Julianne E. Scamardo, Ph.D.

Department of Watershed Science Utah State University Logan, UT juli.scamardo@usu.edu

Education 2023 Ph.D. Geosciences – Fluvial Geomorphology Colorado State University. Fort Collins. Colorado M.S. Geosciences – Geosciences 2019 Colorado State University, Fort Collins, Colorado 2017 **B.S.** Environmental Science (Geology) University of Texas at Austin, Austin, TX Appointments 2024-Present Assistant Professor, Department of Watershed Science, Utah State University 2023-2024 Post-Doctoral Researcher, Department of Geography & Geoscience and the Cooperative Institute for Research to Operations in Hydrology (CIROH), University of Vermont NSF Graduate Research Fellow and Research Assistant, Department of 2019-2023 Geosciences, Colorado State University 2022 Visiting Research Fellow, School of Geography, Earth, and Atmospheric Sciences, The University of Melbourne, Australia Graduate Research Assistant, Colorado State University 2017-2019 Researcher, Boulder County Parks and Open Spaces, Colorado 2017-2019 Undergraduate Research Assistant, Jackson School of Geosciences, The 2016-2017 University of Texas National Science Foundation Research Experience for Undergraduates, Stroud 2015 Water Research Center & University of Delaware

Publications

Google Scholar Metrics (February 2025) citations: 319 h-index: 10 i10-index: 10

<u>Refereed journal articles</u>

- 18. Stegen, J., Burgin, A., Busch, M., Fisher, J., Landau, J., Abrahamson, J., Kinsman-Costello, L., Li, L. et al. (*including* Scamardo, J.), Reviews and Syntheses: Variable Inundation Across Earth's Terrestrial Ecosystems, *in press at* EGUsphere.
- Scamardo, J., Munger, W., Loria, K., Nauman, B., Wang, J., Leopold, S., Heggli, A., Huntly, N., Baker, M., and Meadow, A.M., 2025, Trends in the Outcomes, Practice, and Law of LowTech Process-Based Restoration in Western Rangelands. Rangeland Ecology and Management 98: 344 - 356. DOI: 10.1016/j.rama.2024.08.032.
- 16. Ockelford, A., Wohl, E., Ruiz-Villanueva, V., Comiti, F., Piegay, H., Darby, S., Parsons, D., Yochum, S., et al. (including Scamardo, J.), 2024, Working with wood in rivers in the Western United States. River Research and Applications. DOI: 10.1002/rra.4331.
- 15. Wohl, E., Rathburn, S., Dunn, S., Iskin, E., Katz, A., Marshall, A., Means-Brous, M., **Scamardo, J.,** Triantafillou, S., and Uno, H., 2024, Geomorphic Context in Process-Based River Restoration. River Research and Applications. DOI: 10.1002/rra.4236.

- 14. Wohl, E., Uno, H., Dunn, S.B., Kemper, J.T., Marshall, A., Means-Brous, M., Scamardo, J., and Triantafillou, S.P., 2024, Why wood should move in rivers. River Research and Applications. DOI: 10.1002/rra.4114.
- Scamardo, J. and Wohl, E., 2024, Recognizing the Ephemeral Stream Floodplain: Identification and Importance of Flood Zones in Drylands. Earth Surface Processes and Landforms. DOI: 10.1002/esp.5754.
- Kemper, J.T. and Scamardo, J., 2023, Snow Avalanches as a Driver of Large Wood Dynamics in Mountain Streams. Geophysical Research Letters 50(24). DOI: 10.1029/2023GL106355.
- 11. **Scamardo, J.,** Nichols, M., Rittenour, T., and Wohl, E., 2023, Drivers of geomorphic heterogeneity in unconfined non-perennial river corridors. Journal of Geophysical Research: Earth Surface 128, e2023JF007102. DOI: 10.1029/2023JF007102.
- Kemper, J.T., Rathburn, S.L., Mueller, E.R., Wohl, E., and Scamardo, J., 2023, Geomorphic response of low-gradient, meandering and braided alluvial river channels to increased sediment supply. Earth-Science Reviews 241: 104429. DOI: 10.1016/j.earscirev.2023.104429.
- Wohl, E., and Scamardo, J., 2022, Aufeis as a Major Forcing Mechanism for Channel Avulsion and Implications of Warming Climate. Geophysical Research Letters 49: e2022GL100246. DOI: 10.1029/2022GL100246.
- 8. **Scamardo, J.,** Nelson, P.A., Nichols, M., and Wohl, E., 2022, Modeling the relative morphodynamic influence of vegetation and large wood in a dryland ephemeral stream, Arizona, USA. Geomorphology 417: 108444. DOI: 10.1016/j.geomorph.2022.108444
- Wohl, E. and Scamardo, J., 2022, Patterns of organic matter accumulation in dryland river corridors of the southwestern United States. Science of the Total Environment 833: 155136. DOI: 10.1016/j.scitotenv.2022.155136.
- 6. Scamardo, J., Marshall, S., and Wohl., E., 2022, Estimating widespread beaver dam loss: Habitat decline and surface storage loss at a regional scale. Ecosphere 13(3): e3962. DOI: 10.1002/ecs2.3962
- 5. Wohl, E., Marshall, A.E., Scamardo, J., White, D., and Morrison, R.R., 2022, Biogeomorphic influences on river corridor resilience to wildfire disturbances in a mountain stream of the Southern Rockies, USA. Science of the Total Environment 820: 153321. DOI: 10.1016/j.scitotenv.2022.153321
- 4. Lininger, K., Scamardo, J., and Guiney, M., 2021, Floodplain large wood and organic matter jam formation after a large flood: investigating the influence of floodplain forest stand characteristics and river corridor morphology. JGR Earth Surface 126: e2020JF006011. DOI: 10.1029/2020JF006011
- 3. Wohl, E., and **Scamardo, J.,** 2021, The resilience of logjams to floods. Hydrological Processes 35(1): e13970. DOI: 10.1002/hyp.13970
- Scamardo, J., and Wohl, E., 2020, Sediment storage and shallow groundwater response to beaver dam analogues in the Colorado Front Range, USA. River Research and Applications 36(3): 398-409. DOI: 10.1002/rra.3592
- Wohl, E., Hinshaw, S., Scamardo, J, and Gutierrez-Fonseca, P. 2019. Transient organic jams in Puerto Rican mountain streams after hurricanes. River Research and Applications 35(3): 280-289. DOI: 10.1002/rra.3405

Book Chapters

 Wohl, E., Marshall, A., Scamardo, J., and Rathburn, S., 2023, Biogeomorphic processes, spatial heterogeneity, and river corridor resilience to stand-killing wildfire *in* Florsheim, J.L., O'Dowd, A.P., and Chin, A. (Eds), Biogeomorphic Responses to Wildfire in Fluvial Ecosystems: Geological Society of America Special Paper 562, p. 153-176. DOI: 10.1130/2024.2562(08).

<u>Manuscripts in review</u>

- Wohl, E., **Scamardo, J.**, and Morrison, R., Bed, banks, and beyond: River Peak Flow Dynamics, *in review at* Hydrological Processes
- Diehl, R.M., Lawson, K.S., Underwood, K., **Scamardo, J.,** Clemins, P., Wemple, B., Distinguishing hydraulically distinct floodplain types from high resolution topography with implications for broad-scale flood routing, *in revision at* Journal of Geophysical Research: Earth Surface.

Non-refereed contributions

- Scamardo, J., 2023, Form and Function: Quantifying Geomorphic Heterogeneity and Drivers in Dryland Non-Perennial River Corridors. Doctoral Dissertation, Colorado State University, Fort Collins, CO, available online at https://www.proquest.com/openview/6f58daa1bd05328c7d8040c3e6d14a6a/1?pqorigsite =gscholar&cbl=18750&diss=y
- Scamardo, J., 2019, Rivers and Beaver-Related Restoration in Colorado. Master's Thesis, Colorado State University, Fort Collins, CO, available online at https://mountainscholar.org/bitstream/handle/10217/199728/Scamardo_colostate_0053N _15511.pdf?sequence=1&isAllowed=y
- Scamardo, J. and Wohl, E., 2019, Assessing the Potential for Beaver Restoration and Likely Environmental Benefits. Boulder County Parks and Open Spaces Final Report, available online at https://assets.bouldercounty.gov/wp-content/uploads/2019/03/beaverrestorationpotential.pdf

Awards and Honors

2021	Natural Resources Workforce Development Fellowship, Southwest Climate Adaptation Science Center	
2021	Graduate Student Achievement Award, CSU Graduate Student Showcase	
2021	Early Career Spotlight, AGU Earth and Planetary Surface Processes	
2018	Thomas A. Jones Graduate Research Assistantship, Colorado State University Warner College of Natural Resources	
2017	Edward Warner Graduate Research Assistantship, Colorado State University Warner College of Natural Resources	
2015-2017	Distinguished Honors Scholar, University of Texas at Austin	

Grants & Funding

Submitted & Pending

Co-PI, Cooperative Institute for Research to Operations in Hydrology (CIROH), "Optimizing the NextGen Hydrofabric for Channel Routing", PI: Rebecca Diehl, Additional Co-PIs: Kristen Underwood, Bongchul Seo. \$1,000,000 [Budgeted \$222,503 to Scamardo].

- Co-PI, Cooperative Institute for Research to Operation in Hydrology (CIROH), "Revising spatial and time scales of channel reaches in the hydrofabric to improve NextGen flood inundation mapping", PI: Belize Lane, Additional Co-PIs: Collin Phillips, Sagy Cohen. \$700,000 [Budgeted \$34,933 to Scamardo]
- PI, Utah Agricultural Experimental Station (UAES) Seed Grant, "Large Wood Influence on Streamflow Permanence in Utah", 2025 2027, \$57,676
- Co-I, National Park Service Inventory and Assessment, "Inventorying streams emanating from rock glaciers to predict climate refugia and bolster conservation", PI: Scott Hotaling, Additional co-Is: Simeon Caskey, Caitlyn Florentine. \$125,000 [Budgeted \$4,367 to Scamardo]

Awarded Prior to USU

- PI, National Science Foundation Graduate Research Fellowship Program, "Geometric and Vegetative Controls on Sedimentation in Steep, Ephemeral Catchments", 2019 – 2023. [\$147,000]
- PI, Colorado State University Office of the Vice President for Research, Graduate Student Fellowship, 2022 2023 [\$4,000]
- PI, CUAHSI Pathfinder Program, "Quantifying the extent and drivers of geomorphic heterogeneity in dryland ephemeral watersheds", 2022 [\$5,000]
- PI, Geological Society of America Farouk El-Baz Student Research Award for Desert Studies, "Watershed-scale connectivity in ephemeral streams: identifying sediment sources to floodplains in dryland catchments", 2022 [\$2,500]
- PI, Geological Society of America Awards for Geochronology Student Research (AGeS), "Sediment storage as a driver of floodplain geomorphic heterogeneity in ephemeral watersheds across the Southwest U.S.", 2021 [\$8,987]
- PI, Geological Society of America Graduate Student Research Grants, 2020 [\$1,850]
- PI, Geological Society of America McGill Research Award, 2018 [\$2,000]

Teaching Experience

Instructor, Utah State Unive	ersity			
Spring 2025	Fundamentals of Watershed Science (WATS 3700)			
Guest Lecturer, University	of Vermont			
Fall 2023	Geomorphology (GEOL 3410)			
Teaching Assistant, Colorado State University				
Spring 2021	Geomorphology Lab (GEOL 454)			
Fall 2020	Introduction to Geology Lab (GEOL 121)			
Guest Lecturer, Colorado State University				
Spring 2018 & Spring 2020	Geomorphology (GEOL 454)			
Fall 2018	Fluvial Geomorphology (GEOL 652)			

Committees

Committee Member, Utah State University Collins Stephenson, M.S. in Civil & Environmental Engineering, Primary advisor: P. Shuai Alex Walt, M.S. in Watershed Sciences, Primary advisor: S. Bennett Jennifer Courtwright, PhD in Ecology, Primary advisor: C. Hawkins Michaela Shallue, PhD in Civil & Environmental Engineering, Primary advisor: C. Phillips

Service Activities

Utah State University

Evaluator, 2024 Undergraduate Student Research Symposium

University of Vermont

Coordinator, CIROH @ UVM Early Career Seminar Series, 2023-Present

Colorado State University

Mentor, CSU Department of Geosciences Graduate Mentoring Program, 2022
Graduate Student Member, Department of Geosciences DEI Committee, 2021 – 2023
Graduate Representative, University Technology Fee Advisory Board, 2021 – 2023
Secretary and Co-Founder, CSU Geosciences Graduate Student Organization, 2021 – 2023
Geosciences Department Representative, CSU Graduate Student Council, 2019 – 2023
Co-President, CSU Graduate Student Council, 2021-2022
Graduate Representative, Faculty Council Committee on Scholarship, Research, and Graduate Education, 2021 – 2022
Pod Member, Unlearning Racism in the Geosciences (URGE), 2021
Graduate Student Member, Warner College D&I in the Field Committee, 2019-2021
Vice President of Engagement, CSU Graduate Student Council, 2020 – 2021
Outreach Committee Member, Northern Colorado Graduate Women in Science, 2019 – 2021
Mentor, CSU Department of Geosciences Undergraduate Mentoring Program, 2019

Journal Referee

Nature Communications (2024 – Present) Earth's Future (2024 – Present) Earth Surface Processes and Landforms (2022-Present) Geomorphica (2024 – Present) Geomorphology (2024 – Present) River Research and Applications (2020-Present) Water Resources Research (2023-Present)

External committees, boards, and panels 2025-Present Science Advisory Committee, Nature Conservancy Canyonlands Research Center

Conference Sessions Organized

 2024 Co-convener, American Geophysical Union, H14F & H11T: Interdisciplinary Investigations of Nonperennial and Variably Inundated Ecosystems, Oral and Poster sessions
 2023 Co-convener and chair, Geological Society of America Connects, 207 – D1: Advances in Geomorphology and Quaternary Geology, Oral and Poster sessions.
 2022 Co-convener and chair, Geological Society of America Connects, 2 – T8: Non-

Science Communication and Outreach

Southwest Climate Adaptation Science Center Southern Utah Science, Management, and Policy Exchange, 2023, Presented summary of process-based stream restoration research in the southwestern U.S. to federal researchers and land managers, private consultants, and non-profit organization leaders.

Perennial Streams and the Fluvial System, Oral and Poster sessions.

- Montana Beaver Working Group, 2022, Outlined potential analyses to support decision making for federal and state management agencies in Montana.
- Southwest Climate Adaptation Science Center Logan Science, Management, and Policy Exchange, 2022, Presented summary of process-based stream restoration research and practices in the southwestern U.S. to community stakeholders and academics.
- **Riverscapes Restoration Network,** 2020, Presentation to non-profit groups, consultants, and state employees across the Rocky Mountains on the efficacy of low-tech process-based restoration.
- **Representative Joe Neguse,** 2019, Worked with cohort of graduate students to present on graduate student concerns regarding federal funding, environmental policy, and state-specific geoscientific issues.
- **Front Range Teen Science Café,** 2018, Presentation to high school students across Northern Colorado on beavers, graduate school, and careers in geosciences

Invited Presentations & Seminars

2024	Women Advancing River Research (WARR) Seminar Semi	eries	
	Utah State University, Department of Geosciences Semin	ar	
	Utah State University, Department of Civil Engineering V	Vater & Environment Seminar	
	University of Delaware, Department of Earth Science Sen	ninar	
2023	University of Vermont, CIROH Early Career Seminar Sen	ies	
	CUASHI Biennial Colloquium, Session on Student-Center	ered Research	
	University of Nevada, Las Vegas, Department of Geoscie	nce Seminar	
	University of New Mexico, Department of Earth and Planetary Sciences Seminar		
Confe	erence Presentations (Contributed)	* Student Author	

- Scamardo, J., Lawson, S., Diehl, R., Underwood, K., and Wemple, B., 2024, Determining Where and How Floodplain Topography Influences Flood Routing in the National Water Model. Abstract H32D-01: talk presented at 2024 Annual Meeting, AGU, Washington DC, 9-13 Dec.
- Diehl, R., Lawson, S., Underwood, K., **Scamardo, J**., Clemins, P., and Wemple, B, 2024, Distinguishing hydraulically-distinct floodplain types from high resolution topography

with implications for broad-scale flood routing. Abstract EP41B-03: talk presented at 2024 Annual Meeting, AGU, Washington D.C., 9-13 Dec.

- Kabis, S.*, Diehl, R., Underwood, K., Myers, H., Scamardo, J., and Johnston, K, 2024, Does Floodplain Geomorphic Heterogeneity Influence Flood Routing and Attenuation. Abstract EP43C-1322: poster presented at 2024 Fall Meeting, AGU, Washington D.C., 9 13 Dec.
- Scamardo, J. and Wohl, E., 2023, Recognizing the Ephemeral Stream Floodplain: Identification and Importance of Flood Zones in Drylands: talk presented at GSA Connects 2023, Pittsburgh, Pennsylvania, 15-18 October.
- Scamardo, J. and Wohl, E., 2023, Drivers of Geomorphic Heterogeneity in Non-Perennial River Corridors: poster presented at the Catchment Science Gordon Research Conference, Andover, New Hampshire, 18-23 June.
- Scamardo, J., Rutherfurd, I., and Wohl, E., 2022, The incorporation of large wood into channels following a significant forest blowdown. Abstract EP45A-04: talk presented at AGU Fall Meeting 2022, Chicago, Illinois, 12-16 December.
- Scamardo, J. and Wohl, E., 2022, Patterns and Drivers of Floodplain Heterogeneity in Dryland Ephemeral Watersheds across the Southwest USA. Abstract 2-9: talk presented at GSA Connects 2022, Denver, Colorado, 9-12 October.
- Kemper, J., and **Scamardo, J.**, 2022, The impact of snow avalanches on wood delivery and geomorphic change in montane streams. Abstract 181-1: talk presented at GSA Connects 2022, Denver, Colorado, 9-12 October.
- Wohl, E., and **Scamardo, J.**, 2022, Aufeis as a forcing mechanism for channel avulsion and implications of warming climate. Abstract 2-6: talk presented at GSA Connects 2022, Denver, Colorado, 9-12 October.
- Scamardo, J. and Wohl, E., 2022, The abundance and importance of wood in dryland ephemeral streams across the southwestern United States. Abstract EGU22-390: talk presented at 2022 General Assembly, EGU, Vienna, Austria, 23-27 May.
- Scamardo, J., Wohl, E., and Nichols, M., 2021, Morphodynamic Influence of Large Wood in a Dryland Ephemeral Stream, Arizona, USA. Abstract EP55B-1121: poster presented at 2021 Fall Meeting, AGU, New Orleans, La., 13-17 Dec.
- Scamardo, J., and Wohl, E., 2021, Quantifying the role of wood in shaping Southwestern dryland Streams: poster presented at Colorado State University Graduate Student Showcase, Fort Collins, CO, 5 8 Nov.
- Guiney, M.R.*, Lininger, K.B., and **Scamardo, J.**, 2020, The influence of disturbance and reach-scale geomorphology on depositional patterns and loads of large downed wood in semi-arid rivers, Colorado, USA. Abstract EP052-0016: poster presented at 2020 Fall Meeting, AGU, Virtual.
- Wohl, E., Scamardo, J., and Iskin, E., 2020, Large wood and stream longitudinal disconnectivity. Abstract EGU20-10411: talk presented at 2020 General Assembly, EGU, Virtual.
- Reynolds, L., Jaeger, K., Lyons, K., Weiting, C., Scamardo, J., Cooper, D., Wohl, E., and Rathburn, S., 2020, Floodplain Plant Community and Stream Channel Response More than Ten Years Following Tamarisk and Russian Olive Removal in Canyon De Chelly National Monument, Arizona: talk presented at 2020 Annual Conference, Rivers Edge West, Virtual.

- Scamardo, J. and Wohl, E., 2019, The Geomorphic Effect of Beaver Dam Analogs in the Colorado Front Range: poster presented at 2019 Binghamton Geomorphology Symposium, Denver, CO, 12-13 Oct.
- Scamardo, J. and Wohl, E., 2018, Geomorphic Channel Response to Beaver Dam Analogs in the Colorado Front Range. Abstract H210 –411541: poster presented at 2018 Fall Meeting, AGU, Washington D.C., 10—14 Dec.
- Wohl, E., Hinshaw, S., **Scamardo, J.,** and Gutierrez-Fonseca, P., 2018, Transient Organic Jams in Puerto Rican Mountain Streams After Hurricanes. Abstract EP41D-2712: poster presented at 2018 Fall Meeting, AGU, Washington D.C., 10 – 14 Dec.
- Scamardo, J., and Kim, W., 2016, How Do River Meanders Change with Sea Level Rise and Fall? Abstract EP53G-08: talk presented at 2016 Fall Meeting, AGU, San Francisco, CA, 12 – 16 Dec.
- Jones, C., Hsia, S., **Scamardo, J.**, Nguyen, K., and Papendieck, A., 2016, Longhorn Stream Team: An Experiential Environmental Science and Engineering Learning Community. Abstract W1A-1: talk presented at Mid Years Engineering Experience Conference, College Station, TX, 30 – 31 March.
- Scamardo, J., Pizzuto, J., Skalak, K., and Benthem, A., 2015, The Age and Origin of Scallop Floodplain Benches from Difficult Run, Fairfax County, VA. Abstract EP33A-1061: poster presented at 2015 Fall Meeting, AGU, San Francisco, CA, 14 – 18 Dec.

Professional Affiliations

Geological Society of America (GSA) American Geophysical Union (AGU) Earth Science Women's Network (ESWN) Phi Beta Kappa Honors Society

Media Coverage

- Canyonlands Research Center, 2021, Studying the Desert's Elusive Flows. The Sundial. Available at: https://canyonlandsresearchcenter.org/news/newletters/2021_Sundial_ Newsletter.pdf
- Cottle, S., Daley, L., Feltes, A., and Medeiros, J., 2020, When in Drought, Call the Beavers. The Water Desk. Available at: https://waterdesk.org/2020/01/video-story-when-in-drought-call-the-beavers/
- Runyon, L., 2018, The Bountiful Benefits of Bringing Back the Beavers. NPR Weekend Edition. Available at: <u>https://www.npr.org/2018/06/24/620402681/the-bountiful-benefits-of-bringing-back-the-beavers</u>