

GEOLOGICAL SOCIETY OF NEVADA NEWSLETTER

Geological Society of Nevada, 2175 Raggio Parkway, Room 107, Reno, NV 89512
(775) 323-3500 - Hours Tuesday -- Friday, 9 a.m. to 4 p.m. Monday by appointment.
Website: www.gsnv.org • E-mail: gsn@gsnv.org



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CALENDAR OF GSN EVENTS

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Dennis Bryan
Consultant
dpbryan@sbcglobal.net

VICE PRESIDENT
Mary Stollenwerk
ALS Minerals
Mary.Stollenwerk@alsglobal.com

SECRETARY
Steven Weiss
Consultant, Geologist
siraweiss@outlook.com

TREASURER
Bob Kastelic
McEwen Mining
bob_kastelic@yahoo.com

MEMBERSHIP CO-CHAIRS
Patty Capistrant, Renaissance Gold
plcapistrant@gmail.com

Kelsey Sherrard, Terraphase Engineering
Krsheppard@gmail.com

PUBLICATION CO-CHAIRS
Ruth Carraher, C&M Consultants
racarraher@gmail.com

Shannon Gill, Kinross Gold
shannon.gill@kinross.com

GSN EXECUTIVE MANAGER
Laura Ruud
gsn@gsnv.org

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Dennis Bryan

Most Recent Past GSN President
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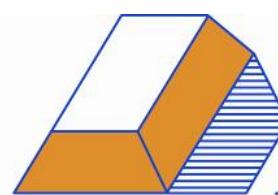
- Aug. 9, 2019 FRIDAY** **17TH ANNUAL "SILVER" SUMMER SERIES BBQ IN RENO**
Guest Speaker: Mr. Doug Silver, Orion Resource Partners. Title: "*Why no one is investing in Mineral Exploration: Facts Vs Myths*". Location is at Dan Kappes's home, 13045 Welcome Way, Reno, NV. 6:00 PM Drinks, 6:30 PM Potluck BBQ, 7:30 PM talk begins. **Sponsors for the evening are Kappes, Cassiday & Associates, Mine Development Associates, CGS Mule and MRC Inc.** Please RSVP by August 6th to Laura Ruud at the GSN Office, gsn@gsnv.org or 775-323-3500. Details on page 3.
- Aug. 14, 2019 WEDNESDAY** **WINNEMUCCA CHAPTER SUMMER BBQ!**
The annual BBQ will be held at Highland Park, 4220 Water Canyon Road, Winnemucca, NV, 4:30 to 8:00 PM. **Food & Drinks Sponsored by: ALS Minerals & Boart Longyear.** For more information, please contact Robbie Anderson at robbie.agau@gmail.com. Details on page 7.
- Aug. 15, 2019 THURSDAY** **ELKO CHAPTER SUMMER BBQ #3**
The Elko monthly BBQ will be held at the Duncan Little Creek Gallery Bar Backyard, 516 Commercial St. BBQ begins at 6:00 p.m. **Food & Drinks Sponsored by EM Strategies.** For more info please contact Diane Cheung-Harris at dianehcheung@gmail.com, Details on page 7.
- Sept. 14, 2019 SATURDAY** **1st ANNUAL BRIAN MORRIS MEMORIAL TRAP SHOOT!!**
2-man "Buddy Shoot", Humboldt Co. Shooting Range, Winnemucca, NV. \$140 per team includes prime rib dinner and 12 gauge ammunition. Register by emailing: briantrapshoot@hotmail.com. See flyer on page 10.
- Sept. 20, 2019 FRIDAY** **GSN MEMBERSHIP MEETING** will be held at Great Basin's Taps & Tanks, 1155 S. Rock Blvd. Reno, NV. Drinks @ 6:00 pm, APPETIZERS @ 6:30 pm, Talk @ 7:15 pm. Speaker, Lucia Patterson, NDOM. Topic: Navigating NDOM's & NBMG's new open-data site. Contact Laura Ruud at gsn@gsnv.org.

G.S.N. "SILVER" SUMMER SERIES SPONSORS!



**MINE DEVELOPMENT
ASSOCIATES**
A DIVISION OF **RESPEC**

R
RESPEC


KCA
Kappes, Cassiday & Associates



MRC
MANAGEMENT RESOURCE CONSULTING

CGS MULE
COMPLETE GEOLOGICAL SUPPLIES


FROM YOUR NEW PRESIDENT
Dennis Bryan, GSN President 2019-2020
AUGUST 2019

Greetings to all the GSN members. As incoming President of GSN this year I would like to say it is an honor to represent one of the most prestigious and respected geological societies within this country, if not the World. I have been a GSN member ever since my graduate school days in the early 1970's when we would traipse down to the Stein in downtown Reno to rub elbows with the industry "elite" and the occasional "academic" in order to expand our knowledge, network with like-kind and quench our thirst. Somewhat similar to what we still do!

It is going to be a big year for our society with the upcoming Symposium planning moving briskly forward for next May under the exceptional leadership of Eric Struhsacker, GSN 2020 Symposium Committee Chair, along with the assistance of an exceptional committee of dedicated volunteers.

The Summer Silver Series speaker August 9th, once again at Dan Kappes's home, will bring back the Silver Series namesake himself, Mr. Doug Silver. After a hiatus of a few years he will again regale us with his keen insight and often subtle humor into the vagabond industry so many of us are so entwined in. Doug's presentation is entitled: "**Why no one is investing in Mineral Exploration: Facts Vs Myths**". Sounds like it should live up to the hype we have all come to expect when Doug's in town.

I would also like to recognize the leadership of our Past-President, Richard Bedell, and all our 2018 – 2019 officers and chairs for keeping our organization moving forward. Similarly, I want to welcome to the Executive Committee our new Vice-President Mary Stollenwerk and new Membership Co-Chairs, Kelsey Sherrard & Patty Capistrant.

Our organization runs on volunteers and we very much appreciate it when you step up and help with the various activities, meetings, speaking engagements, field trips and other events that make this organization so special. Without your unselfish willingness to assist this organization we would not be where we are at today.

The principal mission of our Society is to promote the advancement of the geological sciences, especially as they relate to Nevada. And don't forget our secondary mission of supporting the GSN Foundation as well, which is to fund a number of earth science related charitable programs. Let's leave a legacy that speaks of our commitment and dedication to the career path we chose.

Am looking forward to an eventful year and hope to see many of you at our upcoming meetings and other events. If you have any ideas to further enhance our organization and "fly the flag", please don't hesitate to speak up.

Thanks, and looking forward to seeing you soon.

Dennis

***The G.S.N. wishes to thank
HARRIS EXPLORATION and
FALCON DRILLING for
sponsoring the MAY 18, 2019
MEETING in RENO!***



**FALCON
DRILLING**



GSN “SILVER” SUMMER SERIES BBQ—AUGUST 9, 2019

17th Annual “Silver” Summer Series BBQ With Special Guest Speaker: Doug Silver

Title: “*Why no one is investing in Mineral Exploration: Facts Vs Myths*”

Date: Friday, August 9, 2019

Time: Drinks @ 6:00 pm, BBQ/Potluck Meal @ 6:30 pm, Talk @ 7:30 pm

Where: Dan Kappes’s Home, 13045 Welcome Way, Reno, Nevada

Things to Bring Along: A Side Dish, Salad or Dessert to share and a Lawn Chair!

Dan Kappes is providing the BBQ’d meat & hosting the event again; Mine Development Assoc., a division of RESPEC, is providing the beer kegs, CGS Mule is providing wine, MRC Inc. is providing scotch.

DIRECTIONS TO DAN’S HOUSE (Please Carpool if you CAN!):

Take U.S. 395 to Damonte Ranch Exit. Head west on Arrow Creek Parkway, turn right (north) on Thomas Creek Rd. Turn right on Welcome Way at the 4-way stop sign. Dan’s house is downhill from the corner, the first house on the left (except for the corner house) 13045 Welcome Way. Call if you get lost – Dan’s Cell phone is: 775-848-1981 and home phone: 775-622-1117.

Membership Renewals Coming Soon!

GSN members, this is a reminder that your yearly membership fee is due by the September monthly meeting. Membership dues are \$50. Nevada student dues are \$10 (with Geotemps donating \$15 towards the \$25 dues of each Nevada student!). You can also become a lifetime member and never have to worry about dues renewals again for just \$1,250.

Please log on to: <http://gsnv.org/membership/join-gsn.php> to pay your dues online. If paying by check you can print the form on page 11 and mail it in. We are very close to launching our new website that will make it easier for members to pay their dues online and edit the directory.

We will email you when it is LIVE!! If you have questions please contact Patty Capistrant or Kelsey Sherard, GSN Membership Co-Chairs (see pg. 1). Thank you for continuing to be an important part of this great organization!

“FACES OF GSN”

Phoebe Hauff

Monday, August 31st, 1942 - Friday, April 5th, 2019

Obituary

Phoebe Louise Hauff, born August 31, 1942, passed away peacefully on April 5, 2019 at St. Anthony Hospital in Lakewood, Colorado after a long series of illnesses.

Phoebe will be remembered for her strong and forthright personality, avid travel, generosity to friends, scientific drive for more information on and knowledge of minerals, her love of parties big and small, and service as an international “hub” for mineralogical information and spectral geology.

Phoebe was born in Challenge, California, but moved with her parents, Emil E. Hauff and Grace (Aloise) Lytle Hauff, to Menlo Park, California early in life and lived there until after graduation from high school. She recalled many visits from members of her father’s farming family from North Dakota, especially during the winters after the harvests were completed.

She attended high school at the Convent of the Sacred Heart in Atherton, California. Based on stories of her school years, she apparently was a key figure, and often probably also instigator, in many high jinks by a close group of school friends that were not approved of by the nuns, but livened up the environment for the students at the time. Those friendships and the school remained treasured until the end of her life. She graduated in 1960.



Phoebe attended college at the University of California-Berkeley (UCB) during the turmoil of the early to mid-1960s. Although she decided not to get involved in the political scene and student unrest and riots, she observed much of the action at the time from nearby buildings. Following on her tradition of extracurricular activities in high school, she participated in many “events” (common in colleges at the time) with schoolmates, including periodic detergent sudsing of a large fountain in town, repurposing of city work and traffic signs, and harassment of rival colleges’ icons. Phoebe also was closely involved in the Newman Hall-Holy Spirit Parish at UCB, a strong Catholic organization on campus then and which remains active today. Phoebe graduated in 1965 with a Bachelor of Science in Geology. She likewise treasured and remained in contact with many of her classmates from UCB.

Phoebe moved to Colorado to pursue her love of geology as a career and further college studies. She attended Colorado State University in Fort Collins from 1965 to 1968, but did not complete her planned graduate degree program. She started work at the U.S. Geological Survey (USGS) in Lakewood in 1968 and stayed there until 1983. She was a Supervisor in charge of an analytical laboratory which served the USGS Geologic Division geologists assigned to solving problems in mineralogy. It also provided limited mineral identification services to the general public. The laboratory developed mineral identification and characterization techniques and methods and taught classes within the USGS as well as to industry personnel. This is the period when Phoebe developed her in-depth knowledge of mineralogy and mineral analysis, particularly of the clay minerals.

Her wilder side continued after she moved to a rustic house in Conifer, Colorado, including being a regular patron of the famous Little Bear Bar in Evergreen. The Little Bear then was a frequently rowdy place, gaining it infamy in the region for bar fights and other carousing. It also featured live music and frequently hosted big-name acts, including Willie Nelson who frequented the bar when staying at his house in the area and whom Phoebe got to know and visit with on many occasions.

Phoebe also served for a time as a volunteer EMT with the Conifer Fire Department. Her main area of activity was the U.S. Highway 285 corridor, which saw many car accidents due to its steep and winding roadway. She left the department after dealing with several gruesome accidents in a short time frame in the early 1970s. She also managed to be personally involved in a couple accidents, one on a motorcycle and one in a car. She never fully got her knees repaired from those incidents, which was the basis for her increasing knee and walking problems in her 60s and early 70s.

In addition to working at the USGS, Phoebe took on an evening job for a few years at the Montgomery Ward department store in Lakewood to make some extra money. She was in charge of the night shift for their regional mail order office. During her supervision, the group did very well and became a significant part of the income stream for Montgomery Ward in the Denver area.

Phoebe left the USGS in 1983 to begin her entrepreneurial stage of career by starting the Clay School, based at her house in Conifer. This was a joint venture with Dr. Robert Reynolds of Dartmouth University and Dr. Ross Geise of State University of New York-Buffalo. The school was established to teach clay mineralogy concepts and techniques to industry, government agencies, and academia. Phoebe also became closely involved with the Clay Minerals Society and their technology, development and educational programs. (continued on page 5)

Phoebe Hauff (continued from page 4)

During the 1970s and 1980s, Phoebe was very active in the dog show community of the Colorado Front Range. She raised and showed multiple dogs, her favorites being Norwegian elkhounds (Gatsby being her most beloved dog and last to be shown).

In 1986, Phoebe became a Research Associate at the University of Colorado in Boulder in their Center for the Study of Earth from Space (CSES). The CSES was established by Dr. Alexander Goetz as a teaching and research institute in geologic and environmental remote sensing. Dr. Goetz was formerly with the Jet Propulsion Laboratory in Pasadena, California and one of the best-known researchers in the field of hyperspectral remote sensing.

At CSES, Phoebe helped set up a mineralogical analysis and research laboratory for the infrared spectroscopy of minerals. This laboratory interacted with the geologists, geophysicists, and environmental scientists in CSES and outside researchers. In addition, she worked with graduate students in a teaching and advisory capacity. The laboratory did fundamental research in spectral mineralogy using the visible through short-wavelength infrared (SWIR) regions of the electromagnetic spectrum, particularly concentrating on the SWIR. This was integrated into remote sensing research using both satellite (LANDSAT TM) and airborne (AVIRIS) sensors.

One of the primary CSES projects in which Phoebe was instrumental was to develop portable-to-the-field ground truthing methods for hyperspectral remote sensing scanners, specifically AVIRIS. The objective was to develop field data collection protocols and mineral spectral libraries using solar-illuminated field spectrometers. This work by Phoebe included participation in a UNESCO-funded program that produced a detailed, multi-analytical infrared spectral database of common minerals identified in different remote sensing environments. Among these were lithologic mapping and clay mineralogy characterization in the Paris Basin with Dr. Medard Thiry of Ecole des Mines de Paris; clay minerals in metallurgical processes in gold heap leach pads; clay minerals for exploration geology with Drs. Raul Madrid and Fred Kruse; clay minerals for geologic and alteration systems mapping with Dr. Kruse; quantification of infrared spectra with Ben Feltzer; authentication and provenance of archeological artifacts using SWIR with Dr. Brian Curtis; mine waste evaluation and characterization with Dr. Kruse; and development of “unmixing” algorithms for mineral identification of hyperspectral imaging spectrometer data with Dr. Kruse. Much of the research was applied to the development of field spectrometers commercially produced by Analytical Spectral Devices (ASD) in Boulder and the PIMA-II, produced by Integrated Spectronics (ISPL) in Sydney, Australia.

In 1991, Phoebe went out on her own using her in-depth analytical expertise in the science of mineralogy, particularly her background in SWIR reflectance spectroscopy, and founded Spectral International Inc. (SII). SII initially was the applications, training, and marketing organization for the PIMA-II portable infrared spectrometer developed by ISPL. SII worked extensively with the Australian Commonwealth Scientific and Industrial Research Organization (CSIRO) as part of Phoebe's efforts with PIMA and building of mineral spectral databases. SII shortly thereafter expanded to include consulting work in the mineral exploration, industrial minerals, mine waste, abandoned mine lands, and environmental industries. Phoebe was the key person at SII for all these functions, but over time the company expanded to include technical, training, and sales associates in five countries.

Phoebe has been acclaimed by some of her colleagues in the mineral exploration industry as the person who single-handedly promoted portable spectrometry to industry, academia and government organizations for finding metal deposits and guiding exploration efforts directly and through other remote sensing means. She did this through marketing efforts both personally (i.e., “banging on doors”) and through numerous technical and trade shows in the 1980s, 1990s, and 2000s. Her introduction of the SWIR technology has been noted as “ground breaking and disruptive...into the mineral exploration community.”

After many years of working with the PIMA spectrometer, SII included activities with ASD to promote and sell their spectrometers. SII then moved to operations with Spectral Evolution Inc. of Massachusetts to help them design a spectrometer to market to the exploration and mining industry and promote sales of that spectrometer.

Phoebe travelled extensively domestically and internationally during both her tenure at CSES and for SII business. She also travelled for pleasure, particularly with her very close friend Concetta Jorgenson, who passed away in 2012. She visited numerous countries and clients, too many to list here, and every continent (multiple times) except Antarctica. She had an endless appetite for new knowledge of minerals and applications to mineral deposits. There were always more mineral spectra to acquire and mineral repositories to visit to add to her extensive mineral database. She delighted in her numerous business contacts and friends around the world, and kept in regular touch with many of them up until her last months of life.

A major mining industry downturn in 2014 led to dramatically reduced spectrometer sales and consulting jobs. This combined with Phoebe's increasing health problems over 2014 and 2015 finally ended most SII business and forced Phoebe into a series of hospitals and nursing homes from which she was unable to emerge. Nonetheless, she never gave up hope and plans for a comeback if she could get her health issues back under control and the business climate improved. Even up until a month before her death, she still was hoping and planning for future travel to technical meetings and potential consulting jobs.

Phoebe had no living immediate family. Her beloved cats, Harley and Hudson, have gone to new and loving homes in the Denver area. She is survived by her adopted “family” (family of Concetta Jorgenson), the Jorgensens, Martinsens, and Morgans (godmother of Andre Morgan) of California and Australia, with whom she stayed very close until the end. Phoebe also is survived by a nephew in Minnesota, Monte Engel, and his family. Phoebe had cousins in North Dakota and California, for whom we unfortunately do not have a list of names and locations.

A memorial service for Phoebe was held on July 28, 2019 in Golden, Colorado. Donations can be made in her memory to the Foothills Animal Shelter (https://4agc.com/donation_pages/8315254b-cb86-42a9-a05b-81d1c9294f9b) or to the student support programs of the Clay Minerals Society (cms@clays.org).

Another Great GSN Member Picnic!

By Bob Thomas, Chairman of the GSN Board of Directors

The summer GSN member picnic was held on June 21 at Rancho San Rafael Park in Reno. We were blessed with very comfortable temperatures, a nice break from the heat of the last few picnics. We had a little over 100 attendees. The event was again organized by the GSN Board of Directors, and for once we had just about exactly the right about of burgers and hot dogs – everyone had their share and we didn't run out! Robbie Anderson spearheaded the game activities ("Game Czar"), and went out of his way to purchase the equipment for a new game - the cornhole toss. I must say, however, that this picnic crowd was not exactly a game-loving group, as game participation was a little off. Low game attendance notwithstanding, everyone seemed to have an enjoyable time, which is what counts most. Besides Robbie, certain people deserve a hearty thank you for their generosity and effort. Dave Shaddick secured the site reservation on his own dime for the Peavine Pavilion, by far the best picnic site at the park. The beer was provided by MDA/RESPEC – with Cami Prenn organizing the effort (the kegs didn't just show up on their own!). Once again, wonderful tasty desserts were prepared by Molly Hunsaker and Patty Capistrant – we even had ice cream! Greg French and John Watson were the head burger/dog grillers, and their job was made more comfortable due to Steve Weiss's contribution of a tarp wind break – he made a special trip back home to get it. Cami once again served as overall food organizer, salad maker, onion and tomato cutter and generally made sure everything was available as the crowd loaded up their plates. Finally, Laura Ruud helped remind us of the numerous things we probably would have forgotten, including provision of game prizes. Thanks all!



GSN WINNEMUCCA CHAPTER SUMMER BBQ

WEDNESDAY, AUGUST 14, 2019

4:30 p.m.—8:00 p.m.

Come enjoy some food and drink while playing games and catching up with friends!

Location: Highland Park

4220 Water Canyon Road

Winnemucca, Nevada

Food and Drinks Sponsored by:



GSN ELKO CHAPTER SUMMER BBQ #3

(last one before we go back to our regular meetings at the Western Folklife Center)

THURSDAY, AUGUST 15, 2019

6:00 p.m.—9:00 p.m.

Location: Duncan Little Creek Gallery Bar (Backyard)
516 Commercial Street
Elko, Nevada

Food and Drinks Sponsored by:



G.S.N. SPRING 2019 FIELD TRIP WAS A BIG SUCCESS

Thanks to our very generous sponsors and also to our hard-working field trip organizer, Dennis Bryan, another successful GSN field trip on June 1 -2, 2019 is in the books! Our sponsors for this trip were:

Boart Longyear, Envirotech Drilling, ALS Minerals and American Assay Labs!

The two-day bus trip was to the northern Mother Lode area and beyond in Northern California. The emphasis for the trip was visiting historical mining operations from the 1800's and imagining what life must have been like back then. We went underground at the historical 16 to 1 Mine in Alleghany. Thanks to Michael Miller and crew for an exceptionally vigorous and informal tour. Alleghany, which many consider to be on the northernmost segment of the "Mother Lode", was the most famous high-grade gold mining district in California.

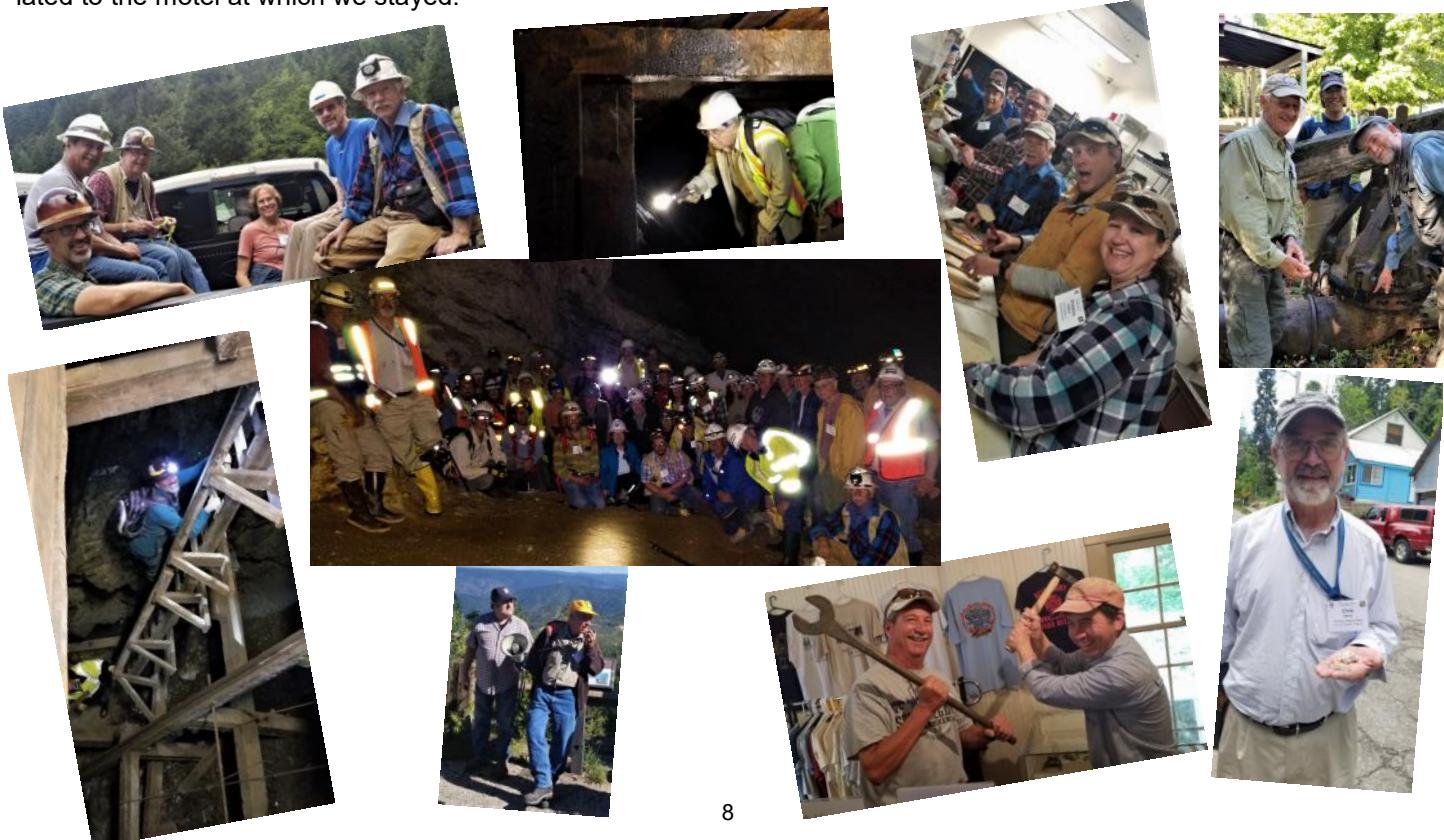
We overnighted in Nevada City and enjoyed an evening social hour and dinner. The speaker for the evening was Chris Henry from the Nevada Bureau of Mines and Geology, accompanied by Odie Christensen discussing something along the lines of:

"More than you ever wanted to know about the auriferous channels, geology, history and where did that gold really come from?"

The next day we visited the Malakoff Diggins and the associated mining town of North Bloomfield. The Malakoff Diggins preserves the largest hydraulic gold mining site in California. It first started in the early 1850's, after most of the active rivers and streams of the surrounding Sierra had been relieved of their accumulated gold nuggets. The tour of the adjacent town of North Bloomfield, with its numerous vintage buildings and businesses, is where those miners lived and raised their families.

We then proceeded up Highway 49 to Goodyears Bar and Downieville, gold placer heaven back in the 1850's, and on to the Lakes Basin region where we stopped at Sardine Lake for lunch and took in the scenic beauty of the Sierra Buttes. The trip was originally planned to follow the Gold Lake Highway north to Graeagle but the exceptional snows from last winter still had the road closed in early June so we had to detour. We were even treated to a bald eagle fishing in the lake. We ended the day at Plumas Eureka State Park where, in 1851 a rich gold ledge was found on the side of the mountain which eventually led to the establishment of the Plumas Eureka Mine which produced, intermittently, up until the 1940's. The field trip guide is the Geological Society of Nevada Special Publication No. 67.

This field trip was principally organized by Dennis Bryan, occasional consultant, and Bob Pease, consultant, who has lived in Grass Valley for half a century. David Lawler came to our rescue Saturday evening, bailing us out of a projector quandary we didn't anticipate and because he is from that part of the country, he shared a lot of good information about various things along the way. Chris Henry was also instrumental in suggestions and advice for the trip and, as always, thanks to Laura Ruud for organizing many of the logistics and making sure things ran smoothly. Laura should especially be thanked for having to unexpectedly make lunches for Sunday on the fly and to deal with another couple of issues related to the motel at which we stayed.





THIS NEW G.S.N. GUIDEBOOK AVAILABLE FOR PURCHASE!

G.S.N. Special Publication #67

Get your copy of GSN's newest field trip guidebook published in conjunction with the June 2019 field trip titled "Mining History and Some Geology, Northern Sierra Nevada"

Cost is \$45 plus \$9 shipping in the U.S. To order, please contact Laura Ruud gsn@gsnv.org or 775-323-3500.



The Nevada Division of Minerals & Bureau of Mines and Geology



Invite **YOU** to attend a **FREE** $\frac{1}{2}$ day workshop at the
Nevada Department of Wildlife Office in **Elko**

60 Youth Center Road

Elko, NV

Thursday September 12, 8am – 12pm

The purpose of this workshop is to demonstrate what data is available on our websites and how to leverage built in functionality. Users will learn how to navigate the data, utilize the interactive maps, customize displays, employ widgets, view and export data.

Please bring a laptop.

Presentations highlighting each open data site will be followed with attendee guided demonstrations.

RSVP to Lucia Patterson
lpatterson@minerals.nv.gov
25 attendees MAX

FIRST ANNUAL
**BRIAN MORRIS MEMORIAL
TRAP SHOOT**



TWO MAN "BUDDY SHOOT" FORMAT
HUMBOLDT COUNTY SHOOTING RANGE

**SEPTEMBER
14th 2019**
11 AM REGISTRATION

6 PM DINNER
AT CONVENTION CENTER

\$140 PER TEAM

INCLUDES TRAP SHOOT AND
PRIME RIB DINNER CATERED BY
THE MARTIN HOTEL

12 Ga. AMMUNITION PROVIDED

Silent and live auction with all proceeds to support the
Brian Morris Scholarship Fund.

Spots are limited! Email briantrapshoot@hotmail.com
to preregister or for sponsorship information.



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SITTIG
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AMERICAN
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THE
COCHRANE
FAMILY

RIDGELINE
MINERALS



GEOLOGICAL SOCIETY OF NEVADA

2020

2175 Raggio Parkway, Room 107, Reno, NV 89512 USA

Phone (775) 323-3500 • Fax (775) 323-3599 • gsn@gsnv.org • www.gsnv.org

Offices are located at NBMG's Great Basin Science Sample & Records Library at The Desert Research Institute

Walk-in Office hours: Tuesday through Friday, 9:00 AM - 4:00 PM. Mondays - Call or email 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 Renewal New

Date: _____

Name: _____ Position/Title: _____

CHECK HERE if everything is the same as before, except as indicated below.

Consultant Consulting Geologist Company Name: _____

Current Full-Time Earth Science Student University: _____ Alma Mater: _____

Address: _____ City: _____ State/Province: _____ Zip Code: _____

E-Mail: _____ Country: _____

Email address is required for Emailed Newsletter

Office/Work #: _____ Website: _____

Fax #: _____

Cell Phone #: _____ Home Phone # (optional): _____
(Your home phone number will not be listed in the Directory)

I would like to have an asterisk by my name in the directory indicating I am available for consulting.
 I have met the licensing requirements and want "QP" (Qualified Person) by my name in the directory.

I authorize GSN to send to me, via email: GSN event announcements, publications updates, employment opportunities, etc.

Yes No

Optional Chapter Affiliation (to receive Chapter announcements directly and Chapter voting rights):

Elko Chapter Southern Nevada Chapter Winnemucca Chapter

\$50.00 - Regular Membership Dues 2020 - Email newsletter (International or Domestic)

\$70.00 - Regular Membership Dues 2020 - Hardcopy newsletter via postal service (Domestic Only)

\$10.00 - Nevada Student Membership Dues 2020 \$25.00 - Non-NV Student Membership Dues 2019
(NV student's dues are subsidized \$15/ea. by Geotamps, Inc.)

LIFETIME MEMBERSHIP - 25 X the Current Dues Rate (25 x \$50 in 2020 = \$1,250.00)

DONATIONS: I wish to donate to the GSN Student Field Camp Fund _____

I wish to donate to the UNR Geology - D.D. LaPointe Scholarship Fund _____

I wish to donate to the GSN Foundation General Fund (K-12 field trips; geology scholarships; mapping) _____

TOTAL: _____

Payment Type: Check # _____ Cash Visa Master Card Discover American Express

Card Number: _____ Exp. Date: _____ Security code: _____

(If paying with a credit card we request that you pay on the website: Gsnv.org)

Name (as it appears on card): _____ Billing Street # (or P.O. #) and Zip Code: _____

Mail payments by check to: Geological Society of Nevada,
2175 Raggio Parkway, Reno, NV 89512
Fax to 775-323-3599. E-mail: gsn@gsnv.org
Website: www.Gsnv.org

GEOLOGICAL SOCIETY MEMBERSHIPS

by Tommy Thompson

"Thank You" to those GSN members who responded to a questionnaire that I generated after communicating with editors of the new "Mining, Metallurgical, & Exploration" journal of SME. Through 3 issues the journal has had no geological paper. I had made earlier written comments to the editor of "Mining Engineering" about the lack of geological content in that publication compared to when I joined AIME (now SME) in 1964. I told the journal editors that I suspected geologist membership numbers were low due to the lack of geological content in their publications. Their response did not accept my comments. Molly Hunsaker generated the online survey via Survey Monkey and provided the summary information.

The response from 359 GSN members supports my surmise about the low geologist memberships in SME (**TABLE 1**). I was, also, surprised by the low numbers of GSN members in GSA, AEMA, and AIPG, and only slightly more than half are SEG members.

TABLE 1. SUMMARY DATA ON MEMBERSHIPS IN OTHER GEOLOGICAL SOCIETIES.

MEMBERSHIPS	YES	NO
SME	22.28%	77.72%
AIPG	32.50%	67.50%
CPG	28.25%	68.15%*
SEG	55.15%	44.85%
GSA	26.05%	73.95%
AEMA	35.63%	64.37%

*3.60% in process of certification

2019 Prazen Living Legend of Mining Award

The American Exploration & Mining Association ("AEMA"; formerly known as the Northwest Mining Association) founded in 1895, is a 1,900-member, non-profit, non-partisan trade association based in Spokane, Washington. Its diverse membership includes every facet of the minerals and mining industry and is a true cross-section of the American mining community, from small miners and exploration geologists to both junior and large mining companies. The Association's mission includes a focus on public, legislative and industry outreach.

AEMA's The More You Dig campaign is a public education effort to increase understanding about the importance of mining in our daily lives, generate accurate public perceptions of mining, and inform the media about the modern mining industry. The program emphasizes that the raw materials extracted by mining are critical to the daily activities of every person in our society. AEMA offers educational resources for all things mining: the process, products, careers, economic impact, safety, environmental protection, and more.

Seeking to enhance teachers' knowledge and ability to educate students about the importance of mining, AEMA has sponsored the Northwest Natural Resources Institute (NNRI) Teacher's Workshop since 2006. The workshop, held every summer, is free for teachers. It includes three full days with hands-on learning about earth sciences, guest speakers, and field trips to area mines. The workshop has educated over 500 teachers providing them with information and activities to effectively engage students in learning earth science, particularly about minerals and metals.

AEMA advocates for the policies necessary to ensure a robust domestic mining industry. It works to educate local, state, and federal legislators and congressional staffers about the strategic importance of mining to our country, particularly in the areas of manufacturing, renewable energy development, national defense, communications, transportation, and advancements in high technology.

In addition to its educational outreach and mission, AEMA has long promoted and worked with its member companies promoting the use of safe, modern, environmentally friendly, and sustainable operating practices through its Statement of Environmental Principles. The Statement emphasizes that mining and environmental protection are indeed compatible, affirms ecological protection as an essential element of mining, and underscores the modern mining industry's commitment to protecting the environment and human health while providing the minerals society needs and uses.

Regarding this year's honorees, National Mining Hall of Fame and Museum Board of Directors' Chair, David Brown, stated, "We are pleased to honor those selected for induction this year into the National Mining Hall of Fame. Their contributions to the mining industry, particularly the safety and wellbeing of mine workers, are immense. The legacies of this year's honorees span a time starting with the hazardous underground mining of the late 1800s to modern-day best practice. Each, in their unique way, has brought significant and lasting contributions to our great industry. We are also delighted to honor the American Exploration & Mining Association with the Prazen Award recognizing their long-standing efforts in promoting public understanding of the critical importance the mining of base materials has in everyone's lives and wellbeing."

Since 1987, the National Mining Hall of Fame and Museum, located in Leadville, CO has been a national monument to the men and women who champion the discovery, development, and processing of our nation's natural resources, as well as a national institution educating the public about the undeniable relationship of mining to our daily lives. Sponsorships are available, contact Jack Roland, Sponsorship Coordinator, at Jack@MiningHallOfFame.org to discuss those opportunities. For event details and ticket purchases visit www.MiningHallOfFame.org or reach out to Francine Webber, Events Manager, at Francine@MiningHallOfFame.org.

NEWS FROM THE FOUNDATION

Cami Prenn, Foundation Chair

Hello from the GSN Foundation! We hope you've had a fruitful summer and enjoyed your time in the field. The Foundation Board has been busy over the summer and we're gearing up for fall's events, most notably processing and approving the K-12 Field Trips. Please spread the word that we're taking applications, which can be found on the website. The Field Trips must have an Earth Science component to be eligible.

Two new scholarships were established within the Foundation last year; the GSN DD LaPointe Scholarship and the Brian Morris Scholarship. Scholarships were awarded from both of the funds; Elizabeth Hollingsworth was the recipient of the GSN DD LaPointe Fund and to Curtis Johnson received the Brian Morris Scholarship. Please keep these worthwhile Scholarship funds in mind when you're considering charitable donations. You can make a donation through the website.

Looking ahead, please mark your calendars now for the Christmas Meeting/Party on Wednesday, December 18. We've booked our speaker and it will be Gregory Crouch, author of The Bonanza King, which is the story of John Mackay. Greg is a really entertaining speaker and knows his subject inside and out! We'll do our best to bring fabulous raffle and auction items – it's the Foundation's biggest fundraising event of the year.

We appreciate every donation we receive and do our best to fund the programs that impact learning about Nevada geology for students and practitioners roaming the state.

*Thank you to our generous
donors in May, June, & July*

*Thank you to our Elko Meeting
Sponsor in May!*

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Activity Update

Mike Brady, JUNE 2019
www.activityupdate.com

NEVADA

Ridgeline Minerals Corp. announced that it acquired a 100% interest in the Swift and Selena properties from EMX Royalty Corp. for \$20,000 cash and 9.9% of its outstanding shares. *Press Release:* May 30

Tertiary Minerals plc. announced that it acquired an option to earn a 100% interest in the Pyramid Lake Property from private interests for \$1,500,000 cash over 5 years. *Press Release:* May 28

Gold Resource Corp. announced that recent drill results at the Isabella-Pearl Project include 0-10.67 meters @ 0.67 gpt Au (IPRC-042); 0-9.14 meters @ 0.70 gpt Au (IPRC-045); 30.48-50.29 meters @ 0.33 gpt Au (IPRC-050) and 0-18.29 meters @ 0.55 gpt Au (IPRC-060). (reserve = 2,694,000 tonnes @ 2.22 gpt Au proven+probable) *Press Release:* June 5

Seabridge Gold Corp. announced that it acquired the Goldstorm Property from Mountain View Gold Corp. for 25,000 shares. *Press Release:* June 5

Sailfish Royalty Corp. announced that it offered to acquire Terraco Gold Corp. through a 0.12 share Sailfish/1.0 share Terraco exchange basis. (resource @ Spring Valley = 89,098,000 tonnes @ 0.69 gpt Au measured+indicated) *Press Release:* June 20

SSR Mining Inc. announced that it acquired 8,900 ha. Of claims comprising the Buffalo Valley and Trenton Canyon properties from Newmont Goldcorp Corp. and Fairmile Gold Mining Inc. for \$22,000,000 cash. (resource @ Buffalo Valley = 20,000,000 tonnes @ 0.65 gpt Au indicated)

Press Release: June 27

NuLegacy Gold Corp. announced that it suspended all exploration activity at its Red Hill Project since it now seeks a joint-venture partner. *Press Release:* June 3

Bitterroot Resources Ltd. announced that it acquired an option to earn a 100% interest in the Castle West Property from Ely Gold Royalties Inc. for \$241,000 cash over 4 years. *Press Release:* June 17

Hecla Mining Co. announced that it reduced Nevada exploration efforts by \$9,000,000 and only mines currently being developed are at the Fire Creek and Midas

operations. The Hollister Mine will be immediately closed. *Press Release:* June 6

Corvus Gold Inc. announced that recent drill results at the Mother Lode Project include 413.0-432.82 meters @ 0.57 gpt Au (ML19-113); 516.64-565.4 meters @ 1.15 gpt Au (ML19-114); 329.18-332.23 meters @ 0.68 gpt Au (ML19-117) and 359.66-396.24 meters @ 1.59 gpt Au (ML19-118). (resource = 13,226,000 tonnes @ 1.72 gpt Au measured+indicated) *Press Release:* June 11

Allegiant Gold Ltd. announced that it terminated its interest in the Red Hills and Silver Dome properties due to discouraging exploration results. *Press Release:* June 11

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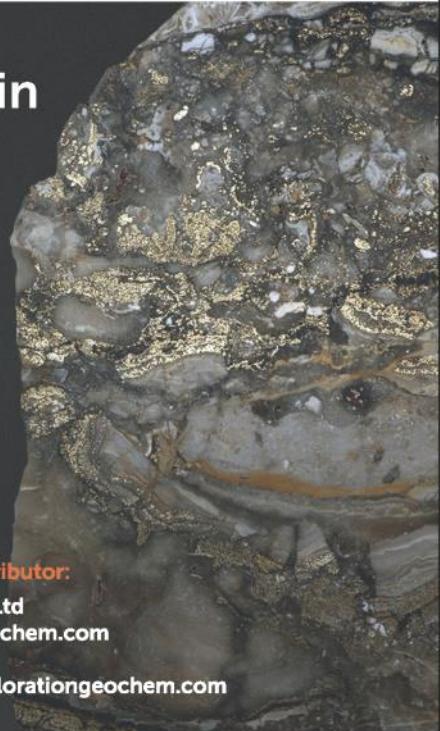
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Women's Mining Coalition Meets with Over 250 Congressional Offices and Federal Regulators Mining Advocacy Group Successfully Completes 27th Annual Washington D.C Fly-In

The week of April 29, 2019, Women's Mining Coalition (WMC) hosted the 27th annual Fly-In to facilitate connections with legislators, agencies, and other professionals in Washington D.C., discussing current mining issues and policies. Participating women work in hardrock, coal, and industrial minerals industries and for companies that provide goods and services to mining companies. "It is so important that we participate in the legislative process," said WMC President Sara Thorne. "This year we found legislators and their staffs genuinely interested in the topics that WMC was putting forward."



Over the course of the 3 ½ day event, Fly-In participants had 251 face-to-face meetings with Congressional Offices (183 House Meetings and 68 senate meetings). Participants also met with the U.S. Geological Survey (USGS), U.S. Forest Service (USFS), and Department of Interior Bureau of Land Management (DOI/BLM). 2019 topics included U.S. reliance on critical minerals and the country's over-reliance on mineral imports; the importance of keeping public lands open to mineral exploration and development; the importance of coal as a balanced, reliable, affordable source of energy; and the need for continued development of mining in support of renewable energy technology.



Since its inception in 1993, WMC has made annual trips to Washington, D.C. to advocate for a robust U.S. mining industry and to discuss issues of importance to the domestic mining industry with members of Congress and Congressional staff. WMC continues to bring insight to the importance of modern mining, to advocate for a strong and productive domestic mining industry, and to showcase the professionalism of women who work in the mining industry. Our mission is to deliver the message to our legislators that a strong mining industry is vitally important to our nation, our communities, our families, and our livelihoods, and that today's regulations and modern technologies ensure responsible stewardship of our lands. WMC facilitates and provides the opportunity for our grassroots members to band together for a stronger voice with their Congressional delegation and to network with other women working in the mining industry.

For more information about Women's Mining Coalition, visit www.wmc-usa.org.

OTHER UPCOMING EVENTS

6 August: **Arizona Geological Society**, Gregory J. Leonard presents "The Planetary Perils and Economic Promise of Near-Earth Asteroids". Sheraton, 5151 E Grant Rd. (& Rosemont), Tucson AZ 85701. Please click on the link for more information and to RSVP: <https://www.arizonageologicalsoc.org/event-3438743>

13-16 September: **The NMEC (Nevada Mineral Exploration Coalition) is hosting the 7th Annual Great Basin Rendezvous.** The event will be held at the Royal Peacock Opal Mine in northern Nevada. (Camp Lamoille was burned in a wildfire this year). Contact Dave Shaddrick, dshaddrick@aol.com or Warren Thompson wftompson@frontiernet.net for more information. Register at <https://www.nvmec.org/2019-great-basin-rendezvous-royal-peacock-opal-mine>

15-18 September: On behalf of the AAPG, the NPGS would like to remind you, and encourage your attendance at the **AAPG Rocky Mountain Section Annual Meeting**. The meeting is being held in Cheyenne, Wyoming on September 15-18, 2019! Please visit the website: <https://rmsaapg2019.com/>

14-17 September 2019 AIPG 56th National Conference. Geology in the Green Mountains: Scenic Beauty and Economic Engine. Burlington, Vermont. Go to www.aipg.org for more information. <https://www.aegannualmeeting.org/>

23-26 September: Nevada Water Resources Association Fall 2019 Symposium.

<http://www.nvwra.org/2019fallweekofwater>

7-10 October 2019 Society of Economic Geologists (SEG/Chile Explore Group) 2019 Conference: South American Metallogeny: Sierra to Craton; Santiago, Chile; Website: www.seg2019.org

14-25 MAY 2020 GEOLOGICAL SOCIETY OF NEVADA'S SYMPOSIUM 2020! Nugget Resort, Sparks/Reno Nevada. Technical Sessions, Field Trips, Short Courses, Exhibits, Luncheons, Parties! Visit the Website for more information: WWW.GSNSYMPHOSIUM.ORG

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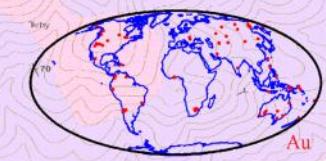
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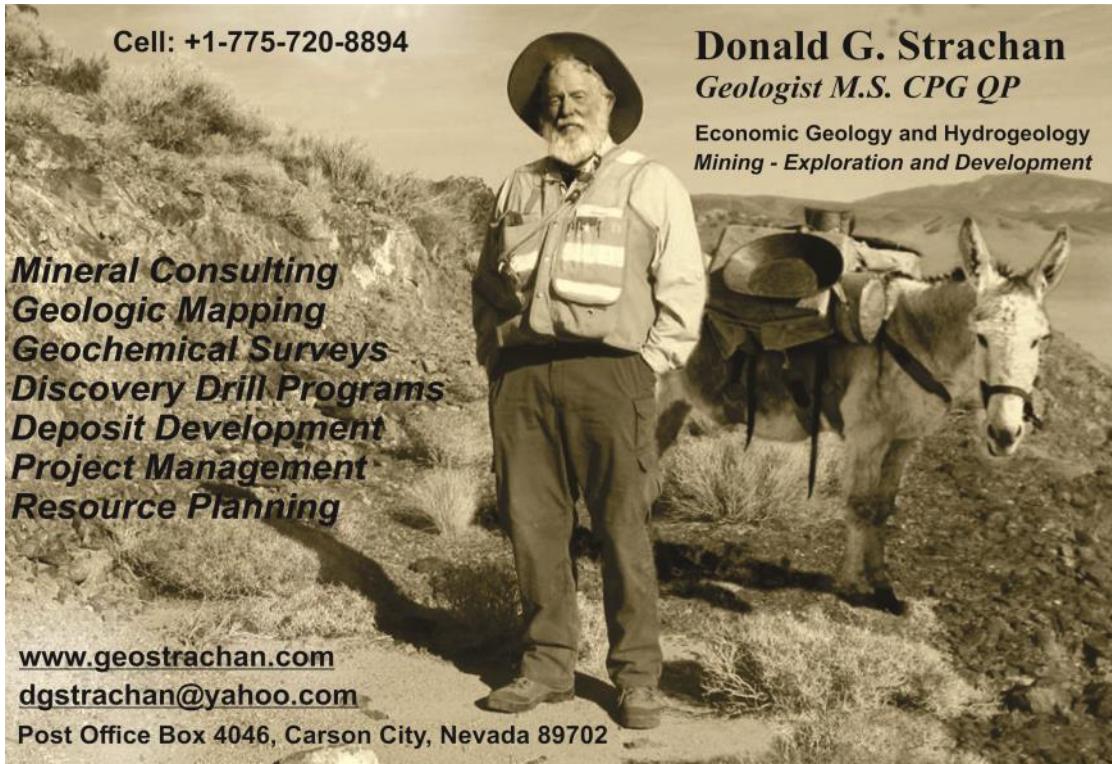
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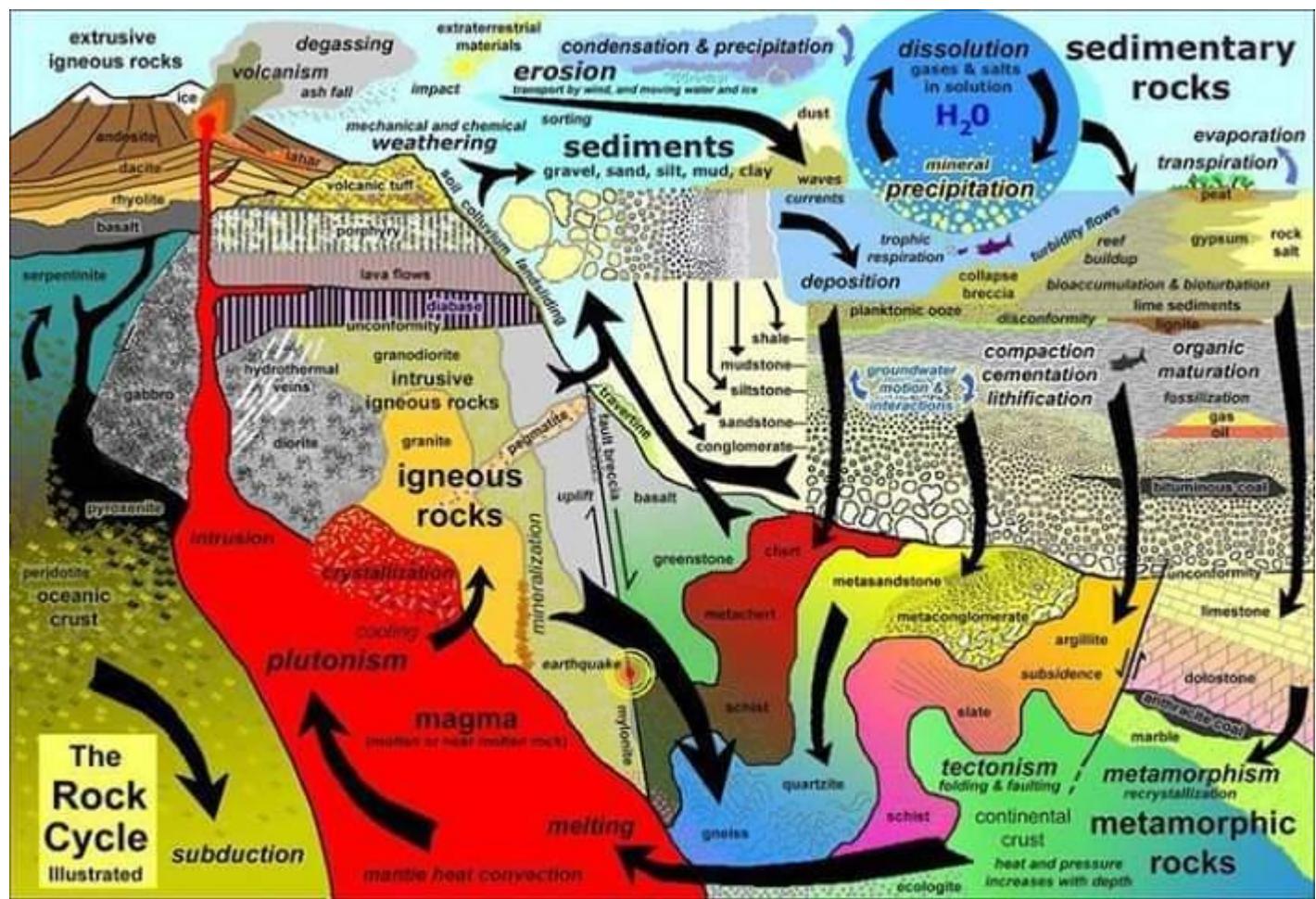
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