

February 2019



# MONTANA GEOLOGICAL SOCIETY NEWSLETTER

Vol 63 No. 3



## Inside this Issue:



### **P2 / PRESIDENT'S LETTER**

Our President is looking forward to warmer weather as snow blankets our state & many more.



### **P5 / LUNCHEON**

Send in your RSVP for the upcoming March MGS Luncheon featuring guest speaker Julia Reece.



### **P7 / COLLOQUIUM**

Hosted by Montana State University, the Earth Sciences Student Colloquium is scheduled for April 17.



### **P7 / CALL FOR PAPERS**

Check out deadlines and additional information for the upcoming Field Conference of the Tobacco Root Geological Society.

## **Upcoming Event:**

Mar 28 - MGS Luncheon - Julia Reece (*see page 5*)

Contact Us:

[mtgeo.org](http://mtgeo.org) / [montanageologicalsociety@gmail.com](mailto:montanageologicalsociety@gmail.com)

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

Find us on 

PO Box 844  
Billings, MT 59103

# President's Letter

Dear Membership,

What a cold and snowy month it has been! I yearn for the warm days of summer, so that I may see all the Montana rocks in their glory. Instead I find myself traveling south, to Palm Springs, CA, only to have this weather follow me! It feels as if there is no escape. The dry desert landscape is covered in a dusting of snow, and the rocks are hiding from me!

All I can do now is look forward to all the events planned for in the Spring. Field trips with students, community event projects to work on, and that wonderful sun with long daylight hours! It can't get here fast enough for me.

Stay warm everyone!

MGS President,

Sarah Friedman

## 2018-2019 MGS Officers

President	Sarah Friedman	406-896-5931
Vice President/Speaker Coordinator	Tom Hewett	406-281-8203
Treasurer	Spenser Kuhn	406-696-0268
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Past President	Felipe Pimentel	

*It's not too late! Don't forget to...*  
**Renew your MGS Membership!**

*Use our convenient online renewal  
system at [mtgeo.org](http://mtgeo.org),  
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at the back of the Newsletter!*



## Who's Who of the MGS

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or find?*

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Contact the Newsletter Editor for more information.



# In the Community

## Looking for Judges!

2019 Science Expo  
March 22-23, 2019



The 2019 Science Expo is a fantastic opportunity for local youth to display their hard work, creative abilities, and scientific interests. This event also provides MGS members with the incredible opportunity to connect with local students and serve the community as judges. They are currently seeking volunteer judges in the industry to help judge student posters. Past volunteers from MGS have had a wonderful time viewing students' ideas and were impressed by the array and quality of projects.

Judging is on Friday, March 22nd, orientation and dinner (provided for free) starts at 5 PM. Activities usually wrap up by 9 or 10 PM.

If you're interested in volunteering as a judge at this year's Science Expo, please visit:

<http://www.msubillings.edu/scienceexpo/judges.htm>

When prompted with "I wish to judge..." members should select "special industry awards"

## Thank you!

Thanks to your membership & contributions, we are able to make an impact in students' lives.

The photo to the left showcases notes of gratitude sent to the MGS for a recent donation for a class trip for Billings West High.



# MGS Luncheon Meeting

**Thursday, March 28<sup>th</sup>, 2019**

**12:00 PM at the Billings Petroleum Club**

**Save the Date!**

**RSVP – [montanageologicalsociety@gmail.com](mailto:montanageologicalsociety@gmail.com)**



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**JULIA REECE**

**INTERNATIONAL OCEAN DISCOVERY PROGRAM (IODP) LECTURER**

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## ***Mud and Bugs Under Stress: Compression of Marine Sediments Beneath the Seafloor***

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Fine-grained sediments such as mudstones are the most common sedimentary rocks preserved close to Earth's surface. Mudstones are very susceptible to developing significant amounts of overpressure because their low permeability and high compressibility prevent pore fluids from draining. This can result in seepage, submarine landslides, or damage to offshore infrastructure. Additionally, mudrocks are fundamentally important as source, seal, and shale gas/oil reservoirs in petroleum systems or as seals for anthropogenic-related storage. In spite of the importance of mudstones to significant hazards and industry endeavors, a systematic, process-based understanding of the controls on hydromechanical properties in mudstones remains elusive. To study these questions Dr. Reece fabricates mudstones in her laboratory from natural, marine sediments, acquired through the International Ocean Discovery Program and its predecessors, using a technique called resedimentation. Resedimentation simulates the natural process of deposition and shallow burial under controlled conditions, is repeatable, and eliminates the problem of coring disturbance associated with testing on intact cores. Therefore, resedimentation is an ideal method for the study of fundamental mechanical behavior of marine sediments. In combination with microscale imaging techniques it also reveals how porosity, permeability, and fabric evolve with burial. Dr. Reece particularly focuses on the interactions between fine-grained detrital particles, microorganisms, microfossils, and pore fluid and their roles in early diagenesis. Here, Dr. Reece will present results from investigations of early chemical and physical diagenesis using mudstones from the Gulf of Mexico (IODP Expedition 308) and offshore Japan (IODP Expedition 322).

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### **Biography**

Dr. Reece is an assistant professor in the College of Geosciences at Texas A&M University and studies the hydromechanical behavior of marine sediments. She was a Schlanger Ocean Drilling Fellowship recipient and participated in two IODP Expeditions (Expeditions 308 and 322).



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fourteenth  
annual  
**Earth Sciences  
Student  
Colloquium**

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***Location:***

***Student Union Building, Ballroom A  
Montana State University  
Bozeman, MT***

***When:***

***WEDNESDAY, April 17, 2019  
8:30AM until 7:30PM***

- Highlighting student research in the Earth sciences
  - **Free and open to the public**
- 

- **Research presentations**
- **Pro-Panel Discussion**
- **Free banquet dinner**

*Full schedule online:  
[montanaesc.wordpress.com](http://montanaesc.wordpress.com)*

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**Keynote Lecture  
by Dr. Sara Wylie**

Assistant Professor  
Sociology & Health Science  
Northeastern University

*Author of Fractivism: Corporate Bodies and Chemical Bonds.  
An ethnographic study of the role science based NGOs played in the emergence of public concerns about the human and environmental health impacts of chemicals used in natural gas extraction, particularly hydraulic fracturing.*



April 17 2019 **6:30 PM**

Keynote address @

For more information, please contact  
[msu.earthsciences.colloquium@gmail.com](mailto:msu.earthsciences.colloquium@gmail.com)





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***Billings, MT 59103***



**TOBACCO ROOT GEOLOGICAL SOCIETY 44th ANNUAL FIELD CONFERENCE  
DEER LODGE, MONTANA, JULY 25–28, 2019**



*Flint Creek Range west of Deer Lodge*

**CALL FOR FIELD TRIP LOGS, PAPERS AND CONFERENCE VOLUNTEERS**

Join us for the annual TRGS Field Conference in Deer Lodge this July. We welcome proposals for field trips, posters, and papers about any aspect of the geology surrounding Deer Lodge. Field guides, abstracts, and papers will be published in *Northwest Geology*, the annual publication of TRGS. Please contact Kaleb Scarberry (kscarberry@mtech.edu) by **March 15, 2019** with your proposed titles. Submission guidelines are posted at <https://www.trgs.org/northwest-geology>. All manuscripts and road logs must be received by **April 15, 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

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(406)496-4743

Colleen Elliott, logistics

[celliott@mtech.edu](mailto:celliott@mtech.edu)

(406)496-4143

Petr Yakovlev, logistics

[pyakovlev@mtech.edu](mailto:pyakovlev@mtech.edu)

Want to help with the conference? Contact Sandy Underwood at

[SandyUnderwood903@hotmail.com](mailto:SandyUnderwood903@hotmail.com)

### **Venue:**

Powell County High School

709 Missouri Ave, Deer Lodge

**Accommodations and Meals:** There are two camp grounds in town, and rustic camping in the nearby Deer Lodge National Forest. For attendees who eschew camping, hotels and restaurants could be a more civilized option. We recommend making reservations early. See more details at the 2019 TRGS web address for this (<https://www.trgs.org/field-conference>). Details on catering will be published with the formal conference registration announcement on June 1, 2019.



**Hotels:**

Western Big Sky Inn  
210 N Main St, Deer Lodge, MT 59722  
(406) 846-2590

Travelodge by Wyndham Deer Lodge Montana  
1150 N Main St, Deer Lodge, MT 59722  
(406) 545-2858

Budget Inn  
809 Main St, Deer Lodge, MT 59722  
(406) 846-2810

**Campgrounds:**

Indian Creek Campground  
745 Maverick Ln, Deer Lodge, MT 59722  
(406) 846-3848  
<http://indiancreekcampground.net/>

Deer Lodge KOA  
330 Park St, Deer Lodge, MT 59722  
(406) 846-1629  
<https://koa.com/campgrounds/deer-lodge/>

Bernie & Sharon's Riverfront RV Park  
Garrison MT, 11 miles north of town  
<http://www.riverfrontrvparkmt.com/>

Racetrack Campground  
Deer Lodge National Forest  
12 miles south and west of town  
<https://www.fs.usda.gov/recarea/bdnf/recarea/?recid=5746>

Lost Creek State Park  
30 miles south and west of town  
<http://stateparks.mt.gov/lost-creek/>

**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

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Education (School, Degree, Year)

Degree #1 \_\_\_\_\_

Degree #2 \_\_\_\_\_

Degree #3 \_\_\_\_\_



# MONTANA GEOLOGICAL SOCIETY

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2006 AAPG Datapages - MGS Publications DVD		\$180.00	
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