



Geological Society of Nevada Southern Nevada Chapter Newsletter

April 2005

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Tracing faults and fissures in the Las Vegas Valley using seismic refraction methods with physical verification

- DATE:** Thursday, April 28, 2005
- SPEAKER:** Otto Holmquist, P.E. (GEOLINES LLC)
- LOCATION:** Room 102 Lilly Fong Geoscience Bldg.
- TIME:** 6:00 p.m. Social *Half-Hour*
6:30 p.m. Presentation
- SPONSOR:** GEOLINES, LLC
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Geological Society of Nevada, Southern Nevada Chapter

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<http://geoscience.unlv.edu/GSN/gsnsc.htm>

Hello Everyone,

We would like to thank Bruce Hurley for presenting at our March meeting. We may plan a GSN field trip to Searles Lake next fall to see and collect some of the same minerals that Bruce talked about during his talk. Please let us know if you would be interested in attending such a trip.

Food and refreshments for April's meeting will be sponsored by GEOLINES, LLC. We really appreciate this sponsorship as it allows us to have both food and refreshments during the meeting. Please thank Otto for getting his company to sponsor this meeting.

During our March meeting, chapter members voted in new officers. We thank Amy Brock for all of her dedicated work as President over the past year and we wish her luck in her dissertation research. ~ Robyn

ELECTIONS:

During our March meeting we elected the following new officers: **President:** Robyn Howley, **Vice President:** Joe Kula, **Treasurer:** R. Paul Bowen, and **Secretary:** Melissa Hicks

KYLE CANYON MORAINÉ FIELD TRIP:

We are planning a field trip to the glacial moraine in Kyle Canyon, Spring Mountain National Recreation Area for Saturday, May 28. This trip will be lead by Dr. Nick Saines and will follow our May meeting where Nick will talk about the moraine. We will send out an email announcement in early May will logistical and other trip information. We are also considering renting a van for the day. Transportation would be free for chapter members and \$5 for non-members. More information will be made available a few weeks prior to the trip.

YUCCA MOUNTAIN FIELD TRIP:

The Yucca Mountain field trip organized by Chet Nichols has been changed to May 17 because of scheduling conflicts. The trip will leave from a location near the Meadows Mall around 7 am and DOE will provide transportation to and from Yucca Mountain. Participants will visit the crest of Yucca Mountain and an alcove in the tunnel itself. David Buesch (USGS) will be the tour guide. If you are interested in attending this trip please contact Chet Nichols at 702.360.3133 or through email chetnichols@earthlink.net. You will need to fill-out paperwork to gain access to the Nevada Test Site so please contact Chet A.S.A.P.

ADS & SPONSORS:

Thanks to GEOLINES, LLC for sponsoring our April meeting. The food and beverages were paid for solely by GEOLINES. GSN is a non-profit organization and chapter fees,

advertisements, and sponsors support our chapter. If your business would like to sponsor social hour at one of our southern Nevada chapter meetings or would like to place a paid advertisement in this newsletter and on our website please contact Jim O'Donnell at 702.293.5664 or jim.odonnell@cox.net. Please see our current advertisements at the end of this newsletter and support our sponsors.

RACE FOR THE CURE:

The Geoscience Department at UNLV is participating in the 10th annual Susan G. Komen Breast Cancer Foundation Race for the Cure® on Saturday, May 7, 2005. Money raised from this event will be used to fund programs and treatment in the Las Vegas area and also supports national research. According to the American Cancer Institute,



“An estimated 211,240 new cases of invasive breast cancer are expected to occur among women in the United States during 2005. An estimated 40,410 women will die from breast cancer. It is estimated that 1,690 men will be diagnosed and 460 men will die of breast cancer during 2005.”

Source: www.komen.org

Please consider supporting a Geoscience participant in the race or making a general donation to the foundation. If you wish to sponsor a Geoscience participant please visit <http://www.komenlasvegas.com/race.php> and click on the link Donate to the Race. From this link you can either make a direct donation to the foundation or you can search for the Geoscience Dept. page and sponsor an individual on the team. The race is still looking for volunteers to help the day of the race; if you are interested please visit the above link for more information.

ALAMO FIELD TRIP:

Max Blanchard ran a very successful trip to the Alamo Impact Breccia last month. We would like to thank him for organizing this

event and we look forward to hearing more about the field trip in the future.

PARKING:

For information on parking at UNLV and obtaining a permit please visit the UNLV parking services website at <http://www.unlv.edu/studentlife/parking/>. This site also includes maps of the campus

and directions. If you would like to obtain a daily parking pass but are not able to purchase the permit before they close at 5 pm we can purchase the pass for you as long as we know that you need it the day before. Daily passes are \$2. Contact Robyn for more information. We want to make sure that everyone has a place to park for our meetings.

THIS MONTH'S SPEAKER

Tracing faults and fissures in the Las Vegas Valley
using seismic refraction methods with physical verification
Otto C. Holmquist

Successful use of surface seismic methods using shear waves to locate earth fissures has been discussed at some length. While obtaining background surface seismic data at an incipient fissure in Arizona, geophysicists noted that the amplitude of compression waves was severely attenuated across the fissure zone. An investigative approach based on the attenuation of first arrival compressional waves was developed to map the subsurface extent of earth fissures. This approach has been used with consistent success in mapping the subsurface extent of fissures, and has recently been used to locate faults in the Las Vegas Valley.

Exploration test pits, or short trenches, are excavated at the seismic line locations to verify the identification of subsurface fissures and trenches. This process generally streamlines the field location effort and allows more time, effort (and money) to be concentrated on the identification and exploration of the earth rupture itself. This presentation will present the fundamentals of the investigative approach and recent case studies in the Las Vegas Valley. The methods have been found to be useful even where relatively shallow cemented zones are present.

Speaker's Background & Education

Otto C. Holmquist, P.E. received his Bachelor's Degree in Geological Engineering from the New Mexico Institute of Mining and Technology (the New Mexico School of Mines) in 1981. After brief stints with Schlumberger Well Services (in the great oil bust) and the New Mexico State Highway Department, Mr. Holmquist joined the geotechnical engineering and environmental consulting community with Sergeant, Hauskins and Beckwith Consulting Engineers (a.k.a. AGRA Earth and Environmental and later, AMEC Earth and Environmental) in 1985. His experience ranges from providing geotechnical site characterization and recommendations for residential, commercial and industrial development in the southwestern United States to preparing a Remedial Investigation/Feasibility Study (RI/FS) at an EPA Superfund site the Salt River Valley in Arizona.

Otto joined a local geotechnical engineering firm in Las Vegas in September, 2001 and began the operation of Geolines, LLC here in January, 2004. His company provides consulting services to engineers in the Valley, including refraction microtremor measurements and applications of seismic-refraction methods to enhance subsurface site characterization for engineering evaluation.

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