JOANMARIE DEL VECCHIO

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EDUCATION

August 2021	Ph. D., The Pennsylvania State University, Geoscience Advisor: Dr. Roman A. DiBiase Thesis: Appalachian Pasts, Arctic futures: permafrost landscape response to warming
December 2017	M.S., The Pennsylvania State University, Geoscience Advisor: Dr. Roman A. DiBiase Thesis: A record of coupled hillslope and channel response to Pleistocene periglacial erosion in a sandstone headwater valley, central Pennsylvania
May 2015	B.A., Pomona College, Geology Advisors: Dr. Karl A. Lang, Dr. Colin Robins Thesis: Mechanisms for valley aggradation in Cow Canyon, San Gabriel Mountains, CA
Fall 2013	The University of Edinburgh, UK (study abroad)

APPOINTMENTS

Spring 2024-present	**College of William and Mary**, Assistant Professor of Geology
Fall 2021-Fall 2023	**Dartmouth College**, Postdoctoral Fellow, Neukom Institute for Computational Science
Fall 2015-Spring 2021	**The Pennsylvania State University**, teaching/research assistant
Summer 2019	**Los Alamos National Laboratory**, graduate researcher
Summer 2016-2018	**The Pennsylvania State University**, teaching assistant, field school
Summer 2015, 2016	**Research Experience for Undergraduates,** mentor

TEACHING

Instructor: William & Mary
GEOL 320: Earth Surface Processes
GEOL 110: Physical Geography
GEOL 437: Computers and Geology

Instructor: Dartmouth College
EARS 33: Earth Surface Processes and Landforms
EARS 45: Field Methods: Techniques of Structural and Stratigraphic Analysis

Teaching assistant: Penn State University
GEOSC 10: Geology of the National Parks
GEOSC 303: Introduction to Environmental Geology
GEOSC 310: Earth History
GEOSC 340: Geomorphology
GEOSC 472A/B: Field Geology I and II

HONORS AND AWARDS

2023	Dartmouth College Earth Sciences mentorship award
2020	Marie Morisawa Award, Quaternary Geology and Geomorphology Division, GSA
	Richard R. Parizek Graduate Fellowship, Alley Family Graduate Scholarship
2019	Wiley (now Mike Kirkby) Award, British Society of Geomorphology
	Scholten-Williams-Wright Scholarship
2018	First place, Penn State Energy and Environmental Sustainability Laboratories Green Dollars grants
	Pennsylvania Space Grant Graduate Fellowship
	Richard R. Parizek Graduate Fellowship
2017	Alley Family Graduate Scholarship
	First place in physical sciences and mathematics category, Penn State Graduate Exhibition
2016	Marie Morisawa Award, Quaternary Geology and Geomorphology Division, GSA
2015	Raymond V. Ingersoll Senior Thesis Award, SEPM – Pacific Section

AWARDED RESEARCH GRANTS

2024	Supplement to National Science Foundation Award # 2311319 "Elements: A workflow for efficient and reproducible permafrost geomorphology analysis" Office of Advanced Cyberinfrastructure, $51,389
2023	National Science Foundation Award # 2311319 "Elements: A workflow for efficient and reproducible permafrost geomorphology analysis" Office of Advanced Cyberinfrastructure, $393,758
2022	Google Cloud Climate Innovation Challenge awardee
2021	NSF Earth Sciences Postdoctoral Fellowship, recommended for funding (*declined*)
2020	Geological Society of America student research grant
	American Association of Petroleum Geologists Grant-in-Aid
2019	Department of Energy Office of Science Graduate Student Research (SCGSR) awardee

PUBLICATIONS

Peer-reviewed

[9] Landis, J.D., … **Del Vecchio, J.,** et al, (2024). Quantifying soil accumulation of atmospheric mercury using fallout radionuclide chronometry. Nature Communications, 15(1), p.5430.

[8] **Del Vecchio, J.,** Palucis, M.C. and Meyer, C.R., (2024). Permafrost extent sets drainage density in the Arctic. *Proceedings of the National Academy of Sciences*, *121*(6), p.e2307072120.

[7] **Del Vecchio, J,** Sarah J. Ivory, Gregory J. Mount, Matthew Leddy, and Roman A. DiBiase. "Hillslope and vegetation response to postglacial warming at Bear Meadows Bog, Pennsylvania, USA." *Quaternary Research* 117 (2024): 79-97.doi:10.1017/qua.2023.60

[6] **Del Vecchio, J.,** Zwieback, S., Rowland, J. C., DiBiase, R. A., and Palucis, M. C. (2023), Hillslope-channel transitions and the role of water tracks in a changing permafrost landscape) *Journal of Geophysical Research: Earth* Surface doi.org/10.1029/2023JF007156

[5] **Del Vecchio, J.,** Lathrop, E., Dann, J. B., Andresen, C. G., Collins, A. D., Fratkin, M. M., Zwieback, S. Glade, R. C., and Rowland, J. C. (2023), Patterns and rates of soil movement and shallow failures across several small watersheds on the Seward Peninsula, Alaska. *Earth Surface Dynamics* doi:10.5194/esurf-11-227-2023

[4] **Del Vecchio, J.,** DiBiase, R. A., Corbett, L., Bierman, P. R., Caffee, M.W., and Ivory, S. J., (2022) Increased erosion rates following the onset of Pleistocene periglaciation at Bear Meadows, Pennsylvania, USA. *Geophysical Research Letters* doi:10.1029/2021GL096739

[3] Li, L., DiBiase R. A., **Del Vecchio J.,** et. al. (2018), Investigating the Effect of Lithology and Agriculture at the Susquehanna Shale Hills Critical Zone Observatory (SSHCZO): The Garner Run and Cole Farm Subcatchments. *Vadose Zone Journal* doi.org/10.2136/vzj2018.03.0063

[2] **Del Vecchio, J.** DiBiase, R. A., Denn, A. Bierman, P., Caffee, M.W., and Zimmerman, S. R. (2018), Record of coupled hillslope and channel response to Pleistocene erosion and deposition in a sandstone headwater valley, central Pennsylvania. *Bulletin of the Geological Society of America* doi.org/10.1130/B31912.1

[1] **Del Vecchio, J.,** Lang, K. A., Robins, C. R., McGuire, C. and Rhodes, E. (2018), Storage and weathering of landslide debris in the eastern San Gabriel Mountains, California, USA: implications for mountain solute flux. *Earth Surface Processes and Landforms* doi.org/10.1002/esp.4427

In preparation

[1] Palucis, M. C. and **Del Vecchio, J.** "Extraterrestrial Granular Creep and Flows." Chapter in: Erosion, Deposition, and Weathering Across the Solar System. Editors: Jani Radebaugh, Alex Morgan

In review/revision

[1] **Del Vecchio, J.** and Evans, S. G. "Climate and Topographic Controls on Water Tracks in Permafrost Landscapes" For submission to *Reviews of Geophysics*

Other publications

Gold, D., et al. (including **J. Del Vecchio**), 2017. Recent geologic studies and initiatives in central Pennsylvania: Roadlog for the 82nd annual field conference of Pennsylvania Geologists, 132 pp.

SERVICE AND OUTREACH

Students mentored

2024	Noah Rupert
	Aayla Kastning
	Addison Greenfield
	Zea Nims
	Sean Cochran
2023	Rebecca Risch, Neukom Scholar Winter 2023
	Sade Francis, Stefansson Fellow Winter 2023
	Molly Stevens, Summer 2023
2022	Supriya Ganti and Maya Magee, WISP researchers
2019-2020	Danial Sukor, senior thesis

2017-2018	Rosellen Martin, WISER student
2016	Perri Silverhart and Connor Martin, REU students
2015	Sarah Granke, REU student

Public lectures and outreach

2019	Appalachian Outdoors, "The Geology of Central Pennsylvania"
2018, 2019	Guest Lecturer, SCIED 455 (Penn State)
2016-2019	Collaboration with Shavers Creek Environmental Center

Professional service and synergistic activities

2024	Program Committee, Earth and Planetary Surface Processes Section, American Geophysical Union
	Session convener, "Changing Permafrost Landscapes" American Geophysical Union Fall Meeting in Washington, DC
	Webinar, "Bringing Coding Activities into your Undergraduate Earth Science Classroom: Scalable and Reproducible Analysis for All!", National Association of Geoscience Teachers
	Reviewer: *EGUSphere, Geology, Geophysical Research Letters, Nature Communications, Earth Surface Processes and Landforms*
2023	Workshop convener, "Changing permafrost landscapes: computational approaches" Dartmouth College and Neukom Institute
	Session primary convener, "Changing Permafrost Landscapes" American Geophysical Union Fall Meeting in San Fransico, CA
	Reviewer: *Scientific Reports, Earth Surface Dynamics Discussion*
2022	Session co-convener, "Changing Permafrost Landscapes" American Geophysical Union Fall Meeting in Chicago, IL
	NSF Panelist
2021	AGU Earth and Planetary Surface Processes URGE pod organizer and participant
	GSA Quaternary Geology and Geomorphology Division, Early-Career Representative
2020-2021	AGU Earth and Planetary Surface Processes social media team
2019	Session convener, "Inverting source from sink: decoding sedimentary records of climate, vegetation and erosion," Geological Society of America Annual Meeting in Phoenix, AZ
2017-2019	PSU Association for Women in Geoscience, co-president
2017	Conference organizer, 6th Annual Amtrak (now Wolman) Club Meeting, Penn State University

INVITED SEMINARS

2024 Pennsylvania State University

University of Pittsburgh

USGS, Reston

EPSP Connects (webinar)

2023 Washington University at St. Louis

Amherst College, Eastman Lecture Series

2022 Lamont Dougherty Earth Observatory Biology and Paleoenvironment Seminar

Middlebury College

Williams College

Colgate University Technology Immersion Week (keynote)

2021 Lehigh University

2020 Landscapes Live (Webinar, hosted through European Geophysical Union)

2019 Franklin and Marshall College

SELECTED CONFERENCE PRESENTATIONS

‡+**Del Vecchio, J.,** Rowland, J. C., Palucis, M.C., Zwieback, S., and Meyer, C. R. "Small Satellites, Big Data, and the Fate of Permafrost Landscapes" American Geophysical Union Fall Meeting 2023, San Francisco, CA

Del Vecchio, J., Meyer, C. R., Warburton, K., and Palucis, M. C. "Thermodynamic Channel Inception on Permafrost Hillslopes" American Geophysical Union Fall Meeting 2023, San Francisco, CA

Del Vecchio, J., Meyer, C. R., Palucis, M. C., and Risch, R*. "Ground temperature sets drainage density in the Arctic." American Geophysical Union Fall Meeting 2022, Chicago, IL.

+**Del Vecchio, J.,** "Demonstrating open, reproducible science tools through study of Earth's changing surface." American Geophysical Union Fall Meeting 2022, Chicago, IL.

Del Vecchio, J., Rowland, J., Zwieback, S., DiBiase, R., Glade, R. "Topographic signatures of permafrost processes on the Seward Peninsula, Western Alaska." American Geophysical Union Fall Meeting 2021.

Del Vecchio, J. et al. "URGE pod outcomes for the AGU EPSP Section." American Geophysical Union Fall Meeting 2021.

+**Del Vecchio, J.,** DiBiase, R. A., Corbett, L. B., Bierman, P. R., Caffee, M., Ivory, S. J. "Erosion rates before and after the Mid-Pleistocene Transition in periglaciated central Appalachia." American Geophysical Union Fall Meeting 2020.

+**Del Vecchio, J.,** Ivory, S. J., Leddy, M., Mount, G. and DiBiase, R. A. "Paired paleoerosion-paleoecological record of postglacial landscape change, central Appalachia" Geological Society of America annual meeting 2020

Del Vecchio, J., Fratkin, M. M., Lathrop, E., Andresen, C. G., Collins, A., Crawford, B., Dann, J. B., Wilson, C. J., Adams, J. M., Rowland, J. C. "Measuring and modeling periglacial hillslope processes, Seward Peninsula, western Alaska" American Geophysical Union Fall Meeting 2019, San Francisco, CA 8-13 Dec.

Del Vecchio, J. et al., "Student-led organizations as a mechanism for improving department culture." American Geophysical Union Fall Meeting 2019.

Del Vecchio, J., DiBiase, R., Corbett, L. B., Bierman, P., Caffee, M. W. and Ivory, S. "Pleistocene climate-modulated erosion: interpretations from cosmogenic nuclide concentrations of an 18 m sediment core in central Appalachia." 2019 GSA Annual Meeting, Phoenix, AZ 22-25 Sept.

+**Del Vecchio, J. et al.** "Long term records of climate change preserved in upland landscapes." (*Invited*) 2019 British Society of Geomorphology Annual Meeting, Sheffield, UK, 9-11 Sept.

Del Vecchio, J., DiBiase, R.A., Carr, J.C., Greenberg, E., Hajek, E.A. (2018) "Stratigraphic controls on bedrock channel morphology in the Finger Lakes, New York, USA." 2018 AGU Fall Meeting,

Washington, D.C., 10-14 Dec.

[+]**Del Vecchio, J.** (2018) "Reading rocks and ground that once were cold but now are not." (Up-Goer Five Challenge) *2018 AGU Fall Meeting, Washington, D.C., 10-14 Dec.*

[+]**Del Vecchio, J.,** DiBiase, R., Bierman, P., and Denn, A. "A Quaternary record of periglacial surface processes preserved in a headwater valley in central Pennsylvania." 2017 AGU Fall Meeting, New Orleans, LA 11-15 Dec.

DiBiase, R., **Del Vecchio, J.,** Mount, G., Hayes, J., Comas, X., Lin, H., Zarif, F., Forsythe, B., and Brantley, S. "Quantifying the spatial variability in critical zone architecture through surface mapping and near-surface geophysics (Invited)" 2016 AGU Fall Meeting, San Francisco, CA 14-18 Dec.

Del Vecchio, J, DiBiase, R. A., Denn, A. R., Bierman, P. R. A record of coupled hillslope and channel response to Pleistocene periglacial erosion in a sandstone headwater valley, central Pennsylvania. 6th annual Amtrak (now Wolman) Club meeting, Penn State University

Mount, G., Guo, L., Comas, X., DiBiase, R., Hayes, J., **Del Vecchio, J.,** Forsythe, B., Brantley, S. and Lin, H. "Characterizing Subsurface Lithology and Hydrological Processes at the Susquehanna Shale Hills CZO Using Multi-scale Near-surface Geophysical Measurements." 2016 AGU Fall Meeting, San Francisco, CA 14-18 Dec.

Del Vecchio, J., Denn, A., DiBiase, R. and Bierman, P. "Colluvial signatures of Pleistocene sediment production in central Pennsylvania." AGU, San Francisco, CA 14- 18 Dec.

[+]**Del Vecchio, J.,** Martin, C.*, Mount, G., Hayes, J., Comas, X. "Surface and subsurface characteristics of periglacial landscape modification in central Appalachia." 2016 GSA Annual Meeting, Denver, CO, 25-28 Sept

Silverhart, P.*, Zhi, W., Xiao, D., **Del Vecchio, J.,** DiBiase, R. and Li, L. "Evaluating the importance of regolith heterogeneity on catchment hydrology in Garner Run, Susquehanna Shale Hills Critical Zone Observatory, Pennsylvania, USA." 2016 GSA Annual Meeting, Denver, CO, 25-28 Sept.

DiBiase, R.A., **Del Vecchio, J.,** and Granke, S. B*. "Topographic and colluvial signatures of lithology, base level, and climate in the Shavers Creek Watershed, Pennsylvania." Pardee Symposium, 2015 GSA Annual Meeting, Baltimore, MD, 1-4 Nov.

Del Vecchio, J., Arrowsmith, J. R., Alfano, F., De Michieli Vitturi, M., Clarke, A., Pearthree, K., and Till, R. "Aspect-related differences in sediment transport rates on cinder cones, San Francisco Volcanic Field REU." 2014 GSA Annual Meeting, Vancouver, Canada, 19-22 Oct.

*indicates student mentee author [+]indicates oral presentation [‡]indicates invited

OTHER EXPERIENCES

Archaeology summer field school participant, University of Arizona

Undergraduate research assistant, Politics Department, Pomona College

Student employee, Career Development Office, Pomona College