

MGS Luncheon Meeting

Friday, April 21st

11:45 am – Billings Petroleum Club

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

RSVP – montanageologicalsociety@gmail.com

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



CRYSTAL NIELSEN

2016 MGS SCHOLARSHIP WINNER

Student - Montana State University, Bozeman

Gravelly Range: Tertiary Geology and Vertebrate Paleontology

Geological and paleontological field research in the Gravelly Range of Southwestern Montana was done the summer of 2016 to collect data to refine the age and paleoenvironments of Tertiary strata exposed throughout the south-central part of the mountain range. Vertebrate fossil specimens were collected for preparation and stratigraphic sections were compiled to help correlate and interpret the depositional environments for separate localities in the Black Butte, Lion Mountain, and Tepee Mountain areas, where Tertiary strata is thickest. Collected fossil vertebrate specimens are currently in the process of preparation at the Alf Museum, Claremont, California. Vertebrate fossils collected include *Rapamys* skulls; *Miohippus*, *Palaeolagus*, and *Rapamys* teeth; and *Brontotheridae* tibia, patella, and radius fragments. Interpreted depositional environments include alluvial, primarily floodplain settings and aeolian events. This initial work is to be followed up by two more years of work with finalized fossil data to further constrain ages and new field collections. Additional geologic work, including detailed geological mapping and supplementary stratigraphic section measurements, needs to be done to help determine the overall geologic history of this part of the Gravelly Range.

Biography

Crystal Nielsen is an undergraduate student at Montana State University, Bozeman MT, studying Earth Sciences with a concentration in Geology and a minor in Geographic Information Systems. She took up an interest in sedimentation and stratigraphy while taking a sedimentation and stratigraphy class taught by Dr. Debra Hanneman (Whitehall Geogroup, Inc.). Crystal was later invited by Hanneman to attend a short trip with herself, Dr. Don Lofgren (Webb Schools and Raymond M. Alf Museum of Paleontology), and Alan Tabrum (Carnegie Museum of Natural History) around Southwestern Montana prospecting Tertiary exposures in the summer of 2015, leading to the opportunity to work with Hanneman and Lofgren in the Gravelly Range of SW Montana in the summer of 2016, doing geological and paleontological field work in Tertiary strata.