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# Geological Society of Nevada Southern Nevada Chapter Newsletter

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October 2006

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## Geologic Events of the Miocene that Shape our View of Yucca Mountain

### PRESIDENT

Bruce Hurley  
U.S. Department of Energy  
702.295.1284  
hurley@nv.doe.gov

### VICE PRESIDENT/ WEBMASTER

Jean Cline  
UNLV Professor of Geology  
702.895.1091  
jean.cline@unlv.edu

### TREASURER

R. Paul Bowen  
R.P. Bowen Engineering, Inc.  
702.247.7765  
paulbowen@cox.net

### SECRETARY

Joseph Kula  
UNLV Graduate Student  
702.895.4255  
jkula@unlv.nevada.edu

### NEWSLETTER EDITOR

Lora Griffin  
UNLV Undergraduate Student  
702.419.7661  
lora.griffin@unlv.edu

**SPEAKER:** Dr. David Buesch  
U.S. Geological Survey

**DATE:** Thursday, October 26, 2006

**LOCATION:** LFG Rm. 102

**TIME:** Social half-hour at 6 pm  
Meeting business at 6:30 pm  
Talk at 6:45 pm

**SPONSOR:** Lance Taylor, Geotemps

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### 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>

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***A new GSN year has begun!*** Thanks to all of the members who shared the first meeting of the year with us. Thank you also to Jim O'Donnell who presented his recent work using seismic technologies in Las Vegas.

*At the next meeting, this October, we can look forward to Dave Buesch speaking about cumulative geologic events and how they impact the Yucca Mountain area. In November, we will be treated to Bruce Crowe's talk on volcanism in the Yucca Mountain area. In December Steve Scott will give us the latest on the "Museum without Walls" program that supports geoscience education in Clark County schools.*

*Please note that the meeting date for December has been changed to December 7. This meeting will include a silent auction of minerals and fossils that were donated to GSN Southern Nevada Chapter during the year.*

*A special thank you goes out to Otto Holmquist, of Geolines, LLC, for sponsoring the first meeting of the year. Thank you, also, Lance Taylor of Geotemps for sponsoring the upcoming October meeting. Otto and Lance, as well as any new sponsors for upcoming meetings, will have their names and the name of their company or organization listed as sponsors in every issue of the chapter newsletter throughout the year. This is a new benefit to becoming a chapter meeting sponsor. To become a meeting sponsor contact our chapter president, Bruce Hurley.*

*If you wish to continue to enjoy the many other benefits of being a GSN member, remember to send in your membership renewal form and membership dues. Forms are available on GSN's new web site at [www.gsnv.org](http://www.gsnv.org).*

*-- Lora Griffin ,*

## **ADS & SPONSORS**

### ***New Benefits for Meeting***

#### ***Sponsors***

Monthly advertising in the GSN Southern Nevada Chapter newsletter is now another benefit to sponsorship of meeting refreshments. Support of our chapter by sponsoring a monthly meeting is important to our organization, and to show our appreciation individuals and companies who sponsor the meetings will now have the added benefit of a monthly advertisement in the GSN Southern Nevada Chapter newsletter throughout the fiscal year.

GSN Southern Nevada Chapter is a non-profit organization and 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 Bruce Hurley at 702.295.1284 or [hurley@nv.doe.gov](mailto:hurley@nv.doe.gov).

## **REGISTRATION DUE NOW**

October is the month to renew your membership! Don't forget that membership dues need to be in by October 31, 2006. If you would like to continue receiving the many benefits of GSN membership, application and renewal forms are available online at [www.gsnv.org](http://www.gsnv.org).

Forms and dues payments should be sent to GSN, PO Box 13375, Reno, NV, 89507; or fax a credit card payment to (775)323-3599.

## **NEW GSN WEB SITE READY**

One of the many benefits to being a GSN member is access the latest news, information and resources available online at the Geological Society of Nevada web site. The new web site is now available for viewing at [www.gsnv.org](http://www.gsnv.org). For the latest information about the Southern Nevada Chapter go to <http://geoscience.unlv.edu/GSN/gsnsc.htm>.

## **Silent Auction for Minerals & Fossils December 7 Meeting**

The December 14 meeting has been changed to December 7, to ensure members have an opportunity to hear our speaker, Steve Scott, who runs the "Museum without Walls" program for the Clark County School District. Steve will give an update on what is new with the museum program. This important program helps to support education in the geosciences in Clark County.

Following the meeting attendees will have an opportunity to participate in a silent auction for mineral and fossil specimens and other geology-related items donated to the Southern Nevada Chapter during 2006.

The auction is the perfect chance for members to stock up on unique gifts for the geology buffs on their holiday shopping lists.

## UPCOMING EVENTS

*Please note some dates have changed!*

October 26: Meeting - Dave Buesch


*Geologic events of the Miocene that shape our view of Yucca Mountain*

November 30: Meeting – Bruce Crowe – Volcanism at Yucca Mountain

December 7: Meeting – Steve Scott – Museum without Walls

January 25: Meeting - Steve Rowland

## PAID ADVERTISEMENTS



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## MEETING SPONSORS

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## **Geologic Events in the Miocene that shape our view of Yucca Mountain**

David Buesch - U.S. Geological Survey

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### **Abstract**

Geologic events during the Miocene at Yucca Mountain formed and structurally disrupted the volcanic rocks, and the cumulative geologic history results in important constraints in the characterization of the site. Primary processes in the styles of volcanic eruptions (explosive and effusive) resulted in deposition of ignimbrites (pyroclastic flow deposits), fallout tephra, and minor amounts of lava flows. Secondary processes in some ignimbrites such as welded, crystallized, and cooled resulted in a variety of features such as lithophysae, rims on lithophysae and fractures, vapor-phase corrosion and mineralization, moderate-temperature alteration of glass. These processes and resulting features provide an important perspective of the lithostratigraphic conditions of the rocks shortly after the time of deposition. Faulting and structural disruption of the rocks was active during much of the middle to late Miocene, and a large geothermal system related to the Timber Mountain caldera resulted in zeolitization of vitric materials where they were in the saturated zone. These processes impart properties such as density, porosity, and fracture characteristics that can be modified by later processes and events.

### **Speaker's Background**

Dr. David Buesch is a geologist and volcanologist and has been working for the U.S. Geological Survey on the Yucca Mountain Project since 1992. David received his B.S. and M.S. from California State University Los Angeles, his Ph.D. is from the University of California Santa Barbara, and most of his research has focused on volcanology, especially explosive volcanism. In collaboration with other investigators, David has been developing a petrogenetic model of the mountain through mapping of the rocks exposed at the ground surface, in tunnels, and in boreholes, and by integrating geophysical, hydrogeologic, thermal, and mechanical data.