



MGS

Montana Geological Society

September 2007

Saturday, Sept. 15

MGS Fall Field Trip
“Laramide Structural
Features, Beartooth
Mountains Front”

Thursday, Sept. 27

MGS Luncheon
“A Geologists Guide to
Explaining Natural
Fracture Phenomena w/
Fracture Mechanics”,
AAPG Distinguished
Lecturer, Jon Olson.

The menu will be hot
turkey sandwich, dessert
and coffee or iced tea
for \$14.00.

Members who do not
Receive an e-mail reminder
can RSVP by calling
Doretta Brush at Ballard
Petroleum (406) 259-8790

**All meetings are held at
the Billings Petroleum
Club at 11:45 a.m.
unless otherwise noted.**

MGS HOME PAGE:
www.montanags.org

MGS EMAIL:
mgs@wtp.net

Two Field Trips Down, One to go !

It has been a busy summer for the MGS. Starting with Karen Porter and Jennie Ridgeley’s three-day June Field Trip “Marine Cretaceous Reservoirs in Central and Northern Montana”; which was a rousing success despite threatening weather and a little more hiking than had originally been planned. This trip was followed by a one-day field trip in July that was led by David Lopez and Steve VanDelinder. This trip focused on various facies relationships within the Tensleep Sandstone in the northern Bighorn Basin. On this occasion the weather cooperated completely and gave us a one-day break from a searing July heat wave.

We are now planning to close out the 2007 MGS field trip season with a one-day (Saturday, Sept. 15) excursion to the Beartooth Mountains led by Ennis Geraghty, Stillwater Mining Company. Unlike the earlier trips this summer, this one will be in personal vehicles (you will need four-wheel drive for part of the trip, so bring your 4X4 and offer a ride to someone who doesn’t have one). Pack a lunch, some snacks and beverages, and plan to join your MGS colleagues for a day tramping around the mountains. (For more details, see the Field Trip Notice inside).

Bob Schalla
MGS 1st Vice-President



After very nearly getting her State-owned Suburban stuck in the mud, Karen Porter explains the vagaries of the Mosby Sandstone and Greenhorn Formation to a group of spell-bound field trip participants on an outcrop near Winnett, June 15, 2007.



A Geologist's Guide To Explaining Natural Fracture Phenomena with Fracture Mechanics

AAPG Distinguished Lecturer
Thursday - September 27, 2007
Jon Olson
University of Texas – Austin

This is a review talk designed to introduce a geologic audience to the concepts of fracture mechanics and how they can be applied to make conceptual and quantitative interpretations of natural fracture phenomena. Examples are driven by outcrop and core observations and explained conceptually with simple analytical equations from fracture mechanics. More complex fracture relationships are briefly treated using numerical model results. The talk focuses on opening mode fractures (joints, veins, dikes) and how fracture mechanics can be used to predict their geometric attributes.

Examples include the relationship between in situ stress anisotropy and propagation paths, theoretical predictions of fracture length, spacing and aperture versus length distributions, the role of subcritical (stress corrosion) cracking on fracture clustering, and the concept of natural hydraulic fracturing. The influence of simultaneous diagenesis and fracture growth will also be discussed in the context of preserved fracture aperture (e.g., how does a fracture stay open when the driving stress is gone?).

Education:

1991 Ph.D., Applied Earth Sciences, Stanford University
1984 B.S., Civil Engineering, B.S., Earth Sciences, University of Notre Dame

Experience:

2002-Present Associate Professor, Department of Petroleum and Geosystems Engineering, The University of Texas at Austin
1995-2002 Assistant Professor, Department of Petroleum and Geosystems Engineering, The University of Texas at Austin
1989-95 Research Engineer, Mobil Research and Development Corporation, Dallas, TX

Nominating Committee is Looking for Candidates

The MGS Nominating Committee is seeking nominations for the following positions: **MGS Secretary** and two **MGS-AAPG Delegates**. If you would like to nominate someone for any of these positions please contact Bob Schalla, MGS 1st Vice-President, at (406) 294-3525. As always, nominations may also be made for President, 1st and 2nd Vice-President and Treasurer, if the nominee is willing to run against the current incumbent officers.

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MGS Fall 2007 Field Trip

“Laramide Structural Features, Beartooth Mountains Front”

Leader: Ennis Geraghty, Stillwater Mining Company

Date: Saturday, September 15, 8:00 a.m., depart from Holiday Inn parking lot, no limitation to participants.

(four-wheel drive vehicles required, bring your own or arrange to car-pool with someone; participants are also responsible for their own drinks, snacks and lunch; we hope to be back in Billings around 6:00 pm)

This one-day field trip will examine exposures on the Benbow Road from Dean, Montana to The Golf Course above the West Benbow chrome mine (inactive). Phanerozoic stratigraphy from Cretaceous Judith River Formation down to Cambrian Wolsey Shale is beautifully exposed on this route as well as the Archean Stillwater Complex and its associated metal zones. Laramide deformation has profoundly affected these rocks and we will examine evidence for 6 repetitions of the Great Unconformity (Wolsey Shale on Stillwater Complex) on Laramide backthrusts. In addition, we will discuss the overall Laramide fault architecture for the Beartooth Mountains front as a hinterland-dipping basement duplex based on shallow and deep drilling integrated with surface mapping.

IMPORTANT NOTICE: The Montana State Office of the BLM will not be holding the tentatively scheduled October 9, 2007, Competitive Oil and Gas Sale. The next BLM sale is tentatively scheduled for Tuesday, November 27, 2007.

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<http://home.mcn.net/~wbhansen/> Email: wbhansen@mcn.net

Submission deadline for the MGS Newsletter is the **10th** of each month. Submit requests to Brad Thompson, Editor, bthompson@nancepetro.com or 245-6248.

IOGCC Summit Languishing Oil Market in Rockies

Interstate Oil and Gas Compact Commission Chairman Gov. John Hoeven of North Dakota will host a Rocky Mountain Crude Oil Market Dynamics Summit, Sept. 4-5, 2007, in Denver, Colo., to address unstable market conditions in the region that threaten domestic production.

Since early 2006, oil producers in the area have received as much as \$25 to \$30 per barrel less than what was paid for similar quality oil in other regions of the country. As a result, North Dakota, Montana, Wyoming, Colorado, South Dakota and Utah have lost millions of dollars in revenues that would have been reinvested into more development, production of domestic energy, jobs and economic activity.

Last year, due to lower prices, North Dakota lost \$19 million that would have gone to help fund schools and state government programs, according to Ron Ness, president of the North Dakota Petroleum Council. The IOGCC, as a steward of domestic petroleum resources, began studying this issue under the leadership of 2006 IOGCC Chairman Gov. Dave Freudenthal of Wyoming. A task force composed of representatives from Rocky Mountain states, Canada and federal agencies explored the crude oil market dynamics in the region that were resulting in lower prices and developed its recommendations earlier this year.

"It is the intent of the IOGCC to further the work of the task force to develop the valuable resources in this region," said Hoeven. "This summit will bring together a cross-section of the region's stakeholders involved in all aspects of the crude oil market from extraction to final destination for the purposes of education, dialogue and planning for the future."

Regional governors attending the summit will participate in a forum to promote an open discussion on how to resolve and prevent future problems from occurring not only in the Rocky Mountain region, but across the United States. Brian Jeffries, executive director of Wyoming Pipeline Authority, another state affected by the issue, stressed the importance of participation by all key stakeholders in the Rocky Mountain region crude oil industry. "The continuing collective efforts of the state governments, local producers and the Interstate Oil and Gas Compact Commission are essential to the development of adequate infrastructure to bring our resource base to market," said Jeffries.

Those interested in attending the IOGCC Summit may register at <http://www.iogcc.state.ok.us/events.html> or contact Amy Wright at (405) 525-3556, ext. 117.

A Message from the Montana Petroleum Association

Greetings:

Please take the time to sign the petition below. Our industry is under attack by environmental organizations that call themselves sportsman's groups. Please consider the comments in the editorial from the Billings Gazette on Saturday August 18th. The Theodore Roosevelt Conservation Partnership claims to represent sportsman and is made of up many other groups including Trout Unlimited, the National Wildlife Federation, Boone and Crocket as well as many leading companies that produce sporting goods including Orvis and Benelli. <http://www.billingsgazette.net/articles/2007/08/18/opinion/guest/40-blm.txt>

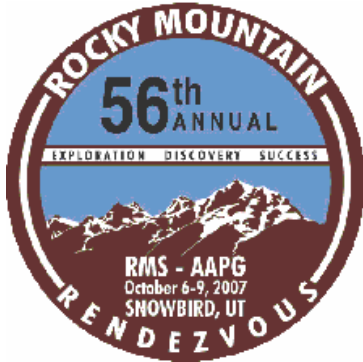
It is groups like Trout Unlimited, the National Wildlife Federation and TRCP that protested sales recently and one result was a deferment of 73,000 acres in McCone and Garfield counties from the July 31 BLM sale. While this petition may not seem like much, I think along with other oil and gas associations, that it is important to let folks know that there are quite a few of us who work in the industry, that hunt and/or fish, and who believe development can take place without compromising our wildlife.

Thanks for listening, David A. Galt, Executive Director

Sign Conservation in Action's Sportsmen for Responsible Energy Development Petition

Tired of so-called conservation and sportsmen's groups who want to end energy development in the Intermountain West claiming to speak for you? Help counter the claims of these groups who use Western sportsmen as pawns in their political agenda! If you are a hunter and/or fisherman and support responsible energy development in the Intermountain West, please take just a moment to sign this online petition and **be sure to forward this to fellow sportsmen and others in your company.** To sign the petition go to – <http://conservationinaction.us>

EXPLORATION, DISCOVERY, SUCCESS



ROCKY MOUNTAIN RENDEZVOUS AT SNOWBIRD, UTAH, OCTOBER 7-9, 2007

Early Registration Deadline: September 14, 2007!

**Register by August 17 and receive a free CD of the new UGA Guidebook to Central Utah!
(Professional, full meeting registrants only)**



Capt. Howard Stansbury Utah State Historical Society

Utah Petroleum History

"Utah's oil industry developed slowly in two distinct phases: a long period of exploration and a more recent time of commercial production. The exploratory period began in 1850 when Capt. Howard Stansbury, while on a survey of the Great Salt Lake for the Army Corps of Topographical Engineers, discovered evidence of "petroleum" along the northern shore of the lake. During the next forty years Utah residents and visitors found other signs of oil in various parts of the region." Walter Jones, The Growth of Utah's Petroleum History, Utah State History-To-Go.

Memorial

Long time MGS member Jarvis (Jerry) Klem, passed away August 17 in Billings.