MONTANA GEOLOGICAL SOCIETY NEWSLETTER Vol 63 No. 7

Inside this Issue:

P2 / **PRESIDENT'S LETTER** Our President discusses the season's in geology education -- field camps.



P7 / **IN THE NEWS** Browse headlines & read up on the latest updates in the wonderful world of science.

P3 / LIBRARY

Looking for a specific title to add to your geologic library? You may soon find it!



Check out additional information for the upcoming TRGS Field Conference, taking place in Deer Lodge July 25-28.



Contact Us: Find us on f mtgeo.org / montanageologicalsociety@gmail.com

PO Box 844 Billings, MT 59103

June 2019

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

President's Letter

Dear Membership,

Universities around the country are in their summer sessions. That means geology field camps are beginning to migrate to the great state of Montana! We have the whole gambit to offer these camps: 3 different tectonic regimes (thin-skinned, thick skinned and extensional), economic resources (including the only Pt-Pd mine in the country), sedimentary packages (some of which include dinosaur bones), glacial and fluvial geomorphology, and that doesn't even include the National Parks nearby! It's no wonder Montana is a stop for many geology field courses. Hopefully you'll run into students from these camps, either in the field or in town after a hard day's work. If you do, make sure to introduce yourself and talk to the students. They always appreciate hearing about geology from the real experts (not their professors).

Keep your eyes peeled for those camps! MGS President

2018-2019 MGS Officers

President

	Sarah Friedman	406-896-5931
Vice President/Speaker Coordinator		
	Tom Hewett	406-281-8203
Treasure	r	
	Spenser Kuhn	406-696-0268
Secretary		
	Felipe Pimentel	352-514-3607
Past Pres	rident	

Felipe Pimentel



Seeking: AAPG Representative

We are in need of a representative to the AAPG House of Delegates for 2019-2022. As the society's sole elected representative, the delegate shall attend the annual meeting at each year's ACE AAPG Conference.

If you're interested in serving as the either the primary or alternative delegate for MGS, please contact montanageologicalsociety@gmail.com

_____2 ____

Who's Who of the MGS

BOARD OF DIRECTORS Joe Carlisle Don French Robert Schalla Steven W. VanDelinder	
AAPG-ROCKY MOUNTAIN SECT	ION
Delgate: Mark Millard	
Alternate: Don French	
Foundation: Rob Diedrich 30.	3-830-5875
COMMITTEES	
Awards and Continuing Education:	
Felipe Pemintel	
Field Trips:	
Gary Hughes 861	-2072
University Liaison:	
Steven W. VanDelinder	
Publications:	
Duncan McBane 252	2-3170
Montana Oil & Gas Fields Update:	
Jim Halvorson 650	6-0040
PUBLICATION SALES Doretta Brush 259	9-8790
	0790
NEWSLETTER EDITOR	
Jessica Renstrom 208	8-2504

<section-header><text>

Books & Publications Available!

Long-time MGS Member Lawrence Monson has a large geologic library, including many textbooks, bulletins, and publications, available to members free of charge.
If you've been looking for a specific item to add to your collection or wish to inquire about the array of publications available, please contact him at geomon@nemont.net.

3 -



Website: https://rmsaapg2019.com/

Early Bird Registration (ends July 19) Professional - 1 day - \$150

Professional - 1 day - \$175

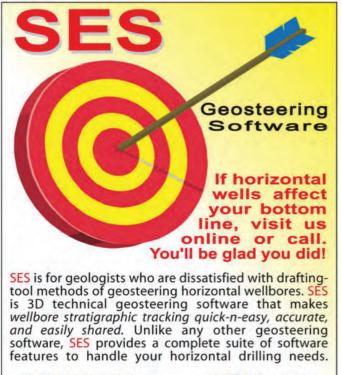
Student also attending Rocky Mtn Rendezvous - \$20 Valid Student ID and/or proof of registration to

Registration includes the technical program, icebreaker, admittance to exhibit hall and happy hour events.

Call for Photos!

Do you have photos of past MGS events, MGS members, or Montana geology? If so, we'd like to see them!

For a chance to have your photo featured in the MGS Newsletter & MGS Facebook page, please submit your high-resolution photograph(s) and full name to montanageologicalsociety@gmail.com





Interested in placing an ad?

Contact Jessica Renstrom at montanageologicalsociety@gmail.com with your ad, or request pricing to create one for your business or event.

> 2019 Advertising Rates: Full Page - \$100/month Half Page - \$50/month Quarter Page - \$25/month **Business Card- \$10/month**

All ads must be prepaid. Send payment to: MGS, PO Box 844 Billings, MT 59103

ENVIRONMENTAL CONSULTING SERVICES

Hydrology | Geology | Engineering | GIS

NEPA: CAT EX/EA/EIS GIS

5

Environmental Compliance Water Management

Environmental Due

HydroSolutions'

- Expert Testimony
- **Engineering Design**
 - Diligence Environmental Permitting Remediation

Independent Expertise in Water Resources and the Environment

BILLINGS :1500 Poly Drive Suite 103 | Billings, MT 59102 | 406.655.9555 HELENA : 303 Clarke Street | Helena, MT 59601 | 406.443.6169





consulting scientists and engineers

Hydrometrics, Inc.

Founded in 1979, Hydrometrics provides an expansive range of science and engineering services for the oil and gas and mining industries, ranging from the Arctic Circle to South America.

- Oil & Gas Industry Support
- Refinery & Marketing Terminal **Environmental Support**
- Civil, Geotechnical, Chemical, Geological, and Environmental Engineers
- Hydrogeology, Geochemistry, and **Reclamation Specialists**
- Permitting and Compliance
- EA and EIS Support
- Remedial Investigations and Construction
- SPCC and SWPP Preparation
- Dam Design and Investigation
- Water Rights
- Solid and Hazardous Waste Management
- Power Probe and Auger Drilling

Helena (406) 443-4150 • Billings (406) 656-1172 Missoula • Kalispell • Coeur d'Alene www.hydrometrics.com



Providing geoscience expertise and technology to the field and office since 1981

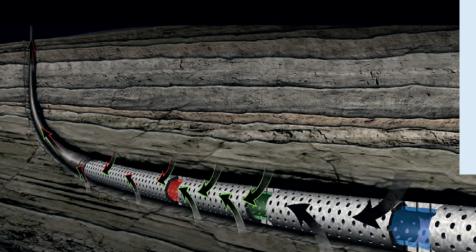
Well Site Geology Geosteering - On site & Remote Rock Analytics Geologic Prognosis/Mapping Oil Field Safety Training - PEC Regulatory Representation

NAMES OF A

406.259.4124

sunburstconsulting.com

Inflow intelligence to improve well productivity at a fraction of PLT costs.





Know more, spend less with Inflow, the smarter way to gather data from your reservoir.

A Tracer Production Log[™] gives long-term data to help you optimize field development:

- Maximize full field potential at a dramatically lower cost than a PLT
- Determine clean out efficiency
- Obtain years of oil inflow data along the length of a wellbore by surface sampling
- Identify position and quantify water inflow over several years
- Measure packer / plug / sleeve integrity

Know where you are and where you want to be.

www.tracerco.com/reservoir-characterisation



Geology: In the News

"Plate tectonics may have driven 'Cambrian Explosion'"

"The quest to discover what drove one of the most important evolutionary events in the history of life on Earth has taken a new, fascinating twist."

To read the article, please visit: https://www.sciencedaily.com/releases/2019/06/190619130315.htm

"Antarctic marine life recovery following the dinosaurs' extinction"

"A new study shows how marine life around Antarctica returned after the extinction event that wiped out the dinosaurs. A team studied just under 3000 marine fossils collected from Antarctica to understand how life on the sea floor recovered after the Cretaceous-Paleogene (K-Pg) mass extinction 66 million years ago. They reveal it took one million years for the marine ecosystem to return to pre-extinction levels."

> To read the rest of the article, please visit: https://www.sciencedaily.com/releases/2019/06/190619104642.htm

"Study provides new insight into origin of Canadian Rockies"

"Research suggests the mountains formed in a westward collision event more than 100 million years ago." To read the article, please visit: https://www.sciencedaily.com/releases/2019/06/190606150328.htm

7 -

Tobacco Root Geological Society 44th Annual Field Conference Deer Lodge, Montana, July 25-28, 2019

Deer Lodge is central to the Boulder Batholith and Elkhorn Mountains volcanic field, the Anaconda Metamorphic Core Complex, the Gold Creek placer mines, and the Butte and Anaconda mining districts and their notorious industrial superfund sites. Deer Lodge is also home to the Old Montana Prison and the Grant Kohrs Ranch National Historic Site. It is the ideal base camp for a diversity of geologic field trips and outdoor adventures.

The regional geologic history is rich and varied. Cordilleran folding and thrusting was accompanied by emplacement of the Late Cretaceous Boulder Batholith and Elkhorn Mountains volcanic field. The comagmatic batholith and volcanic field preserve an unusually complete record of Cordilleran continental arc magmatism. Eocene collapse of the fold-thrust belt was marked by caldera-forming eruption of the Lowland Creek volcanic field, extension along low angle detachments, and formation of Anaconda Metamorphic Core Complex. Precious and base metal mineralization—including formation of the Butte Hill copper deposits--accompanied every stage of contraction, collapse, and magmatism.

The region is still seismically active, continuing the basin-and-range-style block faulting that created deep basins in the Deer Lodge, Elk Park, and Whitetail valleys, and lateral transtension in the Lewis and Clark Zone.

Contacts:

Kaleb Scarberry, field trip and paper submissions kscarberry@mtech.edu (406)496-4743

Colleen Elliott, logistics celliott@mtech.edu (406)496-4143

Petr Yakovlev, logistics pyakovlev@mtech.edu

Venue: Powell County High School 709 Missouri Ave, Deer Lodge Want to help with the conference? Contact Sandy Underwood at SandyUnderwood903@hotmail.com

-8 _____

MONTANA GEOLOGICAL SOCIETY Billings, MT 59103

P.O. Box 844

Membership R	enewal
--------------	--------

Last Name		
First Name		Middle Initial
ANNUAL DUES:		
\$20.00 Regula	r	
\$10.00 Studen	t	
*****	******	******
Please update the has changed:	e information below if neede	ed. Please leave blank if nothing
Company/Affiliation	1	
Mailing Address (w	ork or home)	
Street		
City	State	Zip
Phone (w)	Phone (h)	Phone (c)
E-Mail		
	ease circle) YES NO	
Education (School, 1	Degree, Year)	
Degree #1		

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 Crazies	\$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

Email Address ____

Ν	a	n	е
---	---	---	---

Address _____ City, State, Zip _____

Company _____

Please make checks payable to: Montana Geological Society. Visa and MasterCard also accepted.

Visa / MasterCard (circle one)	Expiration Date
Name as it appears on the Card	
Phone Number ()	

Mail orders: Montana Geological Society, PO Box 844, Billings, MT 59103 Email orders: dbrush@ballardpetroleum.com Phone orders: Doretta Brush (406) 281-8228