

MARCH 2008

Future Luncheon
Meetings:

Friday April 4th
AAPG Distinguished
Lecturer Dr. Gary Karner
will present "Accuracy of
Eustatic Amplitude
Estimates: Challenges in
Flexurally Backstripping
Continental Margins."
(More details on page 2.)

Wednesday April 9th
Susan Vuke from the
MBMG will present
the new Montana
Geological Map Project.
(More details on page 3.)

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

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

MGS HOME PAGE:
www.montanags.org

MGS EMAIL:
mgs@wtp.net

PRESIDENT'S LETTER – Bob Schalla

This being March, I suppose I am somewhat delinquent in getting this "State of the Society" report out, but nonetheless I am happy to report that the state of the Society is good. MGS Treasurer Andrew Urie reports that as of February 2008 the Society had about \$58,550 in total cash assets distributed among several accounts. This is good news, especially for those of us who remember when the cash coffers were close to zero back in 2000, shortly after we published our 50th Anniversary, two-volume "Montana-Alberta Thrust Belt" guidebook. More good news is that the Society's publication sales remain strong and continue to be our main source of funding. Gross publication sales in 2007 topped \$12,435, with the Society netting \$8,230 after commissions and other expenses were paid. Having recently finalized our marketing agreement with AAPG Datapages to make digital copies of our publications available through the internet, I have sanguine expectations for this income stream continuing well into the future; especially knowing that our newly constituted Publications Committee is forging ahead with all sorts of ideas and plans.

You may recall that back when you paid your 2008 dues you were asked if you would prefer to receive this newsletter in a digital format via e-mail. You may also be wondering whatever happened to that, since it is March and you are obviously holding a paper Newsletter in your hands. Well, we are working on it! As it turns out there is a fair bit of logistical planning that is required for the Society to make the transition. This is especially true since the vast majority of the membership indicated a preference for the digital format. With any luck, those of you who prefer a digital format will be receiving your first e-mail Newsletter in April. Then we can start working through all the glitches that are sure to pop-up!

As noted elsewhere in this edition, the 20th anniversary of the Billings Clinic Research Center's Science Expo will be held Saturday, March 29th in the Alterowitz Gym at MSU-B. The MGS is sponsoring several exhibits and we are still looking for a few additional volunteers to help answer questions and to keep an eye on some of the more interesting mineral specimens to try to prevent them from "walking-out-the-door". Contact Betsy Campen for more information or if you'd like to volunteer.

Continued on page 3.

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AAPG Distinguished Lecturer Abstract: Accuracy of Eustatic Amplitude Estimates: Challenges in Flexurally Backstripping Continental Margins

Presented by Dr. Gary Karner

Measuring the amplitude of eustatic sea-level fluctuations has proven to be a difficult problem, whose resolution is essential for the establishment of an accurate eustatic sea-level curve that can be used to infer ice volume, rapid and long-term climate variations, and for the accurate prediction of sediment facies of depositional sedimentary systems. Amplitudes and rates of glacial-eustatic sea-level change obtained by backstripping studies and from marine $\delta^{18}\text{O}$ records are markedly lower than those originally interpreted from seismic stratigraphic studies. During Leg 104, the Ocean Drilling Program drilled a sequence of wells on the carbonate platforms of the Marion Plateau, Northeast Australia. In particular, an early middle Miocene highstand carbonate platform was drilled while in the adjacent carbonate clastic apron, an interval of shallow-water carbonates with hardgrounds overlain by deeper-water sediments was recovered. The geometric relationship between the exposed Miocene carbonate platform relative to the adjacent shallow water clastic apron offers an unparalleled opportunity to estimate the late middle Miocene eustatic fall (13.6-11.4 Ma).

The relatively small horizontal distance between the drilling sites (~20 km), the undisturbed and consistently dipping pre-carbonate platform strata observed on seismic reflection profiles, and the general lack of any major faulting suggests that no significant differential subsidence (i.e., faulting) has occurred between the drilling sites. In an attempt to maximize the accuracy of the late middle Miocene estimate of eustasy, corrections for thermal subsidence induced by Late Cretaceous rifting, flexural sediment loading, and sediment compaction were taken into account. The response of the lithosphere to sediment and water loads was considered for a range of effective elastic thicknesses ($10 < T_e < 40$ km).

This presentation summarizes the most recent estimates for the amplitude of the late middle Miocene eustatic change based on flexural backstripping of the Marion Plateau stratigraphic sequences and discusses the main contribution to errors and error ranges.

(Dr. Karner will be speaking at the April 4th MGS Luncheon.)

President's Letter continued from page 1:

Finally, don't forget to sign up for this years' MGS/PTTC short course, "*Applied Hydrodynamics in Petroleum Exploration*", taught by Eric Dahlberg. Attendance is limited, so don't miss out.

Oh yeah, one final, final note. Who are these guys? And why do they look so happy? (answers on page 6).



April 9th MGS Luncheon

Speaker: Susan Vuke

Topic: New Montana Geologic Map Project from the
Montana Bureau of Mines and Geology

The Geologic Map of Montana includes three parts. Plate 1 is the geologic map of the state (*approx. 4x7ft*). Plate 2 provides supporting and complementary information including the correlation chart of surface rocks with generalized lithologic information. The third part is a booklet containing all figures shown on plates 1 and 2, additional figures, the description of map units, list of source maps for plate 1, and references cited for all plates, figures, and text.

For more information go to www.mbm.mtech.edu/gmr/gmr-gm62.asp.



APPLIED HYDRODYNAMICS IN PETROLEUM EXPLORATION & PRODUCTION

Thursday and Friday May 1 and 2, 2008

Petroleum Club, Crown Plaza Hotel, Billings Montana

Fee: \$250 MGS members, \$300 non-members; limit 25 attendees

Includes: refreshments, lunch, workbook, and PDH certificate

Instructor: Eric Dahlberg, ECD Geological Specialists (1979), Saskatchewan Petroleum Ventures LTD.

The major thrust of this course which has been taken by hundreds of oil industry professionals all over the world, is that if “one can characterize the formation water behavior within a volume of rock, then one can predict the related behavior of any associated hydrocarbons in terms of where they are moving, and where they (as a function of hydrology and geology) will become trapped, and where significant accumulations are most likely to be encountered, and what these accumulations will be shaped like.” The course is an effective blend of theory and practice.

It discusses and analyzes petroleum hydrogeological concepts and procedures which allow the geologist and engineer to utilize water data in the development of regional plays and local prospects and the accurate delineation of existing oil and gas pools.

The subjects covered include : Fluids, Subsurface Pressures and Gradients; Formation Pressure Measurements, DST and RFT; Fluid Environments, Flow and No-Flow; Potential Energy in Fluids and Electrical analogs; Rock Grain Systems, Pore Spaces, and Capillarity; Mechanics of Abnormal Pressures; Uses for Pressure-Depth relationships; Potentiometric Map construction and utilization, and subsurface Waterflow; Pressure Correlations of Geologic Units and Reservoirs; Tilted Oil-Water Contacts and, recognizing them from logs; Displaced Oil and Gas Pools; Construction of Entrapment Potential Cross Sections; U,V,Z Map constructions, and reflection of the combined effects of Facies, Structure, and Water Movement on Hydrocarbon Entrapment and Migration; Hydrodynamically-influenced plays, prospects and risk elements; Examples, Case Histories and Problems.

We “wrote the book” in Petroleum Hydrogeology* and are acknowledged experts and consultants to major exploration and production companies around the world, and the course draws from over twenty-five years of appropriate petroleum industry experience.

**Applied Hydrodynamics in Petroleum Exploration” by E. C. Dahlberg, 1994 (second edition, first edition 1982), Springer-Verlag N.Y., 295 pp. with Log Analysis by Don Fraser.*

Register online: www.pttcrockies.org

For more information, contact Mary Carr, 303.273.3107, mcarr@mines.edu

Field Equipment and Microscope for Sale!!

Lee Blatter is interested in selling the items listed below. He is currently out of state, but arrangements can be made to view the equipment in Billings by calling Ruby at 406-245-1154. For further questions, you may contact Lee at 386-755-0247 or at leeblatter@comcast.net.

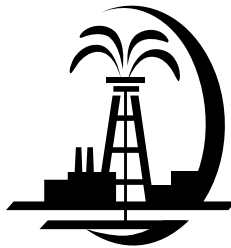
1. Field equipment – asking \$250:
 - a. 10 power microscope
 - b. Black light
 - c. Sample trays
 - d. Pans
 - e. Carrying case

2. Bausch & Lomb Sterozoom microscope – asking \$750:
 - a. Stand system
 - b. 10x WF eyepieces
 - c. Nicholas Illuminator system
 - d. Polarizer/analyzer
 - e. Carrying case

Volunteers Needed!

The 20th anniversary of the Billings Clinic Research Center's Science Expo will be held Saturday, March 29th in the Alterowitz Gym at MSU-B. The MGS is sponsoring several exhibits and we are still looking for a few additional volunteers to help answer questions from students and the public. This is your opportunity to inspire future geologists.

Contact Betsy Campen at 652-1760 or betsycampen@bresnan.net for more information.



Thank you!

Thank you to Jack Warne for helping sponsor the Oilies Party in December 2007.

We apologize that Jack's name was not included on the list of sponsor's in last month's newsletter.

Again, thank you for your support!

MEETINGS OF INTEREST

MPA Planning Meeting:

The MPA Planning Meeting is scheduled for June 17-18 with an opening reception on the evening of June 16th. The 2008 Planning Meeting will be held at the River Rock Lodge in Big Sky, Montana. This is a beautiful part of the State and we are sure to have many topics to discuss in preparation for the 2009 Montana legislative cycle. Space at the main lodge is limited and we ask that you contact Bobbie to secure a room reservation (please see attached registration form). As the meeting time draws near, MPA will provide a list of recreational opportunities for you to consider while attending the meeting. Again, please get your room reservation confirmed by contacting Bobbie at MPA@montanapetroleum.org. Thank you for your early response.

IOGCC Mid-Year Meeting:

The Interstate Oil and Gas Compact Commission annual mid-year meeting is May 4 – 6, 2008 in Calgary. Online registration is available now...registration is discounted if it is received before April 9. More information can be found on the IOGCC Website at: www.iogcc.state.ok.us/events.html.

The meeting will focus on the Alaska Gas Pipeline; the impact of federal and state land access closures on reserves and the potential cost to consumers; Canadian oil and natural gas production technology; developments in carbon capture and geologic storage technology and regulation; net receipts sharing and an overview of its impact on public lands; and much more.

Answer to question in President's column on page 3:

From left to right: Don French, John Mitchell, Eric Johnson, Bob Schalla, Joe Carlisle, Mac Clark, Dave Bickerstaff; why are they smiling? - five of these guys just got laid-off, who knows what makes Don and Mac smile.

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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 th Anniversary Symposium	
1998 8 th International Williston Basin Symposium -----	\$55.00
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1997 MGS-TRGS Field Conference Guide -----	\$25.00
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1996 AAPG Rocky Mountain Section Meeting Expanded Abstracts Volume -----	\$25.00
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1991 Field Trip Guides: Beartooth Mountains -----	\$7.50
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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 nd Annual Central Montana Field Conference -----	\$12.50
1950 BGS 1 st Annual Field Conference -----	\$12.50

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 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.**