Alia J. Lesnek

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EDUCATION

2014-2019	University at Buffalo, Buffalo, NY Ph.D. in Geology
2010-2013	University of Florida, Gainesville, FL B.S. in Geological Sciences

PROFESSIONAL APPOINTMENTS

2021-present	Queens College, City University of New York, Queens, NY Assistant Professor
2019-2021	University of New Hampshire, Durham, NH Postdoctoral Research Associate
2014-2019	University at Buffalo, Buffalo, NY Graduate Research Assistant
2011-2013	University of Florida, Gainesville, FL Undergraduate Research Assistant

RESEARCH INTERESTS

Quaternary surficial geology

- Glacier and ice sheet response to abrupt climate change
- Mapping Quaternary surficial deposits using field techniques and remote sensing
- Multi-proxy environmental reconstructions (e.g., lake sediments, animal fossils)
- Impacts of paleonvironmental change on ancient human migration and settlement patterns
- Frequency of natural hazards such as rock slides, earthquakes, and volcanic eruptions

Geochronology

- Improving cosmogenic nuclide geochemistry laboratory methods
- Cosmogenic nuclide production rate calibrations

PUBLICATIONS

These publications are available on my <u>research website</u> and <u>Google Scholar</u> profile.

Published

- (12) Baichtal, J.F., **Lesnek, A.J.**, Carlson, R.J., Schmuck, N., Smith, J.L., Landwehr, D.J., and Briner, J.P. (2021) Late Pleistocene and early Holocene sea-level history and glacial retreat interpreted from shell-bearing marine deposits of Southeastern Alaska: *Geosphere*, https://doi.org/10.1130/GES02359.1
- (11) Young, N.E., Briner, J.P., Miller, G.H., Lesnek, A.J., Crump, S.E., Pendleton, S.L., Schwartz, R., Schaefer, J.M. (2021). Pulsebeat of early Holocene glaciation in Baffin Bay from high-resolution beryllium-10 moraine chronologies: *Quaternary Science Reviews*, v. 270, 107179.
- (10) Young, N.E., **Lesnek, A.J.**, Cuzzone, J.K., Briner, J.P., Badgeley, J.A., Balter-Kennedy, A., Graham, B.L., Cluett, A., Lamp, J.L., Schwartz, R., Tuna, T., Bard, E., Caffee, M.W., Zimmerman, S.R.H., and Schaefer, J.M. (2021). Cosmogenic isotope measurements from recently deglaciated bedrock as a new tool to decipher changes in Greenland Ice Sheet size: *Climate of the Past*, v. 17, p. 419-450.
- (9) Briner, J.P., Cuzzone, J.K., Badgeley, J.A., Young, N.E., Steig, E.J., Morlighem, M., Schlegel, N.J., Hakim, G.J., Schaefer, J., Johnson, J.V., Lesnek, A.J., Thomas, E.K., Allan, E., Bennike, O., Cluett, A.A., Csatho, B., de Vernal, A., Downs, J., Larour, E., and Nowicki, S. (2020). Greenland Ice Sheet mass loss rate will exceed Holocene values this century: *Nature*, v. 586, p. 70-74.
- (8) Lesnek A.J., Briner, J.P., Baichtal, J.F., Lyles, A.S. (2020). New constraints on the last deglaciation of the Cordilleran Ice Sheet in coastal Southeast Alaska: *Quaternary Research*, v. 96, p. 140-160.
- (7) Downs, J.Z., Johnson, J.V., Briner, J.P., Young N.E., **Lesnek, A.J.**, Cuzzone, J.K. (2020). West Greenland Ice Sheet retreat history reveals elevated precipitation during the Holocene thermal maximum: *The Cryosphere*, v. 14, p. 1121-1137.
- Young, N.E., Briner, J.P., Schaefer, J.M., Miller, G.H., Lesnek, A.J., Crump, S.E., Thomas, E.K., Pendleton, S.L., Cuzzone, J.K., Lamp, J., Zimmerman, S., and Caffee, M. (2020). Reply to Carlson (2020) comment on "Deglaciation of the Greenland and Laurentide ice sheets interrupted by glacier advance during abrupt coolings", Quaternary Science Reviews, 106329.
- (5) Lesnek, A.J., Briner, J.P., Young, N.E., Cuzzone, J.K. (2020). Maximum Southwest Greenland Ice Sheet recession in the Early Holocene: *Geophysical Research Letters*, v. 47, no. 1, e2019GL083164.
- (4) Young, N.E., Briner, J.P., Miller, G.H., **Lesnek, A.J.**, Crump, S.E., Thomas, E.K., Pendleton, S.L., Cuzzone, J.K., Lamp, J., Zimmerman, S., Caffee, M., Schaefer, J.M. (2020). Deglaciation of the Greenland and Laurentide ice sheets interrupted by glacier advance during abrupt coolings: *Quaternary Science Reviews*, v. 229, 106091.
- (3) Lesnek, A.J., Briner, J.P., Lindqvist, C., Baichtal, J.F., Heaton, T.H. (2018). Deglaciation of the Pacific coastal corridor directly preceded the human colonization of the Americas: *Science Advances*, v. 4, no. 5, eaar5040.

- (2) Lesnek, A.J., Briner, J.P. (2018). Response of a land-terminating sector of the western Greenland Ice Sheet to early Holocene climate change: Evidence from ¹⁰Be dating in the Søndre Isortoq region: *Quaternary Science Reviews*, v. 180, p. 145-156.
- (1) Briner, J.P., Tulenko J.P., Kaufman, D.S., Young N.E., Baichtal, J.F., **Lesnek, A.** (2017). The Last Deglaciation of Alaska: *Cuadernos de Investigación Geográfica*, v. 43, p. 429-448.

Submitted

Walcott, C.K., Briner, J.P., Baichtal, J.F., **Lesnek, A.J.**, Licciardi, J.M., A cosmogenic nuclide chronology of Cordilleran Ice Sheet configuration during the Last Glacial Maximum in the northern Alexander Archipelago, Alaska. Submitted to *Geochronology*, November 2021.

Darvill, C.M., Menounos, B., Goehring, B.M., Lesnek, A.J., Cordilleran Ice Sheet Stability During the Last Deglaciation. Submitted to *Geophysical Research Letters*, August 2021.

FUNDING

Total awarded to date: \$33,874

pending	Dating Quaternary slope failures in Grand Teton National Park, Wyoming using cosmogenic nuclides; PSC-CUNY Research Award Program. \$3,000
2020	Quantifying rates of Quaternary landscape evolution in Grand Teton National Park using <i>in situ</i> cosmogenic ¹⁰ Be, ¹⁴ C, and ³⁶ Cl dating; University of Wyoming-National Park Service Research Station Small Grants Program. \$5,000
2018	College of Arts and Sciences Dissertation Fellowship; University at Buffalo. \$6,000
2017	Doctoral Dissertation Research: Late Pleistocene Glaciation in Southeastern Alaska: Assessing the Sensitivity of a Marine-terminating Ice Sheet to Changing Environmental Conditions (BCS-1657065); National Science Foundation. \$15,999
2017	Visiting Graduate Student Travel Grant; National Lacustrine Core Facility. \$1,000
2016	Pegrum Professional Development Award; University at Buffalo. \$500
2016	Graduate Student Conference Travel Grant; University at Buffalo. \$500
2015	Graduate Student Research Grant; Geological Society of America. \$1,875
2012	University Scholar Award; University of Florida. \$2,000

HONORS AND AWARDS

2019	College of Arts and Sciences Research Poster Winner, University at Buffalo
2018	Solène Pouget Prize for Scientific Contributions to Society, University at Buffalo

INVITED SEMINARS

2021	Greenland Ice Sheet mass loss will exceed Holocene values this century. Baruch College Climate Scholars seminar, September 20, Online.
2021	A land of ice and fire: Late Quaternary deglaciation, sea level change, and volcanism on America's Northwest Pacific coast. Queens College School of Earth and Environmental Sciences Colloquium, February 17, Online.
2020	A land of ice and fire: Late Quaternary deglaciation, sea level change, and volcanism on America's Northwest Pacific coast. University College Dublin (Ireland) seminar series, November 11, Online.
2020	Unraveling the Last Deglaciation: Case Studies from Greenland and Alaska. Queens College School of Earth and Environmental Sciences Colloquium, March 12, Flushing, NY.
2018	Deglaciation of the North Pacific coast and the peopling of the Americas. University New Hampshire Department of Earth Sciences, November 30, Durham, NH.
2018	The last deglaciation of the Greenland and Cordilleran ice sheets: Reconstructions from Southwest Greenland and Southeast Alaska. University of Maine Climate Change Institute seminar, October 25, Orono, ME.
2018	Deglaciation of the Pacific coastal corridor: Causes, consequences, and remaining questions. International Quaternary Webinar (hosted by University of Massachusetts at Amherst), September 19, Online.
2017	Holocene fluctuations of the western Greenland Ice Sheet. National Lacustrine

CONFERENCE PRESENTATIONS

*denotes advisee author

submitted	Lesnek, A.J. , Licciardi, J.M., Briner, J.P., Baichtal, J.F., Walcott, C.K., Volcanism, glaciation, and sea-level change at the Mount Edgecumbe Volcanic Field, Alaska: Implications for human occupation of the Northwest Pacific coast. Abstract submitted for 2021 AGU Fall Meeting.
submitted	Walcott, C.K., Briner, J.P., Baichtal, J.F., Lesnek, A.J. , Licciardi, J.M., Of humans and glaciers – a glacial chronology from the coastal Pacific migration route. Abstract submitted for 2021 AGU Fall Meeting.

Core Facility (LacCore), October 10, Minneapolis, MN.

submitted Ward, D., Licciardi, J.M., Goehring, B., **Lesnek**, **A.J.**,. Transdimensional Bayesian inversion of multi-isotope cosmogenic nuclide measurements. Abstract submitted for 2021 AGU Fall Meeting.

submitted Price, B.N., Fernández, A., Stansell, N.D., Licciardi, J.M., **Lesnek, A.J.**, Sorensen, M.K., Castillo, E.J., Muñoz, A., Ciocca, I., Mark, B.G., Shutkin, T., Chlorine-36

Surface Exposure Dating and Glacial Sensitivity Analysis of late-Holocene Moraines, South-Central Chilean Andes (38°S). Abstract submitted for 2021 AGU Fall Meeting.

- 2021 Lesnek, A.J., Licciardi, J.M., Briner, J.P., Baichtal, J.F., Walcott, C.K., Exposing the history of volcanism and sea-level changes at the Mount Edgecumbe Volcanic Field in Southeast Alaska using cosmogenic nuclides. Oral presentation at 50th Annual International Arctic Workshop, April 15, Online.
- Thomas, E.K., Cuzzone, J.K., Briner, J.P., Badgeley, J.A., Cluett, A.A., Downs, J., Lesnek, A.J., Young, N.E., Allan, E., Bennike, O., Csatho, B., de Vernal, A., Hakim, G.J., Johnson, J.V., Larour, E., Morlighem, M., Nowicki, S., Schaefer, J., Schlegel, N.J., Steig, E.J., Turrin, M., Precipitation modulates Greenland Ice Sheet size during the Holocene. Oral presentation at 2020 AGU Fall Meeting, December 15, Online.
- 2020 Lesnek, A.J., Larsen, D.J., Licciardi, J.M., A multi-proxy reconstruction of Pleistocene-Holocene denudation rates in the eastern Teton Range, Wyoming. Poster presented at 2020 AGU Fall Meeting, December 10, Online.
- 2020 Lesnek, A.J., Licciardi, J.M., Thackray, G.D., Constraining Late Quaternary offset rates along the Teton Fault, Wyoming, using cosmogenic ¹⁰Be dating of alluvial landforms. Poster presented at 2020 GSA Annual Meeting, October 28, Online.
- Briner, J.P., Cuzzone, J.K., Badgeley, J.A., Allan, E., Bennike, O., Cluett, A.A., Csatho, B., Corcoran, M.C., de Vernal, A., Downs, J., Hakim, G.J., Johnson, J.V., Larour, E., Lesnek, A.J., Morlighem, M., Nowicki, S., Schaefer, J., Steig, E.J., Thomas, E.K., Young, N.E., Greenland Ice Sheet mass loss rate will exceed Holocene values this century. Oral presentation at 2019 AGU Fall meeting, San Francisco, CA.
- 2019 Lesnek, A.J., Briner, J.P., Young, N.E., Cuzzone J.K., Maximum Greenland Ice Sheet recession in the Early Holocene. Poster presented at 2019 AGU Fall Meeting, December 10, San Francisco, CA.
- Young, N.E., Briner, J.P., **Lesnek, A.J.**, Balter, A., Cuzzone, J.K., Graham, B.L., Schaefer, J., Constraining periods of reduced Greenland Ice Sheet extent using in situ ¹⁰Be-¹⁴C-²⁶Al measurements in recently exposed bedrock surfaces. Poster presented at 2019 AGU Fall Meeting, December 10, San Francisco, CA.
- 2019 Cuzzone, J.K., Morlighem, M., Schlegel, N.J., Larour, E., Briner, J.P., Young, N.E., Lesnek, A.J., Badgeley, J.A., Steig, E.J., Hakim, G.J., Investigating the role climate reconstructions play in the simulated retreat history of southwestern Greenland during the Holocene using the Ice Sheet System Model (ISSM), Poster presented at 2019 AGU Fall Meeting, December 10, San Francisco, CA.
- 2018 Briner, J.P., Young, N.E., Allan, E., Badgeley, J.A., Bennike, O., Cluett, A.A., Csatho, B., Corcoran, M.C., Cuzzone, J.K., de Vernal, A., Downs, J., Hakim, G.J., Johnson, J.V., Larour, E., Lesnek, A.J., Morlighem, M., Schaefer, J., Steig, E.J., Thomas, E.K.,

Turrin, M., The Snow on Ice Project: A data-model collaboration for assessing
Greenland Ice Sheet change during periods of Arctic warmth. Poster presented at
2018 AGU Fall Meeting, Washington, D.C.

- Young, N.E., Miller, G.H., Briner, J.P., Schaefer, J.M., Crump, S.E., Lesnek, A.J., Pendleton, S.L., Ice-sheet sensitivity to abrupt climate change. Poster presented at 2018 AGU Fall Meeting, Washington, D.C.
- Nichols, S.*, Briner, J.P., **Lesnek, A.J.**, Reconstructing Holocene ice sheet margin history near Kangiata Nunaata Sermia, Southwest Greenland, using radiocarbon dated proglacial-threshold lake sediments. Poster presented at 2018 AGU Fall Meeting, Washington, D.C.
- 2018 Lesnek, A.J., Briner, J.P., Baichtal, J.F., Rapid Cordilleran Ice Sheet retreat during Heinrich Stadial 1. Oral presentation at 2018 AGU Fall Meeting, December 10, Washington, D.C.
- 2018 Lesnek, A.J., Briner, J.P., Young N.E., Synthesizing Holocene Greenland Ice Sheet chronology for data-model comparison. Poster presented at Joint CANQUA/AMQUA Biennial Meeting, August 10, Ottawa, ON.
- Sbarra, C.*, Briner, J.P., **Lesnek, A.J.**, Baichtal, J.F., Glacial erosion rate for the Cordilleran Ice Sheet in Southeast Alaska using cosmogenic ¹⁰Be concentrations in bedrock and perched boulders. Poster presented at Northeastern Section GSA Meeting, 19 March, Burlington, VT.
- 2018 Lesnek, A.J., Briner, J.P., Young, N.E., Cuzzone, J.K., Downs, J.Z., Johnson, J.V., Holocene Greenland Ice Sheet extent for data-model comparison. Oral presentation at 48th Annual International Arctic Workshop, April 5, Boulder, CO.
- 2017 Lesnek, A.J., Briner, J.P., Baichtal, J.F., Sbarra, C.*, Latest Pleistocene deglaciation of the Cordilleran Ice Sheet in southeastern Alaska. Poster presented at 2017 GSA Annual Meeting, October 23, Seattle, WA.
- Young, N.E., Miller, G.H., Briner, J.P., Schaefer, J.M., Crump, S.E., Lesnek, A.J., Pendleton, S.L., Early Holocene evolution of the Laurentide and Greenland Ice Sheets. Oral presentation at 2017 GSA Annual Meeting, October 22, Seattle, WA.
- 2017 Lesnek, A.J., Briner, J.P., Roop, H.A., Cluett, A.A., Thomas, E.K., Young, N.E., Constraints on western Greenland Ice Sheet extent during the middle Holocene from proglacial threshold lakes. Poster presented at 47th Annual International Arctic Workshop, March 23, Buffalo, NY.
- Schweinsberg, A.D., Briner, J.P., Miller, G.H., **Lesnek, A.J.**, Lifton, N.A., Clements, S., Holocene Mountain Glacier Variability in the Sukkertoppen Region, Western Greenland. Poster presented at 2016 AGU Fall Meeting, December 12, San Francisco, CA.
- 2016 **Lesnek, A.J.**, Briner, J.P., It takes two: New constraints on Cordilleran Ice Sheet extent and retreat from ¹⁰Be and radiocarbon dating. Oral presentation at 2016 AGU Fall Meeting, December 11, San Francisco, CA.

Lesnek, A.J., Briner, J.P., It takes two: Using ¹⁰Be and radiocarbon dating to decipher the glacial history of southeastern Alaska. Oral presentation at 46th Annual International Arctic Workshop, April 2, Boulder, CO.
 Lesnek, A.J., Briner, J.P., Schweinsberg, A.D., Lifton, N.A., Toward a master chronology for western Greenland's Fjord Stade Moraines: New ¹⁰Be ages from the Søndre Isortog region. Oral presentation at 2015 AGU Fall Meeting,

2015 Lesnek, A.J., Briner, J.P., Schweinsberg, A.D., Lifton, N.A., A preliminary ¹⁰Be chronology of the Fjord Stade Moraines in the Søndre Isortoq region, western Greenland. Poster presented at 2015 Northeastern Section GSA Meeting, March 23, Bretton Woods, NH.

2013 Lesnek, A., Martin, J.B., Deuerling, K., Hydrochemical Evidence for Differential Weathering in Proglacial and Deglaciated Streams in Western Greenland. Poster presented at University of Florida Undergraduate Research Symposium, March 23, Gainesville, FL.

TEACHING

Queens College

GEOL 208 Sedimentology and Landscape Evolution

December 17, San Francisco, CA.

University of New Hampshire

ESCI 402 Earth History

ESCI 680/780 Paleoceanography

TECH 411 Innovation Scholars I

TECH 412 Innovation Scholars II

University at Buffalo

GLY 445/545 Glacial Geology

GLY 465/565 Environmental Remote Sensing (TA)

GLY 407 Geology Field Camp (TA)

GLY 101 Natural Hazards (TA)

GLY 102 Climate Change (TA)

STUDENT MENTORING

Julia Brazo (MS thesis committee, University of New Hampshire)

Calen Rubin (MS thesis committee, University of New Hampshire)

SERVICE AND OUTREACH

Reviewer: Boreas, Geology, The Holocene, Oceanography, Quaternary Research, Quaternary Science Reviews

Ad hoc reviewer: NSF Arctic Natural Sciences, Irish Research Council

2021	Primary convener for oral session at AGU Fall Meeting: "Human responses to Late Quaternary Paleoenvironmental Change"
2021	Panelist, Negotiating for an Academic Position, Woods Hole Oceanographic Institution
2020, 2021	Panelist, Scientific Writing Workshop: Essential Skills for Earth Scientists, AGU Fall Meeting
2019	Primary convener for oral session at AGU Fall Meeting: "Catching cosmic rays: Advances in using cosmogenic nuclides to quantify earth surface processes"
2019	Co-convener for technical session at GSA Annual Meeting: "Cordilleran Ice Sheet through the Quaternary: Chronology, paleoenvironments, and implications"
2017-2019	Faculty Liaison, Department of Geology, University at Buffalo
2017	Local organizing committee, NSF-sponsored workshop on Greenland Ice Sheet Stability
2017	K-12 Education and Outreach Committee, Buffalo March for Science
2015-2017	University at Buffalo Science Exploration Day
2014-2017	Graduate Student Association Senator, University at Buffalo
2011-2013	"Can You Dig It?" presenter, Florida Museum of Natural History
2011-2013	Museum Docent, Florida Museum of Natural History

FIELD CAMPAIGNS

2021	Teton Range, Wyoming Collecting rock samples for ¹⁰ Be and ³⁶ Cl dating
2021	Southeastern Alaska Collecting rock samples for ³⁶ Cl and Ar-Ar dating
2020	Seacoast Region, New Hampshire Collecting rock samples for ¹⁰ Be dating
2019	Teton Range, Wyoming Collecting rock samples for ¹⁰ Be, ¹⁴ C, and ³⁶ Cl dating
2019	Southeastern Alaska Collecting rock samples for ¹⁰ Be, ³⁶ Cl, and Ar-Ar dating, lake sediment coring
2018	Collegiate Peaks, Colorado Collecting rock samples for ¹⁰ Be dating

2017	Southeastern Alaska Collecting rock samples for ¹⁰ Be dating (self-directed; included UB undergraduate student Christopher Sbarra as a field assistant)
2017	Nuuk region, southwestern Greenland Collecting rock samples for ¹⁰ Be dating, lake sediment coring
2016	Kangerlussuaq region, southwestern Greenland Collecting rock samples for ¹⁰ Be dating, lake sediment coring, GPS mapping of moraines
2015	Southeastern Alaska Collecting rock samples for ¹⁰ Be dating
2014	Sukkertoppen region, southwestern Greenland Collecting rock samples for ¹⁰ Be dating, lake sediment coring, GPS mapping of moraines, collecting <i>in situ</i> fossilized moss emerging from ice caps

MEDIA	
2021	Sitka Nature Show Episode #241 KCAW Radio (Sitka, Alaska)
2020	Stone artifacts hint that humans reached the Americas surprisingly early Science News
2020	Continental ice sheet left Southeast Alaska thousands of years earlier KFSK Community Radio (Petersburg, Alaska)
2020	Current, past Tongass employees essential to Cordilleran Ice Sheet research Tongass National Forest Newsletter
2019	First Americans arrived at least 16,000 years ago, and probably by boat PBS NOVA
2019	2,000-Year-Old Tattoo Tool Found in Washington Storage Closet Gizmodo
2018	Humans May Have Reached North America by More Than One Route Gizmodo
2018	Boulder-sized Clues to How Humans Settled the Americas The New York Times
2018	The First Americans 'island hopped' down the west coast past the glaciers Quirks & Quarks (Canadian Broadcasting Company podcast)
2018	How Did Ancient Humans Travel to America from Asia? New Research Looks at Pacific Coast Newsweek
2018	New map of Alaska's ancient coast supports theory that America's first people arrived by boat Science Magazine

PROFESSIONAL DEVELOPMENT

2021	Grants 101 Bootcamp, CUNY Advanced Science Research Center
2021	Unlearning Racism in the Geosciences (URGE), University of New Hampshire
2020	"Introduction to Inclusive Teaching" course, University of New Hampshire
2018	NAVIGATE Project participant, an NSF-funded initiative to increase the retention of women in STEM fields
2018	"Science Communication for Any Audience" workshop, CIRTL Network
2017	Associate level certification, CIRTL

AFFILIATIONS

American Geophysical Union (AGU)

Geological Society of America (GSA)

Center for the Integration of Research, Teaching and Learning (CIRTL)

Women in Science and Engineering (WiSE)

Out in Science, Technology, Engineering, and Mathematics (oSTEM)