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## QUALIFICATIONS SUMMARY

I am an environmental scientist specializing in ecosystem responses to climate and land-use change.

## PROFESSIONAL PREPARATION & EDUCATION

- 2016-2018: Postdoctoral Fellow, Lamont-Doherty Earth Observatory at Columbia University  
 2016: Ph.D. Paleoecology (Interdisciplinary Studies; Geosciences Department),  
 University of Alaska Fairbanks.  
 Dissertation title: *Landscape sensitivity to climate change in northern Alaska: Lessons from the past*  
 2010: M.S. Biology, University of Alaska Fairbanks.  
 2007: B.A. Northern Studies, Sterling College and the Center for Northern Studies.

## APPOINTMENTS

- 2019-Present: Research Assistant Professor, Water and Environmental Research Center, Institute of Northern Engineering, University of Alaska Fairbanks.  
 2018-2019: Postdoctoral Researcher, University of Alaska Fairbanks.  
 2011-2016: *Research Ecologist SCEP Employee*, Alaska Science Center, USGS.  
 2014: Co-Teaching Ice Age Alaska, University of Alaska Fairbanks.  
 2009-2010: *Research Biologist* National Park Service, Fairbanks.  
 2008-present: *Research Assistant* Alaska Stable Isotope Facility, University of Alaska Fairbanks.  
 2008: *Teaching Assistant*, Biology and Wildlife Department, University of Alaska Fairbanks.  
 2003-2005: *Botany Technician*, Cleveland Museum of Natural History, Botany Department.

## PUBLICATIONS

- Leland, C., D'Arrigo, R., Davi, N., Anchukaitis, K.J., Andreu-Hayles, L., Porter, T.J., Galloway, T., Mant, M., Wiles, G., Wilson, R. and Beaulieu, S., **Gaglioti, B.V.** 2023. A spatiotemporal assessment of extreme cold in northwestern North America following the unidentified 1809 CE volcanic eruption. *Paleoceanography and Paleoclimatology*, 38(5), p.e2022PA004581.  
 Hansen, W.D., Foster, A., **Gaglioti, B.V.**, Seidl, R. and Rammer, W., 2023. The Permafrost and Organic LayEr module for Forest Models (POLE-FM) 1.0. *Geoscientific Model Development*, 16(7), pp.2011-2036.  
 Wiles, G.C., Devereux, K., **Gaglioti, B.V.** and D'Arrigo, R.D., 2023. A 420-Year Perspective on Winter Lake Erie Levels. *Geophysical Research Letters*, 50(1), p.e2022GL099911.

- Gaglioti, B.V.**, Mann, D.H. and Wiles, G.C., 2022. Ecosystems at Glacier Margins Can Serve as Climate-Change Laboratories. *Geophysical Research Letters*, 49(13), p.e2022GL098574.
- Tape, K.D., Clark, J.A., Jones, B.M., Kantner, S., Gaglioti, B.V., Grosse, G., Nitze, I., 2022. Expanding beaver pond distribution in Arctic Alaska, 1949 to 2019 *Scientific Reports*
- Jones, B.M., Grosse, G., Farquharson, L.M., Roy-Léveillé, P., Veremeeva, A., Kanevskiy, M.Z., **Gaglioti, B.V.**, Breen, A.L., Parsekian, A.D., Ulrich, M. and Hinkel, K.M., 2022. Lake and drained lake basin systems in lowland permafrost regions. *Nature Reviews Earth & Environment*, 3(1), pp.85-98.
- Monteath, A.J., **Gaglioti, B.V.**, Edwards, M.E. and Froese, D., 2021. Late Pleistocene shrub expansion preceded megafauna turnover and extinctions in eastern Beringia. *Proceedings of the National Academy of Sciences*, 118(52).
- Gaglioti, B.V.**, Mann, D.H., Wiles, G. and Wiesenberg, N., 2021. Is the modern-day dieback of yellow-cedar unprecedented?. *Canadian Journal of Forest Research*
- Jones, B.M., Tape, K.D., Clark, J.A., Bondurant, A.C., Ward Jones, M.K., **Gaglioti, B.V.**, Elder, C.D., Witharana, C. and Miller, C.E., 2021. Multi-dimensional remote sensing analysis documents beaver-induced permafrost degradation, Seward Peninsula, Alaska. *Remote Sensing*, 13(23), p.4863.
- Bergstedt, H., Jones, B.M., Hinkel, K., Farquharson, L., **Gaglioti, B.V.**, Parsekian, A.D., Kanevskiy, M., Ohara, N., Breen, A.L., Rangel, R.C. and Grosse, G., 2021. Remote Sensing-Based Statistical Approach for Defining Drained Lake Basins in a Continuous Permafrost Region, North Slope of Alaska. *Remote Sensing*, 13(13), p.2539.
- Rangel, R.C., Parsekian, A.D., Farquharson, L.M., Jones, B.M., Ohara, N., Creighton, A.L., **Gaglioti, B.V.**, Kanevskiy, M., Breen, A.L., Bergstedt, H. and Romanovsky, V.E., 2021. Geophysical Observations of Taliks Below Drained Lake Basins on the Arctic Coastal Plain of Alaska. *Journal of Geophysical Research: Solid Earth*, 126(3), p.e2020JB020889.
- Gaglioti, B.V.**, Berner, L.T., Jones, B.M., Orndahl, K.M., Williams, A.P., Andreu-Hayles, L., D'Arrigo, R.D., Goetz, S.J. and Mann, D.H., 2021. Tussocks enduring or shrubs greening: Alternate responses to changing fire regimes in the Noatak River Valley, Alaska. *Journal of Geophysical Research: Biogeosciences*, p.e2020JG006009.
- Andreu-Hayles, L., **Gaglioti, B.V.**, Berner, L.T., Levesque, M., Anchukaitis, K.J., Goetz, S.J. and D'Arrigo, R., 2020. A narrow window of summer temperatures associated with shrub growth in Arctic Alaska. *Environmental Research Letters*, 15(10), p.105012.
- Berner, L.T., Massey, R., Jantz, P., Forbes, B.C., Macias-Fauria, M., Myers-Smith, I., Kumpula, T., Gauthier, G., Andreu-Hayles, L., **Gaglioti, B.V.** and Burns, P., 2020. Summer warming explains widespread but not uniform greening in the Arctic tundra biome. *Nature Communications*, 11(1), pp.1-12.
- Wiles, G.C., Charlton, J., Wilson, R.J., D'Arrigo, R.D., Buma, B., Krapek, J., **Gaglioti, B.V.**, Wiesenberg, N. and Oelkers, R., 2019. Yellow-cedar blue intensity tree-ring chronologies as records of climate in Juneau, Alaska, USA. *Canadian Journal of Forest Research*, 49(12), pp.1483-1492.
- Gaglioti, B.V.**, Mann, D.H., Wiles G.C., Jones B.M., Charlton, J., Weisenberg N., Andreu-Hayles L. (2019) Timing and causes of coastal Alaska glacier advances during the 19<sup>th</sup> century as documented by tree-ring dating and historical accounts. *Frontiers in Earth Science* 7, 82.
- Gaglioti, B.V.**, Mann, D.H., Williams, A.P., Wiles, G.C., Stoffel, M., Oelkers, R., Jones, B.M., Andreu-Hayles, L. (2019) Traumatic resin ducts in subalpine mountain hemlock trees as a new proxy for past winter storminess. *Journal of Geophysical Research: Biogeosciences*.

- Arp, C.D., and 16 others (**Gaglioti B.V.**) (2019) Ice roads through lake-rich arctic watersheds: Integrating climate uncertainty and freshwater habitat responses into adaptive management. *Arctic, Antarctic and Alpine Research* 51 9–23.
- Mann, D.H., Groves, P., **Gaglioti, B.V.**, & Shapiro, B. (2018) Temporal Simplification of Ecological Dynamics was the Globally Shared Cause of Late-Quaternary Extinctions of Terrestrial Megafauna. *Biological Reviews* 94, 328–352.
- Gaglioti, B.V.**, Mann, D.H., Groves, P., Kunz, M.L., Wooller, M.J., Farquharson, L.M., Jones, B.M., & Reanier R., (2018). Aeolian stratigraphy describes ice-age paleoenvironmental in unglaciated Arctic Alaska. *Quaternary Science Reviews* 182, 175-190.
- Elder, C.D., Schnell, J.D., Xu, X., Walker, J., Hinkel, K.M., Townsend-Small, A., Arp, C.D., Pohlman, J.W., **Gaglioti, B.V.** & Czimczik, C.I. (2018) Young carbon fuels CH<sub>4</sub> and CO<sub>2</sub> emissions from lakes in Arctic Alaska. *Nature Climate Change*.
- Gaglioti, B.V.**, Mann, D.H., Wooller, M.J., Jones, B.M., Wiles, G.C., Groves, P., Kunz, M.L., Baughman C.A., & Reanier R., (2017). Younger-Dryas cooling and sea-ice feedbacks were prominent features of the Pleistocene-Holocene transition in Arctic Alaska. *Quaternary Science Reviews*. 169, 330-343.
- Stackpoole, S.M., Butman, D.E., Clow, D., Verdin, K., **Gaglioti, B.V.**, Genet, H., & Striegl, R. (2017) Inland waters and their role in the carbon cycle of Alaska. *Ecological Applications*, (25) 1403–1420.
- Gaglioti, B.V.**, Mann, D.H., Jones, B.M., Wooller, M.J. & Finney, B.P., 2016. High-resolution records detect human-caused changes to the boreal forest wildfire regime in interior Alaska. *The Holocene*, 26(7), 1064-1074.
- Elvert, M., Pohlman, J.W., Becker, K.W., **Gaglioti, B.V.**, Hinrichs, K.U. & Wooller, M.J., (2016). Methane turnover and environmental change from Holocene lipid biomarker records in a thermokarst lake in Arctic Alaska. *The Holocene*, 26(11), 1766-1777.
- Mann, D.H., Groves, P., Reanier, R.E., **Gaglioti, B.V.**, Kunz, M.L., & Shapiro, B.A. (2015). Life and extinction of megafauna in the ice-age Arctic. *Proceedings of the National Academy of Sciences*, 2015, 165-173.
- Wooller, M. J., **Gaglioti, B.V.**, Fulton, T. L., Lopez, A., & Shapiro, B. (2015). Post-glacial dispersal patterns of Northern pike inferred from an 8800 year old pike (*Esox cf. lucius*) skull from interior Alaska. *Quaternary Science Reviews* 120, 118-125.
- Arp, C. D., Whitman, M. S., Jones, B. M., Grosse, G., **Gaglioti, B. V.**, & Heim, K. C. (2014). Beaded streams of Arctic permafrost landscapes. *Biogeosciences Discussions*, 11(7), 11391-11441.
- Gaglioti, B. V.**, Mann, D. H., Jones, B. M., Pohlman, J. W., Kunz, M. L., & Wooller, M. J. (2014). Radiocarbon age-offsets in an arctic lake reveal the long-term response of permafrost carbon to climate change. *Journal of Geophysical Research: Biogeosciences*, 119(8), 1630-1651.
- Tape, K.T., Flint, P.L., Meixell, B.W., & **Gaglioti, B.V.** (2014) Inundation, sedimentation, and subsidence creates goose habitat along the Arctic coast of Alaska. *Environmental Research Letters*, 8(4) 045031.
- Jones, B. M., Breen, A. L., **Gaglioti, B. V.**, Mann, D. H., Rocha, A. V., Grosse, G., & Walker, D. A. (2013). Identification of unrecognized tundra fire events on the north slope of Alaska. *Journal of Geophysical Research: Biogeosciences*, 118(3), 1334-1344.
- Jones, B. M., Gusmeroli, A., Arp, C. D., Strozzi, T., Grosse, G., **Gaglioti, B. V.**, & Whitman, M. S. (2013). Classification of freshwater ice conditions on the Alaskan Arctic Coastal Plain

- using ground penetrating radar and TerraSAR-X satellite data. *International Journal of Remote Sensing*, 34(23), 8267-8279.
- Mann, D. H., Groves, P., Kunz, M. L., Reanier, R. E., & **Gaglioti, B. V.** (2013). Ice-age megafauna in Arctic Alaska: extinction, invasion, survival. *Quaternary Science Reviews*, 70, 91-108.
- Wooller, M.J., Kurek, J., **Gaglioti, B.V.**, Cwynar, L.C., Bigelow, N., Reuther, J. D., & Smol, J. P. (2012). An ~11,200 year paleolimnological perspective for emerging archaeological findings at Quartz Lake, Alaska. *Journal of Paleolimnology*, 48(1), 83-99.
- Wooller, M. J., Pohlman, J. W., **Gaglioti, B. V.**, Langdon, P., Jones, M., Anthony, K. M. W., & Elvert, M. (2012). Reconstruction of past methane availability in an Arctic Alaska wetland indicates climate influenced methane release during the past ~12,000 years. *Journal of Paleolimnology*, 48(1), 27-42.
- Blinnikov, M. S., **Gaglioti, B. V.**, Walker, D. A., Wooller, M. J., & Zazula, G. D. (2011). Pleistocene graminoid-dominated ecosystems in the Arctic. *Quaternary Science Reviews*, 30(21), 2906-2929.
- Gaglioti, B.V.**, Barnes, B.M., Zazula, G.D., Beaudoin, A.B., & Wooller, M.J. (2011). Late Pleistocene paleoecology of arctic ground squirrel (*Uroditellus parryii*) caches and nests from Interior Alaska's mammoth steppe ecosystem, USA. *Quaternary Research*, 76(3), 373-382.
- Wooller, M.J., Zazula, G.D., Blinnikov, M., **Gaglioti, B.V.**, Bigelow, N., Sanborn, P., & La Farge, C. (2011). The detailed palaeoecology of a mid-Wisconsinan interstadial (ca. 32 000 <sup>14</sup>C yr BP) vegetation surface from interior Alaska. *Journal of Quaternary Science*, 26(7), 746-756.
- Gaglioti, B. V.**, Severin, K., & Wooller, M. J. (2010). Developing graminoid cuticle analysis for application to Beringian palaeoecology. *Review of Palaeobotany and Palynology*, 162(1), 95-110.

## INVITED TALKS

- 2023: *Paleoclimatic archives from the North Pacific describe changes in the behavior of the Aleutian Low*, University of Buffalo
- 2018: *Arctic climate change and environmental responses during the deglacial period*. Invited Seminar, University of Pittsburgh
- 2017: *The thin brown line: The crucial role of peat in protecting permafrost in Arctic Alaska*. Invited Talk, American Geophysical Union Fall Meeting.
- 2015: *Sensitivity of Permafrost Carbon to Past Climate Change in Arctic Alaska*. Invited Talk, American Geophysical Union Fall Meeting.

## GRANT FUNDING & AWARDS

### Current grants

- 2023: Primary Mentor, National Science Foundation, Arctic Natural Sciences Postdoctoral Fellowship (\$350k).
- 2023: Co-PI, Swiss Polar Institute (\$65k)
- 2022: Co-PI, National Science Foundation, Arctic Natural Sciences (\$167k)
- 2022: PI, National Science Foundation, EPSCoR Track IV (\$114k)
- 2021: Senior Personnel, National Science Foundation, Navigating the New Arctic (\$123k)
- 2020: PI, National Science Foundation, Paleoclimate Program (\$327k)

2020: PI, Joint Fire Science Program (\$400k)

*Previous grants*

2019: Co-PI National Science Foundation, Office of Polar Programs (\$69k)

2016: Co-PI, Joint Fire Science Program Research Grant (\$382k).

2018: PI, National Geographic Explorer Grant (\$21k).

2017: PI, Climate Center, Lamont-Doherty Earth Observatory (\$9,877).

2016: PI, Climate Center, Lamont-Doherty Earth Observatory (\$9,744).

2015: International Quaternary Association, Student Travel Support Nagoya Japan Conference (\$1k)

2015: Alaska Quaternary Center, Travel Grant (\$1k)

2014: National Institute of Water Resources (Alaska Chapter) Research Grant (\$20k)

2013: Arctic Field Office (National Park Service) Cooperative Agreement Grant on Landscape Change in Gates of the Arctic National Park (\$52k)

2012: National Institute of Water Resources (Alaska Chapter) Research Grant (\$17k)

2012: National Ocean Sciences Accelerator Mass Spectrometry (Woods Hole Ocean Institute) Graduate Student Internship (\$20k).

2012: Joint Fire Sciences Program (Department of the Interior) Graduate Research Fellowship (\$25k).

2011: Center for Global Change (University of Alaska Fairbanks) Student Award (\$10k).

2010: Alaska Quaternary Center (University of Alaska Fairbanks) David and Rachel Hopkins Grant (\$1.4k)

2010: Limnological Research Center (University of Minnesota) Graduate Student Research Grant (\$5k).

2009: Institute of Arctic Biology (University of Alaska Fairbanks) Graduate Student Fellowship (\$10k)

**NOTABLE LABORATORY EXPERIENCE**

**2016-2018 Tree-Ring Laboratory, Lamont Doherty Earth Observatory at Columbia University:** Tree ring preparation, measurements, counting, and data-analysis. Experience analyzing blue-light intensity in tree rings, a new proxy for late-wood density. Cellulose extraction of tree rings for stable isotopes.

**2010-2016 US Geological Survey Pathways Student and Researcher in the Cold Regions Research Lab at the Alaska Science Center, US Geological Survey.**

**2013 National Ocean Science Accelerator Mass Spectrometry:** Graduate Student Internship in radiocarbon dating preparation and analysis. Ramped temperature pyrolysis radiocarbon dating to infer different ages of carbon pools in lake sediments (see Gaglioti et al., 2014).

**2010 Paleolimnology and LacCORE facility, University of Minnesota:** Graduate student internship in lake sediment description and sampling.

**2009 Paleoecology Lab, Royal Alberta Museum:** Paleobotany identification of ice age plants during a week-long workshop and collaboration.

**2008-2010 Advanced Instrumentation Laboratory, University of Alaska Fairbanks:** Identifying modern and ancient foliage using scanning electron microscopy. This experience led to the Gaglioti et al., 2010 publication noted above.

**2008-2016 Water and Environmental Research Center, University of Alaska Fairbanks:** Plant cellulose extraction techniques for stable isotope analysis in tree-rings. Sedimentary

charcoal analysis in lake sediments. Compound and dissection microscope use and photography. Lake sediment geochemistry analysis.

**2008-2016 Alaska Stable Isotope Facility, University of Alaska Fairbanks:** Preparation and analysis of stable carbon, nitrogen and oxygen isotopes.

**2006 Paleocology Laboratory, Northern Arizona University:** Pollen extraction, identification, and data analysis.

### NOTABLE FIELD EXPERIENCE

**2013-Present Field research in Glacier Bay National Park and the Tongass National Forest, Alaska:** Collections and analyses pertained to glacier geology, tree-rings, geomorphology, lake and peat cores, and geomorphology. Similar wilderness skills as above.

**2008-Present Paleoclimate and paleocology field work in Northern Alaska:** Collecting and interpreting geomorphology, geologic sections, paleobotany archives, vegetation mapping, lake sediment collections, paleontology archives, and tree-rings. This involved backpacking, paddling, and camping in one of the most remote regions of North America for weeks at a time.

**2003-2005 Botany Technician for the Cleveland Museum of Natural History:** Collecting and Mapping Aquatic and Wetland Plants in Ohio's Natural Areas.

### TEACHING AND MENTORSHIP EXPERIENCE

**Columbia University (affiliation, 2016-2019):** Guest Lectured in Graduate School Climate Science Class, Mentoring various students on research projects and publications.

**The College of Wooster (collaboration, 2013-present):** Guest lectured in Climate Change Science and Environmental Geology Courses in the Geology Department, Led remote fieldwork and teaching sessions with undergraduate student.

**University of Alaska Fairbanks (affiliation, 2008-2016; collaboration, 2016-present):** Designed and Co-taught Graduate and Undergraduate Ice Age Alaska and Paleocology Course crosslisted in Biology and Geosciences Departments. Provided mentorship for several undergraduate and graduate students. Led field work with undergraduate and graduate students. Teacher Assistant and guest lecturer in Wildlife Biology Course in Biology Department.

### SCIENTIFIC OUTREACH

**2021-Present:** Ongoing collaboration with Alaskan journalist Ned Rozell.

**2019-Present:** Instructor Osher Lifelong Learning Center, Fairbanks

**2017-2018:** Collaboration with Lauren Oakes, a science communicator and writer from Stanford University on National Geographic Explorer's Blog.

**2016-2018:** Presentations at the Lamont-Doherty Open House for people from the New York City area.

**2015-2016:** Leading high school students on geologic field trips to Glacier Bay National Park.

**2011-2015:** Helped organized numerous public talks sponsored by the Alaska Quaternary Center.

**2010:** Popular Press Article about the ice age ecosystems of Alaska, *Fairbanks News Miner*.