PRESIDENT’S MESSAGE— Mike Hawks

Fellow WGA Members,

Welcome to March, already. A couple of things about March in Wyoming I have noticed: 1) If you believe that groundhog, you’re in for a rude awakening, 2) If you are lucky enough to have drilling rigs in the field (or any other kind of field work), don’t put those chains, ice scrapers, tow ropes, winter survival gear, etc. away yet, and 3) There is a good chance you will use the air conditioner and heater on the same day. But don’t be discouraged; mud season is just around the corner.

If it sounds like I am complaining, well, I am. But the other side of the coin reveals my love for Wyoming, the challenges we face in the mineral extractive industries on a yearly basis, our ability to overcome these obstacles, and that we are better people for it in the long run.

Stay tough and safe out there, your families depend on you and want to see you again.

Best regards,

Mike Hawks

Upcoming 2013 WGA Luncheon Meetings

Reservations: email info@wyogeo.org or call and leave a message at WGA office 307.237.0027

- Meetings: At Casper Petroleum Club, unless noted.
- Lunch: Buffet ($12.00), served 11:15 a.m. to noon.
- Guests: Always Welcome!

**3 Mar**

*** NO MEETING THIS DAY! ***

**8 Mar**

Paul Heller, Professor, Department Chair at University of Wyoming

**12 Mar**

Jason Pitcher, Halliburton Sperry Drilling SPE/WGA Point Mtg.

**15 Mar**

*** NO MEETING THIS DAY! ***

**22 Mar**

Will F. Fortin, Ph.D. Candidate, University of Wyoming

**29 Mar**

*** NO MEETING THIS DAY! ***

**3 Mar**

*** NO MEETING (AAPG DISTINGUISHED LECTURER, THURSDAY FEB 7TH) ***

Tectonic Significance of Anomalous Cretaceous/Paleogene Gravels of the Southern Rocky Mountains

**3 Mar**

Increasing Production with Better Well Placement in Unconventional Shale Reservoirs - Challenges and Solutions

**3 Mar**

*** NO MEETING THIS DAY! ***

(SPE/WGA JOINT MEETING TUESDAY)

To Be Announced

**3 Mar**

*** NO MEETING (AAPG DISTINGUISHED LECTURER, THURSDAY FEB 28TH) ***
8 Mar  Title: Tectonic Significance of Anomalous Cretaceous/Paleogene Gravels of the Southern Rocky Mountains  
Speaker: Paul Heller, Professor, Department Chair at University of Wyoming  

Biography:
Paul got his Bachelors of Science in geology from the University of New York in 1974. He then travelled to Western Washington University to receive his Masters of Science in 1978. Finally, he was awarded a doctorate in geology from the University of Arizona in 1983. He is currently a professor and the department chair at the University of Wyoming specializing in sedimentation and tectonics  

Abstract:
Syntectonic conglomerates in most settings are characterized by sustained deposition of fluvial gravels stacked in the proximal parts of basins. In contrast the Rocky Mountains contain several solitary, abrupt, thin conglomerate units each deposited over 100 km or more. Paleoslope and thickness reconstruction indicate that such units require regional crustal tilting down in the direction of sediment transport. As large wave-length, albeit small amplitude, deflections suggest deep, tectonic processes at work, the existence of these deposits provide a means of validating proposed models of upper mantle compensation associated with the initiation and continuation of subduction beneath the Cordillera.  

Recently we have discovered a sequence of smaller-scale, time-transgressive anomalous conglomerates near the Cretaceous-Paleogene boundary in the central Rocky Mountains. These are evaluated in terms of possible climate vs. tectonic driving forces. Each of these gravel units was separately derived from individual source areas and not part of a once continuous gravel sheet. Straw grasping leads us to comparison of conglomerate distribution with the previously proposed subduction of an oceanic plateau - the conjugate Shatsky Rise. Hypothesized isostatic tilting effects caused by this migrating feature beneath the U.S. Cordillera are generally consistent with the distribution, timing and dispersion directions of these anomalous gravels. Hence, all of these anomalous gravel deposits provide records of transient tectonic effects traversing the Rocky Mountain region. Thus, the sedimentary record provides a tool to evaluate sometimes poorly constrained geophysical models of crustal deflections.  

12 Mar  Title: Increasing Production with Better Well Placement in Unconventional Shale Reservoirs - Challenges and Solutions  
Speaker: Jason Pitcher, Halliburton Sperry Drilling (Joint SPE/WGA Meeting)  

Biography:
Jason Pitcher is the Director of Global Technical Solutions for Halliburton based in Houston, Texas. He received his bachelors of Science degree in Geology from the University of Derby and his masters of Science degree in Mineral Exploration from Imperial College in London. Jason has over 20 years of experience with Sperry Drilling, having worked in multiple areas of data acquisition and interpretation. He has developed and managed well placement operations around the world, contributing to multiple national and international geosteering campaigns. He has co-authored over 20 papers and articles on LWD tools, petrophysics, geosteering, and unconventional shale exploration and development.  

Abstract:
The idea that the stimulation process "will take care of the geology" in unconventional reservoirs is proving false.  

Unconventional reservoirs are often regarded as resource plays with little demand for reservoir analysis beyond simple geosteering techniques during the development campaign. This leads to the common practice of stimulating wells with equally spaced stages and treating all the stages exactly the same, with no regard to the nature of the rock being treated. As a result, production can vary from each stage, with some stages either not contributing or doing poorly.
Clearly, the stimulation process alone cannot mitigate the impact of geology in unconventional reservoirs; however, mechanisms do exist for improving results in these reservoirs. Mapping the distribution of geomechanical properties for optimal stimulation is one example of unconventional thinking that can be applied. The practice of "steering to brittleness" or similar techniques can have a direct impact beyond simple well placement. Given a map of geomechanical properties along the wellbore, completion engineers can optimize the position of plugs or packers, and stimulation engineers can fine tune the design of the treatment applied to the rock. By re-establishing the link between production and geology, these methods can decrease the exploitation costs of unconventional reservoirs.

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**15 Mar**  ***NO MEETING (SPE/WGA Joint Meeting Tuesday, Mar 12th)*** 

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**22 Mar**  Will F. Fortin - Speech Title To Be Announced

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**29 Mar**  ***NO MEETING (Good Friday/Easter Holiday)*** 

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**~ !BREAKING NEWS! !~**

Don Basko has agreed to talk to WGA at the Pioneers Luncheon on April 26th!

The title will be ..... (*drum roll*)

*“HISTORY OF THE WYOMING OIL AND GAS COMMISSION”*
University of Utah alumnus, **W. Dan Hausel (BS 1972, MS 1974)** recounted the discovery of the Donlin Creek gold deposit in Alaska as a member of a 7-geologist team who was later awarded Economic Geology’s most prestigious award – the **Thayer Lindsley Award for an International Mineral Discovery** by the **Prospector’s and Developer’s Association in Canada** in 2009 (21 years after the discovery). In 1988, Hausel and six other geologists discovered a Monster Gold Deposit in the Kuskokwim Mountains of Southwestern Alaska described by **Northern Miner News** as the **largest undeveloped gold deposit in the world**! Hausel, who was on leave from the Wyoming Geological Survey at the time, was consulting for WestGold, a subsidiary of **Anglo-American** and **DeBeers**.

The **Northern Miner** (v.98, no.52, 2013) reported Donlin Creek to have more than 43 million ounces of contained gold! As a comparison, the **Homestake gold mine** which operated for 123 years from 1878 to 2001, produced 39.8 million ounces of gold and had one of the longest surviving stocks in history on the NYSE. Donlin Creek has stepped up as the new measuring stick for all other gold miners in the world. The mine is currently in the final stages of permitting, envisioned to be the largest gold mine in the world.

Two other **Wyoming geologists** were on the discovery team - University of Wyoming alumnus **Mark A. Bronston** (BS, 1979) and alumnus **Paul J. Graff** (PhD, 1978).

Hausel, a world renowned **mineral discoverer**, is also a Halls of Fame martial artist. In December 2012 he was promoted to the highest ranked Shorin-Ryu martial artist. Shorin-Ryu is the traditional Okinawa form of karate developed many centuries ago. In 2004, Hausel was promoted to **Judan** (10th degree black belt) in **Shorin-Ryu karate**, a rank only achieved by a very small, select group of martial artists from Okinawa. Rarely has a non-Asian reached this level in karate. In 2012 he received an unprecedented promotion to **Junidan** (12th degree black belt) that has only been awarded to a handful of martial artists in history.

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**Editor’s Note:**

*Many thanks to Dan Hausel for submitting this article to the March edition of the WGA Contact!*
1989 Donlin Creek base camp and Snow Gulch Exploration Group.

Thayer Lindsley Award
Call for Papers
To submit an abstract for an oral, poster, or core poster presentation go to rmsaapg2013.com and click on “SUBMIT ABSTRACT”
Contributions from young professionals and students are especially welcome
Deadline for abstracts is March 29, 2013

Technical Program Highlights
- Lacustrine basins: Modern and ancient
- Shale/tight gas and oil plays
- Great oil/gas fields of the Rocky Mtns.: A historical perspective
- Carbon capture, utilization, and storage
- Structure, stratigraphy, and source rocks of the Rockies
- Gas marketing in the Rockies: Forum discussion
- Emerging oil shale and oil sand resource plays
- Geologic and environmental aspects of hydraulic fracturing

Field Trips
- Lacustrine microbial carbonates: Modern and ancient
- San Rafael Swell and Henry Mtns. Basin
- Wasatch Mountains: Scenic trip through time
- Nine Mile Canyon geology: Green River and Wasatch Fm.

Other Convention Events
- All-convention luncheon: Geology of Mars, Utah analogs, and the latest discoveries of the Curiosity rover
  Dr. Rebecca Williams, Planetary Science Institute
- Several pre- and post-meeting short courses
- Night at the new Natural History Museum of Utah
- Guest hospitality suite and three days of special activities

Registration opens in Spring 2013
For convention details visit: rmsaapg2013.com

Hosted by the
Utah Geological Association
WGA Call For Papers 2013

SHARE YOUR EXPERTISE ON THE CRETACEOUS OF THE ROCKY MOUNTAINS

The Wyoming Geological Association, Society of Petroleum Engineers: Wyoming Petroleum Section, and Tate Geological Museum are jointly hosting

Cretaceous Conference: Evolution and Revolution
1-4 June 2013
Casper College - Casper, WY

Topics will include paleontology, geology, and petroleum engineering of the Rocky Mountain region

CALL FOR PAPERS

You are invited to submit a technical paper on any or a combination of the aforementioned topics to include in the conference guidebook. Those willing to speak in addition to writing a technical paper are welcomed (see below).

For more information on paper guidelines and deadlines contact as soon as possible:

Marron Bingle-Davis
Email: mbingledavis@wyoming.com
Phone: (307) 237-7854

Barb Atkinson
Email: batkinson@trihydro.com
Phone: (307) 232-3101

CALL FOR SPEAKERS

You are invited to submit an abstract on your research on any or a combination of the aforementioned topics to be presented at the 2013 conference. Those willing to write a technical paper in addition to speaking are welcomed (see above).

For more information on guidelines and deadlines contact as soon as possible:

Mike Bingle-Davis
Email: Michael_Bingle-Davis@cameco.com
Phone: (307) 333-7737

J.P. Cavigelli
Email: jpcavigelli@caspercollege.edu
Phone: (307) 268-3008
Conference planning is coming along!

**Saturday, June 1st** will be a western PRB field trip to look at Cretaceous outcrops. Following the field trip will be the evening icebreaker at the Casper Petroleum Club.

**Sunday, June 2nd** will be the day of paleo talks .... The keynote speaker is Pat Druckenmiller. Mr. Druckenmiller is from University of Alaska Fairbanks and will be speaking on Cretaceous Dinosaurs.

The oil & gas day of talks will be on **Monday, June 3rd**. The keynote speaker is Christopher Fielding from University of Nebraska-Lincoln. Mr. Fielding will be giving a presentation on Frontier research.

**Tuesday, June 4th** will be a field trip to marine Cretaceous rocks on the eastern side of the PRB, offering a special focus on looking for ammonites.

*Check the WGA website ([www.wyogeo.org](http://www.wyogeo.org)) for the link for registration which will be opening soon!*
### Conference News & Sponsorship Opportunities!

**Cretaceous Conference:**
**Evolution & Revolution**

**Sponsorship Opportunities**

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All sponsors will be recognized on the website and through verbal recognition, signage and in conference literature. Your support is appreciated and supports the Tate Geological Museum, Society of Petroleum Engineers Wyoming Chapter, and the Wyoming Geological Association.

**Company Name** (for use in all conference materials):

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**Contact Information:**
Julia Lemaster – julia@goolsbyfinley.com
julia@goolsbyfinley.com
307-266-3199

**Tax ID:** 83-6060963
Graduating Seniors – SCHOLARSHIPS!

The Central Wyoming Section of SME is again offering scholarships to area high school graduating seniors.

It is intended for students who will be majoring in a physical science (chemistry, geology, or physics), math, or engineering.

It is open to students at Natrona County High School, Kelly Walsh, Roosevelt, Midwest, Glenrock, and Douglas schools.

A minimum of a 3.0 GPA is required.

Applications have been sent directly to the local schools, and the deadline to submit applications is April 5th.

Please contact JoAnn True (joann.true@truecos.com) for additional information.
If You Could Speak . . .

If you could speak about your life, your travels, your research, your interests, your ideas on technology and the future of geology as a science and a gateway to a thriving and successful economy, . . . then, what would you say?

Tear out this page, or print it, fill in the blanks below, and scan/email/walk/”snail mail” it to Dixie Eaton at the WGA office ... and you might be the next featured speaker on the WGA Friday-afternoon luncheon floor. You need NOT be a Member of WGA in order to present at our Friday luncheon meetings.

To misquote Charles Lyell, on the science of geology, . . .

“Your presentation may be the key to our future”

I would like to give a presentation at a Friday-afternoon WGA luncheon. My topic is:

__________________________________________________________________________________________________________________________ ...

__________________________________________________________________________________________________________________________ ...

My name is: ___________________________________________________________

I work for/my experience is: ________________________________________________

Sir Charles Lyell
1797—1875

Principles of Geology
Publ. in three volumes, 1880-1833
Spring Dance Coming Soon!

WGA Spring Dinner and Dance

Friday, April 26, 2013
Casper Petroleum Club

Celebrating WGA's 70th Anniversary

Theme: "Platinum Anniversary Masquerade Ball"

Band: Swing Sounds

There will be some great door prizes, plus a special skit for your entertainment!

The WGA will once again be honoring our 60- and 50-year Pioneers at the Friday afternoon luncheon; and we encourage our honorees to attend the WGA Spring Dinner Dance later that same evening, at the Petroleum Club.

If you or someone you know joined WGA in 1953 or 1963 and wish to be honored as a Pioneer, please contact Dixie at the WGA office, 307 237-0027.
MUD LOG REQUEST!

We have successfully updated our database of mud logs for Wyoming wells, with over 6000 logs that are now available!

However, we are always looking for additional logs. If you have any Wyoming mud logs that you would like to donate or loan, please drop them by our office:

WGA Office: 602 South David Street, Casper.

Office hours:
Monday-Thursday, 9:30 – 12:00 noon

And we may also be able to make special arrangements. Thank you!
Professional Services

**Lyn George**
Lynette D.W. George
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Casper, WY 82601

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dave.foster@weatherfordlabs.com
www.weatherfordlabs.com
Source Rocks 101 - What the Exploration Geologist, Geophysicist, and Production Engineer Should Know about Petroleum Source Rocks

Thursday – Friday morning, March 7-8, 8:30 am – 5 pm Thursday and 8:30 – 12:30 Friday,
Petroleum Club, Billings Montana
Fee: $350 MGS Members, $375 Non-members, includes food, workbook, and PDH certificate.
Instructor: Dr. Nick Harris, Associate Professor, Earth and Atmospheric Science, University of Alberta

This 1.5 day course will focus on course work the first day and participant provided data the second day. Source rocks are the foundation of the petroleum system. This course will provide a succinct overview of the characteristics of source rocks, the processes involved in source rock deposition and hydrocarbon generation and how to evaluate source rocks. Attendees will learn through lecture and exercises how to evaluate and predict source rock quality and the amount and quality of hydrocarbons generated from these source rocks. Topics to be covered: What is a source rock? How do you evaluate a source rock? Relationship between source rock type and the hydrocarbons they generate. Models for source rock deposition. The role of thermal history in source rock generation and migration will be discussed. Participants are encouraged to bring their own source rock data (TOC/pyrolysis, etc.) to work through Friday morning. Data that can be worked in a class example is preferred, but instructor will be available to work though data on an individual basis as well.

Tectonic History of the Rocky Mountain Region

Thursday, April 4, 2013, 8:30 AM-5:00 PM
Colorado School of Mines, Ben Parker Student Center Ballroom A
Fee: $250; Includes: refreshments, workbook, and PDH certificate
Instructor: Dr. Chuck Kluth, Colorado School of Mines

This one day short course will review the tectonic framework and history of the Rocky Mountain region. It will begin with a short review of tectostratigraphic analysis and tectonic maps. The tectonic analysis will begin at the bottom of the geologic column with a brief discussion of the basement underpinnings of the region and Lower Paleozoic cratonic-shelf setting. These shelf deposits are variably preserved in the region but in some areas provide hydrocarbon reservoirs. This cratonic-shelf was interrupted by crustal-scale intraplate deformation in the late Paleozoic, that resulted in widespread development of the Greater Ancestral Rocky Mountains. The uplifts produced arkosic sediments but the voluminous Late Paleozoic sands are from a distal source. The early Mesozoic represents a return to the stable cratonic-shelf that, in late Jurassic, begins to reflect orogeny to the west. The data support the presence of a low-dipping subduction zone along the western plate margin that resulted in crustal shortening and the development of the Cordilleran thrust belt and the basement-cored ‘Laramide’ Rocky Mountain uplifts and basins. Hydrocarbons, generated by the earliest subsidence related to thrusting began migrating toward the craton, only to be captured by the Laramide structures. Erosion of the uplifts filled the adjoining basins to spill-points. Later Cenozoic regional uplift or climate changes have resulted in exhumation of the basins. This process is continuing today and was accelerated during the Pleistocene glacial event.

Class Descriptions and Register Online: www.pttcrockies.org
For more information, contact Mary Carr, 303.273.3107, mcarr@mines.edu
Wyoming Geological Association
P.O. Box 545 • Casper, WY 82602 • (307) 237.0027 • Fax (307) 234.4048
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Advertising space is also available in the membership directory and the annual field conference guidebook. Discounts are available for advertising in all three publications.

CONTACT MARCH 2013

Submission deadline for April 2013 issue is Friday, March 22nd.

All ads must be prepaid. Send ad and payment to:

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PO Box 545,
Casper WY 82602
info@wyogeo.org
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**FEBRUARY 2013**

**APRIL 2013**

**APRIL 2013**

**APRIL 2013**