

Geological Society of Nevada Southern Nevada Chapter Newsletter

October 2009

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Importance of Validation of Digital Soil Layers in Soil Mapping

SPEAKER: Mr. Douglas Merkler
DATE: Thursday, October 29, 2009
LOCATION: LFG Rm. 105, UNLV
TIME: Social half-hour at 6:45 pm
Meeting business at 7:15 pm
Talk at 7:30
SPONSOR: Anonymous



Greetings GSNER's! Fall is in the air and even though it may not look it, the trained Nevadan eye can see (and feel) the seasons are changing! With this new season brings our GSN Southern chapter October meeting, featuring Mr. Douglas Merkler a local soils scientist and pedologist.

Douglas will dazzle us with his adventures and experiences in the soil world, and will be discussing the usefulness of various tools used in digital soil mapping. Douglas is also a fourth generation Nevadan, and is an active member of many local committees in the Las Vegas Area, including the Lake Mead Water Quality Forum and many of its subcommittees. The GSN Southern Nevada chapter welcomes this Nevada native and expert in all things soil!

As you can see above, the sponsor for this month has asked to remain anonymous, thank you for your generosity! If anyone has anything they want in the next newsletter, please let me know!

-Laura Eaton, Newsletter Editor

Geological Society of Nevada Southern Nevada Chapter

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

Importance of Validation of Digital Soil Layers in Soil Mapping

Speaker: Mr. Douglas Merkler

Abstract

The truth of any model is at best partial, and hence relative; a model can only be “more-or less” true. Moreover, a model can seem to be true in some ways and far from it in other ways. In fact, what we are looking for in the application of digital data as it is applied to the process of soil survey is not “truth,” or “verity,” but *validity*. For example, when defining the validity of a soil taxon, we conform to accepted principles of sound pedologic classification. We discuss the usefulness of various tools used in digital soil mapping for providing variables to adequately model differences and composition of soils geospatially across a complex landscape ranging from arid to subalpine in southern Nevada. We stress the need for the use of field notes to ground truth the validity of the digital layers and to develop the soil-landscape concepts which represent the actual climatic variability reflected in elevation, surface orientation (slope and aspect), and shadows cast by topographic features to describe the high spatial and temporal heterogeneity in local energy and water balance. These features determine micro-environmental factors such as air and soil temperature regimes, evapotranspiration, snow melt patterns, soil moisture, and light available for photosynthesis. The resulting patterns then can be grouped into meaningful map units and scaled back to the landscape. These patterns can then be used to refine digital terrain models that provide information indispensable for land resources management and environmental assessments.

Speaker's Background

Doug Merkler comes to us from the USDA Natural Resources Conservation Service, working as the Area Resource Soil Scientist for Southern and Eastern Nevada. Awarded the Soil Scientist of the year nationally for the USDA in 2004, Doug currently runs the Technical Soils Services Program for Nevada, and is mapping the soils and plant assemblages of Desert National Wildlife Refuge and assisting with the Soil Climate Project and the UNLV, UNR, DRI Climate Change NSF project.

Doug started out working with Fred Peterson at UNR, 1978 and has been mapping the Basin and Range for 31 years, publishing 18 soil survey manuscripts along the way. He is a member of the Standing Committee on National Cooperative Soil Survey Standards, Subcommittee on gypsum, the National Education Committee for USDA, and sits on the International Committee for Soil Morphology, International Union of Soil Science, 2006-2010.



Announcements

Volunteer to Share your experiences!

Share your field experiences with other GSN SNV chapter members through a story and/or photos in an upcoming newsletter.



Interested? Contact Laura Eaton at eatonl4@unlv.nevada.edu

Calling all speakers and sponsors!

GSN is looking for sponsors and speakers for our 2009-2010 year! If you are interested or have ideas, please contact Swapan Sahoo or Josh Bonde.

Thank you!

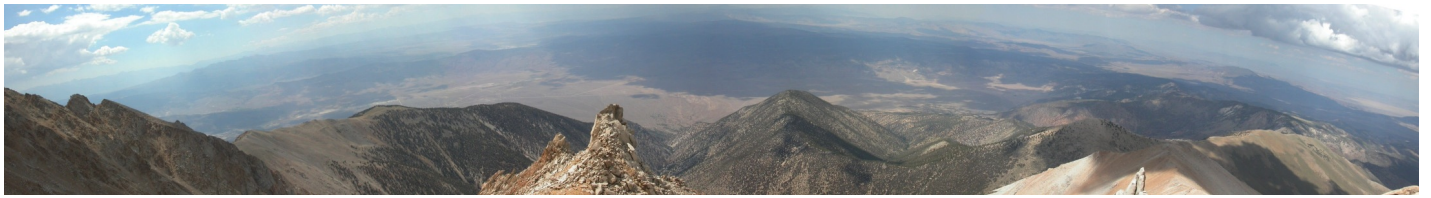
Silent Auction Items

GSN is always looking for specimens and silent auction items for our monthly meetings. The well-being of GSN is made possible by your generous donations. If you have a specimen or silent auction item, please contact Swapan Sahoo or Josh Bonde, or just bring it to the next meeting.

Thank you!

**Have an announcement you
would like to share in the
next newsletter? Contact
Laura Eaton at
eatonl4@unlv.nevada.edu**





GSN 2010 SYMPOSIUM

Mark your calendars!

*The Geological Society of Nevada invites you to attend our sixth symposium, **Great Basin Evolution and Metallogeny**. We strive to maintain a tradition of excellence, emphasizing descriptive accounts of ore deposits, new theories on deposit formation and innovative concepts of how to find the next district or deposit.*

Technical Sessions:

- Carlin-Type Deposits I and II
 - Great Basin Metallogeny
 - Nevada Geology and Tectonics
 - Discovery Case Histories
 - New Mine Developments
 - Volcanic-Hosted Epithermal Deposits
 - Young Au-Ag Hydrothermal Systems
 - Styles of Tertiary Magmatism and Metallogeny
 - Intrusion-Related Deposits
 - Geothermal
 - Rumors from the Bush—
- Great Basin Exploration Update
 - Outta the Box—Concepts in Great Basin Geology and Ore Deposits
 - Exploration Remote Sensing
 - Regional Exploratin Roundup
 - World Exploration
 - Exploration Success—America
- Molybdenum Deposits
 - ArcGIS
 - Remote Sensing
 - Sample Collection, Prep and Analysis
 - Isotopes and Exploration

Field Trips

- Carlin Gold Deposits-Three Trips
- Epithermal Deposits-Two Trips
- Porphyry and IOGC Deposits
- Modern Ancient Geothermal Systems
- Industrial Mineral Deposits

Short Courses:

- SEG Workshop—Gold in 2010
- Structural Systematics
- Fundamentals of NI 43-101



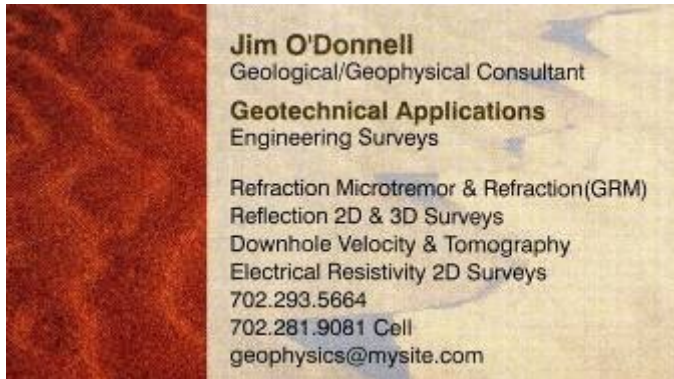
Want to learn more or attend?

Contact: (775) 846-9766
Secretary@gsnv.org
www.gsnv.org/symposium



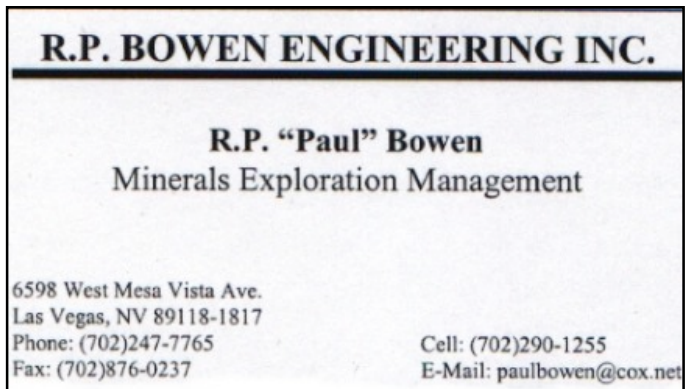
Paid Advertisements

Thank you for your support!

A business card for Jim O'Donnell, Geological/Geophysical Consultant. The card has a dark red textured background on the left and a light tan background on the right. The text is in black.

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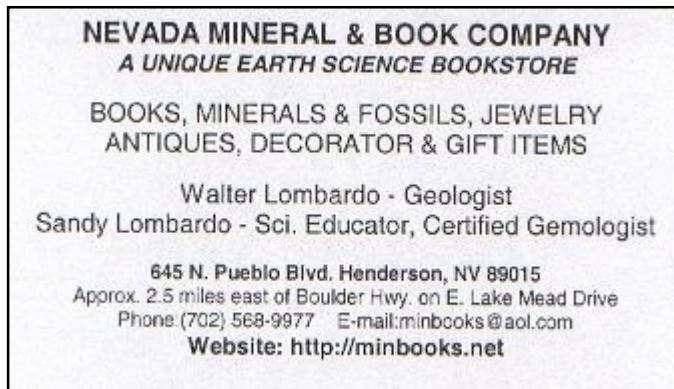
A business card for R.P. Bowen Engineering Inc. The card is white with a black border. The text is in black.

R.P. BOWEN ENGINEERING INC.

R.P. "Paul" Bowen
Minerals Exploration Management

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E-Mail: paulbowen@cox.net

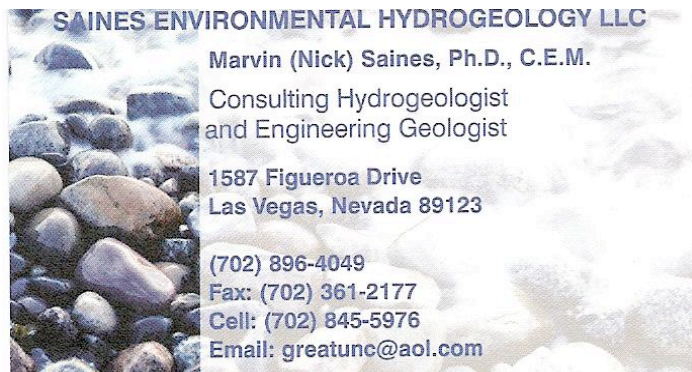
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Phone: (702) 568-9977 E-mail: minbooks@aol.com
Website: <http://minbooks.net>

A business card for Saines Environmental Hydrogeology LLC. The card features a background image of smooth, light-colored river stones. The text is in black.

SAINES ENVIRONMENTAL HYDROGEOLOGY LLC

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Consulting Hydrogeologist
and Engineering Geologist

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