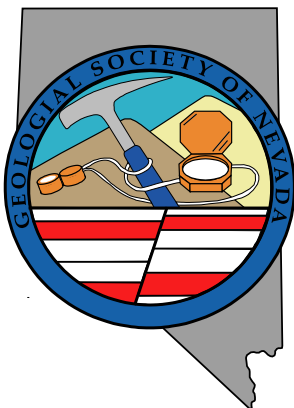

Geological Society of Nevada

SOUTHERN NEVADA CHAPTER

GSN Newsletter

February, 2002



Plutons as Magma Chambers: Processes and Products

DATE: Thursday, February 28, 2002

SPEAKER: Dr. Rod Metcalf

LOCATION: Room 105
Lilly Fong Geoscience building

TIME: 5:30 p.m. Social hour
6:30 p.m. Presentation

Announcements:

Visit the website for up to date information!

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UNLV Dept of Geoscience



Photo courtesy of J.VanHoesen

Plutons as Magma Chambers: Processes and Products

Dr. Rod Metcalf –

Abstract (GSN- Las Vegas meeting on February 28, 2002)

Magmatic activity begins when partial melting events in the mantle and/or crust generate primary magmas. Such primary magmas, however, rarely reach the earth's surface as unmodified lavas. Magmatic processes (crystal fractionation, magma mixing, assimilation etc.) operating in the subsurface modify the composition of primary magmas and are largely responsible for the wide spectrum of magmatic compositions evident in volcanic materials. Thus, magma systems must be viewed as lithospheric scale features spanning the region from melting sites to surface volcanoes. Volcanic rocks often represent samples of liquids derived from subsurface magma chambers and provide indirect evidence about magmatic processes. Plutonic rocks (batholiths, plutons, dikes and sills) represent magma transfer conduits and magma chambers and can provide insight into the subsurface processes that modify magma compositions. This presentation will examine plutonic bodies as slices through lithospheric-scale magma systems, in particular the view of plutons as magma chambers. We will explore how plutonic studies can contribute to our understanding of magmatic processes and magma system evolution. Although examples will be presented from a variety of localities worldwide, the presentation will focus on the Tertiary plutonic-volcanic record of the Colorado River extensional corridor, Nevada and Arizona.

Dr. Rod Metcalf

Associate Professor of Geology

Dr. Metcalf received his B.S. in Geology from the University of Kentucky in 1979. In the early 1980's he worked on a variety of mineral exploration projects in the eastern U.S. and Mexico. In 1984 he completed a M.S. degree in Geology at the University of Kentucky under the supervision of Dr. William. H. Blackburn. Dr. Metcalf's M.S. thesis dealt with U and Th in a Grenville-age granite in the Virginia Blue Ridge. In 1990 he completed a Ph.D at the University of New Mexico under the supervision of Dr. Jeffrey. A. Grambling. His Ph.D. dissertation dealt with the origin and evolution of Proterozoic migmatites and related plutonic rocks in the central Santa Fe Range, New Mexico. Dr. Metcalf began his teaching career as a part-time instructor first at the University of Kentucky and then at the University of New Mexico teaching both Physical Geology and Historical Geology. He has been a faculty member at the University of Nevada, Las Vegas since the fall of 1990 and was awarded an Associate Professorship of Geology in 1997.

Announcements

Future Speakers:

January 24: Nick Saines – “Lost Afghanistan”.

February 28: Rod Metcalf – “Plutons as magma chambers, processes and products”.

March 21: Cathy Snelson – Crustal Structure in Western Washington State: Implications for Seismic Hazards

April 25: UNLV Graduate Student Presentations

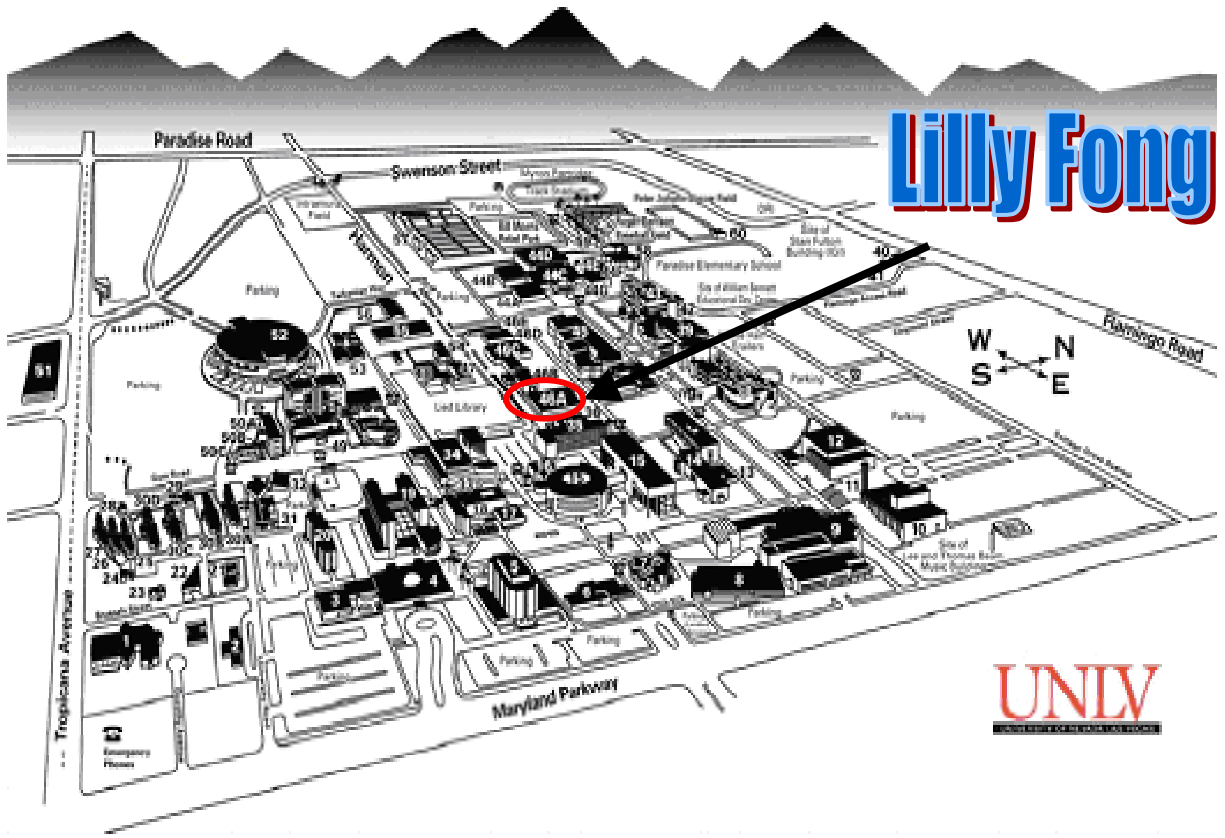
May 23: Maxwell Blanchard (tentative)

Look! Its a *NEW* GSN web site!

<http://www.gsnv.org>

<http://www.unlv.edu/Colleges/Sciences/Geoscience/GSN/gsnsc.htm>

If you know of anyone that would like to become a member of if you need to renew your membership in the Geological Society of Nevada, a membership application is attached or can be accessed online.



Publication and mailing of this newsletter has been contributed by The UNLV Department of Geoscience.

Come visit us online at http://www.unlv.edu/Colleges/Sciences/Geoscience/1st_page.html or <http://www.unlv.edu/Colleges/Sciences/Geoscience/GSN/gsnsc.htm>



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