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MONTANA GEOLOGICAL SOCIETY

NEWSLETTER

Vol. 62 No. 10



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Don't forget to register for RMAG's November Core Description Workshop, and mention the MGS to receive discount pricing for the course!

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President's Letter

Membership,

With officer elections coming up about to begin, I wanted to take a moment to introduce the newest candidate to join the team of officers, Nicole Bradley.

Being from Lebanese descent, Nicole was born and raised in Roanoke, Virginia, where there is a large Lebanese community. She grew up with her parents and a large extended family. After graduating high school in 1998, Nicole tried her hand at mechanical engineering, but soon found her interests focusing within the Geosciences department at Virginia Tech (GO HOKIES!). After graduating in 2004 with a Geosciences/Geochemistry degree, she furthered her education with a Geography/GIS degree in 2006, and soon thereafter moved to Montana with her husband, who obtained a job in the oilfield. First living in Missoula, and not sure what to think of it, they moved to Billings, Montana for more options. Nicole has previously worked for the Bureau of Mines and Geology as a research assistant, and at Sunburst Consulting as a Well-site Geologist. In 2016, Nicole and her husband had a little boy, who is now a chunky toddler. After being a stay-at-home mom, she decided to go back to work, and is currently a lab technician at Pace Analytical Services here in Billings.

Nicole will be joining the existing team of MGS officers, Sarah Friedman who will be running for president, Tom Hewett (Speaker Coordinator), and Spenser Kuhn (Treasurer), and I will be assisting as Past President. You will be receiving an election ballot email soon. If you would like to get more involved with the MGS, there are other opportunities so please reach out to one of us.

I also wanted to share some interesting news I came across recently. A team of researchers led by Trent University's Professor Ian Power has developed an accelerated way to produce magnesite ($MgCO_3$) at room temperature — a mineral which can capture the greenhouse gas carbon dioxide (CO_2) from the atmosphere. Their work explained in detail the process and speed of magnesite formation in nature which takes hundreds of thousands of years at Earth's surface. The team of researchers was able to show that by using polystyrene microspheres as a catalyst, magnesite would form within 72 days. The process takes place at room temperature meaning it is energy efficient.

The next steps in this research would be scaling up the process significantly to be used in atmospheric carbon sequestration. Pretty encouraging stuff!

Thanks for reading,

Felipe Pimentel
MGS President

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Officer Elections Are Coming Up!
Watch your inbox for your ballot

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“Geoscientists find unexpected 'deep creep' near San Andreas, San Jacinto fault”

“A new analysis of thousands of very small earthquakes in the San Bernardino basin suggests that the unusual deformation of some may be due to 'deep creep' 10 km below the Earth's surface”

To read the article, please visit:

<https://www.sciencedaily.com/releases/2018/09/180918131713.htm>

“Geologists reveal ancient connection between England and France”

“The British mainland was formed from the collision of not two, but three ancient continental land masses”

To read the rest of the article, please visit:

<https://www.sciencedaily.com/releases/2018/09/180914084835.htm>

“Volcano under ice sheet suggests thickening of West Antarctic ice is short-term”

“Evidence left by a volcano under the ice sheet suggests that the observed bulging of ice in West Antarctica is a short-term feature that may not affect the glacier's motion over the long term”

To read the article, please visit:

<https://www.sciencedaily.com/releases/2018/09/180906100451.htm>

Educator Spotlight

The following article is written by Jessica Dufresne, Daly Elementary librarian, who was chosen as a participant in the National Park Service's Teacher Program to learn more about the geology of the Bitterroot Valley and Ice Age Floods National Geographic Trail.

I have countless memories from childhood sitting in the back seat of the car, the Montana landscape zooming past me while my mother, Lynne Dickman, a USFS Geologist, read from the Roadside Geology of Montana book. Her enthusiasm left me full of wonder. Growing up in Missoula, the strandlines on Mt. Jumbo and Mt. Sentinel were constants. It was as if every land formation, every rock contained a thousand mysteries waiting to be unearthed.

Fast forward thirtysome years- thanks to Teacher Ranger Teacher, a National Parks Service program to help teachers become more familiar with educational resources and opportunities in National Parks, I again found myself staring at every rock and land formation with the wide-eyed wonder of a child. As the TRT for the Ice Age National Geologic Trail, the mystery to be unearthed this go around was Glacial Lake Missoula and it's mind-blowing flood.

I had an amazing support system as I journeyed across three states and back in time to explore Glacial Lake Missoula and its impact on the local landscape. My local hosts included the Bitter Root Cultural Heritage Trust and the Montana Natural History Center. I also received tremendous help from the Missoula Chapter of the Ice Age Floods Institute, the Ravalli County Museum and the Paradise Center. Piece by piece, conversation by conversation, and trip by trip, the mystery of Glacial Lake Missoula unraveled before me.

My adventure began with George Furniss, a professor at the Bitterroot College, and members of the Missoula Ice Age Institute. They lead me south of Hamilton, crossing from Roaring Lion to Lost Horse and finally to Lake Como. There we saw beach sand deposits from Glacial Lake Missoula, glacial erratics, and the Glacial Lake Missoula rock at Lake Como. George told the story of the Bitterroot's amazing geology and started me on my Ice Age Floods National Geologic Trail journey.

Next, my mother, Kristine Komar of Bitter Root Heritage Cultural Trust, and I once again hopped in a car to explore the natural world. We visited the Paradise Center and their interactive topographic relief map of the entire Glacial Lake Missoula area. We travelled past the Eddy Narrows, Rainbow "Dog" Lake, the Markle Pass Kolks, and the Camas Prairie Ripples. Later in the summer, my mother and I once again zipped in her car for a trip through the Stevensville area, comparing Joseph T Pardee's original sketch of the Three Mile Lake lines to the hillside



cont. on page 6

along the road. We traced down an erratic on a dirt road and stood by Lone Rock's and imagined the power of a flood that could have moved a rock that large.

Finally, we took a detour coming back from a family trip to the Washington coast, hauling our fifth wheel through the scablands of Eastern Washington. This was a fantastic way to end the physical exploration of the Glacial Lake Missoula because not only did it allow me to wrap my mind around the size and scope of the lake and its far reaching impact, but it provided a generational connection, as I took the role of my geologist mother, pointing out the land formations to my children, Finn and Lila, in hopes that would wonder how a lake that filled the Bitterroot Valley and beyond could possibly have impacted the landscape hundreds and hundreds of miles away.

My TRT adventure concluded with what I hope will be a wonderful compilation of resources for the Bitterroot Valley and beyond. Working with the Natural History Museum's existing Glacial Lake Missoula Curriculum, I've added features for the Bitterroot and compiled resources for the teachers. I am partnering with the Bitterroot Cultural Heritage Trust and the Ravalli County Museum to develop a speaker series and activities for the museum to use. Some of the materials I've gathered will be used to make a brochure in hopes that more people will explore the features of the Bitterroot.

As a librarian, I seek to make resources available to teachers and students as well as make connections. The TRT program opened my eyes to a wealth of information that should have a tremendous impact in the school. It was a wonderful adventure that I hope inspires others to look at the natural world with the keen eyes and awe of a geologist.

Jessica Dufresne



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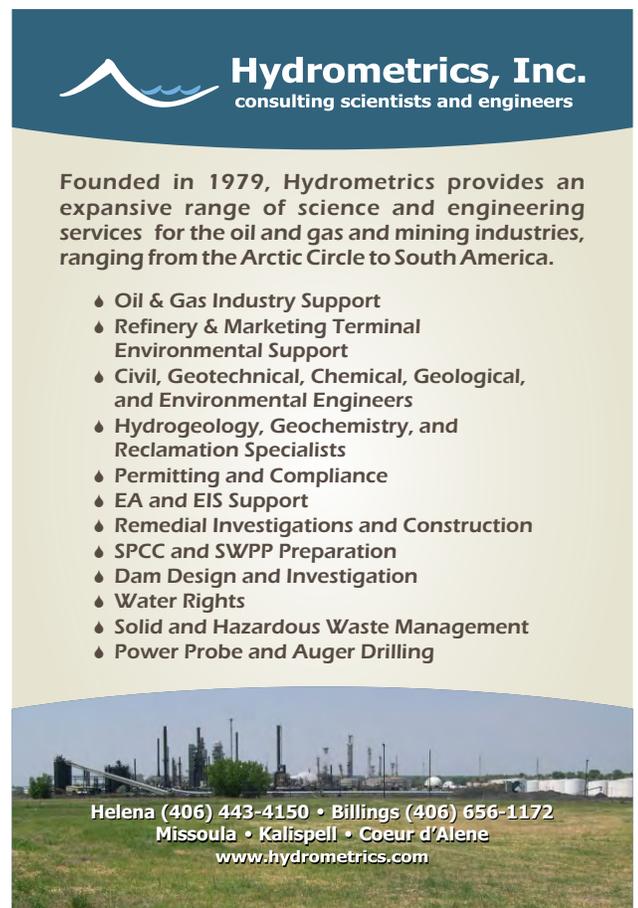
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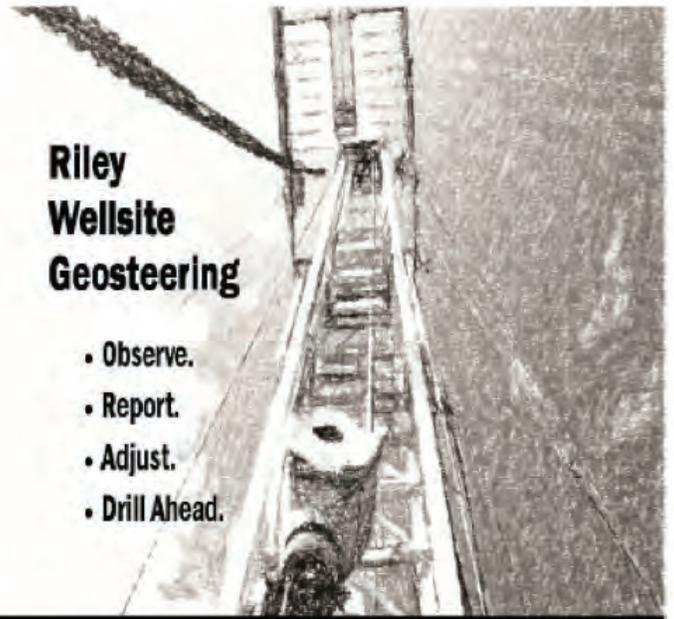
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