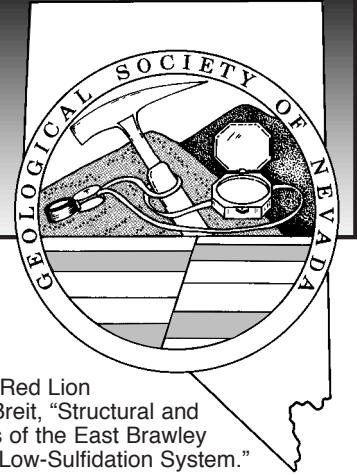


GSN NEWSLETTER



October 2002, Vol. 16, No. 8

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CALENDAR OF EVENTS

- Oct 3
Thursday
WINNEMUCCA CHAPTER MEETING: Humboldt Room, Red Lion Hotel and Casino. Bar-6:30 pm, meeting-7:00 pm. Fred Breit, "Structural and Temporal Relationships and Geochemical Characteristics of the East Brawley Peak High-Sulfidation Prospect and the Adjacent Aurora Low-Sulfidation System." Contact Sheila Bunch, 775/623-0202, sbunch@lambdacom.com.
- Oct 17
Thursday
ELKO CHAPTER MEETING: Western Folklife Center. Speaker and topic to be announced. Social-6:30 pm, talk-7 pm. Contact Marcus Johnston for information, 775/778-4036.
- Oct 17
Thursday
SOUTHERN NEVADA CHAPTER MEETING: Lilly Fong Geoscience Building, Room 102, UNLV, Las Vegas, NV. Speaker and topic to be announced. Social-5:30 pm. Contact Jean Cline, 702/895-1091, for information.
- Oct 18
Friday
GSN MEMBERSHIP MEETING: Reno Elks Lodge, Reno, NV. Bob Leonardson, Barrick Gold Exploration Inc. Topic: Pascua-Lama-Veladero. Call Laura Ruud at the GSN office for dinner reservations, 775/323-3500.
- Oct 19 & 20
GSN FALL FIELD TRIP: "GOLD DEPOSITS OF THE EAST RANGE - NEW DISCOVERIES IN AN OLD DISTRICT." The trip will visit the Couer Rochester and Florida Canyon and the Standard Mine and Packard Flats. See page 2 to Register!

**2002/2003 MEMBERSHIP RENEWALS ARE DUE IN THE GSN OFFICE BY
NOVEMBER 1, 2002! THANK YOU FOR RENEWING TODAY!**

GSN Newsletter is published monthly except June and July
Geological Society of Nevada, PO Box 12021, Reno, NV 89510-2021 USA, 775/323-3500

Calendar of Student Posters

October 18, 2002, GSN Meeting

Aline Concha Dimas and Robert J. Watters

"Geotechnical Assessment of Volcanic Flank Stability at Pico de Orizaba, Mexico"

Robin K. Ten Brink

"Geochemical Characterization, Elemental Gain-Loss, and Geochronology of Igneous Rocks along the Getchell Trend, Northern Nevada"

Hyun Mee Park

"Differentiation of Climatic Controls from Tectonism using Diatom Records: A Case Study from the Neogene Basins in the Sierra Nevada-Basin and Range Transition"

FROM THE PRESIDENT

Bob Thomas, GSN President 2002-2003

I hope everyone had an enjoyable and even profitable summer and is gearing up for another great season of dinner meetings. We're looking forward to strong attendance and an interesting slate of talks is being assembled. We're trying to keep the meal prices the same as last year and good turnouts will ensure that.

The third weekend of October is turning out to be a busy one for GSN – in addition to the first dinner meeting of



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News and Announcements

FROM THE PRESIDENT (continued)

the year on Friday the 18th, where Bob Leonardson will present a talk on the geology of the Pascua/Lama-Veladaro gold deposit, the Fall Field Trip to Florida Canyon and Rochester will take place on Saturday (19th) and Sunday (20th). We again are fortunate to have generous support for these events. **Eklund** is sponsoring both the social hour at the inaugural meeting, as well as the next night in Lovelock on our field trip. The field trip is also receiving support from **ALS Chemex** (drinks/snacks), **American Assay** (lunch), and **Inspectorate** (lunch). Generous sponsorship has enhanced all of our GSN events, but it's something that we cannot take for granted. Please offer your personal "thank you!" when you see these kind folks. For potential sponsors who may be reading this message, it's still not too late to support the field trip – the Saturday dinner can be sponsored for ~\$500 or the Sunday breakfast can be sponsored for ~\$300. Also, there is still space on the field trip for late sign-ups – just call Laura at the GSN office for details.

It's been a couple of years since we have inducted an honorary member to the GSN. We plan on doing so this year and a nominating committee has been formed for this purpose. If anyone has a name that they would like the committee to consider, please send it, along with a short biography, to Laura at the GSN office.

For those of you that are interested in helping out with the **GSN Symposium 2005**, please note that the next planning meeting is 12 noon, October 18th, at the Round Table Pizza at the McCarran/Mae Ann shopping center (west side of McCarran). Hope to see a crowd there!

GSN PUBLICATIONS

It has been a while since we printed the GSN publication order form in the newsletter for our members (see pages 5 and 6). We continue to publish two new field guidebooks (Fall and Spring) each year with the same quality that has become the expected standard for the Geological Society of Nevada. Through the sale of these publications, the GSN is able to keep the office operating at an approximately break-even level. If the sales go down, then operating expenses must go down to keep GSN in the black. Please peruse the list to see if there is anything your library is missing. There are quite a few must-haves if you are a geologist searching for metals. We are also trying to reduce our 1990 Symposium Volumes inventory by offering them at the very discounted price of \$15 per 2-volume set. This includes the Symposium Proceedings or the Field Trip Compendium.

Think about it – Christmas is just around the corner!

Visit our web site at:

www.gsnv.org

FALL FIELD TRIP

GOLD DEPOSITS OF THE HUMBOLDT RANGE NEW DISCOVERIES IN AN OLD DISTRICT October 19 - 20, 2002

It's not too late to sign up for the field trip. The trip will visit the Florida Canyon, Standard, Packard Flat, and Rochester Mines. The trip will emphasize the geology of the well known and often visited Florida Canyon and Rochester Mines and also see the new discoveries at the Standard and Packard Flats deposits. The field trip will leave Reno on Sat, Oct 19th to go to the Florida Canyon and the Standard Mines with Robert Thomason and Rich Larsen as field trip guides. We will spend the night at the Ramada Inn in Lovelock. On Oct 20th, first we will visit the Packard Flat and Rochester Mines with Dave Harvey as the field trip leader and return later that day to Reno. The trip will be limited to 40 people. This will be the first trip to the new discoveries at the Standard and Packard Flats Mines and will provide a chance to see new deposits before they are holes in the ground. **HURRY!** Registration deadline is Oct 10, 2002. Fill out the form and fax to 775/323-3599 or contact Laura Ruud at 775/323-3500, gsn@mines.unr.edu.

Fall 2002 Field Trip Sign Up

Name _____

Daytime Phone _____

Fax _____ Email _____

Company _____

Address _____

Email _____

Person to contact in case of emergency:

Name _____ Phone _____

Lodging needed in Lovelock: Y__ N__ Single__ Double__

Roommate (or we will assign) _____

MEMBER COST: Double room-\$135.00, single room-\$155.00, w/o Lovelock lodging-\$120.00

NON-MEMBER COST: Double room-\$160.00, single room-\$180.00, w/o Lovelock lodging-\$140.00

Amount included with this form \$ _____

Paid with Check # _____

Visa__ MC__ Exp Date _____

Credit Card # _____

Signature _____

(as it appears on card)

Payment must be made by Oct 10, 2002. No refunds after Oct 15, 2002. Fax: 775/323-3599 or mail to GSN office: P.O. Box 12021, Reno, NV 89510-2021, or email to: gsn@mines.unr.edu

Price includes: transportation; lunch & dinner Sat; lodging; breakfast and lunch Sun; field trip guidebook, snacks, beer, and soft drinks.

Reservations will be on a first-come, first-serve basis. We will be using rented Vans, and are looking for **volunteer drivers**. In order to keep the entourage down to a reasonably small number, **the field trip is limited to 40 attendees**. Payment must be in the GSN office for your reservation to be guaranteed.

GSN October 18, 2002 Membership Meeting

Date: Friday, October 18, 2002

Time: Social-6:00, Dinner-7:00 (\$17.00), Meeting-8:00

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

Deadline: Reserve by noon Wednesday, October 16

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

Speakers/topic: Bob Leonardson, Barrick Gold Exploration Inc.
See abstract below.

Pascua-Lama-Veladero

A northerly trending graben is formed along the continental divide (the international border) by two high angle reverse fault zones, the east verging Baños del Toro/Chollay on the west and the west verging El Indio on the east. The graben contains the El Indio deposit 45 km south of Pascua and the Pascua and Veladero mineral deposits to the north. Pascua is 11 km northwest of Veladero. Strong, west-northwest fracture zones cut the graben at Pascua and El Indio forming loci for mineralization.

The Pascua area has been the locus of repeated intrusive and volcanic activity since the late Paleozoic. In the early Permian a dacite to rhyolite ash flow succession was deposited, possibly an outflow deposit from a potential caldera to the northeast in Argentina. In the Triassic, the ash flows were intruded by the petrographically diverse batholith of the Pascua Lama granite intrusive complex. The Pascua-Lama granite intrusive complex is the dominant host rock for the deposit followed by Permian ash flows at Esperanza and Penelope. Non-volcanic and granitic host rocks unrelated to mineralization are unusual for high sulfidation deposits therefore Pascua is anomalous among deposits of this type. After a long hiatus numerous diorite stocks and dikes were intruded during the Oligocene, followed by an intense swarm of up to four families of dikes emplaced throughout the Miocene Period that culminated with deposition of Upper Middle Miocene dacite to rhyodacite ash flows in the Pascua area at 11.23-12.67 Ma. These were precursors to the magmatism and associated hydrothermal activity at 8.76-9 Ma that produced the Pascua deposit. Rhyodacite porphyry dikes concluded the magmatic activity at Pascua at 7.86 Ma. These dikes have been weakly to moderately altered during the waning stages of alteration.

Mineralization and breccias are controlled by high angle faults, particularly the intersections of three or more sets of faults. Six high angle fault sets have been identified, with west-northwest, north-northeast and north south strikes being the most important. A total of 14 major centers of mineralization, and a number of smaller centers are recognized. Brecha Central is the most significant center. Mineralization in Brecha Central is localized in and around a multi-phase breccia pipe that is interpreted to have formed by phreatomagmatic explosive activity. In mineralized areas, low angle fractures of a seventh fracture set normally contain significant gold-copper ±silver mineralization.

Early advanced argillic alteration consists of quartz-alunite-pyrite (QAP) and is most intense around mineralizing centers, but these zones coalesce to form a large zone of QAP alteration surrounding all of the mineralized centers. The early advanced argillic alteration is followed by brecciation, & then a second stage of advanced argillic mineralization consisting of alunite-pyrite-enargite (APE), again focused around the mineralizing centers, but forming a broad zone that is nearly coincident with the zone of early advanced argillic alteration.

Alteration zones from the intensely altered core of the system, or from any of the mineralizing centers, towards the less altered margin are: quartz (silica), quartz-alunite, quartz-alunite-dickite, quartz-alunite-kaolinite, quartz-illite, quartz-illite-smectite and locally propylitic in diorite bodies. Pyrite and enargite occur in all of the alunite-bearing assemblages but are generally more abundant in the more strongly altered zones. A silica cap occurs at the top of the sulfide zone just below a paleo water table where the sulfides are oxidized and less common. Pyrophyllite is the dominant clay mineral below a depth of 4500-4550 meters where temperatures were hotter and gold mineralization is rare. It also occurs in narrow tabular zones along presumably hotter structural zones up to an elevation of around 4900 meters and it is more common toward the east.

A euhedral to subhedral pyrite with only minor associated gold occurs in the first advanced argillic stage. Two distinct pyrite types and enargite occur in the second advanced argillic stage: the earliest one is an oscillatory-zoned arsenian-copper variety containing sub-microscopic gold that is the most abundant pyrite type and the chief gold bearing pyrite, and the younger one is essentially a non-gold bearing brassy type that occurs both with, and without, enargite. Enargite is the dominant gold-bearing mineral in the deposit and contains both sub-microscopic gold and gold as native and telluride inclusions. Of interest is the fact that Au in the zoned pyrite is associated with the copper-bearing zones and not directly with the arsenic zones as is the case for sediment hosted gold in the Carlin Trend of Nevada. Submicroscopic silver and gold and gold-bearing inclusions in enargite are generally associated with tellurium.

At the interface between the top of the APE sulfide zone and the overlying silica cap precipitation conditions fluctuated between deposition of sulfides and sulfates. Here, colloform zoned pyrite alternates in bands with szomolnokite, a soluble sulfate of iron. We infer conditions in this region may have behaved as a solubility front where boiling has concentrated soluble constituents in the fluid and sulfate minerals precipitate when their solubility is exceeded. Zoned pyrite precipitates when boiling ceases and the hydrothermal reservoir is refilled. Deposition of szomolnokite occurred at temperatures well in excess of 100°C in a slightly cooler hydrothermal environment, relative to APE mineralization, that represents the initiation of deposition of a suite of soluble sulfate minerals. All subsequent soluble sulfates precipitate from continually cooling hydrothermal fluids that represent part of a hot supergene environment at Pascua.

A high silver blanket occupies silicified rock just below the hydrothermal water table and the zone of steam-heated alteration. Dominant silver minerals are silver halides with mercury chloride (calomel) where silver correlates with mercury but not with gold. The blanket cross cuts all other alteration and mineralization zones and it appears to be produced by a subsiding hot supergene alteration zone that is the product of a collapsing hydrothermal system. The silver zone is continuous over the gold-silver-copper mineralized centers and permits the deposit to be mined as a unit and not as a group of separate deposits.

Steam heated alteration occurs in an east-west elongated zone at the surface that is centered on Brecha Central. It is superimposed over the advanced argillic alteration patterns down to 4850 meters and extends to greater depth along strong structural zones. Opaline silica at, and below, the steam-heated zone extends down to a depth around 4750 meters and with the silver blanket, indicates to us the location of the hydrothermal water table as the hydrothermal system collapsed at the end of silver blanket time.

continued

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ABSTRACT (continued)

Stable isotope studies have shown that all alunite mineralization at Pascua is dominantly the result of hydrothermal fluid. All jarosite analyzed to date is actually supergene and it is almost always younger than associated alunite. Meteoric fluid has played a very minor role in the hypogene and hot supergene portions of the deposit but became dominant during jarosite formation after development of most of the soluble sulfates. Jarosite and soluble sulfates do not normally occur together.

Relict minerals in quartz suggest that following development of a silica cap and superposition of a silver blanket the hydrothermal water table collapsed allowing meteoric water from melting ice into the sulfate and sulfide-bearing silicified rocks to create supergene oxidation. Some water achieved sufficient depth to boil and form young breccia bodies with jarosite matrices that remobilized gold and silver and removed copper. This occurred in cooler, peripheral sectors of the deposit like Esperanza, and we speculate for Veladero as well.

Relative abundances of minor elements in rocks underground and talus fines from the surface are not identical. Readily leached elements like copper are absent on the surface, but gold and silver are good guides to mineralization at a shallow depth. On the surface other reasonable guides to mineralization are antimony and bismuth while mercury is less encouraging. Arsenic and lead tend to be peripheral to mineralized zones on the surface. Copper, gold, silver, arsenic, antimony and bismuth occur together in the sulfide zone underground and, with the exception of copper, in the oxidized Esperanza mineralized zone on the surface. Also in the underground silver and mercury occur together in the high silver blanket, and do not correlate with gold.



GEOLOGICAL SOCIETY OF NEVADA

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PUBLICATION ORDER FORM & INVOICE

		QTY	TOTAL			QTY	TOTAL
SYMPOSIUM 2000 PUBLICATIONS				SPECIAL PUBLICATIONS			
Proceedings				Field Trip Guidebooks			
00-1	Geology and Ore Deposits 2000: The Great Basin and Beyond Symp Proceedings, 2 hard bound vol., 1,219 p. (2000) \$110.00	_____	_____	SP-6	N Carlin Trend, Big Springs: Bluestar, Genesis, Bootstrap, Post, & Dee Mines; Big Springs Property, 174 p. (1987) \$35.00	_____	_____
00-2	Geology and Ore Deposits 2000: The Great Basin and Beyond Symp Proceedings, CD-ROM, 1,219 p. (2000) \$50.00	_____	_____	SP-7	Hot Springs Gold Deposits of NW NV & SE OR: Florida Canyon; Sleeper; Quartz Mtn; Hog Ranch, 117 p. (1988) \$35.00	_____	_____
Field Trip Guidebooks				SP-8	Gold Deposits of N-C NV: Marigold; Cove; McCoy; Rain; Surprise, 107 p. (1988) \$18.00	_____	_____
00FT2	Structure, Volcanic Stratigraphy, & Ore Deposits of the Pah Rah Range, Washoe County, NV: Olinghouse Mine, Pyramid Mining District, Perry Canyon Caldera, & Pah Rah Range Oligocene-Miocene Volcanic Succession, 132 p. (2000) \$25.00	_____	_____	SP-9	Geology & Mineral Deposits of White Pine County: Golden Butte; Robinson Mining District; Illipah; Nighthawk Ridge; Greensprings, 143 p. (1989) \$35.00	_____	_____
00FT3	Tilted Middle Tertiary Ash-Flow Calderas & Subjacent Granitic Plutons, Southern Stillwater Range, NV: Cross Sections of an Oligocene Igneous Center: Stillwater Caldera Complex, Southern Stillwater Range & Wonder Mining District, 101 p. (2000) \$25.00	_____	_____	SP-10	Geology & Gold Deposits of the Osgood Mtns, NV: Pinson; Preble; Chimney Creek, 104 p. (1989) \$10.00	_____	_____
00FT4	Eocene Magmatism & its Role in Generating Sediment-Hosted Gold Deposits of the Carlin Trend: Emigrant Pass Volcanic Field, Northern Carlin Trend (Beast, Genesis, & Betze-Post Deposits), Tuscarora Volcanic Field (Mt Blitzen Volcanic Complex, Tuscarora Epithermal Precious-Metal Deposit), 223 p. (2000) \$35.00	_____	_____	SP-11	Geology & Ore Deposits of the Sierra Nevada & Foothills: Mary Harrison Prospect; Royal Mtn, King, Lincoln, & Spanish Mines, 158 p. (1990) \$35.00	_____	_____
00FT5	Ore Deposits of the Battle Mtn Area, NV: Variations on a Theme in the Havallah & Antler Sequences: N Peak & Marigold Mines; Phoenix Project; Redline Deposit, 172 p. (2000) \$35.00	_____	_____	SP-12	Carlin & Cortez Trends: Comparisons & Contrasts (Elko Chapter), 139 p. (1990) \$20.00	_____	_____
00FT6	Cortez to Eureka Gold Deposits: Ruby Hill/Archimedes Mine Area, Cortez Gold Mines, 206 p. (2000) \$35.00	_____	_____	SP-13	Tertiary Geol & Volc-hosted Au Deposits; S Great Basin & Vicinity: Lake Mead Region; Castle Mtns Mine; Halloran Springs & Nelson District, 138 p. (1991) \$35.00	_____	_____
00FT7	Giant Sedimentary Rock-Hosted Mineral Systems of the Carlin Trend: Gold Quarry & Betze/Post Deposit: Gold Quarry & Betze/Post Mines; Mike Deposit, 165 p. (2000) \$45.00	_____	_____	SP-14	Hawthorne Area-Central Walker Lane Structure & Tectonics: Wassuk Range, Pine Nut, Cedar Mtn, & Sheep Canyon Faults; Santa Fe-Isabella Area; Bettles Well Graben; Dicalite Detachment, 224 p. (1992) \$30.00	_____	_____
00FT8	Volcanic History, Structure, & Mineral Deposits of the N-C Northern Rift, 174 p. (2000) \$35.00	_____	_____	SP-15	Reno Area-N Walker Lane Mineralization & Structure: Peavine, Wedekind, Pyramid, & Olinghouse Districts; Washington Hill, Antelope Valley & Talapoosa Deposits; Volcanic Stratigraphy, 207 p. (1992) \$35.00	_____	_____
00FT9	Geology & Ore Deposits of the Getchell Region, Humboldt County, NV: Twin Creeks, Getchell, Pinson, & Preble Mines, 153 p. (2000) \$35.00	_____	_____	SP-16	Industrial Minerals & Gold Deposits Along I-80 Corridor: All-Lite Aggregate, Zeolite, & Argenta Barite Deposits; NV Cement Pit & Plant, CR Minerals Diatomite & Eagle-Picher Colorado Diatomite Pits; Marigold & Lone Tree Mines, 180 p. (1992) \$15.00	_____	_____
00FT10	Comparisons of Various Types of Ore Deposits in S-C NV: Rawhide, Tonopah Copper, & Round Mtn Mines; Three Hills Project; Tonopah & Goldfield Districts; Gemfield Deposit, 223 p. (2000) \$35.00	_____	_____	SP-17	Robinson Mining District Geol & Mineralization: (Elko Chapter), 82 p. (1993) \$12.00	_____	_____
00FT11	Cenozoic Tectono-Magmatic Evolution of White Pine County, NV: Core Complexes, Eocene-Oligocene Volcanic Centers, Episodic Extension & Shortening, & Disseminated Gold Deposits: White Pine & Central Egan Ranges; Illipah Mine, Snake Range Metamorphic Core Complex, Robinson Mining District, 168 p. (2000) \$35.00	_____	_____	SP-18	Gold & Silver Deposits of W NV: Rochester, Florida Canyon, & Crofoot/Lewis Mines; Rosebud Deposit, 167 p. (1993) \$30.00	_____	_____
				SP-19	NE NV Breccia Bodies Symp (Elko Chapter), 90 p. (1993) \$15.00	_____	_____
				SP-20	Gold Deposits of the Central Walker Lane, NV: Talapoosa Deposit; Borealis, Paradise Peak, & Denton-Rawhide Mines, 224 p. (1994) \$35.00	_____	_____

Column A Subtotal _____

Column B Subtotal _____

PUBLICATION ORDER FORM & INVOICE (continued)

	QTY	TOTAL
SP-22 Geology & Ore Deposits of Bodie Hills, N Mono Basin Region: Bodie Hills, Aurora District, 71 p. (1995) \$10.00	_____	_____
SP-23 Geology & Gold Deposits of E NV: Bald Mtn & Mt. Hamilton Mines; Alligator Ridge; Robinson Project, 247 p. (1996) \$35.00	_____	_____
SP-24 Geology & Ore Deposits of NW NV: Trenton Canyon Project; Lone Tree, Getchell, Twin Creeks, & Florida Canyon Mines, 192 p. (1996) \$35.00	_____	_____
SP-25 Geology & Ore Deposits of NE NV: Cortez, Pipeline, Goldstrike, & Bootstrap Mines; Crescent Pit; W Leeville Project, 156 p. (1997) \$35.00	_____	_____
SP-26 Low-Sulfidation Volcanic-hosted Epithermal Au-Ag Deposits, W-C NV: Rawhide & Round Mtn Mines; Three Hills Project, 246 p. (1997) \$35.00	_____	_____
SP-27 Sediment-Hosted Au Deposits of Eureka, Ruby Hill Mine, Gold Bar District, E-C NV, 161 p. (1998) \$35.00	_____	_____
SP-28 Shallow Expressions of Deep, High-Grade Au Deposits: NW Rain/Tess, W Bazza/Screamer, & SSX Deposits, 172 p. (1998) \$45.00	_____	_____
SP-29 Low-Sulfidation Au Deposits in N NV: Olinghouse, Mule Canyon, & Midas Deposits, 220 p. (1999) \$40.00	_____	_____
SP-30 Geology & Ore Deposits at Bingham Canyon, Barney's Canyon, Mercur & Adjacent Districts in the Oquirrh Range, UT (Elko Chapter), 143 p. (1999) \$35.00	_____	_____
SP-31 Geology & Gold Mineralization of the Buffalo Valley Area, NW Battle Mtn Trend: Trenton Canyon, N Peak, Buffalo Valley, & Marigold Mines, Redline Gold Skarn Deposit, Copper Canyon Gold Skarn-A Review, 272 p. (1999) \$40.00	_____	_____
SP-32 Platinum Group Elements, High Grade Gold and History: The Sierra Nevada 2000, 185 p. (2000) \$25.00	_____	_____
SP-33 Regional Tectonics & Structural Control of Ore: The Major Gold Trends of Northern NV, Battle Mtn Spring Field Conference, 448 p. (2001) \$60.00	_____	_____
SP-34 Magmatism and Gold Deposits in North-Central Nevada - Variations on a Theme, McCoy/Cove, 219 p. (2001) \$35.00	_____	_____
SP-35 Jurassic Magmatism and Metal Deposits in Western Nevada, Yerington Mining District & Humboldt Mafic Complex, 168 p. (2002) \$35.00	_____	_____
Column C Subtotal	_____	_____

PAST SYMPOSIUMS AND ABSTRACTS

	QTY	TOTAL
87-1 Bulk Mineable Precious Metals Symp Proceedings, 34 papers w/abstracts, 775 p. (1987) \$25.00	_____	_____
87-2 Bulk Mineable Precious Metals Symp Guidebook for Field Trips, papers & road logs, 418 p. (1987) \$15.00	_____	_____
89-1 Compressional & Extensional Structural Styles, 9 short papers, b/w illustrations, 42 p. (1989) \$12.00	_____	_____
90-1 Geology & Ore Deposits of the Great Basin Symp Proceedings, 2 hard bound vol., 1,257 p. (1990) \$15.00	_____	_____
90-2 Geology & Ore Deposits of the Great Basin Symp Field Trip Compendium, 2 hard bound vol., papers & road logs, b/w illustrations, 1,161 p. (1990) \$15.00	_____	_____
92-1 Walker Lane Symp Proceedings, papers, b/w illustrations, 245 p. (1992) \$25.00	_____	_____
95-1 Geology & Ore Deposits of the American Cordillera Symp Proceedings, 3 hard bound vol., 1,747 p. (1995) \$80.00	_____	_____
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UP-COMING EVENTS

Oct 3 – WINNEMUCCA CHAPTER MEETING: Humboldt Room, Red Lion Hotel & Casino. Fred Breit, "Structural & Temporal Relationships & Geochemical Characteristics of the East Brawley Peak High-Sulfidation Prospect & the Adjacent Aurora Low-Sulfidation System." Bar-6:30 pm, meeting-7:00 pm. 775/623-0202, sbunch@lambdacom.com.

Oct 11 – Northern NV Section of SME, Monthly Meeting: Bonanza Inn, 4720 N. Virginia, Reno, NV. The speaker is James A. Creameens, Senior Engineer, Agapito Associates, Grand Junction, CO. The title of his paper is "Closure of Remote Historic Mines in Desert Environments." The meeting commences at noon with lunch followed by the professional program at 12:30 pm. Cost for lunch is \$15.00. Call Dan Rovig for more information, 775/746-0252, drovig@charter.net.

Oct 17 – ELKO CHAPTER MEETING: Western Folklife Center. Speaker and topic to be announced. Social begins at 6:30 pm and talk at 7 pm. Contact Marcus Johnston for more information, 775/778-4036.

Oct 17 – SOUTHERN NEVADA CHAPTER MEETING: Lilly Fong Geoscience Building, Room 102, UNLV, Las Vegas, NV. Speaker and topic to be announced. Social-5:30 pm. Jean Cline, 702/895-1091, for info.

Oct 18, Friday – GSN MEMBERSHIP MEETING: Reno Elks Lodge, Reno, NV. Bob Leonardson, Barrick Gold Exploration Inc. Topic: Pascua-Lama-Veladero. Call Laura Ruud for dinner reservations, 775/323-3500.

Oct 19 & 20 – GSN FALL FIELD TRIP: "GOLD DEPOSITS OF THE EAST RANGE - NEW DISCOVERIES IN AN OLD DISTRICT." The trip will visit the Couer Rochester and Florida Canyon and the Standard Mine and Packard Flats. See page 2 to Register!

Oct 22-26 – Expo Minera Sonora 2002. Hotel Araiza Inn, Hermosillo, Sonora, Mexico. Contact Luis Palafox Torres at 662-210-0110 or email luispala@aimmgmac-son.org.mx

Oct 27-30 – Geological Society of America – Annual meeting and expo, Colorado Convention Center, Denver, CO. Contact Brenda Martinez, 303/357-1038, website: www.geosociety.org.

Nov 4-8 – Alaska Miners' Association Annual Convention & Trade Show, Sheraton Hotel, Anchorage, Alaska. Tel: 907/563-9229. Fax: 907/563-9225. Email: ama@alaskaminers.org or website: www.alaskaminers.org.

Nov 14-16 – Manitoba Mining & Minerals Convention 2002, Winnipeg Convention Centre, Winnipeg, Manitoba. Manitoba Industry, Trade and Mines. 204/945-8093. Fax: 204/945-8427. Email: convention@gov.mb.ca or website: www.mineralsconvention.com.

Nov 20-21 – "Workshop on Modeling Complex Systems" Reid Engineering Laboratory Conference Facility, University of NV, Reno. Keynote speakers: Stuart Kauffman: "Molecular Autonomous Agents: A Possible Definition of Life, And a Possible Technological Revolution," and Stephen Wolfram: "A new Kind of Science." Contact Lisa Stillings, USGS, Reno Field Office, 775/784-5803, <http://minerals.usgs.gov/west/seminar.shtml>.

Nov 20-21 – 2002-2003 AAPG Distinguished Lecturer, School of Oceanography, Univ of Washington, "Anatomy of a Submarine Hydrothermal Field."

The GSN Foundation wishes to thank the following donors for adding a donation to their membership renewals this month. Your generosity is very much appreciated!

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2002 EARTH SCIENCE WEEK FIELD TRIPS

In celebration of National Earth Science Week, October 12-19, we invite you to join geoscientists from the Nevada Bureau of Mines and Geology (NBMG), UNR, Geological Society of Nevada, and other organizations on two day-long, free geological field trips.

Field trip 1: In Search of "The Right Tuff" but you can just "Take it for Granite"

Saturday, October 19 OR Sunday, October 20, 2002 - Assemble at 8:30 A.M. - leave at 9:00 A.M.

This approximately 60-mile loop tour will take you to areas of geological interest north of Reno that also happen to be remarkably beautiful and photogenic landscapes. In a single day, you will walk along a fault plane cutting the granite of "Moon Rocks," eat lunch atop an aplite-pegmatite dike swarm on Warm Springs Mountain, compare ancient, wind-eroded features on welded tuff boulders, ponder evidence for movement along the Honey Lake-Bedell Flat strike-slip fault, scramble over volcanic tuffs of the Red Rock area, and look for elusive scepter quartz crystals on the flanks of Petersen Mountain.

Field Trip 2: Fossils and Ancient Lakes

Saturday, October 19, 2002 - Assemble at 8:30 A.M. - leave at 9:00 A.M.

On this approximately 150-mile tour led by paleontologists Dr. James Firby and Dr. Howard Schorn, you will visit several fossil localities in northern Nevada. You will visit a "Fossil Hill" of limestone containing Miocene fossil gastropods near Brady's Hot Springs, east of Reno on I-80. Then you will travel south on Highway 95 to the Mopung Hills to look for fossil snails in limestone tufa that formed on the shallow lake bed over a million years ago. Turning back west at Fallon on Hwy 50 Alt, you will find fossil stickleback fish in diatomite sediments formed in an ancient lakebed near Hazen.

Both trips will meet in the parking lot of **Washoe County Lazy 5 Regional Park, located on Pyramid Highway**, about 5 miles north of McCarran Blvd. You will need to bring your own insured high-clearance vehicle; some travel will be on unimproved dirt roads, some parts rocky and steep, all dusty! Wear sturdy hiking shoes or boots. Bring rock-collecting equipment: rock hammers, gloves, eye-protection, collecting bags, hand rakes or small shovels (for quartz crystal collecting), hats, sunscreen, **lunch**, snacks, and **WATER**.

On Field Trip 1, there will be **NO RESTROOM facilities after we leave Lazy 5 Park**.

To sign up for either or both field trips, go to the NBMG website at www.nbmg.unr.edu and follow the links to Earth Science Week field trips, or call Terri at 784-6691, ext. 126. On the website, you can also find the road logs, maps, and photo examples of what you will see on the trips.

THE SECRETS OF THE EXPLORATION BUSINESS REVEALED

Greg Arehart, Dept. of Geological Sciences, UNR

As part of our ongoing Yardley lecture series, Dr. Roger Steiningger will conduct a series of three seminars dealing with the practical aspects of the mineral exploration business. Topics to be covered include: location and administration of mining claims; mining deals; working with governmental agencies; selecting contractors (labs, consultants, temporary labor, etc.); types of drilling and how to use them; what really happens at the drill rig; what type of analyses should be considered; budgets; & how to work with management and landowners, to name a few subjects. There is something in this for everyone, from the beginning explorationist to the most seasoned veteran. The seminars will be held on Mon evenings Nov 4, 11, and 18 from 6 to 8 PM (room to be announced). There is no cost for attending, but you must register before Oct 21 so that we can arrange appropriate space. For more information and to register: Greg Arehart at UNR, 775-784-6470 or arehart@unr.edu.

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Field trip participants can compare 2002 to this 1992 photo of the Rochester Mine.