

SHEILA M. TRAMPUSH

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PROFESSIONAL APPOINTMENTS

2018-present: University of California, Berkeley, Postdoctoral scholar

2017-2018: University of Delaware, Postdoctoral researcher

EDUCATION

The Pennsylvania State University, PhD. in Geosciences, 2017

Dissertation: How landscape dynamics can alter the preservation and interpretation of paleoenvironmental signals in fluviodeltaic environments.

University of Wyoming, M.S. in Geology, 2013

Thesis: Paleoslope reconstruction of the Upper Jurassic Morrison Formation in Eastern Utah.

Humboldt State University, B.S. in Geology, *Magna cum laude*, 2011

Senior thesis: The depositional history of a flood deposit on Redwood Creek, Northern California from 1954 to 2009.

Columbia College, A.S. in Earth Science, with honors, 2009

PUBLICATIONS

Metzger, T. L., Pizzuto, J. E., **Trampush, S. M.**, Friedman, J. M., Shook, D. M., 2019, "Event-scale floodplain accretion revealed through tree-ring analysis of buried plains cottonwoods, Powder River, Montana", *Earth Surface Processes and Landforms*

Lyons, S. L., Baczynski, A. A., Babila, T. L., Bralower, T. J., Hajek, E. A., Kump, L. R., Polites, E. G., **Trampush, S. M.**, Vornlocher, J. R., Zachos, J. C., Freeman, K. H., 2019, "Palaeocene–Eocene Thermal Maximum prolonged by fossil carbon oxidation," *Nature Geosciences*, 12, 54-60.

Trampush, S., Hajek, E., 2017, "Preserving proxy records in dynamic landscapes: Modeling and examples from the Paleocene-Eocene Thermal Maximum" *Geology*, 45 (11), 967-970.

Self-Trail, J., Robinson, M., Bralower, T., Sessa, J., Hajek, E., Kump, L., **Trampush, S.**, Willard, D., Edwards, L., Powars, D., Wandless, G., 2017, "Coastal Marine Response to Global Climate Change during the Paleocene Eocene Thermal Maximum, Salisbury Embayment", *Paleoceanography*, 32, 1-19.

Trampush, S., Hajek, E., Straub, K., Chamberlin, E., 2017, "Identifying autogenic scales in fluvial-deltaic stratigraphy: Evaluating the effect of outcrop-quality data on the compensation statistic", *Journal of Geophysical Research—Earth Surface*, 122, 1-23.

Chamberlin, E., Hajek, E., **Trampush, S.**, 2016, "Evidence for Random Paleo-Avulsion Patterns in the lower Williams Fork Formation", *Autogenic Dynamics and Self-Organization in Sedimentary Systems, SEPM Special Publication*, 106, 132-144.

- Heller, P., Ratigan, D. **Trampush, S.**, Noda, A., McElroy, B., Drever, T. Huzurbazar, S. 2015, "Origins of bimodal stratigraphy in fluvial deposits: An example from the Morrison Formation", *Journal of Sedimentary Research*, 85, 1466-1477.
- Trampush, S.**, McElroy, B., Huzurbazar, S., 2014, "Empirical assessment of theory for bankfull characteristics of alluvial channels", *Water Resources Research*, 50(12), 9211-9220. *WRR Editors' Choice Award, 2015*

HONORS, AWARDS, SCHOLARSHIPS, AND FELLOWSHIPS

- 2016, 2015, and 2014: Penn State Dept. of Geosciences Shell Research Facilitation Award
2016 and 2014: Penn State Dept. of Geosciences Krynine Scholarship
2015: WRR Editors' Choice Award
2015: Marathon Alumni Centennial Graduate Fellowship
2015: Penn State Dept. of Geosciences Chesapeake Energy Scholarship
2014: AAPG Grants-in-Aid, Harold J. Funkhouser Memorial Grant
2013: University of Wyoming Department of Geology & Geophysics Outstanding Masters Student
2012: ConocoPhillips Rocky Mountain Basin Graduate Study Scholarship in Geology and Geophysics
2011: Humboldt State Geology Department John Young Award for Outstanding Senior Thesis

TEACHING EXPERIENCE

Pennsylvania State University

Teaching Assistant

- *Earth History*, Spring 2017, taught an upper division lab section in a combined stratigraphy and structure course for Geoscience majors in their junior or senior year. Responsible for redesigning, teaching, and grading labs.
- *Field Geology*, Fall 2016, assisted small, upper division field-based mapping and structure course. Grade reports and maps.
- *Geomorphology*, Spring 2015, assisted small, upper division ArcGIS lab with basic geomorphic analysis; graded weekly lab reports.
- *The Sea around Us*, Fall 2013, assisted large, lower division survey oceanography course. Managed online assignments in PSU's in-house course management site.

Mentor

- *Summer Experience in Earth and Mineral Science (SEEMS)*, Summer 2016, developed curriculum and team-taught a 6-week fluvial geomorphology research experience course for a group of high school students from under-represented groups as part of the Upward Bound Math & Science college-immersion program.
- *Supervised senior thesis research*, 2014/2015 and 2016/2017, assisted two undergraduates (John Hribik and Tori Garman) with planning and conducting research for their required senior thesis.

- *Penn State Association for Women Geoscientists undergraduate mentorship program* 2015/2016 and 2016/2017, mentor a female undergraduate student about planning for her academic and professional career.
- *MS student field work*, 2016, assisted Evan Greenberg in collecting channel bar morphology measurements and interpretations from the Bighorn Basin, WY.
- *MS student field work*, 2015, assisted Martin Jimenez in how to measure and interpret his stratigraphic sections in Rollins, WY when our (shared) adviser was not able to join him.
- *MS student field work*, 2015, assisted Garrett Brown collect and merge terrestrial lidar data of a fossil locality in the Guadalupe Mountains, TX and NM.
- *Undergraduate field experience*, 2014, supervised and trained three undergraduate field assistants during a four-month long field campaign in Western Interior Seaway sediments in Utah and Colorado.

University of Wyoming

Teaching Assistant

- *Physical Geology*, Fall 2012, taught 2 lab sections of an introductory geology course.
- *Stratigraphy*, Fall 2011, Team-taught 2 lab sections of an upper division stratigraphy and sedimentology course.

Humboldt State University

Teaching Assistant

- *Environmental Conflict Resolution*, Spring 2011, graded essay responses for an upper division course on resolving conflicts about the environment and resource management.

Peer Tutor

- *Tutoring Center*, Fall 2009-Spring 2011, Tutored math and lower division science in one-on-one and small group settings.

Columbia College

Peer Tutor

- *Math Resource Center*, Spring 2009, peer tutor in drop-in, on-campus math tutoring center; also responsible for assisting grading homework for various math courses on campus.

PROFESSIONAL EXPERIENCE

April 2012- July 2012; Cabot Oil & Gas; Geoscience Intern; Pittsburgh, PA

June 2010-July 2011; National Park Service, Physical Science Technician, Redwood National Park, CA

RESEARCH EXPERIENCE

2019-present: Modeling the effect of emergent vegetation on the sedimentation rate of fine-grained sediment in coastal Louisiana

2017-present: Mapping and characterizing floodplain deposits in the highly mobile, meandering Powder River in Montana

2015-present: Characterizing and interpreting shallow marine sediments associated with the Paleocene-Eocene Thermal Maximum in the Salisbury Embayment in Maryland

2014-present: Characterize landscape dynamics and evolution in ancient deposits with spatial statistics

2011-2014: Reconstruct channel dynamics in the fluvial Morrison Formation (Jurassic) in central Utah

2011-2014: Analyzed bankfull channel geometries of modern rivers using Bayesian statistical methods

SERVICE TO PROFESSION

2016-present: active peer reviewer

2017: Helped organize the “Amtrak Club,” a two-day, informal conference on geomorphology that is hosted by different east coast university each year, State College, PA May 19-20, 2017

2016/2017: Webmaster of the Association for Women Geoscientists, Penn. State chapter.

2015/2016: Vice-President of the Association for Women Geoscientists, Penn. State chapter.

SERVICE TO DEPARTMENT

2017: Served on the planning committee for the 2017 Penn State Graduate Colloquium, a three-day long meeting where graduate students from the Penn State Department of Geosciences present their research. Presenting work at the colloquium is required for all graduate students who have requested funding from the department.

2014/2015 and 2015/2016: Graduate student representative at Penn State Dept. of Geosciences faculty meetings.

2012/2013: Organized the University of Wyoming Geology & Geophysics Graduate Student Lunch Seminar.

OUTREACH

2017: Helped organize a “Talk with a Scientist” booth at a State College street fair; led the stream table activity at the event.

2016: Planned and led a stream table activity for pre-school and elementary age children as part of an Earth Science outreach day organized by the Penn State chapter of the Association of Women Geoscientists and the Discovery Space Children’s Science Museum in State College, PA, November 12, 2016.

2016: Founding member and first webmaster for the science advocacy group We Are For Science at Penn State.

WORKSHOPS AND SHORT COURSES

2015: Participant at STEPPE workshop on climate and tectonic records in Lake Tanganyika, December 13, 2015.

2015: Participant at NCED Summer Institute on Earth-Surface Dynamics 2015: Summer in the Swamp: Self-organization in the stratigraphic record, hosted at Tulane University, New Orleans, July 27 - August 5, 2015.

2014: Participant at iSamples/C4P Early Career Forum on cataloging geological samples, December 14, 2014.

RELEVANT SKILLS

Experienced with many spatial and temporal statistical methods, including both frequentist and Bayesian approaches.

Experienced with the following software packages and programming languages: Matlab, python, R, Geographix, ArcGIS, QGIS, Agisoft Photoscan, MySQL, and Microsoft Access.

Other skills include: general geologic mapping, surveying river channel morphologies, collecting terrestrial LiDAR, Structure-from-motion photogrammetry, and ESRI ArcPad based GPS mapping.

INVITED TALKS

2019: “Stratigraphic completeness, landscape dynamics, and the challenge of designing an effective sampling strategy” presented at GSA Annual Meeting 2019, Phoenix, AZ, September 22-25, 2019

2019: “The challenges and opportunities of reconstructing” paleoenvironmental records from dynamic landscapes, presented at the University of Tuebingen Department of Geosciences’ Frontiers in Sedimentology Seminar, June 28, 2019

2018: “Stratigraphic completeness and paleohydraulic reconstructions”, presented at a short course on Paleohydraulics at the University of Wyoming, Department of Geology and Geophysics June 15-17th, 2018

2017: “Understanding how delta dynamics influence paleoenvironmental proxy records” presented at GSA Annual Meeting 2017, Seattle, WA, September 22-25, 2017

CONFERENCE ACTIVITY

Sessions Organized

2019: Co-chaired an oral and poster session titled “Linking Surface Dynamics to Stratigraphic Architecture in Sedimentary Systems” for AGU Fall Meeting 2019 in San Francisco

2016: Co-chaired an oral and poster session titled “T190. Modern and Ancient Sediment Transport on Earth and Planetary Surfaces” during GSA's 2016 Annual Meeting in Denver.

Abstracts Presented

Trampush, S., Pizzuto, J., 2019, Preserving Fluvial Sediments in Highly Mobile, Limited Accommodation Systems: Lessons from the Powder River, Montana, abstract EP21D-2240, presented at AGU Fall Meeting 2019, San Francisco, CA, December 9-13, 2019

- Trampush, S.** Hajek, E., 2019, Stratigraphic completeness, landscape dynamics, and the challenge of designing an effective sampling strategy”, abstract 340677, presented at GSA Annual Meeting 2019, Phoenix, AZ, September 22-25, 2019 [Oral Presentation]
- Trampush, S.**, Hajek, E., 2018, Transient impacts of the Paleocene-Eocene Thermal Maximum on sedimentation on the Mid-Atlantic Shelf, abstract OS11F-1463, presented at AGU Fall Meeting 2018, Washington D.C., December 10-14, 2018
- Trampush, S.**, Hajek, E., 2017, Reconstructing landscape dynamics and stratigraphic completeness with sparse data: Modeling and a case study from the Paleocene-Eocene Thermal Maximum on the Mid-Atlantic, abstract EP32A-04 presented at AGU Fall Meeting 2017, New Orleans, LA, 11-15 December 2017 [Oral Presentation]
- Hajek, E., **Trampush, S.**, Chamberlin, E., Greenberg, E., Measuring Paleolandscape Relief in Alluvial River Systems from the Stratigraphic Record, abstract EP33G-07 presented at AGU Fall Meeting 2017, New Orleans, LA, 11-15 December 2017.
- Trampush, S.**, Hajek, E., Straub, K., Chamberlin, E., 2017, Advances in measuring autogenic dynamics in fluvio-deltaic stratigraphy, abstract 307191 presented at GSA Annual Meeting 2017, Seattle, WA, September 22-25, 2017 [Oral Presentation]
- Trampush, S.**, Hajek, E., 2017, The impact of variable sedimentation on reconstructing climate signals in fluviodeltaic and shallow marine deposits, presented at SEPM Research Conference Propagation of Environmental Signals within Source-to-Sink Stratigraphy, Ainsa & Tremp, Spain, June 4-10, 2017 [Oral Presentation]
- Trampush, S.**, Hajek, E., 2016, Evaluating the Effect of Autogenic Sedimentation on the Preservation of Climate Proxy Records: Modeling and Examples from the Paleocene Eocene Thermal Maximum, Abstract EP12A-06 presented at AGU Fall Meeting 2016, San Francisco, CA, 12-16 December [Oral Presentation]
- Trampush, S.**, Hajek, E., 2016, Modifying climate proxy records through autogenic sedimentation: Modeling and examples from the Paleocene-Eocene Thermal Maximum, Abstract 286327 presented at GSA Annual Meeting 2016, Denver, CO, 25-58 September. [Oral presentation]
- McElroy, B., Huzurbazar, S., Hajek, E., **Trampush, S.**, 2016, Refining estimates and uncertainties in paleoslope analysis, Abstract 286586 presented at GSA Annual Meeting 2016, Denver, CO, 25-58 September.
- Trampush, S.**, Hajek, E., 2015, Evaluating the Role of Tides in Building Delta Stratigraphy: Comparing Cretaceous Western Interior Seaway Deposits, Abstract EP34B-07 presented at AGU Fall Meeting 2015, San Francisco, CA, 14-18 December. [Oral presentation]
- Trampush, S.**, Hajek, E., 2015, Depositional environments and sedimentary processes of the Mid-Atlantic shelf during the Paleocene-Eocene Thermal Maximum, Abstract 267808 presented at GSA Annual Meeting 2015, Baltimore, MD, 1-4 November.
- Brown, G. M., Sclafani, J. A., **Trampush, S.**, Hajek, E. and M. E. Patzkowsky, 2015, Distribution and abundance of benthic marine taxa in shelf margin depositional sequences: San Andres Formation (Guadalupian, Permian), Last Chance Canyon, New Mexico, abstract 266195 presented at GSA Annual Meeting 2015, Baltimore, MD, 1-4 November.
- Trampush, S.**, Hajek, E., 2014, Measuring the Stratigraphic Filter in Ancient Deltaic Deposits, Abstract EP13B-3516 presented at AGU Fall Meeting 2014, San Francisco, CA, 15-19 December.

- Trampush, S.** Hajek, E., 2014, Investigating the stratigraphic filter in river-, wave-, and tide-dominated deltas, presented at SEPM Research Conference on Autogenics, Grand Junction, CO, 3-6 August. [Oral presentation]
- Trampush, S.**, McElroy, B., Heller, P., 2013, Application of paleoslope reconstruction method to the Jurassic Morrison Formation in southeast Utah, Abstract EP53B-0830 presented at AGU Fall Meeting 2013, San Francisco, CA, 9-13 December.
- Trampush, S.**, McElroy, B., Huzurbazar, S., 2012, Assessing an alluvial channel behavioral problem, Abstract EP31A-0794 presented at AGU Fall Meeting 2012, San Francisco, CA, 3-7 December.
- Ratigan, D., Heller, P., **Trampush, S.**, Chen, P., Dueker, K., 2012, Tectonic implications of flexural modeling of the Uinta Mountains and surrounding basins since early Eocene time, Abstract T33B-2655 presented at 2012, AGU Fall Meeting 2012, San Francisco, CA, 3-7 December.