



**MONTANA GEOLOGICAL SOCIETY**

# NEWSLETTER

MGS Vol. 53 No. 6

**June 2009**

**2009 Kabeary Memorial  
Golf Tournament**  
Laurel Country Club  
Friday July 10th  
1:00 PM

Registration Form on page 5.

**MGS Summer Field Trip**  
August 29<sup>th</sup>, 2009

**Joern Hauer**  
Ph.D., Candidate  
University of Montana  
**Marc S. Hendrix Ph.D.,**  
Professor  
University of Montana

**“An Outcrop Update  
on the Geology and  
Stratigraphy of the  
Eagle Formation  
in the Billings Area”**

See Flyer on Page 4.

**MGS HOME PAGE:**  
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gmail.com](mailto:montanageologicalsociety@gmail.com)

## **PRESIDENT'S LETTER – PAT LEMKE**

June, 2009

What would we do without computers? If you're like most geologists I know, you spend a good portion of your day in front of a computer screen unraveling the geologic mysteries of the universe. In fact, you're probably sitting in front of a computer reading this. From most comments, the new email version of the MGS newsletter has been successful and well-received. And according to MGS treasurer Andy Hennes, the society is saving an average of \$142 a month on postage and printing by going to the digital format. No problem if you prefer a paper version. We are mailing 64 conventional newsletters and emailing about 170 copies a month.

The other day in our office three geologists plus our computer IT guy were trying to figure out how to add isopach layers of 3 zones in the same formation, a process that is pretty straight forward in most programs, but not intuitive in the current software. Compared to the dinosaurs I was introduced to in high school and college, modern computers have an amazing capability for speed and data storage. Back then it was predicted that computers would help us do our work more efficiently, make our lives easier and free up spare time. In reality, we're expected to accomplish more in less time and keep track of more stuff.

Geologists do everything they did twenty-five years ago, but today we use computers. Very little hand drafting of maps or cross sections is done anymore. About ten years ago I sat a well with a geologist who was still Leroy lettering the mud log, which was pretty outdated by then (and impossible to email, which may have been the point). Many of you remember when that was the standard. Sometimes I explain to people that a lot of what I do is subsurface topographic mapping of zones and formations, and compare it to the familiar USGS topo quads. Many of us spend weeks loading formation tops and well data into the computer so we can spend a couple of hours generating accurate maps.

Some of the most helpful advice I have received in my career involves how to view the computer as an extension of my geologic work. For one, the computer is a presentation and data storage tool. We can store millions of pieces of data and retrieve it relatively quickly and accurately. Typical mapping software has dozens of complicated mathematic algorithms, such as derivative mapping, to analyze and interpret the data. However professional and convincing computer generated maps and cross sections appear, they are only as good as the interpretation of the geologist who made them. Computers generate models, geologists make interpretations. And when I'm starting to drive myself and my coworkers crazy with questions while attempting to unravel the geologic mysteries of the universe, I am reminded of the endearing, timeless advice of sequence stratigrapher Octavian Catuneau, professor of geology at the University of Edmonton. "Your geologic interpretation does not have to be perfect, but it must be reasonable".

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Rita Frasure 247-7349

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### Montana Oil & Gas

### Fields Update:

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## MGS Members Participate in Billings Clinic Research Center Science Expo

Once again, the MGS had a large well attended booth in the MSUB Alterowitz Gym during the 2009 Billings Clinic Science Expo. For a number of years MGS members Earl Norwood, Don Wirth, and Don Thompson have been stalwart participants. It's a great opportunity to demonstrate geology to a young group of budding scientists and the public at large. As always we'd love it if more of our members would volunteer to participate in the years to come. If you interest contact the editor or Betsy Campen.

Thanks for another great year to all those involved!





## **IN MEMORIAL**

***Herb Hadley***  
***Jan. 25, 1914 – May 30, 2009***

Herbert David Hadley was born January 25, 1914 in Monrovia, Indiana to Lelia (Cook) and Oren Z. Hadley. He died at the Horizon Hospice Home on May 30, 2009.

Herb grew up in Indianapolis, Indiana and graduated from Earlham College with a BA degree in Geology. He then went to Chicago where he did two years of post-graduate studies at the University of Chicago as an instructor in courses covering topographic mapping and interpretation of aerial photography. He also taught courses in Geology and surveying at North Park College in Evanston, Illinois.

Herb married Bernice Mulvihill in Chicago, Illinois in 1939. She became his wife, companion and business partner for 60 years until the time of her death in 1999. They had three daughters, Patricia, Carol and Virginia.

In 1940, Herb became geologist for Magnolia Petroleum doing surface mapping and “well-sitting” in Illinois and Texas. He then spent two years in Venezuela, South America with Standard Oil of New York. In 1944, he and his family moved to Billings where he joined the United States Geological Survey. Herb mapped and surveyed the Montana, Wyoming and North Dakota area in support of the war effort. In 1947, he resigned from the Geological Survey to become a consulting geologist and maintained an office in Billings, Montana until his retirement in 1986. He was a co-organizer and Charter Member of the Yellowstone Country Club. In 1950, he and his wife Bernice formed the Northwest Geological Service with offices in Billings, Great Falls and Bismark, North Dakota.

Herb was a member of many professional organizations including a Fellow of the Council of the American Geographical Society; **co-organizer of the Rocky Mountain Section of the American Association of Petroleum Geologists; organizer and Charter Member and Past-President of the Montana Geological Society. Herb was active in the community and social life of Billings as Chairman of the Water Board Adjudicator for the Moat vs. the United States in the Chromium Mine dispute in 1955; Conference Chairman of two geological meetings held in Billings in 1951 and 1972;** co-organizer and Charter Member of the Billings Petroleum Club in 1950 serving as President in 1971.

He was honored by the University of Montana School of Mines in 1997 receiving the Sahinin Silver Medallion Award which was given in “recognition of significant contributions to the understanding and development of Montana mineral, energy and water resources.”

Over the years, Herb published many articles on the geology of Montana and the surrounding areas including papers published by the Billings and Montana Geological Societies, the Montana Bureau of Mines, the United States Geological Society, the Mines Magazine and others.

Herb had a love and respect for nature all his life. He greatly enjoyed his family and was happiest going on fossil and rock hunting excursions, having picnics and back-yard get-togethers and playing games of all sorts with good friends. Following his mother’s example, he liked to get his hands in the dirt and had a garden all of his life. Herb also had a love of music and listened to music every day which led to his providing a music program monthly for the residents of Westpark Village where he lived from 1998 until his death.

Herb was preceded in death by his wife Bernice, his daughter Patricia Moore and his grandson Kevin Hadley. He is survived by his daughters Carol (John) Limbach of Billings, and Ginnie (Dennis) Haines of Marietta, Georgia; his grandchildren Leslie (Kevin) Chambers of Billings, Stuart (Nikki) Wheeler of Everett, Washington, Michelle (Tim) Schwartz of Idaho Falls, Idaho, Chris (Kindra) Moore of Castle Rock, Colorado, Denise (Dustin) Drake of Hudsonville, Michigan and Angela (Bob) Madden of Aurora, Colorado; and his great-grandchildren Jesse Wheeler of Billings, Hadley, Duncan and Kennedy Chambers of Billings, Arianna and Dennis Drake of Hudsonville, Michigan, Keaton and Lexi Schwartz of Idaho Falls, Idaho and Corey Reynolds and Kimberlyn Moore of Castle Rock, Colorado; and his special long time friend, Helen P. Clark of Billings.

In lieu of flowers, you may make a contribution to Riverstone Health Horizon Hospice Home or a charity of your choice.

All arrangements have been made by Michelotti Sawyers Mortuary.

# **MGS Summer 2009 Field Trip**

## **An Outcrop Update on the Geology and Stratigraphy of the Eagle Formation in the Billings Area**

**Date: Saturday August 29th, 8:30 a.m., depart from the Holiday Inn parking lot by the Convention Center, travel by private vehicles to be arranged the day of the trip, no limitation to participants.**

**Leader: Joern Hauer and Marc Hendrix, The University of Montana**

During this one-day field trip we will have a look at 3-4 different sites that Joern identifies during his summer 2009 field season. It will be an informal day but attendees will receive the latest update on Joern's ongoing work on the Eagle formation in and around Billings. He will discuss his latest thoughts on the depositional systems present in the Eagle formation and his ideas about the sequence stratigraphic framework.

**Mark your calendars now  
so you won't miss this great field trip!**



**6<sup>TH</sup> ANNUAL**  
**GARY KABEARY MEMORIAL GOLF TOURNAMENT**

(Formerly known as MGS/MAPL Golf Tournament)

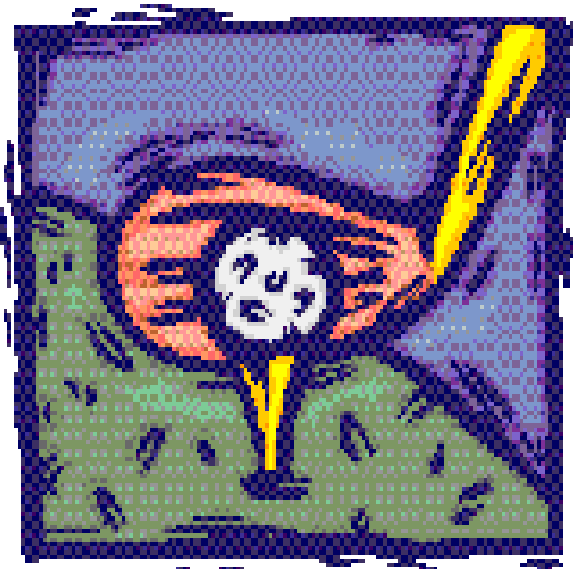
**WHEN:** Friday, July 10<sup>th</sup>, 1:00 P.M. (Shotgun start)

**WHERE:** Laurel Country Club

**FORMAT:** Modified Scramble - "A", "B", "C" and "D" players play their own ball on the top 5, 5, 4 and 4 handicap holes respectively, remaining team members play a 3-man scramble on all holes. Team cards both scores.

**COST:** \$100

Price covers green fees, cart, steak dinner; two drink coupons, six pack of preferred beverage, and raffle ticket used for several drawings at the dinner following the round. Flag prizes will be awarded on every hole. Each player may purchase up to two mulligans (\$5/mulligan). This is the 10<sup>th</sup> year that MAPL (Montana Association of Petroleum Landmen) and MGS have co-sponsored this event. Last year we raised over \$800 for the society. It is a great opportunity to enjoy a beautiful private golf course, spend time with friends and colleagues all while benefiting the MGS. Hope to see you there. In addition, we are soliciting sponsors for flag prizes (\$50/Flag). If you are interested in sponsoring a flag prize, please complete and return the sponsor form.



**Registration Deadline for Tournament and Flag Prize Sponsorship is Friday, July 3rd.**

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**2009 MGS/MAPL GOLF TOURNAMENT ENTRY FORM**

NAME: \_\_\_\_\_ WORK PHONE: \_\_\_\_\_ HOME PHONE: \_\_\_\_\_

ADDRESS: \_\_\_\_\_  
Street City State Zip

EMAIL ADDRESS: \_\_\_\_\_ Handicap or Avg. 18 hole Score: \_\_\_\_\_

PREFERRED PARTNERS: \_\_\_\_\_  
(Note: Tournament directors reserve right to disassemble stacked teams)

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**2009 MGS/MAPL GOLF TOURNAMENT FLAG PRIZE SPONSOR FORM**

SPONSOR NAME: \_\_\_\_\_ DONATION: \_\_\_\_\_

ADDRESS: \_\_\_\_\_  
Street City State Zip

Thank you for your support and sponsorship! The MGS and MAPL truly appreciate it.

For additional information regarding tournament or sponsorships, please contact:

Keven Reinschmidt 259-8790 or 670-3027 (C)

Please send checks payable to "MAPL" and send them with completed forms to:  
Keven Reinschmidt  
MGS/MAPL Golf  
C/O Ballard Petroleum Holdings LLC  
845 12<sup>th</sup> St. West  
Billings, MT 59102



## The MGS is still looking for a few good books!

Thanks to the generosity of Ballard Petroleum, MBMG, and most recently, Bill Samsel, John Utgaard, and John Graham, we have collected 71 of 73 identified MGS publications. Doretta Brush has shipped them to AAPG for digitizing, which, because of backlog, may take up to two years.

Take a minute and search your library for any of the two volumes we're missing.

Two copies of each MGS publication will be sent to the AAPG sponsored Data Pages group in Tulsa who will digitize the books. The digital data will be marketed by AAPG and MGS. The books will not be returned.

If you would like to donate a publication, call the Publication Committee editor collecting for that year:

Joe Carlisle:                      406-294-6222                      [jcarlisle@180.com](mailto:jcarlisle@180.com)                      1980-1989

We need the following publications:

Copies Needed	Year	Title
1	1984	Guidebook to Northwest Montana and Adjacent Canada
1	1987	5th International Williston Basin Symposium

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## Betsy Campen Receives 2 Awards from the AAPG: Honorary Member Award & Energy Minerals Division Distinguished Service Award



Campen

The Award is presented to AAPG members who have distinguished themselves by their accomplishments and through their service to the profession of petroleum geology and the AAPG.

Those of us that know Betsy and her efforts realize this is certainly the case and we at the MGS owe Betsy many thanks for her years of service and dedication to the Society.

CONGRATULATIONS BETSY!



Montana Geological Society  
PO Box 844  
Billings, MT 59103

## MGS PUBLICATIONS

2006 Montana Oil & Gas Fields CD-----	\$65.00	
MGS - NRGDC Northwestern Geologic Service Sample Logs (MT, ND, SD) -----	\$2500.00	
Over 2500 sample logs on CD-ROM, regional sets also available		
2000 Guidebook: Northern Montana & the Montana-Alberta Thrust Belt (2 Vol. Set) -----	\$125.00	
50 <sup>th</sup> Anniversary Symposium		
1998 8 <sup>th</sup> International Williston Basin Symposium -----	\$55.00	
1998 Core Workshop Guide for Williston Basin Symposium -----	\$30.00	
1997 Bighorn Symposium Guidebook -----	\$50.00	
1997 MGS-TRGS Field Conference Guide -----	\$25.00	
"The Edge of the Craziest: Where the Mountains Meet the Plains"		
1996 AAPG Rocky Mountain Section Meeting Expanded Abstracts Volume -----	\$25.00	
1995 Guidebook: Seventh International Williston Basin Symposium -----	\$100.00	
1993 Guidebook: Energy and Mineral Resources of Central Montana -----	\$54.00	
1991 6 <sup>th</sup> International Williston Basin Symposium -----	\$55.00	
1991 Guidebook: Geology and Horizontal Drilling of the Bakken Formation -----	\$50.00	
1991 Field Trip Guides: Beartooth Mountains -----	\$7.50	
Sequence Stratigraphy of the Eagle Sandstone at Billings -----		\$7.50
1989 Guidebook: Geologic Resources of Montana -----	\$80.00	
1986 Guidebook: Geology of the Beartooth Uplift and Adjacent Basins -----	\$45.00	
1985 Symposium: Montana Oil and Gas Fields -----	\$55.00	
1978 Economic Geology of the Williston Basin -----	\$100.00	
1971 Catalog of Stratigraphic Names -----	\$10.00	
1969 Guidebook: Economic Geology of Montana -----	\$8.50	
1951 BGS 2 <sup>nd</sup> Annual Central Montana Field Conference -----	\$12.50	
1950 BGS 1 <sup>st</sup> Annual Field Conference -----	\$12.50	

To place an order please contact Doretta Brush (406) 259-8790 [dbrush@ballardpetroleum.com](mailto:dbrush@ballardpetroleum.com)  
S & H charges are not included in prices. Add \$6 US shipping or \$12 Canadian for each book ordered. For 1985 guidebooks add \$15 US shipping or \$25 Canadian.