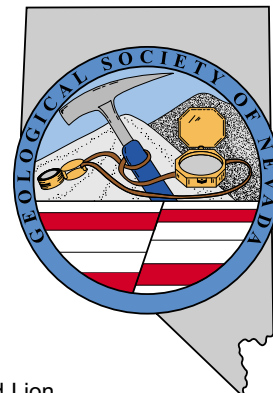


# GSN NEWSLETTER



March 2005, Vol. 20, No. 3

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## CALENDAR OF EVENTS

- Mar. 9<sup>th</sup> Wednesday** WINNEMUCCA CHAPTER MEETING: Humboldt Room at the Red Lion  
Speaker: Michael Nemitz, Newmont Mining Corporation, "The Geology of the Maggie Creek District." Social at 6:30 pm (sponsored by ALS Chemex), talk at 7:00 pm. Please contact Fred Breit at 775/635-4979 or fred.breit@newmont.com.
- Mar. 17<sup>th</sup> Thursday** ELKO CHAPTER MEETING: Western Folklife Center, Elko, NV. Speaker: Vance R. Spalding, Gaylord Cleveland, and Kevin M. Conway, Centerra (U.S.) Inc., "Discovery and Geology of the JB Zone at the Ren Property, Elko County, Nevada." Refreshments at 6:30 pm, presentation at 7:30 pm. Contact Stacy Saari at 775/778-2679 or stacysaari@newmont.com for more information.
- Mar. 18<sup>th</sup> Friday** GSN MEMBERSHIP MEETING: Reno Elks Lodge, Reno, NV. Speaker: Geoff Blewitt, Professor of Space Geodesy, Nevada Bureau of Mines and Geology, and Nevada Seismo Lab, UNR, "How to Catch Geology in Action Using GPS." Social hour at 6 pm, dinner at 7 pm, and talk at 8 pm. Contact Andrea Robinson at 775/323-3500 or gsn@mines.unr.edu.
- Mar. 31<sup>st</sup> Thursday** SOUTHERN NEVADA CHAPTER MEETING: Room 102, Lily Fong Geoscience Building, UNLV, Las Vegas, NV. Speaker: Bruce Hurley, "The Searles Lake Evaporite Deposit, Trona, California." Social with food and drink at 5:30 pm, talk at 6:30 pm. Contact Melissa Hicks at 702/895-1162 or hicksm@unlv.nevada.edu.
- Apr. 15<sup>th</sup> Friday** GSN MEMBERSHIP MEETING: Reno Elks Lodge, Reno, NV. Speaker: Dave Harvey, Chief Geologist, Round Mountain Gold Corp., "Geology of Gold Hill, Nye County, Nevada." Social hour at 6 pm, dinner at 7 pm, and talk at 8 pm. Contact Andrea Robinson at 775/323-3500 or gsn@mines.unr.edu.

**GSN Newsletter is published monthly except June and July**

**Geological Society of Nevada, PO Box 13375, Reno, NV 89507 USA, 775/323-3500, www.gsnv.org**  
**Office location: Laxalt Mineral Research Center, Rm 266, UNR. Hours: Mon thru Fri, 1:30-4:30 pm**

## FROM THE PRESIDENT

Dieter Krewedl, *GSN President 2004-2005*

A sincere thank you is due to Scott Manske for his informative presentation at the February membership meeting about the exploration and recent discovery of the deep Resolution porphyry copper deposit in the Superior, Arizona mining district. Resolution is truly a giant copper deposit, and Scott made a significant contribution towards its discovery. His presentation demonstrates that good geology, perseverance and strong financial support from senior management can lead to a major discovery even in a mature mining district

Thanks to all of you who responded to our 2005 membership survey. Overall, the response was positive regarding the newsletter, field trips, technical talks and the administration. A number of excellent suggestions and recommendations were made that are being considered by the GSN executive committee. The executive committee greatly appreciates any comments you could give us to improve the quality of the GSN programs and services.

Planning for the 2005 GSN Symposium in May is coming together nicely due to the enormous effort of many volunteers. There is a great line up of talks, poster sessions,

field trips and short courses. Exhibitors will have lots of information about their services and great entertainment is planned. Symposium 2005 should be highly educational and a lot of fun. Included in the March Newsletter is a registration form for the Symposium, an update on the status of the meeting, plus announcements on the one day Society of

*continued on page 2*

## MARCH MEETING SPONSOR



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## FROM THE PRESIDENT *continued from page 1*

Economic Geologists forum discussing the origins of the Carlin and Witwatersrand gold deposits and a SEG sponsored mentoring event being held in conjunction with the forum.

Be sure to attend the March 18 GSN membership meeting. Geoff Blewitt, Professor of Space Geodesy at UNR and NBMG, will make a presentation titled "How to Catch Geology in Action Using GPS". Geoff will discuss the use of ultra-precise positioning systems to detect minor changes on the earth's surface. An example is the Mt. Rose ski resort area where GPS measured a 1 centimeter upward movement over a period of six months, which he believes was the result of a magmatic intrusion into the lower crust. His presentation promises to be thought provoking and you do not want to miss it. Thanks go to **Lance Taylor** and **GEOTEMPS** for sponsoring the social hour during the meeting.

Finally, the 2004/2005 GSN membership directories are being distributed. The directory is a great source of information for all of our members. Greg French, Leslie Olmstead, Raye Buckley, and Laura Ruud deserve high praise for a job well done. By the way, this year's membership increased by approximately 10% over last year. This corresponds with a 25% increase in the number of mining claims filed in Nevada in 2004 compared to 2003. These numbers continue to confirm that mineral exploration is alive and well in Nevada.

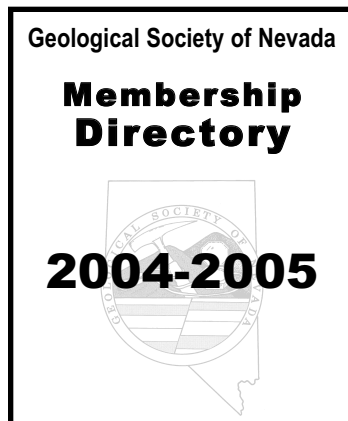
## MEMBERSHIP DIRECTORY

Greg French and David Shaddrick,  
*GSN Membership Co-Chairs*

The GSN wishes to thank all the supporters of the 2004-2005 Membership Directory. The Directory could not have been possible without the hard work of Raye Buckley, Leslie Olmstead, Laura Ruud, and Shannon Fitzpatrick. Post printing, several omissions were discovered. A correction sheet will be sent to the membership. Please send any comments on the Directory content or style to:

gmcnfrench@aol.com.

Remember the Directory is the "who's who" in the Great Basin. **Purchase an extra copy for your home, office, or pickup. Don't leave for the field without one!**



## MINING CLAIM FILINGS INDICATE EXPLORATION ACTIVITY INCREASE

Mining claim filings increased by 24.9 percent in 2004 over 2003 according to data recently released by the Division of Minerals. The total filings in 2003 were 116,819 and the total in 2004 was 145,942. The counties showing the greatest increases were Elko (18,728 to 21,747), Esmeralda (3,877 to 5,952), Eureka (18,318 to 30,881), Lander (17,022 to 19,367), Mineral (4,678 to 7,351), and White Pine (7,290 to 10,053). For further information concerning mining claim filings, including a complete county-by-county listing of the filings, see the Division's website at [minerals.state.nv.us](http://minerals.state.nv.us) or call Doug Driesner at 775/684-7046.

## GSN 2005 SYMPOSIUM "Window to the World"

Eric Ruud, *Co-Chairman, GSN 2005 Symposium*

Soon Spring will be here and so will the GSN's 2005 Symposium – Windows to the World. There are less than twelve weeks to the meeting. This major international symposia will be an exciting, dynamic meeting. All the new activity and enthusiasm in the gold exploration and mining industry has created a high level of interest. The current status of the meeting:

- 91 manuscripts have been submitted
- 112 speakers are in order
- 69 poster presenters are confirmed
- 11 core shacks are committed
- 9 Field trips are mapped out
- 4 Short courses are ready
- SEG pre-Symposium Forum is arranged
- The Big Party is being planned
- Items for the Silent Auction are being accepted
- The Exhibitors Hall is almost full

There are still a few spaces available for exhibitors to display their services and products. Only one large booth is still available. After SME and PDAC they may be filled. Reserve your booth today!

Please contact Brenda at the GSN Symposium office, 775/355-8388 or [bestay@gsn2005.org](mailto:bestay@gsn2005.org), to volunteer for this worthwhile project. Brenda's office is located inside the Gold Summit office on Caughlin Parkway. Don't wait until the last minute to register for the Symposium, Field Trips, Short Courses and Exhibits on the website ([www.gsn2005.org](http://www.gsn2005.org)).

See page 11 for a symposium registration form.



**Thanks to BSi Inspectorate for hosting the February meeting.**

# *GSN March 18, 2005 Membership Meeting*

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**Date:** Friday, March 18, 2005

**Time:** Social-6:00, Dinner-7:00, Meeting-8:00

**Reservations:** 775/323-3500; fax 323-3599,  
e-mail gsn@mines.unr.edu

**Deadline:** Reserve by 11 am Thursday, March 17<sup>th</sup>

**Location:** Elks Lodge, 597 Kumle Lane, Reno, NV

**Directions:** Across (W) from the Reno-Sparks Convention Center (S Virginia St), behind the Les Schwab Tire Center

**Speaker/topic:** Geoff Blewitt, Professor of Space Geodesy, NBMG, and NV Seismo Lab, UNR. See abstract below.

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## **HOW TO CATCH GEOLOGY IN ACTION USING GPS**

Geoff Blewitt, Nevada Bureau of Mines and Geology, University of Nevada, Reno

We tend to think of geology as being a very slow process relentlessly forming and reshaping the land around us, over “geological time” spanning millions to billions of years. Yet we are all very aware of the other end of the geological spectrum, where we find volcanic eruptions taking place over days, and even more extreme, earthquakes taking place over seconds. Of course we understand the latter is a consequence of the former, that geology’s violent and newsworthy events are the result of an accumulation of energy due to long time-scale processes, such as plate tectonic movements and the resulting strain accumulation between tectonic plates. But, what about the details of the connections over such a broad span of time scales? Beyond earth shaking events, how can we catch geology in action, on time scales of months to years and beyond?

Whereas most people these days know that its possible to buy a GPS gadget to position a car within a few meters on the road, it is less well known that over the last 20 years geophysicists have developed methods to process GPS signals that, with appropriate care, can precisely position a GPS station with an accuracy better than 1 millimeter. Thus, by positioning the same point day after day, the slow but relentless accumulation of strain between major earthquakes can be precisely tracked, and areas accumulating strain most rapidly can be pinpointed and flagged as being at seismic risk, or as being promising for prospecting geothermal resources.

I will present some of my experiences in trying to catch geology in action using Global Positioning System (GPS). These experiences range from developing the ultra-precise signal processing techniques, to being part of the re-invention of the world’s argueably oldest science, “geodesy”, and then on to discovering new types of geological phenomena that are taking place on very familiar time scales of hours to years, and yet just beyond the radar of human senses.

One such event occurred over a 6 month period in 2003, when the Mount Rose ski resort (Slide Mountain) moved sharply upward and to the northeast by a cracking 1 centimeter. Of course, nobody noticed except the scientists. However, the implications turned out to be very deep, down where over one thousand micro-earthquakes (which also went unnoticed) took place during the same time interval. We believe we have discovered a magmatic intrusion into the lower crust, so deep at 30 km that earthquakes just aren’t supposed to happen there. Moreover, Lake Tahoe hasn’t experienced surface volcanism for approximately a million years.

Another type of phenomenon that we have recently discovered is that the Earth changes its shape continuously by millimeters as water is seasonally redistributed about the globe, as it tends to get locked in ice on land during the Northern Hemisphere winter. We hope to use such measurements to track how seasons differ from year to year, and ultimately we hope effectively “to weigh” the melting of the ice sheets, if indeed that is occurring in Greenland or Antarctica. This required us to figure out theoretically how sea-level responds to ice melting. This part of the story is really surprising!

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Geoff Blewitt is a Research Professor jointly at the Nevada Bureau of Mines and Geology and the Nevada Seismological Laboratory, University of Nevada, Reno. He started his career 20 years ago at the NASA Jet Propulsion Laboratory, where he led the development of the GIPSY GPS software now used by over 100 institutions worldwide for geophysical research, for which he has won several NASA awards. Geoff has over 70 publications in refereed journals, including Science and Nature. He graduated in 1981 with a Bachelor of Science degree in Physics from University of London, and in 1985 with a Ph.D. in High Energy Physics from Caltech.

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## **GEOSTATISTICS COURSE PLANNED IN ELKO AND RENO**

The GSN Elko Chapter is hosting a “Zero to Kriging” short course by Dr. Isobel Clark at the Hilton Garden Inn the week of the 14<sup>th</sup> of March, 2005. This is a 5 day class and will run for ~8 hours each day. The cost will be \$750 to attend which represents a ~45% savings off the regular market rate, and an exceptional value for GSN members. Also be aware if the 14<sup>th</sup> does not work for you, Isobel is offering the course again the following week (21<sup>st</sup> of March) in Reno, and has agreed to give GSN registrants a 20% discount (or \$1,080) for that venue. Registration fees will provide for beverages during the day, printed handouts, a CD, and you will have the opportunity to buy the Isobel Clark’s book at 30% discount (\$42). Please confirm your interest in attending either of these courses via email to dcaldwell@nevadapacificgold.com, or calling Dave Caldwell at 775.753.4396.

## ACTIVITY UPDATE

Mike Brady, January 2005  
www.activityupdate.com

### NEVADA

Rimfire Minerals Corp. announced that it acquired the right to examine Newmont Mining Corp.'s geoscience database covering 7,920 km<sup>2</sup> within the Walker Lane Belt. Rimfire will be required to spend \$300,000 on exploration over 2 years and may acquire any property within the area of interest with Newmont retaining a 2-3% NSR. M.J.: December 17

Augusta Resource Ltd. announced that it acquired an option to purchase the Mount Hamilton Property from private interests for \$3,600,000 in cash and shares. (resource = 9,020,000 tons @ 0.052 opt Au) N.M.: December 10

Placer Dome Inc. announced that it acquired an option to earn a 51% interest in 3 separate properties from Bravo Venture Group Inc. for \$100,000 cash and \$3,150,000 in exploration expenditures for each property retained over 4 years. The properties include the South Lone Mountain, Three Bar and the South Gold Bar claim groups. Press Release: November 10

Queenstake Resources Ltd. announced that recent drill results at the Jerritt Canyon/Starvation Canyon Project include 170.8-184.5 meters @ 0.155 opt Au (TJ-110); 90.9-100.1 meters @ 0.357 opt Au (TJ-126C); 148.8-151.8 meters @ 0.349 opt Au (TJ-128AC); 151-184.6 meters @ 0.252 opt Au (TJ-142); 82.4-111.4 meters @ 0.407 opt Au (TJ-156A); 111.3-135.7 meters @ 0.310 opt Au (TJ-159A) and 167.8-180 meters @ 0.395 opt Au (TJ-195). (resource @ Starvation Canyon = 1,000,000 tons @ 0.153 opt Au) N.M.: December 24

Royal Standard Minerals Inc. announced that the ramp decline at the Goldwedge Project has now advanced 683 feet (was 135 feet in July). (resource = 211,950 tons @ 0.494 opt Au measured) P.D.: November 2004

Quadra Mining Co. announced that two of its workers at the Robinson Mine were killed while performing maintenance work on the bucket of a mining shovel. (reserve = 115,060,000 tons @ 0.72% Cu, 0.008 opt Au proven+probable) N.M.: December 24

Atna Resources Ltd. announced that recent drill results at the Pinson Project include 222.4-228.65 meters @ 0.266 opt Au (APRF-210); 256.2-259.25 meters @ 0.927 opt Au (APRF-215); 281.2-301.93 meters @ 0.154 opt Au (APCX-219) and 346.9-350.62 meters @ 0.301 opt Au (APCX-220). M.J.: January 7

Apollo Gold Co. announced that it received the first gold pour from the start-up of operations at the Standard Mine. (reserve = 22,501,700 tons @ 0.018 opt Au proven+probable) N.M.: January 7

Newmont Mining Corp. announced that it acquired an option to earn a 60% interest in the LHS Property from Toquima Minerals Corp. for \$2,000,000 in exploration expenditures over 4 years. Press Release: January 21

MBMI Resources Ltd. announced that it acquired an option to earn a 50% interest in the Big Mike Property from Goldsprings Inc. by funding all costs up to and including property development. P.D.: December 2004

## GSN MEMBERS' PERSONAL NOTES & NEWS

### Career Related Moves

John L. Muntean has joined the Nevada Bureau of Mines and Geology as a Research Economic Geologist. Previously, he worked as a senior geologist for Placer Dome Exploration in Reno. His new email address is munteanj@unr.edu.

The Division of Minerals is pleased to announce the appointments of Mike Visher and Christy Morris to positions within the Division. Both Mike and Christy are long-time GSN members.

Mike is the new Chief of the Abandoned Mine Lands Program, overseeing the securing of physical hazards and administering the "Stay Out and Stay Alive" public awareness program. He can be reached at 775/684-7044 (office) or mvisher@govmail.state.nv.us (email). Mike was formerly an exploration geologist with FMC and Meridian Gold.

Christy is the new Oil, Gas, and Geothermal Program Manager with responsibility for all oil, gas and geothermal well permitting and drilling operations in the state. She also serves as the state contact person for the DOE Geopowering the West Program and the Interstate Oil and Gas Compact Commission. She can be reached at 775/684-7045 (office) or clmorris@govmail.state.nv.us (email). Christy was formerly the regulatory affairs administrator for ORMAT Geothermal.

### Deaths

#### Elmer A. Winter

Elmer A. Winter, aged 79, died at home in Reno on February 6, 2005 after a long battle with cancer. He was born on March 23, 1925 in Janesville, Minnesota, to Frieda and Martin Winter.

After service in the U.S. Marine Corps in World War II, Elmer studied geology at the University of Nebraska and the University of Minnesota. He worked as an exploration geologist throughout the United States, as well as the rest of the world until his retirement in 1992. He worked on every continent, and spent extended periods in Alaska, South America and Africa.

Elmer is survived by his wife, Jill, and his brother Donald. He was preceded in death by his parents, his brother Martin and his sister Ruth.

A celebration of Elmer's life will be held at his home in Reno at 3 p.m. on March 19. Thanks to the doctors and staff at Alpine Hematology for many years of care. Memorial donations in Elmer's name can be made to the Elmer A. Winter geology scholarship at the University of Nevada, Reno, the University Foundation, Reno, Nevada 89557.

*Jill M. Winter, Center for Applied Research, UNR*

**Members are encouraged to keep us informed about their own career related moves and awards, and deaths of GSN colleagues. Your information needs to be received by Andrea at gsn@mines.unr.edu by the 21<sup>st</sup> of each month.**

# ELKO CHAPTER MARCH 17<sup>th</sup> MEETING

## DISCOVERY AND GEOLOGY OF THE JB ZONE AT THE REN PROPERTY, ELKO COUNTY, NEVADA

Vance R. Spalding, Gaylord Cleveland, and  
Kevin M. Conway, Centerra (U.S.) Inc., Reno, NV

Corresponding author

Vance R. Spalding, vance.spalding@centerragold.com

The REN property is located on the northern Carlin Trend, Nevada. Centerra (U.S.) Inc. and its predecessors, in joint venture with Homestake Mining Company (now wholly owned by Barrick Gold Corp.), began exploring the deep potential of REN in 1995, and in 2000 encountered a significant intercept in hole RU-24C grading 39.4 g/t Au over 36.6 m beginning at a depth of 828.4 m (1.148 oz Au/ton over 120 ft beginning at 2,718 ft). Discovery of the nearby JB zone followed in 2002 when several, adjacent drill holes returned high-grade gold intercepts, including 21.3 g/t Au over 19.8 m in hole RU-49C (0.620 oz/ton over 65 ft). The discovery holes targeted the area beneath a hill consisting of strongly altered upper plate rocks near an intersection of major structures, including the north to north-west-striking Ren (Post) fault. A large arsenic soil anomaly is located north of the JB zone. Anomalous rock chip gold values to 0.75 g/t were obtained from upper plate rocks in the area, although not directly above the JB zone.

A block model estimate completed on four separate zones of mineralization at REN by Roscoe Postle Associates in December 2004, using an 8 g/t cutoff grade and an assay cap of 40 g/t, identified indicated resources of 1.873 M tonnes grading 13.1 g/t for 24.5 tonnes of contained gold (2.060 M tons grading 0.382 oz/ton for 791,000 oz), plus inferred resources of 1.261 M tonnes grading 12.7 g/t for 16.0 tonnes of contained gold (1.390 M tons grading 0.370 oz/ton for 516,000 oz). The JB zone is the largest of the four zones discovered to date, containing over half of the total resource. It extends from 700 to 960 m below the surface (2,300 to 3,150 ft), and is a typical Carlin-type deposit, hosted predominantly in calcareous siltstone and mudstone of the Devonian Popovich Formation in the lower plate of the Roberts Mountains Thrust.

The Popovich Formation has been structurally disrupted and ranges from 0 to over 120 m (0 to over 400 ft) in thickness. It overlies the massive Silurian-Devonian Bootstrap limestone. The contact between the Popovich and Bootstrap is prone to karsting and collapse brecciation. A low-angle fault contact separates the Popovich from the overlying, strongly sheared, Devonian Rodeo Creek unit of approximately 200 m (650 ft) thickness. The Roberts Mountains Thrust zone separates the Rodeo Creek from about 500 m (1700 ft) of overlying Ordovician through Devonian strata of the upper plate.

Structural controls on gold mineralization in the JB zone are complex. A first-order control is low- to moderate-angle north-dipping faults related to a duplex of favorable Popovich host rock, and an associated low-angle fault along the Popovich-Rodeo Creek contact. The mineralized zone strikes east-west, parallel to and in the footwall of the high-angle MBX fault. Locally, high-grade mineralization is

hosted in Jurassic lamprophyre sills and dikes and in the lower portion of the Popovich. The highest-grade intercepts align north-south along the east margin of the zone and are likely controlled by a north-striking structural feature.

The JB zone is composed mostly of replacement-style and open space-filling style Carlin-type mineralization associated with decarbonatization and related collapse brecciation, weak to moderate silicification, sulfide deposition, and carbon and barite enrichment within a structurally thickened (i.e. duplexed) sequence of Popovich Formation strata. Late-stage realgar occurs immediately above high-grade gold mineralization in two holes. Locally, high-grade is hosted in altered lamprophyre sills and dikes.

An early event of collapse breccia development and intense silicification unrelated to high-grade gold is widespread along the Bootstrap-Popovich contact, although high-grade gold mineralization often is found immediately above this horizon.

## SOCIETY OF ECONOMIC GEOLOGISTS

*(in conjunction with Geological Society of Nevada's  
Symposium 2005 – Window to the World)*

### Controversies on the Origin of World-Class Gold Deposits: Carlin and Witwatersrand

May 14, 2005, Reno, Nevada

The Society of Economic Geologists is sponsoring a one-day forum to examine and discuss the origins of gold deposits in the Carlin and Witwatersrand camps. Despite their importance, there is still no general agreement on their origins. For the Witwatersrand, the debate between placer and hydrothermal origins, and variations in between, has raged since discovery in 1886. For Carlin-type deposits, theories of origin have swung from shallow-hot spring deposits to distal products of porphyry copper deposits to deep mesothermal deposits.

Understanding the origins of these deposits has immense implications not only for future exploration success, but also for a better insight into special earth processes that lead to such large metal anomalies. In the tradition of the scientific debates of the nineteenth and early twentieth centuries, we plan a series of talks that give contrasting views to the origin of these deposits, followed by panel discussions between experts and open discussions with the audience.

Although discussions will likely be animated, the emphasis will be on looking forward and identifying where we need to go in the future to better understand and explore for these deposits. The current forum participants are:

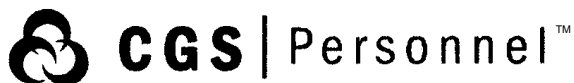
#### Witwatersrand—Speakers

1. Hartwig Frimmel (University of Cape Town, Wuerzburg University)
2. Neil Phillips, moderator: Laurence Robb (University of Witwatersrand)

Discussion panel (in addition to speakers)

1. David Groves (University of Western Australia)
2. John Chesley (University of Arizona)
3. Jonathan Law (CSIRO)

*continued on page 6*



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**SEG** *continued from page 5*

4. Keith Kenyon (Anglogold)
5. Andrew Barnicoat (Geoscience Australia)
6. Victor Wall (Taylor-Wall Associates)

**Carlin—Speakers**

1. Jean Cline (University of Nevada, Las Vegas)
2. Marcus Johnston (Victoria Resources) and Michael Ressel (Newmont)
3. Eric Seedorff/Mark Barton (University of Arizona), moderator: Greg Arehart (University of Nevada, Reno)

Discussion panel (in addition to speakers)

1. Albert Hofstra (USGS)
2. Richard Tosdal (Mineral Deposit Research Unit, University of British Columbia)
3. Chris Henry (Nevada Bureau of Mines and Geology)
4. Tommy Thompson (University of Nevada, Reno)
5. Robert Leonardson (Barrick)
6. Stephen Kesler (University of Michigan)
7. David Groves (University of Western Australia)

The forum will be held at John Ascuaga's Nugget in Sparks, Nevada, starting at 8 am. Registration begins at 7:30 am. After the Forum—hosted reception at 6:30 pm.

**SEG SPONSORED  
MENTORING EVENT AT GSN 2005**

The SEG will sponsor a mentoring event on the evening of Saturday, May 14<sup>th</sup> at the Nugget Casino in Reno. This is in conjunction with the reception for the SEG

Forum at GSN 2005. It is expected that about 30 to 50 young geologists and students, post-graduate and those close to graduation, and 20 to 30 experienced industry geologists will participate. The primary purpose of the evening is to promote interaction between young geologists and members of industry in a relaxed setting. Informal discussions will be encouraged over snacks and drinks from 6:30 to 8:00 pm. Following this introductory session, each of the industry participants will be asked to treat 1-2 young geologists or students to dinner at a local restaurant.

The Reno mentoring event will provide an opportunity for students and young geologists to establish contacts in industry and learn more about the people in the profession and the nature of their work. This evening will allow members of industry to meet young geologists, potential future employees, in an informal setting and provide an opportunity for future recruitment. The mentoring event is part of an SEG mentoring initiative that includes the quarterly publication of an article on a mentoring related topic in the SEG Newsletter.

Those interested in participating in the SEG mentoring event at GSN 2005 should contact Al Lander (for Elko-based geologists), Earl Abbott (for geologists based in Reno, Winnemucca or elsewhere), or John Muntean (for students and recent graduates). Please respond by email to:

- Al Lander (ALander@barrick.com),
- Earl Abbott (eabbott@power.net) or
- John Muntean (munteanj@unr.edu) by March 7<sup>th</sup>.



# Sample Bags

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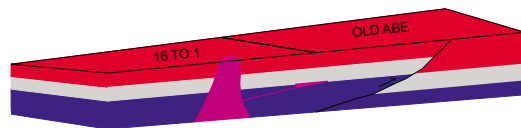
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# WINNEMUCCA CHAPTER MARCH 9<sup>th</sup> MEETING GEOLOGY OF THE MAGGIE CREEK DISTRICT

Michael Nemitz, *Newmont Mining Corporation*

The Maggie Creek district is located along the south central portion of the Carlin trend in northeastern Nevada. Within the district there are at least three Carlin-type gold deposits (Gold Quarry, Tusc, and Mac), one gold-copper-zinc deposit (Mike), and several vein-type base metal deposits (Copper King and Nevada Star) and barite deposits (Rimrock and Schroeder Mountain). Past production and current reserves for the district total approximately 19 million ounces of gold with an additional 8.7 million ounces of gold, 1.03 billion pounds of copper, and 813 million pounds of zinc in mineral inventory at the Mike deposit.

Mineralization within the district is hosted within transitional and carbonate sequences footwall to the Roberts Mountains thrust (RMT). These include from oldest to youngest the Roberts Mountains Formation, Popovich Formation, and Rodeo Creek unit. A minor amount of mineralization is hosted within the overlying allochthonous rocks of the Marys Mountain sequence. To date the majority of gold mineralization has been extracted from the Rodeo Creek unit.

Four deformation events are clearly recognizable within the Maggie Creek district. The oldest is related to the Antler orogeny, which resulted in roughly eastward directed thrusting of the Marys Mountain sequence over the Rodeo Creek unit along the RMT. Numerous north-northeast trending folds identified throughout the district are associated with this event. This was followed by northeast-southwest oriented compression, which resulted in the northwest-striking Good Hope reverse fault along with the northwest trending Alta and Snowbird anticlines. These features are cut by numerous northeast-striking normal faults that are related to Basin and Range extension. The youngest structural features recognized are northwest-striking normal faults, which are the result of ongoing extension in the region.

Wallrock alteration associated with gold mineralization within the district is typical of that for Carlin-Type deposits and includes from oldest to youngest; decalcification, silicification, argillization, sulfidation, dolomitization, alunization, & oxidation. Of these, silicification, argillization, & sulfidation are the most closely related to gold mineralization spatially.

Controls on the distribution of mineralization within the district vary by deposit and often vary within each deposit. The relative importance of each control can be generalized as follows; the primary control on mineralization is high-angle faults, folding provides a secondary control on mineralization while stratigraphy and low-angle faulting are tertiary controls. The intersection of these features often results in higher grade mineralized zones.

## GSN FOUNDATION

Please remember the GSN Foundation when renewing your membership. Foundation dollars are used for University of Nevada scholarships, the Kindergarten through 12<sup>th</sup> grade Field Trip Grant Program, and Nevada Mapping Grants.

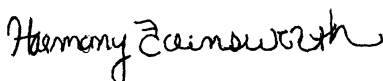
Dieter Krewedl  
President  
Geological Society of Nevada

I want to thank you for the scholarship I received. I currently have two jobs. One is on campus with Teaching and Learning Technologies. The other is a paid internship with the Washoe Department of Water Resources. I support myself so the only aid I get is from scholarships. Your help will allow me to spend more time on school, instead of having to work more in order to pay the bills.

I went to my first GSN meeting last Friday to see some of the wonderful people who are helping to support me this year. I enjoyed the social and had a great time. I will definitely be attending more in the future.

Thank You

Harmony Ann Farnsworth



## Our Lady of the Snows School

June 14, 2002

Dear Ms. LaPointe,

I'd like to thank you for the grant money that made our 5<sup>th</sup> grade field trip to the Hazen fossil pit possible. We had a great day; the weather cooperated, and the children found lots of fossils.

Enclosed are some photos from the trip and thank you notes from the children. They were absolutely fascinated that they could find fossils and actually keep them.

Preparation for this trip is quite extensive. We study earth science, which culminates with fossils. The children learn about fossils through children's literature books. The books are scientific in information, but interesting at the same time. Also included in the preparation of this trip is a chance for the children to make fossils of their own. As you saw a sample last year, it is quite an authentic activity.

Thanks again for making our trip possible. We appreciate it and had a great time discovering the stickleback fish fossil from the pit.

Sincerely yours,



Ann Boeser  
Our Lady of the Snows School  
5<sup>th</sup> Grade Science



## STATUS OF BLM LOCATION AND CLAIM MAINTENANCE FEES

The BLM implemented a \$5 increase in the claim location fee and a \$25 increase in the claim maintenance fee effective June 30, 2004. This applied to all claims filed after June 30, 2004, and all maintenance fees due on or before September 1, 2004. The mining industry was successful in its efforts to include language in the Omnibus Appropriations bill for the fiscal year 2005, which rolled the location fee and the claim maintenance fee back to the pre-July 1, 2004 levels (\$25 per location and \$100 per claim maintenance fee per claim), effective the date the bill was signed by the president, which was December 8, 2004. The language in the bill does not require the BLM to refund location fees paid prior to December 8, 2004, or claim maintenance fees paid prior to December 8, 2004. The lower claim fee remains in effect until the BLM produces a report on permitting delays and implements a permit tracking system. It is our understanding that the Washington, DC office of the BLM has notified all state offices to stop collecting the higher location and claim maintenance fees. In addition, an Instruction Memoranda is being prepared, which will instruct the BLM to refund the excess for anyone who paid the higher location and claim maintenance fees after December 8, 2004. If you filed claims after December 8, 2004 and paid the higher fees, you should contact the BLM office to ensure that you are on the list to receive a refund of the excess fees paid.

If you have any questions, please contact Laura Skaer, Northwest Mining Association, at (509) 624-1241, [www.nwma.org](http://www.nwma.org).



## GEOSCIENTISTS – OUTREACH OPPORTUNITY

Here's a great opportunity for you to convince some young people that geology is an exciting and rewarding career to pursue.

Galena High School is having a Career Day on Friday March 18<sup>th</sup> and would like practicing professionals in geoscience and mining to come man a table at 1-2 hour intervals throughout the day (7:30 am to 3:00 pm) to talk one-on-one with students about the high points of pursuing an education and career in your field. I can provide you with some brochures from AGI and SME on career opportunities in these areas and mineral samples to lure them in. This will only take an hour or two out of your day and could be a turning point in some young person's life.

Please phone or e-mail me back what one- to two-hour time slot works best for you on March 18<sup>th</sup> to visit Galena High school (off Mount Rose Highway at Wedge Parkway). D.D. LaPointe, GSN Education Co-Chair, (775) 784-6691, ext. 134.

## SILENT AUCTION

GSN is seeking donations for a Silent Auction that will be held during the "Big Party" on Tuesday, May 17, 2005 as part of the Geological Society of Nevada Symposium 2005 Conference. We anticipate between 1200 and 1500 people to attend this event, providing you with a great opportunity to show your support for GSN.

Specific items that we are seeking for the silent auction include:

- Mineral specimens
- Mineral Jewelry
- Framed Art
- Gift baskets
- Logo items
- Books
- Drafting supplies
- Geological equipment
- Gift certificates
- Commemorative Coins

All donors will have their names displayed on two large donor panels and can leave business cards or promotional material alongside items donated.

In addition, we will be holding a live auction of one or two high-end items (value greater than \$1,000) that would be of interest to our attendees. Such items might include gold or other precious metal specimens, or unique art works with a geologic or mining related theme. Donors of live auction items will have their names and item descriptions printed in the program (*I need to check on this*) as well as being listed on the donor panels described above.

The auction proceeds will be applied to the GSN Foundations' fund to benefit GSN's educational projects which include grants to Nevada K-12 classes for transportation on earth science related field trips, and to fund grants in aid of geologic mapping in Nevada. In 2004, GSN Foundation distributed over \$6000 to 28 schools for field trips to localities such as the Great Basin Outdoor School at Lake Tahoe, Red Rock Canyon, Valley of Fire State Parks, Hazen diatomite pit, and the W.M. Keck Museum and Nevada Seismological Laboratory at the Mackay School of Earth Sciences and Engineering.

Please send donated items to the address listed below. If you are in the Reno area, you may call to arrange a pick up. Thank you for your support!

D.D. LaPointe  
GSN Education Committee Co-Chair  
Nevada Bureau of Mines and Geology/MS178  
University of Nevada, NV  
Reno, NV 89557

Phone: (775) 784-6691 ext.134  
Fax: (775) 784-1709  
Email: [dlapointe@unr.edu](mailto:dlapointe@unr.edu)

# GSN WISHES TO THANK THE 2005 SYMPOSIUM COMMITTEE

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**Secretary**, Cheri Reimann

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### COMMITTEE MEMBERS AT LARGE

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Brenda Estay

## UPCOMING EVENTS

**Mar. 4<sup>th</sup>** - ECONOMIC GEOLOGY SEMINAR, Mackay Science Bldg, Rm 215, UNR, 4:00 pm. Jon Price, Nevada Bureau of Mines and Geology, UNR, Nickel Deposits of Western Australia - A Report from the Society of Economic Geologists Field Trip. Jon Price, 775/784-6691, ext 126.

**Mar. 6<sup>th</sup>-9<sup>th</sup>** - PROSPECTORS & DEVELOPERS ASSOCIATION OF CANADA (PDAC) 2005, Toronto, Canada. [www.pdac.ca/pdac/misc/conv-info.html](http://www.pdac.ca/pdac/misc/conv-info.html).

**Mar. 16<sup>th</sup>-17<sup>th</sup>** - NEVADA LANDMEN'S ASSOCIATION (NLA) & AMERICAN ASSOCIATION OF PROFESSIONAL LANDMEN (AAPL), 2005 Mining AND Land Resources Institute, Reno, NV. Edd Jackson, [edd.jackson@newmont.com](mailto:edd.jackson@newmont.com), 775/784-8188.

**Mar. 18<sup>th</sup>** - ECONOMIC GEOLOGY SEMINAR, Mackay Science Bldg, Rm 215, UNR, 4:00 pm. Kenneth Hickey, Mineral Deposit Research Unit, Univ of British Columbia, Carlin Reconstruction - Geological Environment in the Eocene in and Around the Carlin Trend - Evidence from Geology and Apatite Fission Track Data. Jon Price, 775/784-6691, ext 126.

**Apr. 15<sup>th</sup>** - ECONOMIC GEOLOGY SEMINAR, Mackay Science Bldg, Rm 215, UNR, 4:00 pm. Mark Reed, Univ of Oregon, From Magma to Main Stage Veins: Pressure Oscillation, Temperature Decrease, and Hydrothermal Alteration Reactions in the Butte Porphyry Copper System. Jon Price, 775/784-6691, ext 126.

## SCIENCE FAIR JUDGES NEEDED

Well, it's that time again - the time to volunteer to help judge the 2005 Regional Science and Inventions Fair! GSN members have traditionally taken an active role in helping with this endeavor.

Judging for the Regional Science Fair will occur on Thursday, March 17<sup>th</sup> at the Lawlor Events Center. As in the past, we will meet for a light supper of sandwiches and salads at 5 p.m. Judging will begin promptly at 6 p.m. -(really!) Judging will go until done - for the lower grades (K-6), it is usually done by 9 p.m. We will be judging grades K-12 for the science fair and also judging K-12 inventions again this year. Below is the form to fill in with all your particulars. Please pass this form on to all your friends and colleagues who may be interested in judging the science fair - many hands will lighten the load! Thanks in advance for all your help - you do make a difference!

### 2005 Western Nevada Regional Science & Engineering Fair Judge Registration Form

Name: \_\_\_\_\_

Telephone: \_\_\_\_\_

email: \_\_\_\_\_

Indicate area of Scientific Expertise (note: we ask this so we don't put 12 geologists together in the same group):  
Biology, Chemistry, Computers, Earth Science, Education, Electronics, Engineering, Geography, Hydrology, Mathematics, Medicine, Physics, Social Science, other:

Willing to be a grade leader? Yes \_\_\_ No \_\_\_

Grade Preference (if any): \_\_\_\_\_

Grade Exemption (if any-i.e. child in that grade, teach that grade, know a child in that grade, etc.):

I prefer judging the science fair: Yes \_\_\_ No \_\_\_

I'll be an Inventions judge: Yes \_\_\_ No \_\_\_

I'll do either judging task: Yes \_\_\_ No \_\_\_

Do you need childcare during the judging?

Yes \_\_\_ No \_\_\_

For how many children: \_\_\_\_\_

Children's' ages: \_\_\_\_\_

Please reply by email or fax to Melody Hefner. *Thank you!*

Melody Hefner

Volunteer Judge Coordinator, 2005 Regional Science Fair

Phone (775) 425-2808, Fax (775) 425-6128

email [mlhefner@gbis.com](mailto:mlhefner@gbis.com)

REGISTRATION FORM

15 December 2004

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Please make checks payable to "GSN 2005" and mail them to GSN 2005, P.O. Box 13375, Reno, NV 89507-3375, USA. Credit card payments (VISA or MasterCard only) can be made on the Web (www.gsn2005.org) or by fax (775-323-3599). For information, see www.gsn2005.org, call 775-355-8388, or e-mail gsnsymp@unr.edu. All registrants are GSN members during the symposium and pre- and post-meeting trips and short courses.

Symposium Registration (Registrants for field trips and short courses must register in one of the following five categories.)

Early, Regular, and On-Site registrants will receive the printed Symposium Volumes by mail after the meeting.)

Early (GSN must receive the registration form by February 28, 2005), \$250 \$ \_\_\_\_\_

Regular (between March 1 and April 30), \$300 \$ \_\_\_\_\_

On-Site and Late (after April 30), \$350 \$ \_\_\_\_\_

Student (must be able to show proof of student status; no Symposium Volumes), \$125 \$ \_\_\_\_\_

Exhibits-Only (may not attend technical sessions and will not receive the Symposium Volumes, but have access to the exhibit hall and may attend the Big Party), \$25 \$ \_\_\_\_\_

Pre-Meeting Field Trips (limited to 40 per trip)

Field Trip 1-Precious Metal Deposits of the Walker Lane and South-Central Nevada (May 11-13), \$375 \$ \_\_\_\_\_ (Field Trip 2-cancelled)

Field Trip 3-Sediment-Hosted Gold Deposits of the Northern Carlin Trend (May 11-13), \$375 \$ \_\_\_\_\_

Field Trip 4-Sediment-Hosted Gold Deposits of the Getchell District (May 11-13), \$375 \$ \_\_\_\_\_

Society of Economic Geologists Forum on Controversies on the Origin of World-Class Gold Deposits:

Carlin and Witwatersrand (Saturday, May 14, at John Ascuaga's Nugget Hotel; Symposium Registration not required, but encouraged; limit 300 - first come, first served), \$149 (cost for professionals) \$ \_\_\_\_\_ or \$89 (cost for students) \$ \_\_\_\_\_

Keynote Luncheon - Doug Silver (Sunday, May 15, limit 650), \$30 \$ \_\_\_\_\_

Controversies Luncheon - Highlights from the SEG Forum (Monday, May 16, limit 650), \$30 \$ \_\_\_\_\_

Post-Meeting Field Trips (limited to 40 per trip) and Short Courses

Field Trip 5-Low Sulfidation Vein Systems in the Northern Nevada Rift (May 19-21), \$375 \$ \_\_\_\_\_

Field Trip 6-Sediment-Hosted Gold Deposits of the Southern Carlin Trend (May 19-21), \$375 \$ \_\_\_\_\_

Field Trip 7-Sediment-Hosted Gold Deposits of the Eureka-Battle Mountain Trend (May 19-21), \$375 \$ \_\_\_\_\_

Field Trip 8-Sediment-Hosted Gold Deposits of the Independence Range (May 19-21), \$375 \$ \_\_\_\_\_

Field Trip 9-Porphyry Deposits of the Great Basin (May 19-21), \$375 \$ \_\_\_\_\_

Field Trip 10-Comstock District (May 19-20, does not include overnight lodging), \$125 \$ \_\_\_\_\_

Short Course 1-Mineral Resource Estimation (May 19, minimum 15, limit 30), \$250 \$ \_\_\_\_\_

Short Course 2-Digital Mapping (May 19-20, minimum 12, limit 20), \$250 \$ \_\_\_\_\_

Short Course 3-Real World Geophysics: A Window into the Ground (May 19, limit 25), \$275/\$100 students \$ \_\_\_\_\_

Short Course 4-Structuring a Mining Deal (May 19-20), \$275/\$150 for students \$ \_\_\_\_\_

Pre-publication order of an extra copy of the Symposium Volumes (estimated to be two hard-bound, volumes with 1,400 pages, some in color). \$90 if picked up at the GSN office; \$102 if mailed to USA address; \$120 if mailed to non-USA address. Lower foreign mailing prices may be available on the Web. \$ \_\_\_\_\_

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Guests/spouses may sign up for the exhibits-only fee, which provides access to the exhibits and to the Big Party on Tuesday evening, May 17. Please complete a separate registration form for each guest. For hotel reservations at John Ascuaga's Nugget Hotel (www.janugget.com), please call 1-800-648-1177 and use "Geology" as the code to get the group reservation rate.

# GEOLOGICAL SOCIETY OF NEVADA



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