

Inland Geological Society

March 2012

Newsletter of the Inland Geological Society

Volume 28 No. 3

This Meeting:

**Thursday,
March 1st**

Time:

Social: 6:00pm
Dinner: 6:30pm
Lecture: 7:00pm

Location:

**LSA Associates
1500 Iowa Ave
Suite 200
Riverside, CA
92507**

(Map on Pg. 4)

**Coming to
Dinner?**

**Please RSVP:
By Monday 2/27
(951) 784-2168
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March Speaker:

Dr. Norman Meek

**Professor and Chairperson, Department of Geography
California State University, San Bernardino**

**“How (In)Effective is the Headward Erosion Process?”
and
“A Brief Summary of the Lake Manix History”**

Abstracts

How (In)Effective is the Headward Erosion Process?

Headward erosion, an awkward term describing the process where one drainage basin grows at the expense of another, is frequently invoked by earth scientists to explain how one drainage pirates another. Headward erosion should not be confused with headward incision, where knickpoints move upstream in a single drainage basin over time. Whereas headward incision is a very effective process, many years of field observations in arid and semiarid landscapes have led Dr. Meek to conclude that headward erosion is a largely ineffective process, even in weakly consolidated strata. An exception appears to be at locales where very active colluvial and other mass-wasting processes are commonplace.

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In this presentation, Dr. Meek will show several case examples that exemplify the ineffectiveness of headward erosion processes in dryland landscapes.

A 1990s *Nova* video, and some published research papers invoke long-distance headward erosion, sometimes in relatively short time periods. Invoking headward erosion should require the investigator to provide evidence that the interfluvium has indeed shifted laterally over time, and that some upper slopes in the growing drainage basin have reversed. This critical evidence is rarely provided. Rather, headward incision and headward erosion are often confused, with an accompanying unsupported presumption that the interfluvium has shifted large distances.

An important implication of this presentation is that stream piracy caused by vigorous headward erosion of a pirating stream is extremely rare. Instead, my anecdotal observations suggest that much stream piracy derives from lateral erosion of narrow interfluviums by the future pirated stream.

A Brief Summary of Lake Manix History

Starting in the mid-2000s, the USGS has re-examined the Manix basin where Dr. Meek did much fieldwork while completing his dissertation. Comparatively speaking, the USGS had a virtually unlimited budget, and conducted many investigations that were beyond anything that Dr. Meek could have done at the time, such as drilling cores, doing extensive radiocarbon work, and using LIDAR to examine the surface in great detail.

In this presentation, Dr. Meek will explain how the USGS' story of Lake Manix differs from what he concluded, and where the story remains the same. In short, nearly all of his main claims about the basin history have been supported by their research, and the controversy that once abounded (as some witnessed at a previous Inland Geological Society meeting) has quietly disappeared.

Biography:

Dr. Norman Meek is a Professor of Geography, and Chairperson of the Department of Geography and Environmental Studies at California State University, San Bernardino. He graduated from the University of Kansas in 1982 with degrees in Geography and Geology, a M.A. from Michigan State in 1984, and a Ph.D. in Geography from UCLA in 1990. His research interests focus on transverse drainages, climate change, and the Southwestern U.S.

Upcoming Meetings/Events

Rock & Gem Shows—Various locations

Various rock and mineral shows will be throughout So. California. To find one near you, visit www.rockngem.com/showdates.asp

South Coast Geological Society Meeting



Gene Suemnicht, a Chief Geologist for EGS Inc. in Santa Rosa, will be presenting a talk on "Geothermal Exploration and Resource Assessment" on **Monday, March 5, 2012** at the Doubletree Club Hotel in

Santa Ana, CA. For more info., visit www.southcoastgeo.org

Earthquake Engineering Research Institute—One Day Course

EERI will be offering a one day short course on the "Analysis, Design and Testing of Pile Foundations" on **Friday, March 30, 2012** at the Grand Pacific Palisades Resort and Hotel in Carlsbad, CA. For more info and/or to register, visit www.eeri.org/registration/register.php

San Diego Assoc. of Geologists Meeting

Dr. Scott Burns will be presenting a talk on the AEG Jahns Lecture on Subduction Earthquakes on **Wednesday, March 21, 2012**. This will be a joint meeting with EERI. For more info, visit www.sandiegogeologists.org

San Diego Assoc. of Geologists Meeting

Geology student presentations will be held on **Wednesday, April 18, 2012**. For more info, visit www.sandiegogeologists.org

REG REVIEW, Inc.—ASBOG Study Course

Are you taking the CEG or CHG exam in Fall 2012? REG REVIEW, Inc. will be offering a study course for the CEG and CHG exams on **Saturday, June 19, 2012**. The courses will be offered at the Best Western Orange County Airport North in Santa Ana, CA. For more info., visit www.regreview.com/

IGS Meeting Schedule

April 12, 2012 (Thursday)

Mr. Brock O'Kelley, MolyCorp
An Update on Project Phoenix, the re-opening of the modernized Mountain Pass Rare Earth Element Mine, California

NOTE: Joint Meeting with Society of Mining, Metallurgy, and Exploration (SME) and Association of Environmental and Engineering Geologists (AEG) Meeting will be held at the California State University, San Bernardino

May 3, 2012 (Thursday)

Danielle Montgomery, UCR Grad Student
TBA

June 6, 2012 (Wednesday)

TBA

July 12, 2012 (Thursday)

TBA

August 1, 2012 (Wednesday)

Thom Deane, Deane Consulting
The Surface Water Outflow from the Orange Crest/Mission Grove (OCMGA) Area of Riverside, CA

September 6, 2012 (Thursday)

Mr. Austin Marshall, Mitsubishi Cement Corp.
TBA

IGS MEETING LOCATION:

LSA Associates, Inc.
1500 Iowa Ave, Suite 200
Riverside, CA 92507

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