



# GEOLOGICAL SOCIETY OF NEVADA NEWSLETTER

Geological Society of Nevada, 2175 Raggio Parkway, Room 107, Reno, NV 89512  
(775) 323-3500 - Hours Monday -- Friday 8-3 Website: [www.gsnv.org](http://www.gsnv.org) • E-mail: [gsn@gsnv.org](mailto:gsn@gsnv.org)



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## CALENDAR OF GSN EVENTS

**April 13  
Wednesday**

**WINNEMUCCA CHAPTER** (*Every 2nd Wednesday of the month*)  
The monthly meeting will be held at the Martin Hotel, 94 West Railroad Street. Drinks and appetizers at 6:30 PM, talk at 7:00 PM. Sponsor for the evening will be Inspectorate America Corp. Speaker for the evening will be Brian W. Morris, Vice President and General Manager, Rio Grande Silver, Inc., Creede, Colorado. His talk is titled "**Creede Colorado District: Its Past and Bright Future – A Changing Paradigm**". For more information contact Rebecca Morris at (775) 304-2661.

**April 21  
Thursday**

**ELKO CHAPTER** (*Every 3rd Thursday of the month*)  
The monthly meeting will be held at the Western Folk Life Center, 501 Railroad Street. Refreshments at 6:00 PM, talk at 7:00 PM. Sponsor for the evening to be announced. Speaker for the evening to be announced. For more information contact Joe Becker at (775) 778-4071.

**April 15  
Friday**

**GSN MEMBERSHIP MEETING** (*Usually Every 3rd Friday of the month*)  
The monthly meeting will be held at the Reno Elks Lodge, 597 Kumle Lane, Reno, NV. Drinks at 6:00 PM, dinner at 7:00 PM, and talk at 8:00 PM. Sponsor for the evening will be Geotemps Inc. Speaker for the evening will be Eric Seedorff, Tucson, AZ. His talk is titled "**Copper: The Metal, the Industry, and the Regional Geologic Context**". (see abstract on page 3) Dinner reservations must be made by 1:00 PM Wednesday, April 13. Contact Kathy Sestanovich at (775) 323-3500 or e-mail [gsn@gsnv.org](mailto:gsn@gsnv.org) for reservations.

**April 28  
Thursday**

**SOUTHERN NEVADA CHAPTER** (*Every Last Thursday of the month*)  
The monthly meeting will be held at the Lilly Fong Geoscience building at UNLV, Room 105. Social hour begins at 6:45 pm and talk at roughly 7:15 pm. The sponsor and speaker for the evening to be announced. The Speaker for the evening will be Marvin (Nick) Saines, Ph.D., C.E.M. from Saines Environmental Hydrogeology. His talk is titled "**Groundwater Exploration and Development in a War Zone - Report from Afghanistan**". (see abstract on page 11). For more information contact Josh Bonde at 702-468-2500.

## GSN BOARD OF DIRECTORS

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**David Shadrack**

**GSN President**  
**Peter Vikre, Current**

**Most Recent Past GSN President**  
**Mike Ressel**

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**Josh Bonde**

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# FROM THE PRESIDENT

Peter Vikre, *GSN President 2010-2011*

## Import importance

Reliance on foreign sources for everyday essentials like oil, cars, and cell phones guarantees worrisome headlines whenever news media sense deprivation or a fear deficit. Import dependence on mineral commodities historically has caused concern (the diluted form of fear) only during wartime. Recently however, rare earth elements (REE), those not so uncommon but widget-critical atoms, worried their way onto the second page when enough worriers finally awoke to the reality that REE are supplied entirely by China. Seldom acknowledged are the dozens of other mineral commodities that are entirely or largely imported. Many of these import-dependent commodities are very small markets compared to cars and cell phones. They generate little excitement among capitalists and little excitement among politicians unless they have applications deemed critical and strategic (the definitions of which can change quickly) or suppliers are deemed unfriendly.

So how significant are mineral commodity imports? One third of 63 mineral commodities tracked annually by the U.S. Geological Survey (Minerals Yearbooks) are consumed in large to small amounts by the U.S. but are not produced domestically. This group of 100% imports includes major infrastructure-consumer products commodities like Mn (cleaner steel) and Al (aircraft), as well as the smaller market but critical commodities fluorspar (steel refining), rare earths (REE; catalysts, magnets, batteries, oil refining), and V (stronger steel). These commodities and other one hundred percenters are largely supplied by China, Jamaica, Mexico, South Africa, Australia, and Canada. Should foreign reliance for these commodities be of concern (as defined above) many of them could be produced domestically but with backfiring economic intervention like price supports and tariffs, unpopular relaxation of environmental regulation, and production mandate replacing indecision and delay. Relatively small market volume for V (~5000 tonnes annual domestic consumption) and REE (~15,000 tonnes) limits interest by private mining companies, although increased demand could improve investment potential for these and other "small" but critical commodities. For comparison, annual domestic consumption of the sub-50% imported, infrastructure-transportation mainstays Cu, Zn, and Pb is high-mid hundreds of thousands of tonnes each.

Another one third of the 63 tracked commodities are 60-90+ % imported from China, Mexico, Russia, India, Canada and a number of European (Belgium, Germany, UK) and South American (Bolivia, Peru, Brazil) countries. This group of commodities includes the industrial and agricultural essentials Ti and potash, as well as other handy commodities such as barite, Ag, Sn, Pt, Sb, Sr, Bi, diamond, Co, and W. Minor domestic supplies of some of these commodities are derived from byproduct and imported scrap. Increased domestic production, with or without help, is geo-

logically conceivable for those with large-volume markets, like Ti, potash, barite, and Ag (millions/hundreds of thousands of tonnes/ounces annual consumption). Increased or sustained domestic production of tweeners like Sn (36,000 tonnes annual consumption), Sb (20,000 tonnes), Sr (12,000 tonnes), Bi (1,200 metric tonnes), Co (11,000 tonnes), and W (12,000 tonnes), requires byproduct support or economic "stimulus". The other 20 or so tracked commodities that are 60-90+% imported include the shunned and reviled (asbestos, As, Tl, Th), the seemingly common (mica, graphite, quartz crystal), and the once obscure (Cs, In, Nb, Rb, Re, Ge, Ta, Y, Ga).

What is the future of once obscure import leaders and technology babes like Cs, In, Nb, Rb, Re, Ge, Ta, Y, and Ga for which annual domestic consumption is a few tonnes to several thousand tonnes? Production from domestic deposits, should they exist, of small-market but technologically essential commodities requires acquisition and maintenance of market share, and immunity from large price fluctuations. In the absence of political intervention, dependence on imported mineral commodities, be they small or large volume, will continue to increase. For the long term mineral consumption will rage on, propped up by deficits, diplomacy, duplicity, and DoD budgets.

## UNR student posters at the April 15 dinner meeting

UNR geosciences students have been invited to present project posters at the April meeting during the 6-7 PM social hour. Here is the opportunity to learn about the variety of student research at UNR. Members are strongly encouraged to meet students and discuss ideas and experiences.

## April 15 dinner meeting presentation

The topic of the scientific presentation at the April 15 dinner meeting is Cu from A to Z. Eric Seedorff, University of Arizona, is the speaker.

## PerIODically and elemenTally yoUrS,

Peter Vikre



**Thanks to Enviroscientists, Inc  
For Hosting the February Meeting**

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# *GSN April 15, 2011 Membership Meeting*

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## **Reservations Are Required - Please Cancel if You Are Unable to Attend**

GSN CAN NO LONGER GUARANTEE DINNER SEATING WITHOUT ADVANCE RESERVATIONS.  
Please call 775-323-3500, Fax 775-323-3599 or e-mail [gsn@gsnv.org](mailto:gsn@gsnv.org) by 1:00 PM, Wednesday, April 13, 2011.  
Social Hour: 6:00 PM – Dinner: 7:00 PM – Speaker: 8:00 PM  
**\$17.00 per person**

Location: Elks Lodge, 597 Kumle Lane, Reno, NV  
Directions: across (W) from the Reno-Sparks Convention Center  
(S. Virginia Street, behind the Les Schwab Tire Center)



**Prepaid dinner reservations will only be accepted for the current monthly meeting.  
Cancellations must be received two days before the meeting in order for your money to be refunded.**  
Download the prepayment form from the GSN website: <http://www.gsnv.org/membership.html>

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## **“Copper: The Metal, the Industry, and the Regional Geologic Context”**

Eric Seedorff

Lowell Institute for Mineral Resources, Department of Geosciences, University of Arizona  
1040 E. Fourth St., Tucson, AZ 85721-0077  
[seedorff@email.arizona.edu](mailto:seedorff@email.arizona.edu)

### **Abstract**

Copper is an essential part of modern civilization and is an important part of the economy of southwestern North America. Copper is a metallic element in the same group in the periodic table as silver and gold. Copper is a major industrial element, third in global consumption after iron and aluminum. The red metal is valued for its electrical conductivity, corrosion resistance, thermal conductivity, and its mechanical, structural, antimicrobial and aesthetic properties, leading to its principal uses in building construction, electrical and electronic products, and transportation equipment. Copper is a non-renewable natural resource, but it is a durable raw material which provides a virtually perpetual stream of economic services that creates a permanent increase in wealth (cf., combustible fuels). “Green” infrastructure and products likely will drive even more copper mining, e.g., hybrid vehicles use about two times—and electric vehicles three times—the amount of copper as conventional vehicles.

Copper is a commodity that is traded on three public exchanges, which also offer futures and options contracts. Powered by industrial expansion of China, copper prices climbed gradually from 2004 to 2005 then stayed between \$2 and \$4/lb until the financial collapse of late 2008 resulted in a collapse to \$1.25. The price then steadily recovered and exceeds \$4/lb in early 2011.

Porphyry deposits are the most important type of deposit hosting copper, responsible for about two-thirds of world copper production. Deposits of the porphyry copper class are widely distributed, mostly in magmatic arcs, forming mostly 1 to 6 km below the paleosurface. Porphyry-related deposits in Southwestern North America, encompassing the Sierra Nevada-Great Basin-Rocky Mountain region and continuing south through Arizona, New Mexico, and Sonora, represent partial superposition of ~eight tectonomagmatic settings of Triassic to Recent age. Deposits of the Laramide belt of Arizona-New Mexico-Sonora (Late Cretaceous to early Tertiary) have the greatest production. The paleo-Cascade arc of Mio-Pliocene age along the Nevada-California border is one of the eight settings, but those systems mostly are shallowly eroded and expose only their upper levels. In the Great Basin, most important districts are Yerington (Jurassic), Robinson (Cretaceous), and Bingham (Eocene).

In recent years, the industry has opened the Carlota mine in the Globe-Miami district, commissioned the first mine in the Safford district, and renewed mining in the Robinson district. In addition, the Rosemont deposit is advancing toward production, and the huge Resolution deposit (hypogene grade >1.5% Cu) is being developed as a giant new underground mine. Exploration activity—feeble for a generation—has begun a revival, including aggressive brownfields exploration, new greenfields activities, and discovery of a new porphyry center in the Yerington district. Many deposits in the American Southwest have huge potential for additional reserves of hypogene sulfides, but closures of smelters in the region during the last decade complicate plans to process them.



# *GSN Spring Field Trip Announcement*

**F**inally, it's been confirmed, blustery winter-like weather with the largest and **U**tterly wettest snowflakes ripping – and sometimes floating - on a brutally cold **N**orth winter wind will strike north central Nevada during the GSN spring field trip (not likely, although I have been in Eureka during June when the snow plows have **T**ossed untold amounts of snow from the main drag). So bring your warm hearts **I**ncluding your nice sunny smiles along for a fantastically fun field trip scheduled for **M**ay 20<sup>th</sup>, 21<sup>st</sup> and 22<sup>nd</sup>. The bus will leave promptly from the GSN office on Friday **E**xactly at 3:00pm for the wilds of Central Nevada.



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## **UNR STUDENT POSTER NIGHT**

*GSN invites UNR geoscience students to display and discuss your project with GSN members in an informal setting, enjoy free drinks and dinner, and listen to a comprehensive and entertaining presentation on copper*

**WHERE:** Geological Society of Nevada April dinner meeting; Reno Elks Lodge, 597 Kumle Lane, Reno (west of South Virginia across from the Reno-Sparks Convention Center)  
**WHEN:** April 15, 2011 (Friday); 5:30 PM set up; 6-7:00 PM informal poster discussions (hosted bar); 7:00 PM dinner (no charge to students); 8:00 PM: presentation by Eric Seedorff, University of Arizona: **Copper: The Metal, the Industry, and the Regional Geologic Context**

Cash prizes will be awarded to the

**If you would like to present a poster please contact:**

Peter Vikre [pvikre@usgs.gov](mailto:pvikre@usgs.gov); 784-5597; LMR 364

Earl Abbott [earl.w.abbott@gmail.com](mailto:earl.w.abbott@gmail.com); 846-8398



**If you would like to make dinner please contact Kathy at the GSN office:**

[gsn@gsnv.org](mailto:gsn@gsnv.org) 323-3500

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## *Thank you to our generous donors*

### **GSN FOUNDATION**

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#### **BRONZE LEVEL DONORS \$1-\$99**

### **STUDENT DINNER FUND**

### **STUDENT FIELD TRIP FUND**

Jeffrey Wilson included the following note with his check:  
"To GSN Foundation Scholarship Fund, Please accept this donation in the name of Karl Frost. He was an excellent geologist and will be missed by many."

## FACES OF GSN

*Jon Price, Reno, Nevada  
Nevada Bureau of Mines and Geology*

Being the State Geologist of Nevada has to be the best job I could have imagined for myself. My first adventure in Nevada was during a 1970 summer field-camp tour through western states, when we camped near one of the passes along U.S. Highway 50 and admired the great geological exposures that the desert affords. Intrigued by the brachiopods, crinoids, and quartz crystals that I found on our farm in central Pennsylvania, I knew at about age 5 that I wanted to be a geologist. My parents were quite supportive and sent me to Lehigh University to pursue a degree in geology. Lehigh required a three-year proficiency in a foreign language for geology majors, so with four years of German in high school, I wound up taking third-year college German as a freshman, spent a summer studying German in Austria, and graduated with a double major – Geology and German. That made it easy to earn a fellowship to study for a year at the University of Heidelberg before going to graduate school at Berkeley. The professors at Heidelberg stimulated my interest in ore deposits, and I chose to work on the Yerington, Nevada porphyry copper deposit as my dissertation project at Berkeley. One summer mapping in the pit and one summer logging core for Anaconda gave me enough material to complete my Ph.D. in a little less than four years.



U.S. Steel hired me for the summer of 1977 to create a 3D picture of one of the iron-copper deposits at Pumpkin Hollow in the Yerington district. After nine months teaching at Bucknell University in Pennsylvania (including an economic geology class that visited classic mines at Sterling Hill, Friedensville, Sudbury, and Elliot Lake), I rejoined U.S. Steel and worked in uranium exploration and in-situ mining in South Texas. That experience led to a great job as a research geologist with the Texas Bureau of Economic Geology in Austin. My standard answer to the lunchtime question (where would you move if you could be anywhere else but Texas?) was Carson City, and when Beth, my spouse since 1972, asked what I wanted to do when I grew up, I actually said being the Nevada State Geologist would be a fun job.

One of the attractions for me to take the job in 1988 was GSN, with hundreds of geologists attending monthly meetings, organizing field trips and symposia, and supporting geologic mapping and other efforts of the Nevada Bureau of Mines and Geology (NBMG). Serving with Kelly Cluer and Christy Morris as Technical Program Co-Chairs for the GSN 2000 Symposium and with Eric Ruud as Co-Chair of the GSN 2005 Symposium was thoroughly enjoyable. GSN's activities mesh so well with NBMG's mission that I was delighted to be able to offer GSN space in our new building, the Great Basin Science Sample and Records Library, when it opened in 2009.

I spent two years on loan from the University of Nevada, Reno to the National Research Council in Washington, D.C., heading their Board on Earth Sciences and Resources. This gave me special insight into the workings of various agencies of the federal government, which manages 87% of the land in Nevada. After returning to Reno in 1995, I continued to be involved in various scientific and policy activities, including service on advisory committees to the U.S. Geological Survey and National Science Foundation and in the leadership of professional organizations (AIPG, AASG, SEG, NPS, WSSPC, GSA, SME). Meanwhile, building NBMG to be one of the top geological surveys, by hiring great scientists and support staff, has been rewarding for Nevada.

**Due to a conflict with the Elk's Lodge and Speaker arrangements, the  
May and September meetings will be held the  
2nd Friday of the month instead of the 3rd Friday.  
May 13, 2011 & September 9, 2011**

## Reno Teen Kayaker Jason Craig Recovering From Injury

As most of the GSN members know, the Craig family enjoys kayaking. Jason is the son of Lindsay Craig and Steve Craig and Kim Craig are his uncles. All three are geologists and have been members of GSN for more years than we can count.

Thank you to the Reno Gazette Journal for allowing us to reprint this in our newsletter.

On March 20, world-champion kayaker Jason Craig suffered a horrific injury when he hit a rock at the base of a 25-foot waterfall while “creeking” — descending very steep, low-volume whitewater — on Dry Creek near Marysville, Calif.

The 17-year-old from Reno underwent six hours of surgery at Sutter Roseville Medical Center in Roseville, Calif. to rebuild the middle of his body. He’s in pain, though it’s lessening. But he can walk.

The Craig family received “awesome news” Monday when Jason was accepted into a specialty rehab program for spinal cord injuries at Shriners Hospital for Children in Sacramento. His mother, Karen, said he will be in rehabilitation for two weeks to a month.

“He has paralysis, but not permanent, like severed paralysis, for his legs and arms” Karen said from the hospital.

“He was walking this morning (Saturday). He’s bound up in a corset and uses a walker, but they want him back on his feet to make sure that all those muscles and nerves are working. He has a lot of numbness down his calf and into his heels, so it kind of feels like he’s walking on Jello.”

To his mother, the fact that Jason can walk, is just one miracle.

“Frankly, the fact that he’s alive at all ... He ended up under a waterfall, under water with no legs to use,” Karen Craig said.

Jason has been involved in the sport of kayaking since he was 10. He is the 2009 Junior World Freestyle Kayak Champion, he placed second at the USA National Point Series Men’s Pro 2010, was the 2009 Junior National Champion, finished second at World Cup 2008 and was the 2006 Junior National Champion.

Then came that fateful evening nine days ago.

When Jason hit the bottom of the waterfall, his kayak struck a submerged rock. The guys he was kayaking with had all landed in nearly the same spot, only without incident.

“The thing about it is, I went in the same spot pretty much as the two people who went before me, I just happened to hit a rock,” Jason said. “I wanted to go farther right than I did, but I still got pushed left but I boofed,” he said, referring to the kayaking term for pulling the bow up to land flat. “Looking at the video, I was in virtually the same spot, but I was the one to hit the rock,” he said. The damage to Jason’s body was substantial. X-rays and CT scans showed Jason basically separated his pelvis, split a body part at the base of his spine virtually in half and ripped a membranous sac that encases the spinal cord within the bony structure of the vertebral column about 5 inches.

“In a sense, his two legs were independent of each other so they weren’t on the same structure anymore,” Karen said. “These doctors had to figure out how to get his nerves to work, keep him walking and keep him feeling, and rebuild a structure that was

strong enough to hold the kid together. They were amazing, absolutely amazing.”

His mother said it could be days, weeks, months or even a year before the nerves that were so badly damaged “find their way to work again.”

### The Trip

During the trip down Dry Creek, which runs into Beale Air Force Base outside Marysville, Jason wasn’t following his friends and fellow kayakers over every waterfall, sometimes choosing to walk around, including one waterfall about 60 feet high.

“Jason said he’s run harder things, he’s run scarier things,” Karen said of the 25-foot-waterfall where he was injured. “This one (where he was injured) was not particularly complex, and it looked fun. He gave it a try.”

After impact, the waterfall that looked relatively tame held Jason under water and pushed him around.

“I ran the waterfall and took a really big hit when I went under,” Jason said. “I might have gone unconscious, I’m not really sure. The next thing I remember I was out of my kayak and underwater. I tried to move my legs and couldn’t, and I tried to swim. That was pretty scary being underwater and not being able to move.

“Eventually I popped up by a rock and grabbed on and held on for awhile trying to move my legs. I couldn’t pull myself up. Every time I did it was super, intense pain, and I shook my head and told the guys I couldn’t get up. The guys paddled over and pulled me onto the shore.”

On shore, the kayakers evaluated Jason’s condition to see if he’d broken his back.

“I could wiggle my toes,” Jason said. “That was a pretty amazing feeling. I was pretty scared that I had paralyzed myself.”

The kayakers were well prepared for the emergency.

“All the rivers are flooding so this was a rare occasion to get on this particular river,” said kayaker Cody Howard, who received combat medical training in the Marines. “Being that it was new and all, we were in expedition mode so we brought out quite a bit of safety gear and safety people so we could complete these rivers as safe as possible.”

One kayaker, Darrin McQuoid of Davis, Calif., used a spot emergency radio to call for medical help. A helicopter arrived, but couldn’t land so the five kayakers with Jason and one emergency medical responder got him out on a spine board.



Jason Craig smiles from his hospital bed in Roseville, Calif.

*Continued on Page 7)*

(Continued from Page 6)

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"They had to haul him up a cliff, over rocks, down a cliff, across a river and out of a canyon," Karen said. "He was in shock, and he was hypothermic. It took them between four and five hours to get him to the road."

Howard, who was taking video of the runs from below the waterfall, knew Jason was in trouble as soon as he hit bottom.

"Right when he landed I said 'uh-oh,' because it was a audible impact, just a loud crushing sound from his boat landing on this

outcropping at the base of the waterfall," Howard said. "It was almost immediate. The telltale signs of carnage were there — an upside down boat and a kayaker not emerging. Jason's a world-champion kayaker and when he wasn't trying to roll it was pretty obvious he was in some pain."

McQuoid, Howard, Taylor Calvin from Coloma, Calif., Will Pruitt from Grass Valley, Calif., Robby Hogg from Sacramento and Gareth Tate from Yosemite, used advanced military and swiftwater-rescue tactics to help carry Jason out.

Jason was taken to a hospital in Marysville, but immediately was transferred to a level-one trauma unit in Roseville.

### The Aftermath

Jason, the valedictorian of his class at WOLF — Washoe On-Line Learning for the Future — is facing a long recovery, and his family is facing "monstrous" medical bills.

The family is finding help with the medical bills through Facebook.

"This wonderful group of family friends, just amazing people, they've brought in his kayak sponsors and friends from around the world, and everyone is putting on fundraisers at different kayak festivals," Karen said.

Information about his injuries and updates on his condition also are posted on the recovery fund Facebook page.

The injury will keep Jason from defending his world championship in June in Germany, but he plans to eventually get back on the water again.

"I'm staying very positive and I'm very excited to go to rehab," Jason said. "I'm excited to get back at it when I'm recovered and when I'm strong again. I can't wait to go kayaking, I can't wait to go rock climbing, I can't wait to spend time with my friends, go to college."

Click this link for additional information about Jason and videos of him kayaking <http://www.jasoncraigkayak.com>

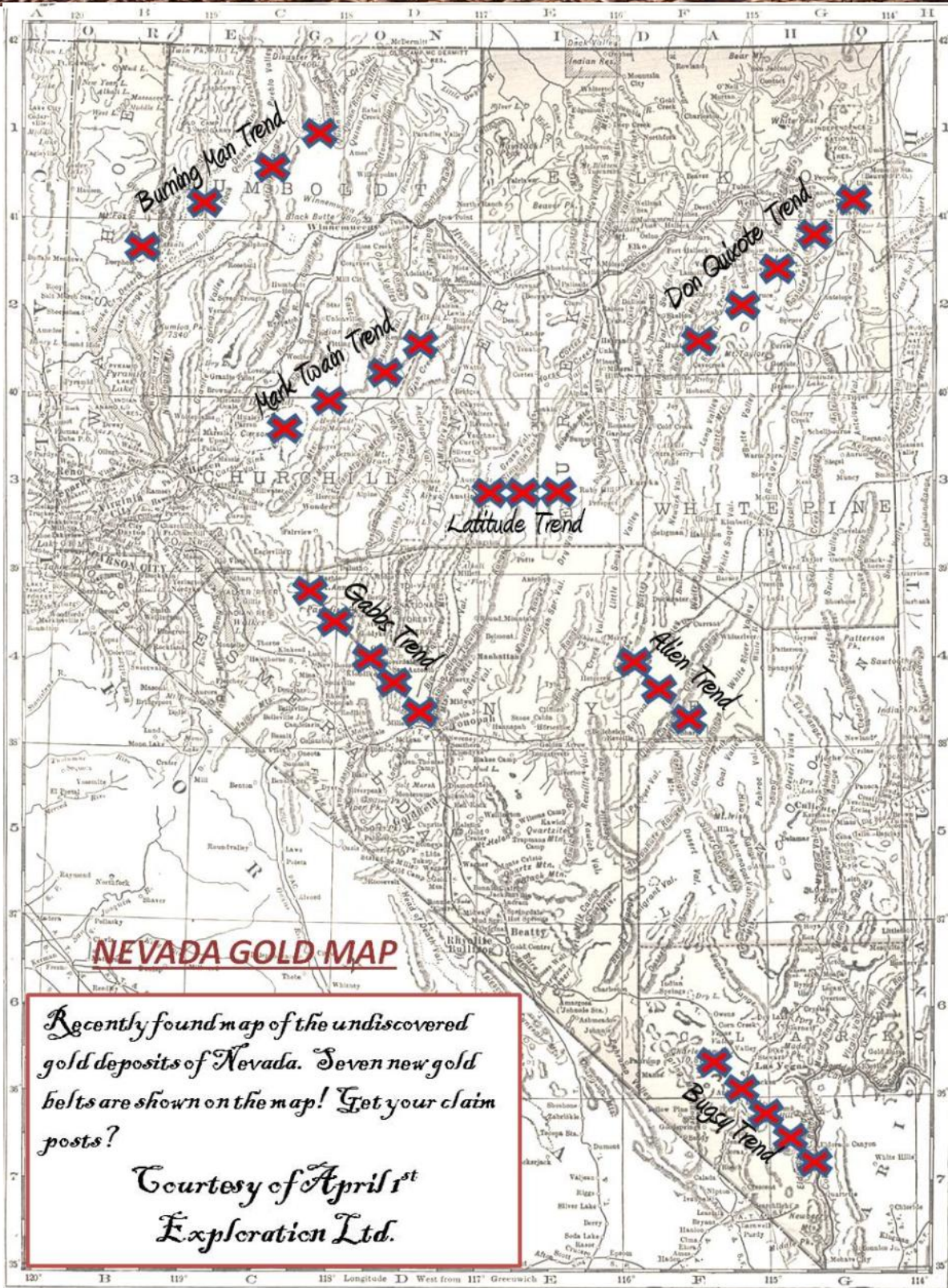
Recovery fund: A special account has been established to support Jason Craig's recovery from his accident. This fund will be administered by Education Design Group. All donations will support medical costs, family travel and rehab expenses. Direct deposits can be made to 121000248 8124276364. Checks and money orders can be sent to the Jason Craig Fund, c/o 250 Bell St., Reno, NV 89509. You also can use the PayPal account at the Facebook page: Jason Craig Recovery Fund.

*Just A Reminder*



Due to a conflict with the Elk's Lodge and Speaker arrangements, the May and September meetings will be held the 2nd Friday of the month instead of the 3rd  
Friday, May 13, 2011 & September 9, 2011

# ROCK TALK



Dave Emmons



# ROCK TALK

## Rock Talk is a new section in the GSN Newsletter for members

The GSN Newsletter has added an editorial section called "Rock Talk" on a trial basis. The purpose of the section is to provide a forum for GSN members to express opinions and geological experiences that would be of interest to members. Topics should be related to geology, mining, and exploration, and could include travel and field experiences or other items of interest to geologists.

The decision to publish letters will be made by the Executive Committee. Letters are limited to 250 words and interesting photos will also be considered for publication. The writer must include his/her name, telephone number, and email address. Letters may be edited for clarity. Letters should be submitted to [gsn@gsnv.org](mailto:gsn@gsnv.org) with "Rock Talk" in the subject line. They can also be mailed or FAXED to the GSN office.

GSN hopes that this new section will provide a forum for communicating interesting items to the more than 1,000 members worldwide.

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GSN Field Trip Guidebooks 1 through 10 (Special Publications 1-10) and 11 through 20 (Special Publications 11-20) are now digitally available, and they will no longer be reproduced in paper form. You can obtain guidebooks 1-10 on a CD for \$15 postpaid, guidebooks 11-20 on a CD for \$15 postpaid, or both for \$25 postpaid by placing an order at the GSN Office.



# *"Mommas Don't Let Your Kids Grow Up to be Geologists"*

By: Karl Frost

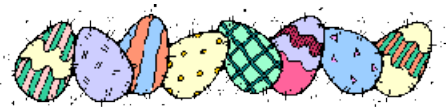
Mommas don't let your kids grow up to be geologists  
They will spend their days in pickup trucks driving dusty rough roads  
Miles to go before they work and miles to travel to get back home  
They'll spend four years in school learning all there is  
Then they will learn that two more years of school are needed to get a job  
Teachers will pack them in vans and drive them around in the midday heat  
Never telling them where they are or where they are going  
The students will have to memorize hundreds of mineral names and chemical compositions

They will spend hours looking one-eyed down microscopes at pieces of rocks  
They will play with sand boxes and topo maps  
It will take hours drawing on paper to decipher fault displacements

After years in school they will dress up in unaccostomened finery to get jobs  
The company will give them trucks and expense accounts  
They will get their own desks and find out that plumbers make more money  
Their days will be spent walking in the hot sand dodging rattlesnakes and bulls  
Ranchers will shoot out their tires and refuse permission to enter BLM land  
Government workers will harass them with a myriad of senseless rules  
They will occasionally make mistakes and sometimes feel like fools  
Fellow geologists will disagree with their ideas and say they are fools  
Drillers will cuss and spit on the geologists boots  
Helpers will come and go and still make more money than the geologists

But geologists get to hike in the woods, take picnic lunches and snap pictures of pretty wild flowers  
They will get to fly in helicopters and chase moose and caribou  
They will see wolves, deer, lakes and big brown bears from the air  
The chopper or truck will break down and they will walk for hours to get help  
They will get sunburned, bug bit, rained on and become lost in a sandstorm  
They will get lost in the bayous and have to make an alligator pirogue to get out  
They will end up so sweaty and rank that even skunks will turn away  
The new drill bit will come at 4:30 Friday and the rig will be 80 miles out  
The boss will never be satisfied with the footage or the mineral grade  
The board of directors will always want more than you find - 100 million tons is too little

They will get married and spend only Christmas at home  
Their lives will be spent in one-horse flea-bitten towns  
The motels will always be next to the highway and the truck spot  
The maids will be grumpy and the beds will be lumpy  
The cafes will be greasy spoons that serve Roloids for Dessert  
The only good-looking woman in town will be married or jail bait  
The men would just as soon shoot you as talk to you  
If the geologists are women the men will be rough, tough, and lecherous  
It will take two years to get the waitress to laugh at your jokes  
The nicest waitress will be from the prison across the road  
They will get arthritis from pounding on rocks and rock chips in their eyes  
They will get cancer on top of their ears from the sun  
But when the race is over and the fight is done  
They will all say "I guess I'd do it all again"



## GSN Southern Nevada Chapter Meeting April 28, 2011

### “Groundwater Exploration and Development in a War Zone - Report from Afghanistan”

**Marvin (Nick) Saines, Ph.D., C.E.M.**  
Saines Environmental Hydrology

#### Abstract

Marvin (Nick) Saines, Ph.D., C.E.M. from Saines Environmental Hydrogeology will present a talk titled "Groundwater Exploration and Development in a War Zone - Report from Afghanistan" at the April GSN meeting. Nick will show slides of living and working in Kabul, Kandahar, and bases near Herat and the Turkmenistan border.

Nick was hired by the U.S. Army hydrogeologists through the US Army Corps of Engineers (USACE) to assist military drillers Seabees (Navy), Red Horse (Air Force) and Army Engineers in the location, drilling, logging, construction, and testing of water wells for the troops on military bases.

Nick recently returned from six months in Afghanistan with USACE where he supervised the water well drilling program on the military bases. Currently Nick is doing groundwater consulting in the Valley and teaching geology at Regis University. Recently he also joined the staff of the Red Rock Canyon Interpretive Association as a naturalist interpreter/geologist and is leading geology hikes and doing public outreach and education.

Nick has worked on many groundwater and engineering projects. In the 1970s, Nick worked for Harza Engineering Company in Chicago on international dam site and groundwater projects including Guyana, Afghanistan, Iran, and Jordan.

In the 1980s, he worked for Tetra Tech International on groundwater exploration and development in the Sultanate of Oman. He came to Las Vegas in 1989 with Harza to work as a hydrologist on the Yucca Mountain Project. Nick worked with OHM Remediation Services on cleanup of military bases on the west coast in the 1990s.. Since 2005 he has been a private consultant doing groundwater and environmental work in Las Vegas, including being an expert witness, and also working with FEMA and the U.S. Army Corps of Engineers.



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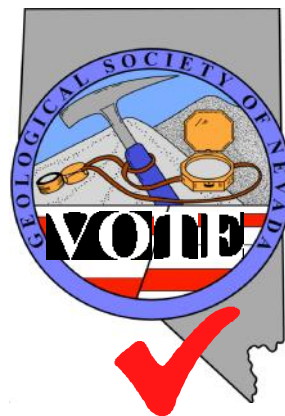
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Each month the GSN Newsletter features a member in "Faces of GSN". Please consider nominating a colleague for this highlight by submitting a biographic write-up and an appropriate photograph of the nominee to Kathy at the GSN Office [gsn@gsnv.org](mailto:gsn@gsnv.org).

## APRIL BALLOT

During the first or second week in April, a ballot will be sent to all GSN members that presents the proposed slate of officers for the Executive Committee for 2011-2012 and Class C directors of the Board of Directors for 2011-2014 effective June 1, 2011, which was approved by the Board during their February meeting. Those members, who receive their GSN Newsletter by email, will receive their ballot by email and those GSN members, who receive their Newsletter in the mail, will receive their ballot in the mail. The ballot must be returned to the GSN office within ten working days of the date it was distributed. Results of the election will be published in the May GSN Newsletter and announced during the GSN dinner meeting in May.



Mark  
Your  
Calendar

Due to a conflict with the Elk's Lodge and Speaker arrangements, the May and September meetings will be held the 2nd Friday of the month instead of the 3rd Friday. May 13, 2011 & September 9, 2011



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# Activity Update

Mike Brady, February 2011

Nevada

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

Newmont Mining Corp. announced that it offered to acquire Frontier Gold Inc. for \$2,300,000,000 cash. (resource @ Long Canyon = 20,208,000 tons @ 0.069 opt Au measured+indicated and 12,287,000 tons @ 0.066 opt Au inferred) *W.S.J.*: February 4

Paramount Gold and Silver Corp. announced that recent drill results at the Sleeper/West Wood Project include 124.4-132.0 meters @ 0.089 opt Au (PGC10-01); 188.8-230.9 meters @ 0.080 opt Au (PGC10-02); 209.8-240.3 meters @ 0.046 opt Au (PGC10-03) and 183.8-205.3 meters @ 0.018 opt Au (PGC10-04). (resource = 29,656,000 tons @ 0.025 opt Au indicated) *M.J.*: February 18

Canarc Resource Corp. announced that it would not proceed with the acquisition of the Relief Canyon Property from Firstgold Corp. (bankrupt) Canarc did announce that it would purchase the assay laboratory at the mine site from the receiver for \$600,000. (resource = 4,655,000 tons @ 0.022 opt Au indicated) *Press Release*: January 31

Solitario Exploration and Royalty Corp.(80%) announced that recent drill results at the Mt. Hamilton/Centennial Project include 27.4-98.7 feet @ 0.024 opt Au, 0.29 opt Ag (MH-2); 317.5-341.5 feet @ 0.016 opt Au, 0.38 opt Ag (MH-3) and 373.6-484.5 feet @ 0.044 opt Au, 0.30 opt Ag (MH-4). (resource = 7,700,000 tons @ 0.035 opt Au inferred) *Press Release*: February 7

International Minerals Corp. announced that based on recent drill results at the Goldfield Main Project, resources aggregate 9,403,900 tons @ 0.044 opt Au indicated and 7,250,000 tons @ 0.050 opt Au inferred. (was 6,600,000 tons @ 0.035 opt Au indicated) *Press Release*: February 1

Timberline Resources Corp. announced that recent drill results at the Lookout Mountain Project include 15-65 feet @ 0.015 opt Au

(BHSE-056); 90-145 feet @ 0.029 opt Au (BHSE-059); 130-175 feet @ 0.018 opt Au (BHSE-060) and 515-750 feet @ 0.036 opt Au (BHSE-062). (resource = 4,753,000 tons @ 0.020 opt Au measured) *Press Release*: February 8

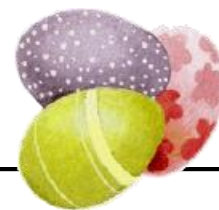
Rye Patch Gold Corp. announced that recent drill results at the Silver Ridge Project include 68.6-74.7 meters @ 0.007 opt Au (GR-01) and 54.9-94.5 meters @ 0.008 opt Au (GR-02). *Press Release*: February 8

Midway Gold Corp.(40%) announced that recent drill results at the Spring Valley Project include 108.2-112.8 meters @ 0.032 opt Au (SV10-497C); 152.4-157.0 meters @ 0.017 opt Au (SV10-498); 149.4-161.5 meters @ 0.035 opt Au (SV10-499) and 396.6-408.1 meters @ 0.032 opt Au (SV10-502C). (resource = 87,750,000 tons @ 0.021 opt Au inferred) *Press Release*: February 24

Entrée Gold Inc. announced that recent drill results at the Ann Mason Project include 214.0-1,201.8 meters @ 0.31% Cu, 0.01% Mo (EGAM10-01). (resource = 891,000,000 tons @ 0.40% Cu inferred) *Press Release*: February 7

Corvus Gold Inc. announced that recent drill results at the North Bullfrog Project include 73.2-100.6 meters @ 0.009 opt Au (NB10-48); 9.1-51.8 meters @ 0.012 opt Au (NB10-51); 9.1-53.3 meters @ 0.009 opt Au (NB10-52) and 7.6-121.9 meters @ 0.006 opt Au (NB10-55). (resource @ Mayflower = 2,860,000 tons @ 0.020 opt Au indicated) *Press Release*: February 1

American Lithium Minerals Inc. announced that recent drill results at the Borate Hills Project include 300-420 feet @ 0.189% Li, 1.21% B (SBH-4); 20-110 feet @ 0.149% Li, 1.25% B (SBH-5); 210-480 feet @ 0.137% Li, 1.08% B (SBH-6) and 230-350 feet @ 0.178% Li, 1.41% B (SBH-1). *Press Release*: February 8



## GSN MEMBERSHIP

When was the last time that you thought about the value of your GSN Membership? The most valuable part of GSN is the intangible part. Meeting up with colleagues, potential employees, potential employers, making new friends, attending the presentations, and finding out what is going on in our fast paced industry doesn't have a direct dollar value. The free drinks aren't really free as they are paid for by our generous sponsors. Even the dinners don't pay for themselves. Over \$32,000 a year is paid to produce the newsletter, membership directory, dinner deficit, the convenience of taking credit cards, filing tax returns, liability insurance, having a phone, and running the office. The cost of administrative services and promoting GSN are above and beyond this amount. In addition, the dedication of GSN volunteers makes the organization run. Take a few minutes to think about the role that GSN plays in your career and take time to thank all of the volunteers and sponsors that provide the venue for your GSN experience.

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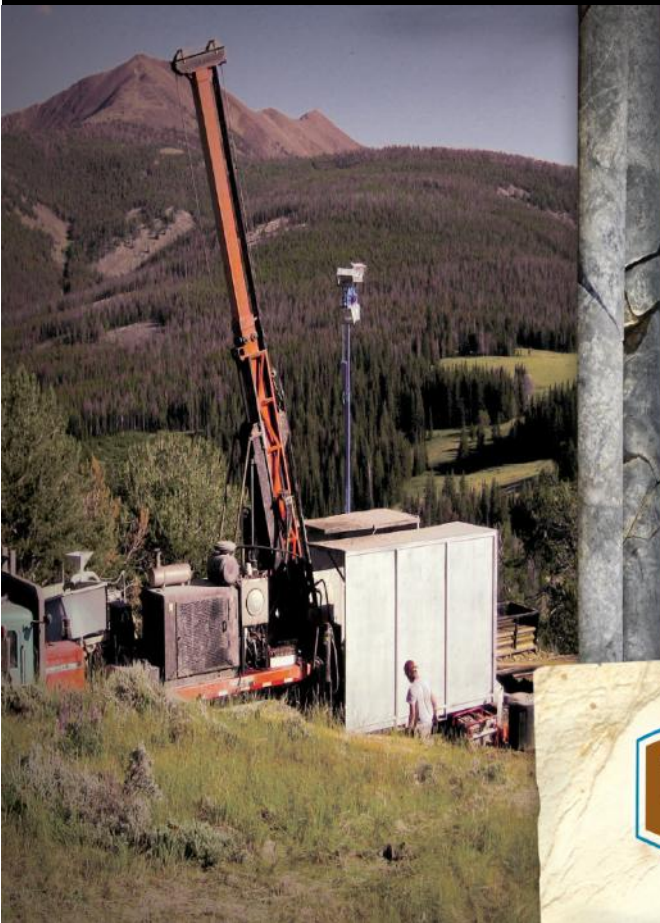
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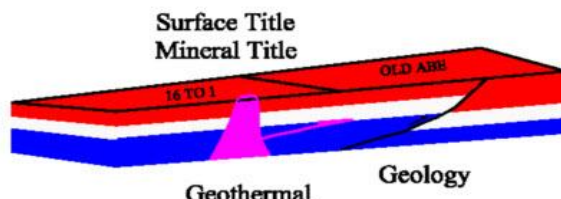
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