

EDUCATION

- 2020** Ph.D., Geology, University of Wyoming, Laramie, WY
Dissertation: *Granular Morphodynamics of Fluvial Bedforms*
Advisor: Brandon McElroy
- 2012** B.A., Geology, Colorado College, Colorado Springs, CO
Thesis: *Temporal Evolution of Sandy Ripples in Response to Changing Oscillatory Flow Conditions*
Advisor: Paul Myrow

APPOINTMENTS

- 2020 – Present** Postdoctoral Researcher, Virginia Tech, Blacksburg, VA
Mentor: Kyle Strom
- 2017** Research & Development Intern, Shell Oil Company, Houston, TX

REFEREED PUBLICATIONS

- 4 Ashley, T.,** Naqshband, S., & McElroy, B. (2021) Lower-stage plane bed topography is an outcome of rarefied, intermittent sediment transport. *JGR: Earth Surface*. doi.org/10.1029/2020JF005754
- 3 Herz-Thyhsen, R.,** Miller, Q., Rother, G., Kaszuba, J., **Ashley, T.,** & Littrell, K. (2020) Nanoscale interfacial smoothing and dissolution contributes to hydrocarbon mobilization and transport during unconventional reservoir stimulation. *ACS Applied Materials & Interfaces*. doi.org/10.1021/acsami.0c22524
- 2 Ashley, T.,** Mahon, R., Naqshband, S., Leary, K., & McElroy, B. (2020b) Probability distributions of particle hop distance and travel time over equilibrium mobile bedforms. *JGR: Earth Surface* 125(7). doi.org/10.1029/2020JF005647
- 1 Ashley, T.,** Buscombe, D., Grams, P., Kaplinsky, M., & McElroy, B. (2020a) Estimating bedload flux from suspended load and water discharge in sand bed rivers. *Water Resources Research* 56(2). doi.org/10.1029/2019WR025883

PUBLICATIONS IN PROGRESS

- 4 Schieber, J.,** Li, Z., Yawar, Z., Cao, X., **Ashley, T.,** & Wilson, W. (*In Review*) Kaolinite Deposition from Moving Suspensions: The roles of flocculation, salinity, suspended sediment concentration, and flow velocity/bed shear. *Submitted to Sedimentology*
- 3 Ashley, T.,** & Strom, K. (*In Prep*) Relaxation of an oversteepened laboratory river towards the threshold state.
- 2 Cohen, S.,** Syvitzki, J., **Ashley, T.,** Lammers, R., & Li, H. (*In Revision*) Trends and drivers of bedload and suspended sediment fluxes in global rivers. *Submitted to Water Resources Research*.
- 1 Strom, K.,** Osborn, R., Dunne, K., Abolfazli, E., **Ashley, T.,** & Nittrouer, J. (*In Prep.*) Vertical profiles of mud floc size and concentration in the lower Mississippi River.

AWARDS AND HONORS

- 2021** Ray Krone Award: Best Poster, International Conference on Cohesive Sediment Transport, Delft
- 2019** Outstanding Student Presentation Award, American Geophysical Union Fall Meeting, San Francisco
- 2019** Outstanding Student Presentation Award, River, Coastal, and Estuarine Morphodynamics Symposium, Auckland
- 2018** Outstanding Student Presentation Award, GSA Rocky Mountain/Cordilleran Section Meeting, Flagstaff AZ
- 2012** Colorado College Department of Geology Estwing Outstanding Senior Geologist Award

GRANTS AND FUNDING

- 2019** Dick and Lynn Cheney International Fieldwork Grant (\$1400)
- 2018** Geological Society of America Graduate Research Grant (\$3200)
- 2018** Chevron Conference Scholarship (\$1400)

- 2018** Bradbury Geology Scholarship (\$3000)
- 2018** Nielson International Fieldwork Grant (\$2500)
- 2018** Dick and Lynn Cheney International Studies Grant (\$1200)
- 2015** W. E. Andrau Scholarship in Geology (\$1000)

INVITED LECTURES

- 2021** *What can laboratory channels tell us about how rivers behave over geologic timescales?* Virginia Tech, Environment and Water Resources Seminar Series
- 2021** *Relaxation of an oversteepened laboratory channel towards the threshold state.* Indiana University
- 2019** *Bayesian modeling in fluvial systems.* Geological Society of America Annual Meeting

PROFESSIONAL MEETING PRESENTATIONS

- 18 Ashley, T., & Strom, K. (2021).** Relaxation of an oversteepened laboratory channel towards the threshold state (Oral). *American Geophysical Union Fall Meeting*, New Orleans, December 2021.
- 17 Ashley, T., & Strom, K. (2021).** Organic polymers profoundly alter kaolinite settling and deposition (Poster). *International Conference on Cohesive Sediment Transport*, Delft, Netherlands, September 2021.
- 16 Ashley, T., Naqshband, S., & McElroy, B. (2020).** Particle collisions control stable bed configuration under weak bedload transport conditions (Poster). *American Geophysical Union Fall Meeting*, San Francisco, December 2020.
- 15 Ashley, T., Naqshband, S., & McElroy, B. (2019).** Plane-bed instability at the granular scale (Poster). *American Geophysical Union Fall Meeting*, San Francisco, December 2019.
- 14 Ashley, T., Naqshband, S., & McElroy, B. (2019).** Plane-bed instability at the granular scale (Poster). *River, Coastal, and Estuarine Morphodynamics Symposium*, Auckland, November 2019.
- 13 Ashley, T., McElroy, B. (2019).** Bayesian modeling in fluvial systems (Oral, Invited). *Geological Society of America Annual Meeting*, Phoenix, September 2019.
- 12 Ashley, T., Mahon, R., Naqshband, S., Leary, K., & McElroy, B. (2018).** Ensemble distributions of particle hop distance and travel time over equilibrium dunes (Oral). *American Geophysical Union Fall Meeting*, Washington D. C., December 2018.
- 11 McElroy, B., Ashley, T., Buscombe, D., Grams, P., & Kaplinski, M., (2018).** Estimating bedload flux from suspended load measurements on the Colorado River in Grand Canyon National Park (Oral). *American Geophysical Union Fall Meeting*, Washington D. C., December 2018.
- 10 Ashley, T., McElroy, B., Buscombe, D., Grams, P., & Kaplinski, M., (2018).** Management implications for bedload models in the Grand Canyon of the Colorado River (Poster). *Geological Society of America Joint Section Meeting*, Flagstaff, May 2018.
- 9 Ashley, T., McElroy, B., Buscombe, D., Grams, P., & Kaplinski, M., (2018).** Statistical bedload modeling on the Colorado River in Grand Canyon National Park (Oral, OSPA winner). *Geological Society of America Joint Section Meeting*, Flagstaff, May 2018.
- 8 Ashley, T., McElroy, B., Buscombe, D., Grams, P., & Kaplinski, M., (2017).** Modeling bedload flux at monitoring stations on supply-limited, sand bed rivers (Poster). *International Conference on Fluvial Sedimentology 11*, Calgary, July 2017.
- 7 Buscombe, D., Kaplinski M., Grams, P.E., Ashley, T., McElroy, B., & Rubin, D. M. (2017).** The sand dunes of the Colorado River, Grand Canyon, USA. *10th Symposium on River, Coastal, and Estuarine Morphodynamics*, Trento-Padova, Italy, September 2017.
- 6 Ashley, T., Mahon, R., McElroy, B. (2016).** Measuring the granular evolution of dune topography (Poster). *Sediment Experimentalist Network*, Tsukuba, Japan, September 2017.
- 5 Ashley, T., McElroy, B., Buscombe, D., Grams, P., & Kaplinski, M. (2016).** Estimating bedload from gage data to improve flux-based sediment budgets (Poster). *Geological Society of America Annual Meeting*, Denver, 2016.

- 4 Ashley, T.,** McElroy, B., Buscombe, D., Grams, P., & Kaplinski, M. (2015). Examining the relationship between suspended sand load and bedload on the Colorado River using concurrent measurements of suspended sand and observations of sand dune migration (Poster). *American Geophysical Union Fall Meeting*, San Francisco, December 2015.
- 3 McElroy, B. J.,** Mahon, R. C., Ashley, T., & Alexander, J. S. (2015). Scaling of sand flux over bedforms – experiments to field scale. *American Geophysical Union Fall Meeting*, San Francisco, December 2015
- 2 Kaplinski, M. A.,** Buscombe, D. B., **Ashley, T.,** Tusso, R., Grams, P. E., & McElroy, B. J. (2015). Observations of sand dune migration on the Colorado River in Grand Canyon using high-resolution multibeam bathymetry. *American Geophysical Union Fall Meeting*, San Francisco, December 2015
- 1 Ashley, T.,** Myrow, P. M., Perron, T., Huppert, K., Kao, J., & Koss, A. (2012). Experimental study of wave ripple defects and their role in adjustment of ripple spacing (Poster). *Geological Society of America Rocky Mountain Section Meeting*, Albuquerque, May 2012.

SYNERGISTIC ACTIVITIES

- 2022** Journal reviewer: *Water Resources Research*
- 2021** Technical discussion leader: The beauty of turbulent flow and sediment transport on Earth's Surface: Virginia Tech
- 2021** NSF ad hoc proposal reviewer
- 2021** Journal reviewer: *Journal of Geophysical Research: Earth Surface, Basin Research*
- 2020** Journal reviewer: *Geomorphology, Journal of Geophysical Research: Earth Surface x2*
- 2018** Short course instructor: Bayesian statistical techniques in fluvial paleohydraulics, University of Wyoming
- 2016** Technical Session organization: Modern and ancient sediment transport on earth and planetary surfaces. *Geological Society of America Annual Meeting*, Denver
- 2014 – Present:** Professional affiliations: American Geophysical Union

TEACHING

- 2020** Teaching Assistant, Sedimentology and Stratigraphy Lab
- 2017** Teaching Assistant, Sedimentology and Stratigraphy Lab
- 2015** Teaching Assistant, Sedimentology and Stratigraphy Lab

UNDERGRADUATE MENTORSHIP

- 2021** - Kerry Desmond, BSc Civil & Environmental Engineering (Virginia Tech)
- 2019** - Heath Geil-Haggerty, BSc Geology – Currently pursuing MSc in Geology (University of Wyoming)
- 2018** - Shaelynn Kaufman, BSc Geology – Currently pursuing PhD in Geology (UI Urbana-Champaign)
- 2017** - Joshua Faass, BSc Geology