Kerry Riley

Dept. of Physical and Environmental Sciences, Colorado Mesa University
Phone: 970-248-1694 **Email:** kriley2@coloradomesa.edu

EDUCATION:

Ph.D. (Geology) ***2019***
Utah State University, Logan, UT
Dissertation: *Quaternary Geomorphology in the Grand Staircase Region of the Colorado Plateau: Understanding Arroyo Cut-Fill Dynamics, Erosion Rates, and Wildfire*
Adviser: Dr. Tammy Rittenour
Committee members: Dr. Joel Pederson, Dr. Patrick Belmont, Dr. Joe Wheaton, Dr. Justin DeRose

M.A. (Hydrologic Science) **2012**
Boise State University, Boise, ID
Thesis: *A 14,000-year Record of Fire and Alluvial Fan Deposition Reveals Relationships Among Fire, Climate, Vegetation and Sediment Yields in the Middle Fork Salmon River, Idaho*
Adviser: Dr. Jennifer Pierce
Committee members: Dr. Ben Crosby, Dr. Elowyn Yager

B.A. (Majors: Physical Geography and Environmental Science) **2004**
University of Colorado, Boulder, CO

TEACHING EXPERIENCE:

Instructor of Geology – (2018-2019)

GEOL 103 Weather and Climate – Colorado Mesa University: Fall/Spring – 2018/19 (3 credits, ~90 enrollment)

GEOL 104 Oceanography – Colorado Mesa University: Fall/Spring – 2018/19 (3 credits, ~90 enrollment)

GEOL 250 Environmental Geology – Colorado Mesa University: Fall - 2018 (3 credits, 9 enrollment)

GIST 332 Introduction to GIS – Colorado Mesa University: Spring - 2019 (3 credits, 10 enrollment)

GEOL 305 Cartography – Colorado Mesa University: Spring - 2019 (1 credit, 10 enrollment)

GEOL 333 Geology of Canyon Country – Colorado Mesa University: Spring - 2019 (1 credit, 15 enrollment)

GEOL 480 Summer Field Camp – Colorado Mesa University: Spring - 2019 (6 credits, 15 enrollment)

Instructor – (2012-2016)

GEOL 3100 Natural Disasters - Utah State University: Summer - 2015 / 2016 (3 credit, 21 and 19 enrollment)

USU 1010 Connections - Utah State University: Fall - 2013 (1 credit, 18 enrollment)

USU 1010 Natural Connections - Utah State University: Fall - 2014 (1 credit, 31 enrollment)

GEOS 313 Geomorphology, Boise State University: Spring - 2012 (4 credit, 25 enrollment)

Teaching Assistant – (Utah State University, UT)
Course: Geol 1115 Physical Geology Spring 2018 (4 credit, 45 students).
Course: Geol 6800 Optically Stimulated Luminescence Short Course Summer 2013 (3 credit, 9 students

GK-12 National Science Foundation Fellowship - (2010-2011) Boise State University, ID
A teaching collaboration between Boise State University and the Foothills Environmental Education Learning Center integrating scientific research into non-traditional informal education.

PUBLICATIONS AND REPORTS

Riley, Kerry E., et al. "Erosion rates and patterns in a transient landscape, Grand Staircase, southern Utah, USA." Geology (2019).

Riley, K, Pierce, J., and Meyer, G. A., 2015, Vegetative and climatic controls on Holocene wildfire and erosion recorded in alluvial fans of the Middle Fork Salmon River, Idaho. The Holocene, 25(5), pp. 857-871.

Riley, K., 2011, Fire geomorphology: Interactions among climate, fire, and vegetation. Vignette In. Bierman and Montgomery, Key Concepts in Geomorphology. http://serc.carleton.edu/60019.

Riley, K., 2011, Fire geomorphology: Fire-related erosion helps to shape our landscapes. Vignette In. Bierman and Montgomery, Key Concepts in Geomorphology. http://serc.carleton.edu/60020.

Augembaugh, K., Harvey, B., Hayes, J., Kernan, K., Marion, D. A., Peterson, J, Pipkin, A., **Riley, K.,** and Kaye, M.. 2009, Fire on the Mountain. In. Speer, Jim (Ed.) The 19th annual North American Dendroecological Fieldweek: Final Report. pp 14-48.

Augembaugh, K., Harvey, B., Hayes, J., Kernan, K., Marion, D. A., Peterson, J, Pipkin, A., **Riley, K.**, and Kaye, M.. 2009, *Quercus Rubra* Tree Ring Chronology. International Tree-Ring Data Bank.
http://www.ncdc.noaa.gov/paleo/treering.html

PUBLICATIONS IN PREPARATION

2019. **Riley, K**., DeRose, J., Rittenour, T., and Pierce, J, Mid-late Holocene climate-fire relationships on the Colorado Plateau, USA. Holocene.

2019. **Riley, K.,** Rittenour, T., Pederson, J., and Belmont, P., Temporal and spatial patterns in paleo-erosion rates in a disequilibrium landscape over 100 ky of climate change. Quaternary Science Reviews.

2019. **Riley, K**. and Rittenour, T., Late Holocene arroyo dynamics in southern Utah: a balance between climate forcing and geomorphic thresholds. GSA Bulletin.

2019. **Riley, K**., Pierce, J., and Hopkins, A., Climate, fires, and debris flows control long-term sediment yields in the Middle Fork Salmon River, Idaho. Geology.

INVITED TALKS

West Virginia University Geology Department Seminar Series (Morgantown, WV - 2017) – "Alluvial Sediments Reveal Relations among Climate, Lithology, Erosion Rates, and Geomorphic Thresholds in the Grand Staircase Region of the Colorado Plateau"

Geological Society of America National Conference (Denver, CO - 2016) – "Using Cosmogenic Nuclides to Understand the Connection between Erosion Rates, Environmental Factors, and Landscape Response"

American Fisheries Association Talk (Boise, ID - 2013) - "Climate, fire, and vegetation change provide primary controls on geomorphic response in the MFSR: Evidence from a 14,000-year record"

PROFESSIONAL DEVELOPMENT AND SERVICE:

STEM fair for high school on the Navajo Reservation in SE Utah (Montezuma Creek, UT – 2018)

Friends of the Pleistocene Field Trip Participant (Moab – 2018)

Ecology Center Seminar Series Committee, Utah State University (2013/2014/2015/2016/2017)

Presented at the Friends of the Pleistocene Field Trip (Salmon and Payette Rivers, Idaho - 2017)

Organized and Led the Friends of the Pleistocene Field Trip (Grand Staircase, southern Utah - 2016)

Preparing for an Academic Career in Geosciences Workshop (Madison, WI - 2015)

Internship at the University of Wyoming (Laramie, WY – 2015) – Cosmogenic Nuclide Berryllium-10 Laboratory

Internship at the University of California Irvine (Irvine, CA – 2015) – Radiocarbon AMS Laboratory

Grant Writing Workshop (Logan, UT – 2013 and 2015)

Sediment Transport Short Course (Logan, UT – 2013)

Optically Stimulated Luminescence Short Course (Logan, UT – 2012)

Software Carpentry Bootcamp (Logan, UT – 2013) – Two-day programming workshop

Friends of the Pleistocene Field Trip Participant (Owyhee's – 2011)

Friends of the Pleistocene Field Trip Participant (Path of the Bonneville Flood – 2011)

GK-12 Presentation Boot Camp (Washington DC - 2011)

EPSCOR National Conference (Coeur d'Alene, ID - 2011) – Student Event Coordinator

Boise Watershed Environmental Education Center volunteer (Boise, ID – 2009 - 2010)

Friends of the Pleistocene Field Trip Participant (Henry Mountains Utah - 2010)

Internship at the University of Arizona Accelerator Mass Spectrometry Lab (Tucson, AZ- 2010)

North American Dendro-ecological Field week (Hampshire College, MA - 2009)

Women's Leadership Conference (Boise, ID - 2009)

Friends of the Pleistocene Field Trip Participant (Lees Ferry, AZ - 2009)

AmeriCorps Member (Gainesville, FL - 2008)

National Interpretive Guide Training and Certification (Syringa, ID- 2005)

AWARDS AND SPECIAL RECOGNITION

- Outstanding Graduate Researcher from Utah State University (2016)
- Outstanding Student Paper Award, American Geophysical Union (2011) - Wildfires, debris flows, and climate: Using modern and ancient deposits to reconstruct Holocene sediment yields in central Idaho.
- EPSCOR Western Consortium Tristate Conference Best Student Poster Award (2011)
- Science in Minute Finalist (2011) – Contest top four finalists: created 90-second video using new technology demonstrating an exploding volcano to grade K-12 students.
- John Montagne Award (2010) – GSA Student Research Grant recipient and award. This monetary award supports research in the field of Quaternary geomorphology.

PROFESSIONAL ORGANIZATIONS AND SERVICE:

Member: Geologic Society of America (2009-2019); American Geophysical Union (2009-2019); Association for Woman Geoscientist (2012-2019); Logan Geological Society (2012-2019); National Association of Geoscience Teachers (2012-2019)

CHAIRED CONFERENCE SESSIONS

Geological Society of America (Denver, CO - 2016)

T60. Quantifying and Interpreting the Role of Climate, Tectonics, and Autogenic Processes in Landscape Dynamics

T179. Quaternary Geochronometers: Applications of Multi- Technique Approaches in Geomorphology and Archeology

Geological Society of America (Baltimore, MD - 2015)

T188. Inside or Out? Investigations into Driving Forces in Fluvial Systems

T189. New Applications of Geochronologic Techniques to Quaternary and Archaeological Settings

American Geophysical Union (San Francisco, CA - 2015)

EP43C. Distinguishing Climate, Tectonic, and Autogenic Drivers in Fluvial Records

GK-12 National Conference (Washington DC - 2011)

The benefits of outdoor learning to STEM curriculums

GRANTS AND FUNDING (~ $40,000 TOTAL)

2017 Utah State University School of Graduate Studies Dissertation Fellowship - **$5000**

2017 Utah State University Center for Women and Gender Scholarship - **$1196**

2016 Association of Women Geoscientist Chrysalis Scholarship – **$2000**

2016 Utah State University Center for Women and Gender Weinshenker Scholarship - **$1000**

2015 NSF Doctoral Dissertation Research Improvement Grant: Use of cosmogenic nuclides to understand relations among climate change, erosion rates, and landscape response in Grand Staircase region of Colorado. - **$16,000**

2015 Utah State University Enhancement Grant – **$4,000**

2015 Utah State University Geology Department Robeson Grant - **$300**

2014 Utah State University Geology Department Springer Memorial Scholarship – **$800**

2014 Utah State University Ecology Center Grant - **$2,500**

2013 Geological Society of America Student Research Grant - **$1,875**

2013 Colorado Scientific Society Grant - **$800**

2013 Geology Department Robeson Grant - **$300**

2010 Geological Society of America Student Research Grant - **$3,500**

CONFERENCE ABSTRACTS AND PRESENTATIONS:

2016. **Riley, K.** Rittenour, T., and DeRose, J., Mid- to Late-Holocene Fire History, Vegetation, and Climate Change in the Grand Staircase Region of the Colorado Plateau, Southwest Utah. American Geophysical Union National Conference (San Francisco, CA) – Poster.

2016. **Riley, K.** and Rittenour, T., Using Cosmogenic Nuclides to Understand the Connection between Erosion Rates, Environmental Factors, and Landscape Response. Geological Society of America National Conference (Denver, CO) – *INVITED* talk.

2015. **Riley, K.**, Cosmogenic nuclides help to understand relations among climate change, erosion rates, and landscape response in Grand Staircase region of Colorado Plateau. Utah State University Student Research Symposium, (Logan, UT) – Poster.

2015. **Riley, K.** and Rittenour, T., Mid-Late Holocene Arroyo Stratigraphy in Southern Utah; Balance between Climate Forcing and Geomorphic Thresholds. American Geophysical Union National Conference (San Francisco, CA) – Poster.

2015. **Riley, K.** and Rittenour, T., Erosion rates influence arroyo cut-fill dynamics in semi-arid catchments draining the Grand Staircase region of Colorado Plateau. Geological Society of America National Conference (Baltimore, MD) - Poster.

2015. **Riley, K.** and Rittenour, T., Mid-late Holocene arroyo cut-fill dynamics: hydro-climate and complex inter-basin response. Geological Society of America National Conference (Baltimore, MD) - Oral.

2015. **Riley, K.** and Rittenour, T., Cosmogenic nuclides help to understand relations among climate change, erosion rates, and landscape response in Grand Staircase region of Colorado Plateau. Utah State University Spring Runoff Conference (Logan, UT) – Poster.

2014. **Riley, K.** and Rittenour, T., The influence of sediment supply on arroyo cut-fill dynamics: a preliminary dataset of catchment averaged erosion rates calculated from in-situ ^{10}Be. American Geophysical Union National Conference (San Francisco, CA) – Oral.

2014. **Riley, K.** and Rittenour, T., Observations of arroyo cut-fill dynamics: a preliminary chronostratigraphy from Johnson Wash, southern Utah. Geological Society of America National Conference (Vancouver, BC) - Oral.

2014. **Riley, K.,** Sedimentary archive of mid-late Holocene arroyo cutting-filling in Johnson Wash, southern Utah. Autogenic Dynamics of Sedimentary Systems Conference (Grand Junction, CO) – Poster.

2013. **Riley, K.** and Rittenour, T., The arroyo problem: A new record of mid-late Holocene cut-fill dynamics in Johnson Wash, southern Utah. Geological Society of America National Conference (Denver, CO) – Oral.

2013. **Riley, K.** and Rittenour, T., Preliminary chronology of Holocene alluviation and arroyo dynamics in Johnson Wash, southern Utah. New World Luminescence Conference (Logan, UT) – Poster.

2011. **Riley, K.** and Pierce, J., Wildfires, debris flows, and climate: Using modern and ancient deposits to reconstruct Holocene sediment yields in central Idaho. American Geophysical Union National Conference (San Francisco, CA) – Oral.

2011. **Riley, K.** and Pierce, J., Debris flows vs. sheetfloods: how fire, vegetation and climate control erosional response in small basins. Geological Society of America National Conference (Minneapolis, MN - 2011) – Poster.

2011. **Riley, K.** and Pierce, J., The role of Holocene climate change and fire-related debris flows on long-term (10^3-10^4) sediment yields in the Middle Fork Salmon River Watershed, in central Idaho. Geological Society of America Regional Conference (Logan, Utah) – Oral.

2011. **Riley, K.** The benefits of outdoor learning to STEM curriculums**.** GK-12 National Conference (Washington DC) – Poster.

2011. **Riley, K.** and Pierce, J., A 10,000-year record of fire activity and fire-related sedimentation in the Middle Fork Salmon River, Idaho**.** EPSCOR Tri-state Consortium Conference (Albuquerque, NM) - Poster and pop-up.

2010. **Riley, K.** and Pierce, J., The role of episodic fire-related debris flows on long-term (10^3-10^4) sediment yields in the Middle Fork Salmon River Watershed, in central Idaho**.** American Geophysical Union National Conference (San Francisco, CA) – Poster.

2010. **Riley, K.** and Pierce, J., Fire frequency and fire-related deposition during the Holocene: a study of alluvial fans in the Middle Fork Salmon River watershed, Idaho. Geological Society of America National Conference (Denver, CO) – Oral.

2010. **Riley, K.** and Pierce, J., Fire history reconstruction and sediment yields in the Middle Fork Salmon River throughout the Holocene**.** Idaho EPSCOR Conference (Boise, ID) - Poster.

2009**. Riley, K.** and Pierce, J., Forests, fire, floods, and fish: nonlinear biophysical responses to changing climate**.** Boise State Day at the Legislature (Boise, ID) – Presented poster.

2009**. Riley, K.** and Pierce, J., Fire history reconstruction and sediment yields in the Middle Fork Salmon River throughout the Holocene**.** Idaho EPSCOR Conference (Moscow, ID) - Poster.