

# MGs Luncheon Meeting

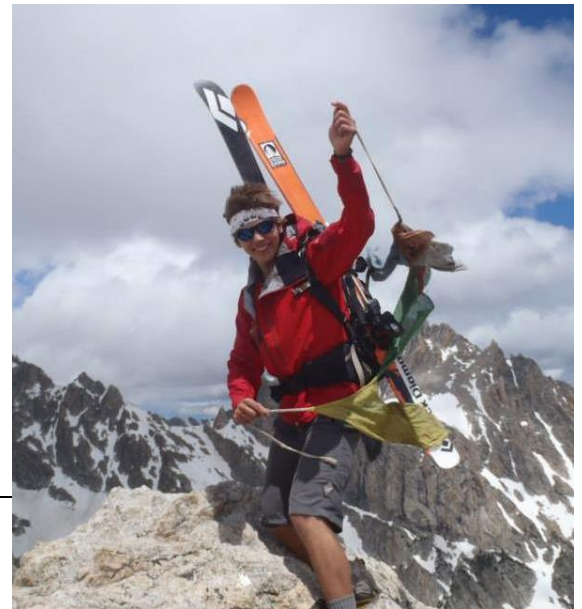
**Tuesday April 26<sup>th</sup>, 2016**

**11:45 am – Billings Petroleum Club**

**Please join us for lunch (\$14) and the talk (no charge)**

RSVP – [montanageologicalsociety@gmail.com](mailto:montanageologicalsociety@gmail.com) , or 406-259-8790

An email reminder will be sent 3 days prior to the talk



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## STUART PARKER

Master's Candidate, Structural Geology/Tectonics

2015 MGS Scholarship Award Recipient

University of Montana

Missoula, Montana

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## *Polycyclic Quartzite Conglomerates of the Northern Basin and Range Province*

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The Late Cretaceous Beaverhead Group crops out across much of southwest Montana and Idaho. The Divide quartzite conglomerate unit has long been assigned to the Beaverhead Group but has never been directly dated. A consistent northerly transport direction within the Divide unit is anomalous to the Beaverhead. Interbedded Kilgore Tuff (4.5 Ma) suggests deposition into the Pliocene. These conflicts with age and source suggest that the Divide unit is a much younger deposit than the Cretaceous Beaverhead. This study will provide a revised interpretation for the Divide unit, highlighting the complex geological history of recycled quartzite from the Cretaceous to the present.

Evidence for a Tertiary, rather than Cretaceous, age demands a reinterpretation of the structural evolution of this gravel deposit. This presentation will provide an alternative model for recycling of Laramide conglomerates, syntectonic deposition in the Tertiary and ultimately emergence of an active Centennial shear zone in the Quaternary. This model for sedimentation and deformation, will be used to improve our tectonic timeline for the region. Recycling of persistent quartzite cobbles throughout the region has long been overlooked and misinterpreted. This investigation will use subtle changes within these multi-cyclic deposits to address multiple phases of extension and ultimately shear within the northern Basin and Range.

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## Biography

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Stuart Parker is a graduate of the University of North Carolina – Asheville (2014). During his undergraduate career, his time was split between the greater Yellowstone area and the Appalachians. Through the National Student Exchange program, he studied at Montana State University, where he gained an interest in Basin and Range tectonics and the Yellowstone Hotspot. While in Asheville, he worked with the NC State Minerals Research Lab, focusing on pilot plant design. Currently, Stuart is pursuing a Master's degree at the University of Montana. In the coming months he will present his thesis to the department before spending his summer instructing in the field.