FROM THE GSN FOUNDATION***



## **The Great Basin Scholarship**



The Great Basin Scholarship is aimed at mostly Ph.D. level research within the Great Basin that contributes to a fundamental understanding of the geology, preferably with a regional context. This is not directly related to ore deposits but can have implications. The fun thing about Economic Geology is we have to understand all our geology to be effective, so the funding of this scholarship will be of value to all geoscientists working in the Great Basin.

Ore deposits research is already reasonably well funded through CREG and GSN Foundation's D.D. LaPointe and Brian Morris scholarships. Faculty who have submitted project proposals through CREG do not tend to get funded because they are not project specific to company sponsors. This is an opportunity to expand the usefulness of the GSN Foundation scholarships to the entire geologic community.

We are the "Geological" Society of Nevada and fundamental understandings about the architecture of the Great Basin are a benefit to all geoscientists working in this domain. In addition, the bulk of the Faculty at UNR in particular, see the organization as ore deposits focused and do not participate in GSN. The intent is to build the Great Basin scholarship into something substantial, so we get more faculty participating and hence, their students.

The scholarship is open to anyone doing research on the Great Basin, not just UNR. Funding may continue for additional years if the research continues to look compelling. According to discussions with faculty, NSF funding for research is difficult unless it has global geologic applications. Since the Great Basin is particularly unique it is difficult to get support for Great Basin only research. It is also difficult to get sustained funding from other sources, therefore supporting a 3-4 year Ph.D. project is very challenging.

The first year, 2020, saw \$7.5k go to Andrew Levy a Ph.D. candidate under Dr. Andrew Zuza at UNR. The project takes a detailed look at Cenozoic extension in NE Nevada and is particularly concerned with the Ruby to East Humboldt core complex. This of course has been studied by many, but not enough detail or analytical data have allowed some fundamental questions to be answered. Systematic geochronology and thermobarometry will look at specific timing and metamorphism of the ductile extension, which may be younger than emplacement of the Eocene Carlin-type gold deposits and may have originated above the core complex (Howard, 2003). This impacts models for the origination of the Carlin trend, and more broadly, Carlin-type gold deposits (Muntean et al., 2011). Because Andrew is finishing, he did not reapply for this year. Andrew will be speaking at the Reno membership meeting in May 2022.

In 2021 the new recipient is James McNeil who is doing a Ph.D. project under Dr. Rich Koehler at NBMG. This looks at neotectonics in the lone region and will do cosmogenic nuclide dating of recent faults in alluvial fans. James will integrate this into the regional strain domains and, in particular, look at kinematics between the transtensional Walker Lane and the extension of the bulk of the Great Basin. Since the Walker Lane and the Great Basin overlap region have been in a similar stress regime over time the resultant strain domains can assist in locating structurally controlled ore deposits.

It is my intent to see this scholarship fund reach \$1 million so that the annual funding can be in the ballpark of \$50,000. This should almost fully support a student and their research. This will probably take a while but it will put GSN on the map by any researcher working in the Great Basin. The current value of the endowment is \$186k. The investment guidelines for the scholarship fund are to support research projects using a maximum of 90% of earnings from the prior year (integrated over time to allow for years with poorer investment performance), thus allowing the fund to grow into an endowment.

A committee composed of Bob Felder, Mario Desilets, and I review the proposals, speak directly with students and faculty and makes a recommendation to the Foundation Board on an annual basis.

I would like to see additional GSN member participation, and to that end will match any contribution up to \$100,000 until Dec. 15<sup>th</sup> 2021.

Richard Bedell

## **Geological Society of Nevada**

### ***“Vision for Discovery: Geology and Ore Deposits of the Basin and Range”***

#### ***GSN 2022 Symposium Call for Papers with Revised Due Dates And Call for Confirmation of Intent to Present Talks Accepted for 2020***

The GSN 2022 Symposium Technical Committee has continued updating and confirming the programs of talks and posters planned for the week of May 2<sup>nd</sup>, 2022 at the Nugget Casino Resort in Sparks, Nevada. As noted in April, the committee is soliciting new talks, talks submitted for 2020, and revisions of talks submitted previously. The committee has pushed back the deadline for submitting draft abstracts by two months to September 30<sup>th</sup>. Please see the revised schedule for submitting abstracts and papers below. The review of options for virtual presentations continues.

In 2022, final abstracts will be available as a digital addendum to the conference program pamphlet available on the symposium website or on an app to be available for smart phones at symposium. Papers new for 2022 will be published in an addendum to the 2020 proceedings. At present, the committee plans to publish the addendum for digital download and, possibly, as a limited edition softbound paper volume. A schedule for release of the proceedings is under review.

*If your 2020 abstract will be acceptable for 2022, you do not have to revise. Those scheduled speakers/poster presenters who did not write a paper for 2020 are encouraged to do so for the 2022.*

*If you plan to update your 2020 paper for 2022 please be sure that it is substantially new data, material, or interpretation. Duplicated 2020 versions for 2022 will not be accepted. Please indicate the new material and discuss with us. You may rewrite your 2020 abstract for your talk &/or poster to include a small or large amount of new material.*

#### **DUE DATES SUMMARIZED**

**Draft Abstracts Due: SEPTEMBER 30, 2021**

**Final Revised Abstracts Due: MARCH 1, 2022**

**Draft Manuscripts Due: OCTOBER 31, 2021**

**Final Revised Manuscripts Due: MARCH 15, 2022**

*Final revised papers in by March 15 should be available at least in digital download at the May 2022 Symposium. Those and later finalized papers should be available for purchase by late-summer 2022 as both digital downloads, USB, or a soft-bound Proceedings Volume. We will be rather strict about these due dates.*



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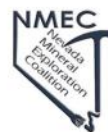
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***Field Trips***

***Short Courses***

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### **\*\*\*INFORMATION\*\*\***

**[www.gsnsymposium.org/](http://www.gsnsymposium.org/)**

**Office Manager phone: 775-433-8758**

***GSN has rescheduled the in-person meeting to Spring 2022 to assure the health and safety of our members and attendees. We appreciate your continued interest and support in the transition to the 2022 dates. There will likely be changes to the Technical Program, Field Trips and Short Courses. We have received support from those involved to accommodate changes.***

# Mining Activity Update

Mike Brady, JULY 2021

[LMBrady@aol.com](mailto:LMBrady@aol.com)

## NEVADA

Anglo Gold Ashanti Ltd. announced that it offered to acquire Corvus Gold Inc. for \$4.00/share cash or a total value of \$370,000,000. *Press Release:* July 13

Silver One Resources Inc. announced that recent drill results at the Candelaria Project include 105.16-129.54 meters @ 35 gpt Ag (SO20-084A); 184.4-198.12 meters @ 97.9 gpt Ag (SO21-078); 16.76-39.62 meters @ 28.7 gpt Ag (SO21-087) and 103.63-117.35 meters @ 123.0 gpt Ag (SO21-090). (resource = 12,384,000 tonnes @ 0.1 gpt Au, 110.2 gpt Ag measured+indicated) *Press Release:* July 15

Headwater Gold Inc. announced that it acquired an option to earn a 100% interest in the Spring Peak Property from Orogen Royalties Inc. for \$10,000 cash, \$250,000 in cash or shares and \$250,000 in exploration expenditures over 2 years. *Press Release:* July 13

Badger Minerals LLC. announced that it acquired an option to earn a 100% interest in the Kalium Canyon Property from Orogen Royalties Inc. for \$1,750,000 cash and \$5,000,000 in exploration expenditures over 5 years. *Press Release:* July 15

Scorpio Gold Corp. announced that recent drill results at the Manhattan /Gold Wedge Project include 137.3-152.5 meters @ 20.04 gpt Au (MWRC21-01); 54.9-57.9 meters @ 2.13 gpt Au (MWRC21-02); 122.0-128.1 meters @ 4.95 gpt Au (MWRC21-03) and 82.3-86.9 meters @ 3.12 gpt Au (MWRC21-04). (resource = 300,000 tonnes @ 10.58 gpt Au indicated) *Press Release:* July 20

Patriot Gold Corp. announced that recent drill results at the Windy Peak Project include 21.3-22.9 meters @ 0.24 gpt Au (PGWP21-01); 6.1-7.6 meters @ 0.29 gpt Au (PGWP21-02); 51.8-61.0 meters @ 0.36 gpt Au (PGWP21-03) and 21.3-73.1 meters @ 0.63 gpt Au (PGWP21-04). *Press Release:* July 26

Ridgeline Minerals Corp. announced that recent drill results at the Selena Project include 243.8-

352.0 meters @ 6.8 gpt Ag, 0.09 gpt Au (SE21-028); 18.3-33.5 meters @ 4.1 gpt Ag, 0.13 gpt Au (SE21-031); 39.6-51.8 meters @ 0.3 gpt Ag, 0.51 gpt Au (SE21-033) and 153.9-167.6 meters @ 11.5 gpt Ag, 0.22 gpt Au (SE21-035). *Press Release:* July 21

Gold Springs Resource Corp. announced that recent drill results at the Gold Springs Project include 89.9-97.5 meters @ 0.49 gpt Au (E21-02); 93.0-102.1 meters @ 1.58 gpt Au (E21-04); 62.5-67.1 meters @ 0.46 gpt Au (E21-05) and 54.9-64.0 meters @ 0.58 gpt Au (E21-07). (resource = 35,657,000 tonnes @ 0.53 gpt Au, 9.4 gpt Ag measured+indicated) *Press Release:* July 5

Gold Bull Resources Corp. announced that recent drill results at the Sandman Project include 111.3-131.1 meters @ 0.67 gpt Au (SA-024) and 4.6-24.4 meters @ 0.60 gpt Au (SA-027). (resource = 18,550,000 tonnes @ 0.73 gpt Au indicated) *Press Release:* July 21

Blackrock Silver Corp. announced that recent drill results at the Tonopah West Project include 439.8-442.9 meters @ 1.29 gpt Au, 136.1 gpt Ag (TXC21-01); 514.0-515.1 meters @ 3.08 gpt Au, 300 gpt Ag (TXC21-02); 399-400 meters @ 1.30 gpt Au, 135 gpt Ag (TXC21-05) and 348.7-352.2 meters @ 7.28 gpt Au, 510.9 gpt Ag (TXC21-06). *Press Release:* July 8

Summa Silver Corp. announced that recent drill results at the Hughes Project include 430.6-433.4 meters @ 2,252 gpt Ag, 21.6 gpt Au (SUM21-30) and 397.4-412.5 meters @ 79 gpt Ag, 0.76 gpt Au (SUM21-32). *Press Release:* July 21

Augusta Gold Corp. announced that based on recent studies at the Bullfrog Project, resources aggregate 52,290,000 tonnes @ 0.52 gpt Au measured+indicated and 9,020,000 tonnes @ 0.45 gpt Au inferred. (was 14,950,000 tonnes @ 1.02 gpt Au measured+indicated and 2,800,000 tonnes @ 1.20 gpt Au inferred) *Press Release:* July 14



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## GEOLOGICAL SOCIETY OF NEVADA

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Office hours: Monday through Friday, 9:00 AM - 4:00 PM. Please call or e-mail for appointment.

The Geological Society of Nevada (GSN) is a non-profit, educational organization whose principal objective is to promote the advancement of geological sciences, especially as they relate to Nevada. GSN supports the dissemination of information through meetings, field trips, publications and academic endeavors. Membership is open to geologists, geophysicists, geochemists, engineers, educators, students, prospectors or anyone else with an interest in the geological sciences and/or the goals of the GSN. The organization is based in Reno with additional Chapters in Elko, Las Vegas and Winnemucca.

The GSN Membership year begins September 1st. **Annual dues are \$50.00, Students \$25.00 or \$1,250.00 for Lifetime Membership. Dues are due in September each year at the commencement of the fall meeting schedule.** The GSN conducts a Field Trip in the Fall and one in the Spring of each year. Monthly meetings are held September through May in Reno, Elko, Winnemucca, and Las Vegas. If you would like to receive email announcements from one of the G.S.N. Chapters (Elko, Winnemucca or Southern Nevada) please check a box below.

Please help support the GSN Foundation and its scholarship funds when renewing if you can. Foundation dollars are used for the Kindergarten through 12th grade Field Trip Earth Science Grant Program, Nevada Mapping Grants, Field Camp Grants, and scholarships at the University of Nevada, Reno, and University of Nevada, Las Vegas.

### MEMBERSHIP APPLICATION

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Yes ☐ No ☐

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☐ \$50.00 - Regular Membership Dues 2022 - Email newsletter (International or Domestic) .....

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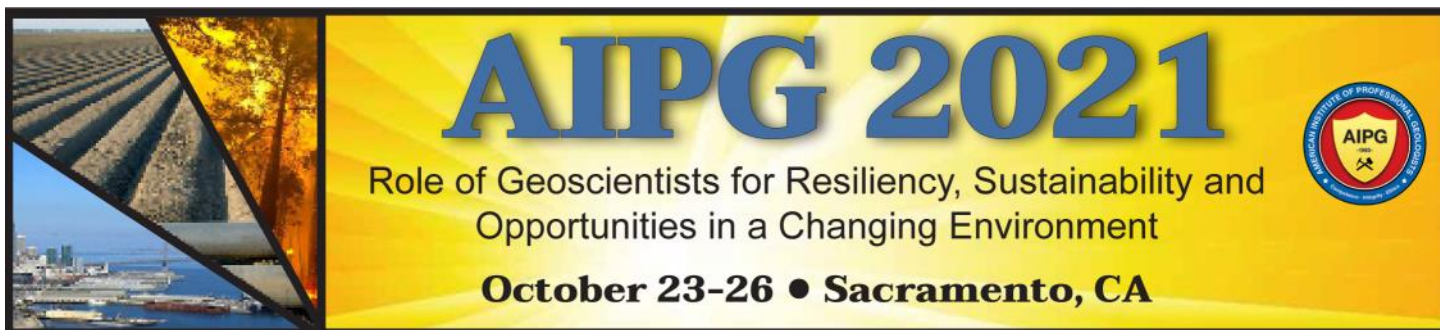
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### **AIPG NATIONAL CONFERENCE**

AIPG will host its National Conference as an in-person event experience where all individuals onsite, including attendees, guests, speakers, staff, and venue personnel, remain safe and comfortable throughout our event. We are continuing to monitor the COVID-19 pandemic through federal, state, and local authorities. Website: <https://aipg.org/page/2021CANationalConference>



### **ROCK TALK**

The “Rock Talk” this month comes from GSN Member John Lucas (one of our four members in Virginia!)

To the GSN Members:

Here is an interesting new blog aimed at exploration geologists. The focus is Australian but the subjects are universal.

I was a geologist working for Rio Tinto's CRA Exploration on their nickel search in Western Australia when the embedded video/movie in the CRAESTAR links [episodes 8 & 9] below were produced. I was briefly in Panguna, Bougainville during the late exploration phase and I'll never forget the heat and humidity and the bugs and terrain and how this affected my colleagues there as well as how it must have impacted our troops fighting there two decades earlier.

After bush work elsewhere and enduring the cycles described in Episode 10, I wound-up working for the late-great U.S. Bureau of Mines.

The video should serve as an appreciation of how things were before the digital age of satellites, GPS, global communications, computerized mapping and drafting and so forth.

John Lucas

<http://www.explorationradio.com/>

A ship named CRAESTAR (part 1)

<http://www.explorationradio.com/ep-08.html>

Exploration radio 2A ship named CRAESTAR (part 2)

<http://www.explorationradio.com/ep-09.html>

## OTHER UPCOMING EVENTS

**September 10-12, 2021: The NMEC (Nevada Mineral Exploration Coalition) is hosting the 8th Annual Great Basin Rendezvous.** The event will be held at the Royal Peacock Opal Mine in northern Nevada. Contact Dave Shaddrick, [dshaddrick@aol.com](mailto:dshaddrick@aol.com) or Warren Thompson [wfthompson@frontiernet.net](mailto:wfthompson@frontiernet.net) for more information. <https://nvmecc.org/>

**September 14-17, 2021: SEG is celebrating its 100th anniversary in 2021.** [www.seg100.org](http://www.seg100.org)

The annual conference showcases the new science and thinking that will benefit society in the future, framed by the understanding of the scientific accomplishments in economic geology and mineral discoveries over the last 100 years. We look forward to seeing you online at this virtual event and if possible, in Whistler, BC, Canada.

**September 14, 2021: NWRA 2021 Water Rights in Nevada Class.** 8:00 a.m. to 4:00 p.m. at the Winnemucca Convention Center in Winnemucca, Nevada. Register by August 27, 2021 for early rates. Go to <http://www.nvwra.org/2021-sept-water-rights-class> for class information and registration. For questions or more information call Tina Triplett at 775-473-5473 or [nevadawaterresources@gmail.com](mailto:nevadawaterresources@gmail.com).

**September 14-15, 2021: NWRA 2021 Nevada Gold Mines Tour of Turquoise Ridge Mine.** Departure from Winnemucca Convention Center in Winnemucca, Nevada. Register by August 20, 2021 for early rates. Go to <http://www.nvwra.org/2021-nevada-gold-mines-tour> for tour information and registration. For questions or more information call Tina Triplett at 775-473-5473 or [nevadawaterresources@gmail.com](mailto:nevadawaterresources@gmail.com).

**September 15, 2021: NWRA 2021 Advanced Water Rights in Nevada Class.** 8:00 a.m. to 3:30 p.m. at the Winnemucca Convention Center in Winnemucca, Nevada. Register by August 27, 2021 for early rates. Go to <http://www.nvwra.org/2021-sept-advanced-water-rights-class> for class information and registration. For questions or more information call Tina Triplett at 775-473-5473 or [nevadawaterresources@gmail.com](mailto:nevadawaterresources@gmail.com).

**October 12-13, 2021: NWRA 2021 Minerals & Mine Water Management Symposium.** Held at the Nugget Casino Resort in Sparks, Nevada. Register by September 1, 2021 for early rates. Go to <http://www.nvwra.org/2021-symposium> for Symposium information, program information and registration. For questions or more information call Tina Triplett at 775-473-5473 or [nevadawaterresources@gmail.com](mailto:nevadawaterresources@gmail.com).

**October 23-26, 2021: AIPG Annual Meeting; Role of Geoscientists for Resiliency, Sustainability and Opportunities in a Changing Environment, Sacramento, CA.** Submit abstracts at: <https://aipg.org/page/2021CACallforAbstracts>

**MAY 2-5, 2022: GEOLOGICAL SOCIETY OF NEVADA'S SYMPOSIUM 2022! Nugget Resort, Sparks/Reno Nevada.** Technical Sessions, Field Trips, Short Courses, Exhibits, Luncheons, Parties! Visit the Website for more information: [WWW.GSNSYMPOSIUM.ORG](http://WWW.GSNSYMPOSIUM.ORG)

## Nevada Mineral Exploration Coalition's Great Basin Rendezvous!



The Nevada Mineral Exploration Coalition's (NMEC's) 2021 Great Basin Rendezvous (GBR) is right around the corner - September 10<sup>th</sup> through 12<sup>th</sup>! The GBR will be hosted by NMEC at the Royal Peacock Opal Mine in the beautiful Virgin Valley adjacent to the Sheldon National Wildlife Refuge south and west of Denio, Nevada.

## REGISTER NOW!

### To send by mail, download official registration form

Your registration fee will cover dry campsites for tents or small trailers needing no hookups. Members will pay \$20.00 plus \$10.00 for each additional family member over age 12. Non-members will be charged a base fee of \$120.00 which includes a 2022 NMEC membership (and the remainder of 2021). The charge for larger trailer sites requiring 30-amp hook-ups is \$40.00 per night and 50-amp hook-ups is \$45.00 per night and will be over and above the registration fee. You must call the mine directly at **(775) 941-0374** to reserve one of these spots.



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