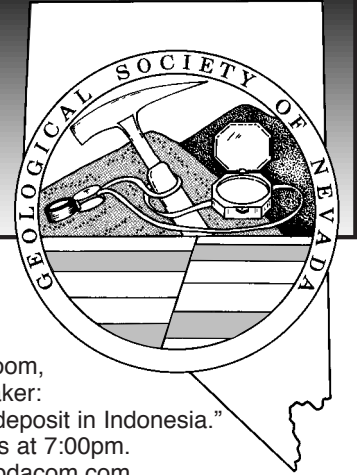


# GSN NEWSLETTER



May 2003, Vol. 17, No. 5

## CALENDAR OF EVENTS

- May 8<sup>th</sup>  
Thursday** WINNEMUCCA CHAPTER MEETING: Humboldt Room, Red Lion Hotel and Casino, Winnemucca, NV. Speaker: Arif Perdana Kusumah, "Geology of the Batu Hijau deposit in Indonesia." Refreshments start at 6:30pm and the meeting starts at 7:00pm. Contact Sheila Bunch, 775/623-0202, sbunch@lambdacom.com.
- May 15<sup>th</sup>  
Thursday** ELKO CHAPTER MEETING: Western Folklife Center, Elko, NV. Speaker: W. James Pendergast, Newmont Mining Corporation, "Geology, Exploration, Drilling and Mining at the Pajingo Gold Mine, QLD." Social-6:30pm, talk at 7:00pm. Contact Marcus Johnston for more information, 775/778-4036.
- May 16<sup>th</sup>  
Friday** GSN MEMBERSHIP MEETING: Reno Elks Lodge, Reno, NV. Speaker: Lew Gustafson, "Porphyry-Epithermal Transition, Cajamarca Region, Peru." Social 6pm, dinner 7pm, talk 8pm. Call Shannon Fitzpatrick for dinner reservations, 775/323-3500 or email at gsn@mines.unr.edu.
- June 21<sup>st</sup>  
Saturday** GSN GOLF TOURNAMENT. See page 6 for details.
- TBA** SOUTHERN NEVADA CHAPTER MEETING: Room 102, Lily Fong Geoscience Building, UNLV, Las Vegas, NV. Speaker to be announced. Social with food and drink at 5:30pm; talk at 6:30pm. Contact Jean Cline, 702/895-1091 for information.

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## FROM THE PRESIDENT

Bob Thomas, GSN President 2002-2003

I'm pleased to report that the trend towards diversity with our dinner meeting topics is alive and well, thanks to **Richard Bedell**, who gave a most informative talk entitled "A Review of Granitic Pegmatites: Genesis and Mineralization". In addition to admiring the stunning gem-quality crystals produced in the mid- to high-level pegmatite environment, it's also nice to be armed with some knowledge of how these lovely specimens actually formed. Great talk, Richard. Pegmatites were not the only subject of the night, as once again the student poster sessions were out in full force. Thanks go to **Brian Cellura** ("Biostratigraphy and Structural Geology in the Marys Mountain Area, Carlin Trend, Nevada"), and a group session on the North American Cordillera, authored by **Keith Campbell** (major plutonic units), **Fredy Marino** (Early Paleozoic terranes), **Matt Jones** (Late Paleozoic terranes), **Craig Mach** (Early Mesozoic terranes), and **Jeremy McHugh** (Late Mesozoic terranes). The meeting was made complete thanks to **Layne Christensen** and their generous sponsorship of the social hour.

This will be my last President's Message, and I'd like to take the opportunity to thank some of the people and

continued on page 2

## May Sponsors



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# News and Announcements

## Calendar of Student Posters

May 16, 2003, GSN Meeting

### Christine Henkelman\* and Jean S. Cline

Can Variations in Pyrite Chemistry Across the Goldstrike System Provide Clues to Gold Deposition?

### E.D. Leavitt\*, T.L. Spell, A.R. Wallace, P.M. Goldstrand, and G.R. Arehart

Volcano-Tectonic Setting of the Midas Epithermal Vain Deposit, Elko, NV

\*Student Presenter

## SLATE OF NOMINEES FOR 2003-2004 GSN EXECUTIVE COMMITTEE

The nominating committee is pleased to present the following slate of nominees for GSN officers, committee chairs, and GSN Foundation directors. Nominations will officially be closed at the May 16 general membership meeting and the election will take place at that time.

Nominations for GSN officers and committee chairs: President, Clancy Wendt; Vice President, Gassaway Brown; Treasurer, Cami Prens; Secretary, Leslie Olmstead; Membership Chair, Greg French; Publications Co-Chairs, Elizabeth Zbinden and Ruth Carraher.

Nominations for GSN Foundation officers and directors: President, Clancy Wendt; Vice President, Gassaway Brown; Treasurer, Cami Prens; Secretary, Leslie Olmstead; Director, Joe Kizis; Director, Greg French; Director, D.D. LaPointe; Director, Ron Parratt; Director, Ann Carpenter; Director, Doug Cook.

## THANK YOU!

A special thank you to **GEOTEMPS** for sponsoring the GSN student memberships.

## TAX DEDUCTION

Donate your old books, magazines, equipment, etc. to get a tax deduction. Recycle your books etc, to third world countries and help other less fortunate schools. We sent 5,000 books to the University of Zacatecas this last fall and we are expanding to other Universities in Mexico. Contact Clancy for more information, 852-2513.

## FROM THE PRESIDENT (continued from page 1)

organizations that have contributed to a successful year. Thanks to the following:

- The dinner meeting speakers that we have had the pleasure of having over the year (see page 4)
- The social hour sponsors (see page 4)
- The Student Poster presenters, along with **Earl Abbott** for organizing them, and **AngloGold, Barrick, Newmont,** and **Placer Dome** for sponsoring prizes.
- Various people that have dragged projectors to meetings, sometimes at the last minute. These include the **Placer Dome** folks (**Greg Cox** and **Vic Chevillon**) and **The Nevada Bureau of Mines and Geology (Terri Garside** and **Steve Castor**).
- Members of our organization for showing up – without you we couldn't do this!

Finally, I have thoroughly enjoyed working with the officers and committee chairs this year, and will miss the fun. **Clancy Wendt** ran a great fall field trip, and the spring trip is shaping up to be of equal quality. **Gassaway Brown** has been a meticulous minute taker as Secretary (no small feat when Roberts Rules break down and the President loses order!). **Cami Prens** has really gone above and beyond as Treasurer, allowing us to keep a tight track on finances. Move over, Alan Greenspan. **Greg French** again has helped keep the membership numbers at high levels, a miraculous feat considering the rather difficult economic environment. **Elizabeth Zbinden** has used just about every available tactic to advertise and sell our publications, not to mention her willingness to volunteer for odd jobs like organization of "booth sitters". **D.D. LaPointe** once again has been a driving force as Education Committee Co-Chair, and we were fortunate to have **Rachel Dolbier** joining D.D. as the other Co-chair. The Christmas raffle, which is organized by the Education Committee, was the most successful effort to date. The picnic, another Education Committee event, actually made money! **Mario Desilets** once more performed admirably as Webmaster. Mario just quietly goes about doing little chores that contribute greatly to the overall smooth functioning of our society. With no fanfare, Mario just gets things done. New Office Manager **Shannon Fitzpatrick** has done a great job in coming into a completely new environment for her – dealing with a bunch of quirky geologists for the first time in her life, and is learning the ropes quickly. Of course it's nice to have help in this regard from our former Office Manager and current Bookkeeper, **Laura Ruud**. Finally, thanks go out to **Raye Buckley**, our typographer who spearheads getting the newsletter published. Raye is stepping down from her field trip guidebook duties, and deserves a special thanks for all of her past efforts in this area. Thanks, Raye!

(continued on page 4)

**Thanks to Layne Christensen Company for hosting the April meeting.**

# GSN May 16, 2003 Membership Meeting

**Date:** Friday, May 16, 2003

**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, May 14<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

**Speakers/topic:** Lew Gustafson  
See abstract below

## PORPHYRY-EPITHERMAL TRANSITION, CAJAMARCA REGION, PERU

Lew Gustafson

This summarizes 6 years of studies for Cia. de Minas Buenaventura and partners, and was given last September at the XI Peruvian Geological Congress in Lima, coauthored by Cesar Vidal, Gerald Clark, Rita Pinto & Javier Veliz.

At least 14 porphyry deposits and 19 epithermal Au deposits occur within 60 km of Cajamarca. The partly explored porphyries vary in grade, Cu-Au-Mo proportions, and depth of erosion. They occur with epithermal mineralization at Perol, Peña de las Águilas, Kupfertal, Yanacocha Norte, Maqui Maqui & Pampa Verde, but not at Michiquillay, Galeno, Chailhuagón, Cerro Corona, La Sorpresa, Colpayoc & Chamis. The deposits are associated with Miocene volcanism, NW-trending folds and thrusts, and NE-trending faults.

Granular A quartz veins, associated with Kspar-bio alteration and disseminated cpy-mag with bn or py, are typically present in and about coeval, multiple porphyry intrusions. Banded quartz veins occur near the top of some shallowly eroded systems, and late py-ser±cpy is superimposed. Epithermal mineralization is mostly high-sulfidation, typically py-en-cov underlying oxide Au zones leached of Cu. Au-Cu is associated with multiple breccias and intense silicification, zoned outward and downward with decreasing SiO<sub>2</sub> and Au through qtz-pyro-diasp-alun-dick to qtz-alun and kaol. Local, apparently late, high-grade, structural, low-sulfidation Au is associated with barite, chalcedony and rare bituminous material.

Transition between porphyry and epithermal environments is seen at Minas Conga, La Zanja and especially Tantauatay and Yanacocha. At Perol, a porphyry Au-Cu deposit is adjacent to and contemporaneous with a deeply eroded dacitic dome altered to qtz-alun with minor qtz-pyro-alun-Au structures. At the contact, the dome is locally altered to qtz-andl-ser, which is cut by pyro-alun-py-cov. At La Zanja, a zone of anomalous Mo with "guzano" alteration and local A quartz veins occurs on the flank of an andesitic dome, adjacent to two zones of oxide Au overlying py-en, and with distal intense silicification, Hg and local Au.

At Tantauatay, an andesitic dome complex is pervasively brecciated and altered to qtz-alun-pyro-diasp-dick, with extensive py-en-cov-(bn) veining and dissemination under Au-rich oxide. A "guzano" texture of soft, round patches of pyro-diasp or alun in silicified matrix, is widespread along with anomalous Mo. Only one of many drill holes to 600m found A quartz veins and minor porphyry intrusions, with evidence of prograde advancement of porphyry into the epithermal environment. In one peripheral area Banded quartz veins and porphyry dikes crop out.

At Yanacocha, the most abundant evidence of direct but complex spatial and temporal relationship between multiple centers of epithermal mineralization and porphyry intrusion & mineralization is just beginning to be deciphered. At Kupfertal, the matrix of "guzano" alteration above the top of the porphyry becomes increasingly silicified and "patchy", developing very contorted "wormy" quartz veins that grade downward into increasingly planar A veins in the top of the intrusion. Intense pyritic qtz-pyro-diasp-alun alteration is superimposed on Kspar-biotite alteration in the porphyry. Fluid inclusions in quartz are vapor-dominant, with downward increasing high-salinity inclusions and minute cpy±bn grains locked in A veins. A-veined and advanced argillic-altered xenoliths in pyroclastic rocks intruded by porphyries show multiple generations of porphyry and epithermal mineralization. Early porphyry Cu and Au are evidently remobilized and incorporated into the epithermal system, but space-time patterns and balances are not yet clear.

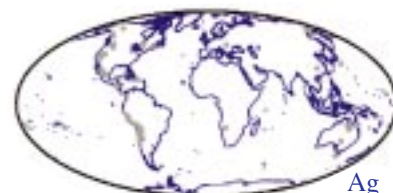
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### FROM THE PRESIDENT (continued from page 2)

Well, this started out as what was going to be my shortest message yet. It turned out to probably be the longest. There are just too many good people that deserve acknowledgement. Speaking of acknowledgments, there's one more – I am thankful for the opportunity to have worked closely with the GSN the last couple of years. The experience has been great, I've established a lot of rewarding relationships, and it is something that I'll always remember.

Thanks!

### Thanks to this Year's Speakers

GSN members have been the beneficiaries of a wide variety of material presented by our monthly dinner meeting speakers. Thanks again to the following folks for making it happen:

Bob Leonardson  
(Pascua-Lama-Veladaro gold-silver)

Jon Carlson  
(Ekati Diamonds)

Steve Castor  
(Nevada Minerals)

Mark Coolbaugh  
(GIS use in Geothermal Resource Exploration)

Eric Jensen  
(Cripple Creek Gold)

Bill Pennell  
(Industrial Minerals)

Richard Bedell  
(Pegmatites)

Lew Gustafson  
(Porphyry-Epithermal Transition, upcoming in May)

Thanks also to Doug Silver for his two uplifting talks:

- 1) The Gold Industry: We're Back
- 2) The ABCs of Starting a Junior Resource Company-A Crash Course

### Thanks to Dinner Social Sponsors and Co-Sponsors

Once again GSN has been fortunate to have a plentiful supply of organizations who have stepped up and kept our social hour sponsorship going. These organizations have truly gone above and beyond, and most of them have a strong history of involvement with this event. When it comes time to consider candidates for your next specialty job, please keep these people in mind. Below is a list of the sponsors over the past year.

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Rubicon Resources Inc. (Dave Shaddrick)  
Stretch's Exploration

### THANK YOU!

A special thank you to the members who have donated to the student dinner fund: Keith Papke, Greg French, Bob Horton, Bill Johnston, Bob Thomas, Eric & Debra Struhsacker, Neil Prenn, Stretch Peterson, and Del Flint.

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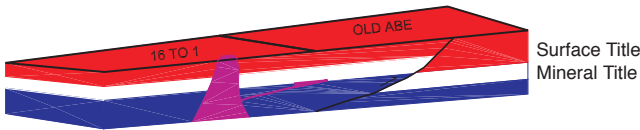
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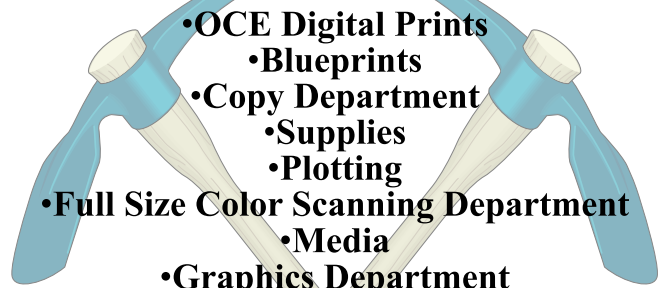


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Business card size (3 1/2 x 2")	\$ 50.00
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Half page (4 3/4 x 7 1/2")	300.00
Classified ads \$10/line (up to business card size)	

**For an advertising form, call the GSN office at 775/323-3500 or fax 323-3599. Camera-ready ads must be received by the 20th of the month to appear in the following month's newsletter.**

## BLM ANNOUNCES NEW AWARDS PROGRAM TO HONOR ACCOMPLISHMENTS IN HARDROCK MINING

Bureau of Land Management (BLM) Director Kathleen Clarke announced a new annual awards program designed to recognize environmentally sound mineral development operations and acknowledge successful partnering efforts in helping ensure a safe and productive hardrock mining industry. The new program allows for two nonmonetary awards to recognize and highlight outstanding examples of responsible mineral resource development on public and private lands.

A coal mining reclamation award program has been conducted by the Department of the Interior through the Office of Surface Mining since 1986. This award program has been an important component of OSM's overall approach to ensuring that land is returned to a productive use after coal mining. The new award program is being initiated to recognize mine operators who have made exemplary contributions to solid minerals development. Two kinds of awards will be available: "The Hardrock Mineral Environmental Award" and "The Hardrock Mineral Award for Community Outreach and Economic Security." This allows for awards to be granted for work in any of the three components of Sustainable Development: environmental health, social responsibility and economic security. The Secretary's four Cs initiative: consultation, cooperation, communication—all in the service of conservation, is integral and basic to the nomination for and approval of these awards. Nominations are being considered and must be submitted by May 30. Please contact Phil Allard with the BLM in Washington DC for more information (202-452-5195); or go to this BLM website for more detail: [http://www.blm.gov/nhp/news/releases/pages/2003/pr030418\\_mining.htm](http://www.blm.gov/nhp/news/releases/pages/2003/pr030418_mining.htm)

## GSN GOLF TOURNAMENT

**The GSN Golf Tournament is being held on Saturday  
June 21st, 2003, 1:00 pm shotgun**

**WASHOE COUNTY GOLF COURSE  
RENO, NEVADA**

**Eklund Drilling is sponsoring this fun event!**

WE WANT YOU TO JOIN US!  
YOUNG OR OLD, GOOD GOLFER OR BAD  
MAN OR WOMAN—COMPETITIVE OR NOT

Registration Fee - \$55 (golf round and barbeque)  
Sign-up as a foursome or we'll place you on a team.  
Guest for the BBQ only - \$5 each  
Deadline for Registration - June 16th!!

**Call Bob Felder @ 824-4000 or  
Shannon Fitzpatrick @ the GSN office - 323-3500.**

### Golf Tournament Registration

**Saturday, June 21, 2003**

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HANDICAP \_\_\_\_\_ OR AVERAGE SCORE \_\_\_\_\_

Cost includes greens fee, cart, prizes, and a barbeque to follow the event = \$55.00.

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(as it appears on card)

NUMBER OF GUESTS EXPECTED AT BBQ \_\_\_\_\_

**Payment must be received by Friday,  
June 16, 2003, no exceptions.**

**We will not collect money at the tournament.**  
No refunds after June 16th.

Fax: 775/323-3599 or mail to GSN office:  
PO Box 13375, Reno, NV 89507

## UP-COMING EVENTS

**May 8<sup>th</sup>, Thur.** - WINNEMUCCA CHAPTER MEETING: Humboldt Room, Red Lion Hotel and Casino, Winnemucca, NV. Speaker: Arif Perdana Kusumah, "Geology of the Batu Hijau deposit in Indonesia." Refreshments start at 6:30pm and the meeting starts at 7:00pm. Contact Sheila Bunch, 775/623-0202, sbunch@lambdacom.com.

**May 9<sup>th</sup>, Fri.** - Northern Nevada Section of SME: The meeting commences with lunch (\$15.00) at noon at the Bonanza Casino Conference Room (4270 N. Virginia St., Reno) with the program following at 12:30pm. Reservations are not required. Dr. John L. Dobra, Founding Director of the Natural Resource Industry Institute and Associate Professor of Economics, University of Nevada, Reno will present a program entitled "Gold — After the War Premium, What's Next?." If you have any questions, please contact Dan Rovig at 746-0252 or drovig@charter.net.

**May 15<sup>th</sup>, Thur.** - ELKO CHAPTER MEETING: Western Folklife Center, Elko, NV. Speaker: W. James Pendergast, Newmont Mining Corporation, "Geology, Exploration, Drilling and Mining at the Pajingo Gold Mine, QLD." Refreshments at 6:30pm, talk at 7:00pm. Contact Marcus Johnston for more information, 775/778-4036.

**May 16<sup>th</sup>, Fri.** - GSN MEMBERSHIP MEETING: Reno Elks Lodge, Reno, NV. Speaker: Lew Gustafson, "Porphyry-Epithermal Transition, Cajamarca Region, Peru." Social 6pm, dinner 7pm, talk 8pm. Call Shannon Fitzpatrick for dinner reservations, 775/323-3500 or email her at gsn@mines.unr.edu.

**TBA** - SOUTHERN NEVADA CHAPTER MEETING: Room 102, Lily Fong Geoscience Building, UNLV, Las Vegas, NV. Speaker to be announced. Social with food and drink at 5:30pm; talk at 6:30pm. Contact Jean Cline, 702/895-1091 for information.

**May 17<sup>th</sup> & 18<sup>th</sup>** - GSN Spring Field Trip: "Gold Deposits of the Goldfields District and Surrounding Areas"-FULL .

**May 18<sup>th</sup>-24<sup>th</sup>** - FORUM ON THE GEOLOGY OF INDUSTRIAL MINERALS, John Ascuaga's Nugget Hotel & Casino, Sparks NV. For info, please visit [www.nbmg.unr.edu/imf](http://www.nbmg.unr.edu/imf) or call Terri Garside, 775/784-6691 x 126.

**June 21<sup>st</sup>, Sat.** - GSN ANNUAL GOLF TOURNAMENT, see details and registration form on page 6.

## NEVADA BUREAU OF MINES AND GEOLOGY PUBLICATIONS

The following publications are now available in the Publication Sales Office (SEM 310):

**OF03-2** Nevada mineral trends by Clancy J. Wendt (2003) 1:1,000,000-scale format, 28 x 37 inches, available rolled or folded, \$27.00, this map is modified from NBMG Map 120.

**OF03-2a** Nevada mineral trends is also available in this poster format, 36 x 46.5 inches, \$38.00, available rolled only.

OF03-2 is also available free on the internet at [www.nbmg.unr.edu/dox/of032.pdf](http://www.nbmg.unr.edu/dox/of032.pdf) <<http://www.nbmg.unr.edu/dox/of032.pdf>>

The original Map 120, Gold and silver resources in Nevada by David A. Davis and Joseph V. Tingley, 1999, was the base map used for OF03-2. It can still be purchased for \$7.00 and does not include the mineral trends.

The following publication is now also available free on the Internet at <<http://www.nbmg.unr.edu/dox>>:

**B91** Thermal waters of Nevada by Garside and Schilling, 1979.

You may place an order or check for shipping charges through our shopping cart at:

[www.nbmg.unr.edu/sales.htm](http://www.nbmg.unr.edu/sales.htm)  
or 775/784-6691 x2.



### *In Memoriam*

Lance Corporal Michael J. Williams was killed in combat on March 23, 2003 at An-Nasiriyah, Iraq. Michael was the 31-year-old nephew of Mike Brady (a longtime GSN member) and son of Mike's sister, Sandy Watson, of Sun City, Arizona. Michael was not married but had recently become engaged. He had joined the Marines after September 11<sup>th</sup> because he wanted to be able to say he made a difference in the world. He was a soldier in the 1<sup>st</sup> Battalion, 2<sup>nd</sup> Marine Regiment. The Marine Corps changed Michael's life. It gave him the sense that his life had a purpose and he wasn't just wasting time. Michael gave up his life so that others could enjoy the freedom that we in America hold so dear.

Mike Brady and his sister suggested that if you would like to do something in honor of Michael, you could donate to the family of Donald Cline here in Reno. Donald was in the same unit as Michael when he was killed. Donald left behind a wife and two small children, so Michael's family would like to help them out. An account has been set up at the Sierra Schools Credit Union in Reno for the Cline children. Donations can be mailed to Tina Cline, c/o Sierra Schools Credit Union, PO Box 7255, Reno, NV 89510.

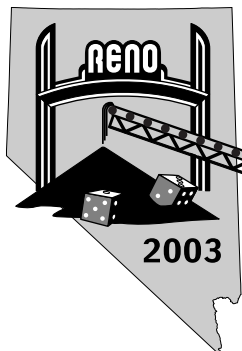


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