



**MONTANA GEOLOGICAL SOCIETY**

# NEWSLETTER

MGS Vol. 55 No. 3

**March 2011**

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

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## **PRESIDENT'S LETTER**

**Andrew Urie**

Catastrophism and uniformitarianism, which side of the fence do you reside on? These two long standing opposing theories have a long history of deeply held beliefs and collision of supporters. Events of recent days have once again brought catastrophe theory back to the top of the heap. The apparent increasing frequency of large earthquakes across the globe, first in Indonesia, then in Chile, remote China, and most recently in Japan and the association with large tsunamis in two of these cases associated with loss of life on a tragically colossal scale is affecting the minds of all citizens of the human race. When Mother Nature wakes, we all suddenly realize how infinitesimally small we really are.

We've seen catastrophic geological events on a smaller scale here in Billings recently as well. Coincident or maybe not with the recent warm weather here in town there have been several major rock falls and slides from the Eagle rim rock cliffs surrounding town ([http://billingsgazette.com/news/local/article\\_31f0b546-cda2-51d3-bb81-cb770e56e56f.html](http://billingsgazette.com/news/local/article_31f0b546-cda2-51d3-bb81-cb770e56e56f.html)). As you may have read in the Billings Gazette your very own Montana Geological Society Treasurer Jay Gunderson with the Montana Bureau of Mines and Geology was on scene (or at the very least at one of our luncheons) for each of these events. While less likely to be a threat to human life these events are no less geologically significant. One only needs to take a short drive along Rimrock Road and observe the mindboggling number of house size boulders of Eagle sandstone in the front yards of many homes in town to begin to understand the possible ramifications of these catastrophic events. And this is only what is visible at the surface today! In fact much of the Yellowstone valley itself is strewn with boulders deposited in the geological blink of an eye, or in the entirety of human existence. A time scale paradox indeed.

I personally subscribe to a theory which has gained much more circulation in the fields of evolutionary biology that it has in geological circles but is no less relevant. "Punctuated Equilibria" developed in 1979 by paleontologists Niles Eldridge and Stephen Jay Gould argues *"that most sexually reproducing species will experience little net evolutionary change for most of their geological history, remaining in an extended state called stasis.* (Continued on pg 2)

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*Punctuated equilibrium also proposes that stasis is broken up by rare and rapid events of branching speciation called cladogenesis. Cladogenesis is the process by which species split into two distinct species, rather than one species gradually transforming into another (1)."* I've blatantly ripped the above quotation from Wikipedia, so all credit goes to the multitude of creators of the infamous encyclopedia.

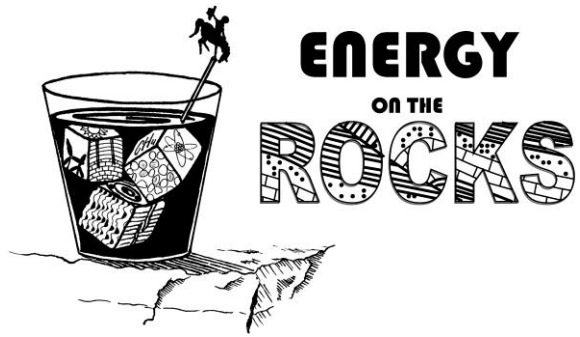
I can paraphrase this into the geological world by saying that geological events are generally in equilibria with erosion balancing deposition, burial and or uplift being balanced by isostasy or any number of other examples. At times though dramatic events punctuate this equilibrium and create a series of events that can be perceived as dramatic and chaotic. Then the system resets and corrects to this new equilibria. Brilliant in its simplicity, this idea personally just makes me smile.

I think likely due to this simplicity this theory has moved beyond the hard sciences and extended into the social theory. Common examples include the relative stasis of the 1920s to the post World War II era with the social upheaval of the 1960s. More recently we've seen a relative calm in the Middle East from the 1970s through till 2010. Now there is extreme revolution throughout the region.

So by now you're undoubtedly asking what's the point of all this rambling. To me punctuated equilibria seems to define change at all levels of the natural and human condition. I cannot count the number of times in my own life I've experienced periods, long periods, of stasis that are suddenly and at the time alarmingly punctuated by change. I take solace in the fact that to date each of these changes has been, in some way though perhaps not perceived as such at the time, a forward movement and have resulted in the most exciting periods of my life. While not without fear I've now come to thirst for these moments and I survive the stasis to live these punctuated moments. It's always fun to wonder what the future will bring

Take care of yourselves and each other,  
Andrew

1. Gould, Stephen Jay, & Eldredge, Niles (1977). "[Punctuated equilibria: the tempo and mode of evolution reconsidered.](#)" *Paleobiology* 3 (2): 115-151. (p.145)



FOR IMMEDIATE RELEASE

Contact:

Lyn George, General Chair, AAPG Rocky Mountain 2011  
Section Meeting

[lgeorge@tribcsp.com](mailto:lgeorge@tribcsp.com)

(307) 265-6338 – office

(307) 267-4967 – cell

## **Rocky Mountain geologists focus on Niobrara for summer meeting**

CASPER – Wyoming’s newfound focus on the potential of the Niobrara shale play makes it the perfect setting for the AAPG Rocky Mountain Section meeting this summer. “Energy on the Rocks” is scheduled for June 25-29 in Cheyenne at the Little America Convention Center, and will highlight the Niobrara with many special events and features.

On the Niobrara schedule is a three-day field trip, a core workshop, two plenary sessions as well as a public session and a Niobrara core museum. The Rocky Mountain Association of Geologists also plans to release its new publication, “Revisiting and Revitalizing the Niobrara in the Central Rockies.” New and old research alike will be visited to give attendees an expanded level of understanding on this development.

“We’re excited to offer attendees such a rounded program on the Niobrara,” said Graeme Finley, president of the Wyoming Geological Association, which is hosting this year’s meeting. This is the 60<sup>th</sup> meeting, but it is the first time in Cheyenne.

While the meeting has a heavy Niobrara focus, the Rocky Mountain Section has planned a diverse technical program featuring CO2 EOR and sequestration; EMD including geothermal, uranium and coal; evaluation of unconventional plays; Rocky Mountain structure, stratigraphy and sedimentology; and more. Several short courses and field trips, which have limited attendance, are also offered. Early registration is encouraged.

The exhibit hall promises to be the place for the exchanging information on products and services. It is located in the center of the meeting area and will host coffee breaks and happy hours.

Rounding out this year’s program is a prospect expo. Prospect exhibitors are invited to showcase their ideas to attract potential partners and investors. Over 700 conference attendees are expected to attend and one-day passes will be available.

To register to attend or exhibit or for full details on the technical program, short course and field trip descriptions and other convention information, go to [www.rms-aapg.org/2011\\_meeting](http://www.rms-aapg.org/2011_meeting).



## MGS Bulletin Board

All AAPG Members.

The MGS needs an second MGS delegate at the upcoming AAPG convention in Houston. If you will be attending or are considering attending the convention, please consider representing the MGS at the House of Delegates Meeting on April 10. A delegate is needed by FRIDAY of this WEEK! For more information, please contact Don French, [def.geo@gmail.com](mailto:def.geo@gmail.com), or Andrew Urie, [aurie@sm-energy.com](mailto:aurie@sm-energy.com), for more information.

*The MGS Roadlog Committee is looking for roadlogs not previously published in our Guidebooks so they can be included in our scanned collection, soon to be released on CD. Jay Gunderson and his student staff have completed scanning and converting to searchable pdf file format, all of the roadlogs they have acquired from MGS guidebooks. We need to expand the search to include Montana roadlogs from other publications and sources (or any MGS guidebooks that were missed). The current list of roadlogs can be viewed at the MGS website ([www.montanags.org](http://www.montanags.org)) If you have a roadlog that you would like to be part of the digital MGS archive, or additional information pertaining to the current list, please contact Jay at the MBMG (406-657-2702, [jgunderson@mtech.edu](mailto:jgunderson@mtech.edu)).*



## **MGS Bulletin Board**

*When Phase I of this project is complete, an index map and roadlogs will be available on CD or DVD. The second phase of the project will be to re-run selected routes and update the logs with color photos and modern terminology and interpretations. These new logs will become part of the MGS archive CD/DVD.*

**Stay tuned and start planning:**

**MGS/MAPL Golf Tournament is  
scheduled for Friday, July 8<sup>th</sup> at the**


**Laurel Country Club**

# MGS Calendar and Reminders

- April 10-13      AAPG Annual Convention and Exhibition – Houston, TX
- June 25-29      RMS-APG Meeting – “Energy on the Rocks” - Cheyenne, WY
- July 8            MGS/MAPL Golf Tournament

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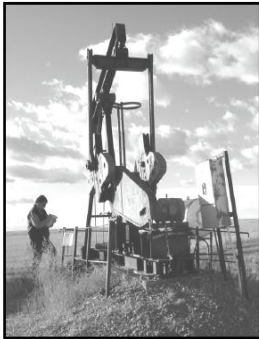
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# Montana Geology

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