



Geological Society of Nevada Southern Nevada Chapter Newsletter

November 2005

UNLV Graduate Student Presentations

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DATE: Thursday, November 17, 2005
SPEAKERS: Peter Druschke & Matt McKelvey
LOCATION: Room 105 Lilly Fong Geoscience Bldg.
TIME: 6:00 p.m. Social *Half-Hour*
6:30 p.m. Chapter Business
6:45 p.m. Presentation
SPONSOR: Rod Metcalf PhD
(UNLV Associate Professor of Geology &
Associate Dean)

Geological Society of Nevada, Southern Nevada Chapter

University of Nevada, Las Vegas
4505 Maryland Parkway, Box 4010, Las Vegas, NV 89154-4010
<http://geoscience.unlv.edu/GSN/gsnsc.htm>

Thanks to GSN President Dieter Krewedl for presenting his research on uranium-mineralized breccia pipes in the Grand Canyon region of Arizona. We appreciate Dieter

coming down from Reno to talk to us about geology and GSN. We would also like to thank Eklund Drilling for sponsoring the October meeting. It's sponsors like Eklund that help keep our chapter running.

In other news, our Fall 2005 field trip was a success. Thanks to Joe Kula for all of his hard work organizing the trip and creating the field guide. On Nov. 19th Jean Cline and I will be traveling to Reno for the 1st GSN Board of Directors meeting. We are providing a voice for southern Nevada and our chapter. In future events, our next meeting will be on Dec. 15th and our speaker will be Dr. Jerome McCartney of CCSN and our 2nd annual holiday party is scheduled for 4 pm on Dec. 17th - please join us for some holiday fun!

Have a Happy Thanksgiving
Robyn

FALL FIELDTRIP:

Last weekend we ran our fall 2005 field trip to the Mojave National Preserve. There were a total of 7 attendees. We carpoled in 2 vehicles and spent 2 days and 1 night exploring the spectacular geology and scenery of the Mojave Desert. Highlights include hiking the Kelso Dunes, exploring cinder cones, granite intrusions, shallow water carbonates, thrust faults, and using our headlamps in a lava tube! We camped in the Cima Volcanic Field and watched the sun set over the many cinder cones. Joe Kula led a fabulous trip and created a very useful field guide. Keep checking the webpage because we will be adding photos from the trip. Some highlights are included below.





 **2nd ANNUAL GSN HOLIDAY PARTY:**

Our 2nd annual GSN holiday party will be held on Saturday December 17, 2005 at the Nevada Book & Mineral Company in Henderson. The festivities start at 4 pm. The party will be jointly sponsored by Walt Lombardo, owner of the Nevada Book & Mineral Company, and the GSN Southern Chapter. Please stop by and mingle with GSN members and guests. Directions will be posted on the webpage prior to the party.



GSN BOOK DONATION:

GSN has graciously donated several GSN symposium volumes and field trip guidebooks to the UNLV Geoscience Department. These books will be available in the department for use by students and faculty. I also have several GSN Symposium 1990 volumes and field guides available for donation to a good home where they can get lots of use – *any ideas?*



OFFICER ELECTIONS:

I just want to remind everyone that we will be holding *officer elections in March 2006*. We will need fresh people to fill vacating positions and help keep our chapter growing strong. Officer positions are open to anyone who has an interest in our chapter and is a

member of GSN. Please let us know by Jan. 1, 2006 if you wish to run.

As of January 2006 we will be in need of a *new host or hostess*. Duties include ordering and picking up the food, setting up food during the meeting, and cleaning up afterwards. In March I will also be looking for someone to take over the *GSN SNC newsletter editor duties* – if you are interested in either of these please let me know.

PARKING:

For information on parking at UNLV please visit the UNLV parking services website at <http://parking.unlv.edu>.

ADS & SPONSORS:

GSN is a non-profit organization and our chapter relies on meeting sponsors and advertisements to keep our chapter up and running. If your business would like to sponsor social hour at one of our southern Nevada chapter meetings or place an ad in our newsletter please contact Robyn Howley.

This month's meeting is sponsored by Dr. Rodney Metcalf, Associate Professor of Geology at UNLV and Associate Dean. *Thanks Rod we appreciate the support!*

MEMBERSHIP:

Don't forget to renew your membership! I have listed the updated membership list as of 11/8/2005 at the end of this newsletter. **Regular membership is \$30 & student membership is \$15. Don't forget to pay the \$5 chapter dues (remember for each \$5 dues paid we get an additional \$5 from GSN).** Also remember that if you are a full-time geology student in Nevada, Lance Taylor of Geotemps will pay your \$15 dues (just write full-time student on the membership form and enclose just the \$5 chapter dues). Please be sure to thank Mr. Taylor and Geotemps. Please mail the form with your payment to GSN in Reno. *We are sorry but we cannot take payments here.* For more information on chapter membership please visit the main GSN website at www.gsnv.org.

The Sheep Pass Formation, Nevada, a latest Cretaceous to Eocene basin developed on the Sevier Plateau

Peter Druschke, UNLV PhD Student

Abstract

The Sheep Pass Formation is a >1km thick fluvio-lacustrine sequence that crops out in a wide area of east-central Nevada. Previous biostratigraphic studies indicate that the Sheep Pass Formation was deposited between the latest Cretaceous and late Eocene, spanning the transition from contraction to extension within the Sevier hinterland. Ongoing work is focusing on the tectonic setting of megabreccia within Cretaceous and middle-late Eocene sections of the basin, how provenance changes seen within the basin may relate to unroofing of the Snake Range/Schell Creek Range core complexes, and how major late Eocene angular unconformities may relate to the initiation of Basin and Range extension in the region. The Sheep Pass Formation provides a test for tectonic and paleogeographic models of how the Sevier Plateau evolved during the latest Cretaceous and Paleogene.



Peter on top of the Stinking Springs Conglomerate.

Speaker's Background

Peter graduated with a BS in geology from Sonoma State University in 1999. He worked as a geologist for GeoEngineering Inc. in San Rafael, CA from 1999 until 2001 when he came to UNLV. Peter received his MS in Geoscience in 2003 by working on Proterozoic siliciclastic successions in China. Peter is currently working on his PhD at UNLV with Dr. Andrew Hanson.

Systematics of caldera formation in the Central Basin and Range: Insights from the Reveille Range, Nevada

Matt McKelvey, UNLV MS Student

Abstract

The Reveille Range in central Nevada provides a unique window into the mid-Miocene geology and volcanology of the central Great Basin during the “ignimbrite flare up.” Although faulted along its margins, the interior of the range is relatively undeformed thus preserving volcanic centers. The Reveille Range contains three mid-Miocene caldera complexes. Previous studies have identified the Goblin Knobs caldera (25.6 Ma) in the central Reveille Range and the caldera of northern Reveille Range (25.3 Ma) to the north. These calderas are completely filled with intracaldera tuffs. This study has identified a younger third caldera located in the southern part of the Reveille Range and the southern margin of the Goblin Knobs Caldera. The newly discovered caldera in the southern Reveille Range, herein named the Pyramid Spring caldera, contains intracaldera tuff, pumice-rich outflow sheets, and volcanoclastic sedimentary moat units dipping to the north off a possible resurgent dome. Crystal rich rhyolite domes occur along the eastern and northeastern margin of the caldera. An 8 km long composite dacite dike (Fang Ridge) is also associated with the caldera. Moat rocks include pyroclastic flows, debris flow breccias, and fine to coarse grained immature sandstones that contain lithic fragments up to 5 cm in size. Of the three calderas in the Reveille Range, the Pyramid Spring caldera is the only one that is associated with outflow tuffs. Three cooling units were identified; the middle is welded and contains fiamme up to 15-20 cm in size. The outflow tuffs of the Pyramid Spring caldera are abruptly cut by the Goblin Knobs caldera. Besides the stratigraphic truncation, the Goblin Knobs caldera margin was identified by a zone of hydrothermal alteration (silicification) and mineralization and a section of outflow from the Pyramid Spring caldera that has slumped (back tilted) into the Goblin Knobs caldera.

Speaker's Background

Matt graduated with a BS from Austin Peay State University in Tennessee and is working towards his MS degree in Geoscience at UNLV. Matt’s advisor is Dr. Gene Smith.

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