

May 2022



MONTANA GEOLOGICAL SOCIETY

NEWSLETTER

Vol 66 No. 5



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P2 / PRESIDENT'S LETTER

Our President discusses the Spring happenings & summer prep for MGS.



P4 / DR. HART

Join us in-person or digitally as our MGS speaker discusses shale facies models.



P6 / SUMMER FIELD TRIPS, 2022

Interested in leading a trip this summer to your favorite outcrop? Let the MGS know by May 6!



P7 / TEACHER OF THE YEAR

Last chance to submit applications for this year's TOTY Award. Deadline is May 31!

Upcoming Events:

May 3 - Happy Hour in Missoula (p. 5)

May 12 - MGS Luncheon/Zoom Talk - Dr. Bruce Hart (p. 4)

Contact Us:

mtgeo.org / montanageologicalsociety@gmail.com



Add our email address to your contacts so your Newsletters & Luncheon announcements don't end up in Spam!

PO Box 844
Billings, MT 59103

President's Letter

Greetings MGS members!

I remember the great sense of anticipation 37 years ago as I prepared for Field Camp in Laramie at the University of Wyoming. It was preceded by three years of chalk talks, lab work, term papers and exams that all wet my appetite for the science but fell woefully short of quenching the thirst. As is the case for many of us, field work opens the eyes and mind to the puzzles we all yearn to solve. From the simplest determination of “stratigraphic up” at the outcrop to unravelling a folded and faulted square mile field area, every day was filled with pure joy. And then it was over, but the ‘damage’ had been done and I was hooked! Sound familiar?

The Field Trip Committee is planning several short field trips for the summer months, with the goal of hosting trips out of Billings, Missoula, and perhaps elsewhere. We hope you join one or more of these informal excursions to re-ignite that joy of being on the outcrop. Or if you yearn to share a favorite outcrop, let us know if you'd like to lead a trip. Stay tuned for details!

Please join us this month on Thursday, May 12th, for a presentation by Dr. Bruce Hart from Ontario, Canada. He will be speaking on “Shale Facies Models: The primary control on source-rock (“Shale”) play potential”. We will be hosting an in-person lunch at the Northern Hotel in Billings (please RSVP by Fri. May 6th for free talk, lunch only \$15) or you may request a Zoom link by Wed. May 11th . Either way we look forward to seeing you!

Our final offering in the lunch series for this season will be on Tuesday June 14th with a mini-seminar of presentations from two recipients of the MGS Scholarship in 2021. It will be an in-person event in Billings with a Zoom option for everyone unable to join us at the Northern. We are looking forward to meeting these students as they share their research with us!

As the weather warms and you feel that yearning to go afield, I hope you re-capture the memories that sparked your interest in geology. We are fortunate to have an amazing natural laboratory as our backyard here in Montana!

Jim Suydam
Geologist & MGS President

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Don't forget to...

Renew your MGS Membership!

*Use our convenient online renewal system at mtgeo.org,
or print & complete the renewal form at the back of the Newsletter!*



Who's Who of the MGS

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*You want another
geology joke?*

*Give me minute...
I'll dig something up.*

*Have something geological to sell,
give, or find?*

Place a free ad in our MGS Classifieds!

Contact the Newsletter Editor for more information.

MGS Luncheon

Thursday, May 12th

11:45am – 1:15pm (talk starts at 12:15pm)

Join us **in-person at the Northern in Billings** (Speaker will be remote on Zoom), or from the comfort of your home **via Zoom**

RSVP to montanageologicalsociety@gmail.com

To join us at the Northern Hotel, RSVP by latest Friday May 6th!

If you prefer to join us on Zoom, RSVP by Wednesday May 11th to receive the Zoom link



SPEAKER: DR. BRUCE HART

WESTERN UNIVERSITY, ONTARIO, CANADA

Shale Facies Models: The Primary Control on Source-Rock ("Shale") Play Potential

Successful source-rock ("shale") plays have several key lithologic traits in common that are linked to depositional processes.

- They are organically enriched, and the organic matter is oil prone. Liquids production helps improve profitability, and thermal cracking of oil to gas creates overpressures that allow even some dry gas wells to produce at economic rates.
- They have relatively low clay contents and are enriched instead in biogenic silica and/or carbonate. As such, hydraulic fracture treatments (including proppant placement) are effective means for increasing surface area and enabling production.
- They were deposited over large areas. As such, there is running room to develop the factory-drilling operations that make these low-margin plays viable economically.

In this presentation I illustrate how patterns and processes of shale deposition 94 million years ago allowed the Cenomanian/Turonian Eagle Ford Formation of South Texas to become a resource play, whereas time-equivalent organic-rich rocks (Tuscaloosa Marine Shale, Second White Specks) did not.

Biography

Bruce Hart is an Adjunct Professor at Western University in Ontario, Canada. He previously held positions with Equinor/Statoil, ConocoPhillips, McGill University, New Mexico Tech, Penn State, and the Geological Survey of Canada. During that time, he worked as a researcher, technical specialist and explorationist for shale plays, tight-gas sandstones, tight-oil plays, fractured carbonates and other unconventional targets on six continents. He toured as the AAPG/SEG Distinguished Lecturer in 2009–2010 and 2016–2017.



<https://mtgeo.org/>

Join us for an MGS happy hour!

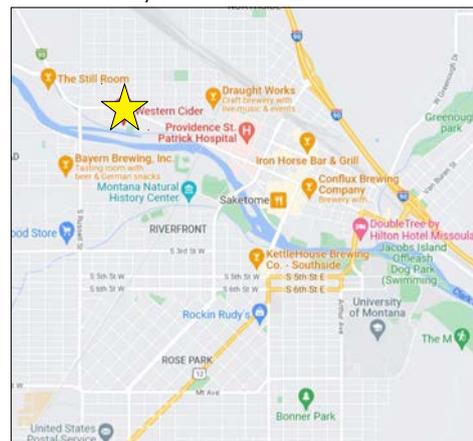
Come join us for a drink and get to know your fellow Missoula area Geologists!

May 3rd, 5:30 PM

at Western Cider

Individuals who become members of Montana Geological Society before or during the event will receive an MGS beer mug!

Western Cider
501 N California St
Missoula, MT 59802





Member Conversations – Field Edition

This summer, lead a field trip and share your favorite outcrop with your fellow MGS Members.

This is how it goes:

Step 1

Send your letter of interest to montanageologicalsociety@gmail.com by May 6th. In the letter include where in Montana you'd like to lead a trip, when you'd like to lead a trip, and how many people could come.

Step 2

Our field trip committee will review the submissions and compile a schedule

Step 3

The MGS will advertise the trips to the members

Step 4

Lead your trip, have meaningful member conversations in the field

Application form for Montana Geological Society K-12 Earth Science Teacher of the Year Award

*What better way to promote earth science in the state of Montana
than to recognize and reward those who do it every day?*

The MGS applauds the hard work of outstanding **K-12 Earth Science Teachers** in Montana. Each year Teacher of the Year (TOTY) applications are reviewed and the most deserving candidate is selected by the MGS Awards Committee to receive \$1000. The MGS winner is then eligible to apply for the regional Teacher of the Year Award (an additional \$2000) through the Rocky Mountain Section of the American Association of Petroleum Geologists (RMS-AAPG). The winner of the RMS-AAPG award becomes the RMS-AAPG nominee for the national American Association of Petroleum Geologists award, which is \$6000 (\$3000 for the teacher and \$3000 for their school). That's the potential for \$9000 in cash awards!

If you teach and promote Earth Science in your classroom or in the outdoors, the MGS encourages you to apply for the TOTY Award. The following completed application form and letter of support is all you need. The 2022 Application Deadline is May 31, 2022.

Qualifications for Nomination

- Teaching must be at a Montana accredited school, any level from K-12.
- Minimum 3 years teaching experience.
- Teaching at least one unit per year on natural resources, defined as:
 - 1) Organic materials such as petroleum, natural gas, and coal,
 - 2) Inorganic substances such as mineral ores, building stone and aggregates,
 - 3) Energy resources from the earth such as geothermal energy.
- Teaching should relate to the scientific study of natural resources, and may include their origin, extraction, historic use, and present use.
- Teaching should also include the use of earth science for decision making related to the preservation of the environment, reclamation, and conservation of resources.

Teacher Contact Information

Name of Teacher	
School	
School Address	
City, ST Zip Code	
Home Phone/Work Phone	
E-Mail Address	



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"Like" the Montana Geological Society to keep up-to-date with the MGS.

Geologists Wanted: MBMG

The MBMG is currently seeking to hire 1-2 mapping geologists.

For more information on the available positions, please visit:

<https://montanatechuniversity.applytojob.com/apply/qqx2reWsaC/BPPF-Assistant-Or-Associate-Geologist>

Become an MGS Sponsor

If your business would like to help the MGS further its mission, consider becoming an MGS Sponsor!

*As an Annual Sponsor, businesses obtain the following perks:

- Custom ads included in each issue of the MGS Newsletter (minimum of 6 issues per year);
- Company logo or name included in a slide at the beginning of each MGS talk;
- Company logo or name and links to the sponsor's websites on the new "Sponsors" page of the MGS website;
- An annual posting of appreciation on the MGS Facebook page, with links to the sponsor's preferred social media page or website.

Rates for MGS Sponsorship are listed below. To become a sponsor or request more information, please email the MGS at montanageologicalsociety@gmail.com

Diamond Sponsor: (Full Page ad) - \$65.00/month (\$780/year, paid annually)

Gold Sponsor: (Half Page) - \$35.00/month (\$420/year, paid annually)

Silver Sponsor: (Quarter Page) - \$18.75/month (\$225/year, paid annually)

Bronze Sponsor: (Business Card) - \$8.50/month (\$102/year, paid annually)

Interested in advertising, but not ready for Sponsorship?

You can still advertise with the MGS without becoming an Annual Sponsor. To advertise in a single issue of the Newsletter, rates are as follows:

Full Page - \$100/issue

Half Page - \$50/issue

Quarter Page - \$25/issue

Business Card - \$10/issue

MONTANA GEOLOGICAL SOCIETY

P.O. Box 844

Billings, MT 59103

Membership Renewal

Last Name _____

First Name _____ **Middle Initial** _____

ANNUAL DUES:

_____ **\$20.00 Regular**

_____ **\$10.00 Student**

Please update the information below if needed. Please leave blank if nothing has changed:

Company/Affiliation _____

Mailing Address (work or home)

Street _____

City _____ **State** _____ **Zip** _____

Phone (w) _____ **Phone (h)** _____ **Phone (c)** _____

E-Mail _____

AAPG Member (please circle) YES NO

Education (School, Degree, Year)

Degree #1 _____

Degree #2 _____

Degree #3 _____

MONTANA GEOLOGICAL SOCIETY

PUBLICATION	QUANTITY	PRICE	TOTAL
2006 Montana Oil & Gas Fields CD		\$65.00	
2006 AAPG Datapages - MGS Publications DVD		\$180.00	
2006 AAPG Datapages - MGS Publications DVD (MGS Member price)		\$150.00	
2000 50th Anniversary Symposium		\$20.00	
1999 Thrust Systems of the Helena Salient		\$20.00	
1998 8th Int'l Williston Basin Symposium		\$20.00	
1998 8th Int'l Williston Basin Symposium Core Workshop		\$20.00	
1997 Big Horn Basin Symposium		\$20.00	
1997 MGS-TRGS: The Edge of the Crazyes		\$20.00	
1997 AAPG - Rocky Mtn. Section Meeting / Abstract Volume		\$10.00	
1996 AAPG - Rocky Mtn. Section Meeting / Abstract Volume		\$10.00	
1993 Energy and Mineral Resources of Montana		\$20.00	
1991 6th International Williston Basin Symposium		\$20.00	
1991 Geology & Horizontal Drilling of the Bakken		\$20.00	
1991 AAPG - RMS Field Trip: Beartooth Mountains		\$7.50	
1991 AAPG - RMS Field Trip: Eagle Sandstone, Billings		\$7.50	
1991 RMS Field Trip #1 Nye-Bowler Linemont		\$7.50	
1991 Sequence Stratigraphy of Eagle Sandstone		\$7.50	
1990 Bakken Workshop Short Course Study Notes #1		\$10.00	
1989 Geologic Resources of Montana		\$20.00	
1986 Geology of the Beartooth Uplift		\$20.00	
1985 Montana Oil & Gas Fields		\$20.00	
1971 Stratigraphic Names of Montana		\$10.00	
1969 Economic Geology of Montana		\$20.00	
Shipping and Handling charges - \$5.00 per CD/DVD \$8.00 per book			
Total Due			

Billing / Shipping Information

Name _____ Company _____
 Address _____ City, State, Zip _____
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Please make checks payable to: Montana Geological Society. Visa and MasterCard also accepted.

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