Andrew J. Christ

Gund Institute for Environment, University of Vermont

Farrell Hall, 210 Colchester Ave, Burlington, VT 05405

Andrew.Christ@uvm.edu | *Website* | *Google Scholar* | *LinkedIn*

PRIMARY RESEARCH INTERESTS

Geomorphology, glacial geology, Antarctica, Greenland, Pleistocene glacial-interglacial cycles, Holocene climate, paleo-sea level, cosmogenic nuclides, Quaternary geochronology, environmental geology, hydrogeology, science communication.

EDUCATION

2019 Ph.D., Earth Sciences, Boston University, Boston, MA

Dissertation: *Pleistocene records of ice sheet processes and glacial history from Antarctica and Greenland*

2011 B.A., Geosciences (Honors), Hamilton College, Clinton, NY

Thesis: *Late Holocene paleoenvironmental history of Barilari Bay, Graham Land, west Antarctic Peninsula*

2010 International Student, University of Otago, Dunedin, NZ

ACADEMIC APPOINTMENTS

2019 – Present *Gund Postdoctoral Fellow*, Gund Institute for Environment, University of Vermont

2019 – 2020 *Lecturer*, Department of Geology, University of Vermont

2018 – 2019 *Visiting Graduate Fellow*, Department of Geology, University of Vermont

2015 – 2019 *Graduate Research Fellow*, National Science Foundation

2014 – 2015 *GK12 STEM Graduate Teaching Fellow*, National Science Foundation

2013 – 2019 *Ph.D. Candidate*, Department of Earth & Environment, Boston University

2010 *Summer Research Fellow*, Department of Geosciences, Hamilton College

OTHER WORK EXPERIENCE

2018 – Present *Independent consultant,* textbook and curriculum development (CENGAGE, W.H. Freeman)

2018 *Assistant Faculty*, Governor's Institute of Vermont, Environmental Science Summer Camp

2011 – 2012 *Environmental Scientist*, URS Corporation, Denver, CO

2008 – 2010 *Hydrogeologist Intern*, URS Corporation, Denver, CO

HONORS & AWARDS

2019 *Postdoctoral Fellowship Competition: Awarded*, Gund Institute for Environment, University of Vermont

2018 *2nd Place, Student Presentation Competition*. Joint Biennial Meeting of the American & Canadian Quaternary Associations

2017 *Outstanding Graduate Seminar.* Department of Earth & Environment, Boston University

2016 *Outstanding Graduate Seminar.* Department of Earth & Environment, Boston University

2015 *Graduate Research Fellowship: Awarded*. National Science Foundation

2014 *Antarctica Service Medal of the United States*. United States Congress & National Science Foundation

2014 *Graduate Research Fellowship: Honorable Mention*. National Science Foundation

2012 *President's Award.* URS Corporation. Highest award conferred to employees in the global Infrastructure and Environment Division (>20,000 employees)

2012 *Pyramid Award for Safety.* URS Corporation. Regional corporate recognition.

2011 *Roger's Prize in Geology.* Hamilton College. Best department record and senior thesis.

2011 *Geosciences Departmental Honors*, Hamilton College

2010 – 2011 *1812 Leadership Scholar*, Hamilton College

2008 – 2010 *Dean's List*, Hamilton College

RESEARCH FUNDING

Co-PI, ANS-Arctic Natural Sciences, National Science Foundation, 2021 – 2023, *Collaborative Research: A fossil ecosystem under the ice: deciphering the glacial and vegetation history of northwest Greenland using long-lost Camp Century basal sediment*. Total: $1,158,220; to UVM: $365,859.

Gund Postdoctoral Fellowship, Gund Institute for Environment, 2019 – Present. $10,000 research fund.

Graduate Research Fellowship, National Science Foundation, 2015 – 2019, $210,000.

TEACHING

Year	Role	Course	No. of pupils	Responsibilities
University of Vermont				
Spring 2020	*Faculty*	GEOL001 Earth System Science	165	Taught lectures; re-designed laboratory exercises and field trips; managed 3 TAs teaching 9 lab sections; adhered to university policies for accessibility. Transitioned lectures and labs to online instruction during COVID-19 pandemic.
Fall 2019	*Faculty*	GEOL055 Environmental Geology	40	Taught both lecture and 2 laboratory sections; developed new exercises and field trips; managed 1 TA. Taught environmental field geology methods and mapping skills; advised students on independent research projects.
Governor's Institute of Vermont				
Summer 2018	*Assistant Faculty*	Environmental Science Camp	15	Taught environmental field methods and oversaw research projects. Resident advisor to male-identifying students.
Boston University				
Fall 2016	*Teaching Assistant*	ES191: Climate Science Seminar I	15	Taught lectures, designed in-class activities; part of the Boston University Research, Education, and Communication of Science program (BURECS). Facilitated classroom discussions and helped organize invited seminar series.
Summer 2016	*Intern Advisor*	BURECS Summer Program	10	Mentored students' summer research projects on Antarctic glacial geology, Martian geologic mapping in ArcGIS, and science communication campaigns.
Spring 2016	*Teaching Assistant*	ES192: Climate Science Seminar II	15	Taught lectures, designed activities, supervised semester-long outreach projects. Part of BURECS

Year	Role	Course	No. of pupils	Responsibilities
Fall 2015	Teaching Assistant	ES191: Climate Science Seminar I	15	Led three undergraduates on a research expedition to Antarctica in 2015, and taught them skills related to geomorphologic mapping, sample collection and management. Fully responsible for group safety in the field. Taught lectures; designed in-class activities. Part of BURECS
Summer 2015	Intern Advisor	BURECS Summer Program	3	Mentored students on summer research projects, oversaw re-organization of storage facility containing >30 years of Antarctic rock, sediment, and volcanic ash samples.
Spring 2015	Teaching Assistant	ES192: Climate Science Seminar II	15	Mentored field assistants on research and outreach projects; fully responsible for group safety in the field. Taught lectures, designed in-class activities. Part of BURECS
Spring 2014	Teaching Assistant	ES333: Earth Surface Processes	40	Taught 2 laboratory sections. Designed and taught exercises focused on geospatial reasoning and geologic mapping, Quaternary geochronologic techniques using research data from Antarctica. Helped lead field trips in eastern Massachusetts.
NSF STEM GK12 Graduate Teaching Program, Michael Driscoll School, Brookline, MA				
Fall 2014 - Spring 2015	Resident Scientist	6-8th grade general science classes	180	Developed a new climate science curriculum for 8th grade classes that integrated atmospheric science, oceanography, surface processes, and renewable energy topics. Designed hands-on laboratory activities to teach surface hydrology, hydrogeology, glaciology, and basic water chemistry for 6th grade classes. Taught 7th grade students the history of life on earth during units on genetics and evolution.
Hamilton College				
Spring 2009	Teaching Assistant	GEOSC209S Hydrogeology	25	Graded lab assignments; assisted with field trips.

MENTORING EXPERIENCE

Undergraduates

1. *Emily Cummings*, UVM College of Arts & Sciences, Class of 2022.
2. *Emelia Chamberlain*, BU College of Arts & Sciences, Class of 2018. *Now*: NSF Graduate Research Fellow & PhD Student, Scripps Institution of Oceanography & University of California San Diego
3. *Natalie Robinson*, BU College of Arts & Sciences, Class of 2018. *Now*: Orangutan Field Researcher in Borneo, Indonesia with the Boston University Biological Anthropology Lab
4. *Daniel Rybarcyzk*, BU College of Arts & Sciences, Class of 2018. *Now*: Barry Goldwater Scholar and PhD Student, Department of Astronomy, University of Wisconsin-Madison
5. *John Hunter*, BU College of Arts & Sciences, Class of 2019. *Now:* PhD Student, Department of Astrophysics, Purdue University
6. *Chase Young*, BU Undergraduate (Class of 2019)

FIELDWORK

Year	Role	Location	Responsibilities
2015-2016	Expedition Leader	McMurdo Dry Valleys & McMurdo Sound, Antarctica	Responsible for coordinating field logistics, team safety, administering medical care, and executing scientific objectives. Led the scientific expedition to conduct glacial geologic mapping, sampling rocks for cosmogenic nuclide dating, and collection of fossil algae for radiocarbon dating on Mount Discovery, Black Island, Cotton Glacier, and Olympus Range Mountains.
2014-2015	Field Assistant	McMurdo Dry Valleys, Antarctica; McMurdo Sound, Antarctica	Conducted glacial geologic mapping, sampling rocks for cosmogenic nuclide dating, and collecting short ice cores on Brown Peninsula, the Quartermain Mountains, and Mackay Glacier.
2013-2014	Field Assistant	McMurdo Dry Valleys, Antarctica; McMurdo Sound, Antarctica	Sampling clasts for cosmogenic nuclide dating in Taylor Valley, Wright Valley, Victoria Valley. Project: “Collaborative Research: Multi-nuclide approach to systematically evaluate the scatter in surface exposure ages in Antarctica and to develop consistent alpine glacier chronologies”. Glacial geologic mapping and sampling clasts for cosmogenic nuclide dating on Mount Discovery.
Spring 2013	Field Assistant	Antarctic Peninsula aboard the RV-IB ARAON (Korea)	International, interdisciplinary research cruise in the Antarctic Peninsula to study linkages between cryosphere, biosphere, ocean, atmosphere, and rapid recent climate change. Responsibilities included marine sediment core collection and sub-sampling, multi-beam swath bathymetric survey data editing, collection of rock samples for cosmogenic nuclide dating, physical oceanographic surveys, and sea ice coring.
2011-2012	Geologist	Western U.S. (AZ, CO, TX, WY)	Collected thousands of groundwater, surface water, soil, air, and radiation exposure samples at federal, state, and commercial environmental sites. Coordinated site visits and executed sampling events across the western US including former precious metal and uranium mines, military bases, oil and gas facilities, and commercial sites. Managed and shipped thousands of samples according to Department of Energy and Department of Transportation regulations. Collaborated with state and federal agencies to design environmental sampling plans and future remediation services. Major clients: U.S. National Park Service, Kinder Morgan, U.S. National Forest Service, U.S. Air Force, Chevron, Colorado Department of Public Health and Environment.
2010	Student	South Island of New Zealand	Learned basic geologic field mapping skills on the South Island of New Zealand in the Otago, Canterbury, and Fiordland regions.

PUBLICATIONS

**Undergraduate advisee*

Published

1. **Christ, A.J.**, Bierman, P.R., Schaefer, J.M., Dahl-Jensen, D., Steffensen, J.P., Corbett, L.B., Peteet, D.M., Thomas, E.K., Steig, E.J., Rittenour, T.M., Tison, J-L., Blard, P-H., Perdrial, N., Dethier, D., Lini, A., Hidy, A.J., Caffee, M., Southon, J., 2021*,* "A multi-million-year-old record of Greenland vegetation and glacial history preserved in sediment beneath 1.4 km of ice at Camp Century", *Proceedings of the National Academies of Sciences*. v. 118, no. 13, e2021442118. doi: 10.1073/pnas.2021442118. *Featured on the cover of journal; see press coverage below.*
2. *Chamberlain, E.J., **Christ, A.J.**, Fulweiler, R.W., 2021, "Influence of Late Holocene climate on Lake Eggers hydrology, McMurdo Sound", *Antarctic Science*. v. 33, no. 2, p. 217-229. doi:10.1017/S0954102021000018.
3. Bierman, P.R., Bender, A.M., **Christ, A.J.,** Corbett, L.B., Halsted, C.T., Portenga, E.W., Schmidt, A.H., 2020 "Cosmogenic Nuclides in Earth Surface Processes", in *Reference Module in Earth Systems and Environmental Sciences,* doi:10.1016/B978-0-08-102908-4.00124-7. IBSN: 978-0-12-409548-9
4. **Christ, A.J.,** Bierman, P.R., Knutz, P., Corbett, L., Fosdick, J., Thomas, E., Cowling, O., Hidy, A., Caffee, M., 2020. "The Greenland Ice Sheet during the Early Pleistocene was similar to today", G*eophysical Research Letters*, v. 47, e2019GL085176. https://doi.org/10.1029/2019GL085176
5. **Christ, A.J.**, Bierman, P.R., 2020. "The local Last Glacial Maximum in McMurdo Sound, Antarctica: implications for ice-sheet behavior in the Ross Sea Embayment", *Geological Society of America Bulletin.* v.132, no. 1-2, p. 31 – 47. doi: 10.1130/B35139.1. *Featured Cover Article.*
6. Kim, S., Yoo, K.C, Lee, J.I., Khim, B., Bak, Y., Lee, M.K., Lee, J., Domack, E.W., **Christ, A.J.,** Yoon, H., 2018. "Holocene paleoceanography of Bigo Bay, west Antarctic Peninsula: Connections between surface water productivity and nutrient utilization and its implication for surface-deep water mass exchange". *Quaternary Science Reviews*, v.192, p. 59-70. doi:10.1016/j.quascirev.2018.05.028
7. **Christ, A.J.,** Talaia-Murray, M., Elking, N., Domack, E.W., Leventer, A., Lavoie, C., Brachfeld, S., Yoo, K., Gilbert, R., Jeong, S., 2015. "Late Holocene Glacial advance and ice shelf growth, Barilari Bay, Graham Land, west Antarctic Peninsula". *Geological Society of America Bulletin*, v.127, no. 1-2. P. 297-315. doi:10.1130/B31035.1

In review or in progress

8. **Christ, A.J.**, Bierman, P.R., Lamp, J.L., Schaefer, J.M., Winckler, G., in review*,* "Cosmogenic nuclide exposure age scatter in McMurdo Sound, Antarctica records Pleistocene glacial history and processes" submitted to *Geochronology,* June 2021.
9. **Christ, A.J.,** Rittenour, T.M., Bierman, P.R., Schaefer, J.M., Knutz, P.K, Thomsen, T., Kuelen, N., Fosdick, J., Hemming, S., Kiesling, B., Dahl-Jensen, D., Blard, P-H, Tison, J.L., *in prep*. "Direct terrestrial evidence for substantial retreat and re-formation of the northwest Greenland Ice Sheet during Marine Isotope Stage 11".
10. **Christ, A.J.**, *in prep* "Ice core basal materials: insights to glacial history and process, paleo-ecosystems, and ice sheet behavior". *Invited review article, Quaternary Science Reviews.*

INVITED SEMINARS

1. Landscapes Live Seminar Series, European Geophysical Union, September 2021.
2. Renaissance Institute, Notre Dame of Maryland University, July 2021.
3. Dartmouth, Ice + Climate Seminar Series, July 2021.
4. Paleo Constraints on Sea Level Rise (PALSEA) Seminar, June 2021.
5. Philadelphia Geological Society, April 2021.
6. International Glaciological Society Global Seminar Series, March 2021.
7. Dept. of Geography, Geosciences Institute, Federal University of Rio de Janeiro, UFRJ, Brazil, March 2021.
8. Earth's Climate: Past, Present, Future, Department of Geology, University of Vermont, February 2021.

9. Glacial Geology class, Dept. of Geology, University of Vermont, February 2021.
10. Renaissance Institute, Notre Dame of Maryland University, January 2021.
11. Geology Webinar Series, University of Vermont, October 2020.
12. School of Earth & Sustainability Seminar Series, Northern Arizona University, September 2020.
13. Public Online Seminar, GFZ-Potsdam, Germany, May 2020.
14. Polar Seminar Series, Scripps Institution of Oceanography, University of California San Diego, May 2020.
15. edWeb.net & Jason Learning online seminar, November 2019. *Broad audience of teachers and students of all ages, >250 attendees.*
16. Department of Geology Seminar Series, University of Vermont, January 2018.
17. Global Awareness Day, Cherry Creek High School, Greenwood Village, CO, February 2017. Keynote speaker to >800 high school students.
18. Chemistry Department, Cherry Creek High School, Greenwood Village, CO, March 2015.

CONFERENCE ABSTRACTS, POSTERS, AND PRESENTATIONS

*Undergraduate advisee

1. ***Invited keynote* – Christ, A.J., 2021** "Camp Century revisited: an ecosystem under the ice reveals Greenland's warmer past". 50th Annual Arctic Workshop. Boulder, CO.
2. ***Invited* – Christ, A.,J.,** Bierman, P.R., Schaefer, J.M., Dahl-Jensen, D., Steffensen, J.P., Steig, E.J., Thomas, E.K., Peteet, D.M., Rittenour, T.M., Corbett, L.B., Tison, J.L., Blard, P.H., Perdrial, N., Dethier, D.P., Lini, A., Hidy, A.J., Caffee, M.W., Southon, J., 2020. "A multi-million-year record of vegetation and ice-cover in the basal sediment from the Camp Century ice core, northwestern Greenland". AGU2020.
3. **Christ, A.J.,** Bierman, P.R., Schaefer, J.M., Dahl-Jensen, D., Steffensen, J.P., Steig, E.J., Thomas, E.K., Peteet, D.M., Rittenour, T.M., Corbett, L.B., Tison, J.L., Blard, P.H., Perdrial, N., Dethier, D.P., Lini, A., Hidy, A.J., Caffee, M.W., Southon, J., 2020, "Camp Century ice core basal sediments contain a multi-million-year rocrd of ice-cover and vegetation in northwestern Greenland". Online oral presentation Geological Society of America Abstracts with Programs. Vol 52, No. 6. doi: 10.1130/abs/2020AM-357268
4. **Christ, A.J.,** Perdrial, N., Bierman, P.R., Hughes, J., Knutz, P.C., Thomsen, T.B., Hemming, S., Fosdick, J.C., Dahl-Jensen, D., Steffensen, J.P, 2020. "Camp Century basal sediment revisited: a multi-parameter geochemical analysis, northwest Greenland". Online oral presentation. Goldschmidt2020 Abstract.
5. **Christ, A.J.**, Bierman, P., Dahl-Jensen, D., Steffensen, J., Peteet, D., Thomas, E., Cowling, O., Steig, E., Corbett, L., Schaefer, J., Hidy, A., Caffee, M., Rittenour, T., Tison, J.-L., Blard, P.-H., Protin, M., and Southon, J., 2020. "Camp Century ice core basal sediments record the absence of the Greenland Ice Sheet within the last million years", EGU General Assembly 2020, Online, 4–8 May 2020, EGU2020-12243, https://doi.org/10.5194/egusphere-egu2020-12243, 2020
6. **Christ, A.J.,** Bierman, P.R., Knutz, P., Corbett, L., Fosdick, J., Thomas, E., 2019. "Extracting histories of climate, erosion, and vegetation from glacial marine diamict, an under-utilized archive: proof of concept from Melville Bugt, NW Greenland". Oral Presentation. Geological Society of America Abstracts with Programs. Vol. 51, No. 5, Phoenix, AZ doi: 10.1130/abs/2019AM-338462
7. Bierman, P.R., Montgomery, D.R., **Christ, A.J.**, 2019, Key Concepts in Geomorphology – edition 2 of a community-based textbook. Poster presentation. Geological Society of America Abstracts with Programs. Vol. 51, No. 5, Phoenix, AZ, doi: 10.1130/abs/2019AM-336235
8. **Christ, A.J.,** Bierman, P.R., Knutz, P., Corbett, L., Fosdick, J., Thomas, E., 2019. "Developing multi-proxy analyses for an under-utilized archive, glacial marine diamict: a proof-of-concept from west, Greenland". Poster presentation. International Union of Geodesy and Geodynamics Meeting, Montreal, QC.
9. **Christ, A.J.,** Bierman, P.R., Knutz, P., Corbett, L., Fosdick, J., Thomas, E., 2019. "Developing new proxies for an under-utilized archive, glacial marine diamict: a pilot study from West Greenland". Poster presentation. Arctic Workshop, Stockholm, Sweden.

10. **Christ, A.J.**, Bierman, P.R., 2018. “Distribution and sources of scatter in Antarctic exposure age chronologies: a case study from McMurdo Sound”. Poster presentation. Geological Society of America Abstracts with Programs. Vol. 50, No. 6, Indianapolis, IN. doi: 10.1130/abs/2018AM-322603
11. *Chamberlain, E.J., **Christ A.J.**, Fulweiler, R.W. 2018. "Exploring the hydrologic and biogeochemical controls on the ecology of Lake Eggers, McMurdo Sound, Antarctica". Poster, Abstract No. #22, 82nd American Society for Microbiology Southern California Branch Annual Meeting, La Jolla, CA.
12. Bierman, P.R., Corbett, L.B., **Christ, A.J.**, Halsted, C., 2018 “You can learn and do cosmogenic Be-10 and Al-26 at the University of Vermont’s community sample processing facility”. Poster presentation. Joint Meeting of the American Quaternary Association and Canadian Quaternary Association, Ottawa, ON.
13. **Christ, A.J.**, Bierman, P.R., 2018 “Integrating terrestrial and marine records of the LGM in McMurdo Sound, Antarctica: implications for grounded ice expansion, ice flow, and deglaciation of the Ross Sea Embayment”. Oral presentation. Joint Meeting of the American Quaternary Association and Canadian Quaternary Association, Ottawa, ON. *Received 2nd place for Best Student Presentation.*
14. *Hunter, J.M., *Young, C.A., **Christ, A.J.**, Withers, P., Marchant, D.R., 2018. “Survey of Martian Mid-Latitudinal Craters Containing Possible Glacial Landforms”. Poster presentation. Abstract No. #1128. 49th Lunar & Planetary Science Conference, Houston, TX.
15. Dennis, D.P., Marchant, D.R., **Christ, A.J.,** Ehrenfeucht, S., and BURECS Science Team, 2017. “BURECS: An Interdisciplinary Undergraduate Climate Science Program”. Abstract No. 241306 (Poster). AGU Fall 2017 Meeting, New Orleans, LA.
16. **Christ, A.J.**, Marchant, D.R., 2017. “Integrating terrestrial and marine records of the LGM in McMurdo Sound, Antarctica: implications for grounded ice expansion, ice flow, and deglaciation of the Ross Sea Embayment”. Abstract No. C21E-1167 (Poster). AGU Fall 2017 Meeting, New Orleans, LA.
17. **Christ, A.J.,** Marchant, D.R., 2017. “Glacial geomorphologic map of McMurdo Sound, Antarctica (78°S): a terrestrial record of Late Pleistocene glaciations in the Ross Sea with implications for former ice sheet volume and contribution to deglacial sea level rise.” Poster presentation in the Best Student Geologic Map Competition, Geological Society of America Abstracts with Programs. vol. 49, no. 6, Seattle, WA, October 2017. doi: 10.1130/abs/2017AM-305337
18. **Christ, A.J.,** Marchant, D.R., 2017. “A terrestrial perspective of the LGM in McMurdo Sound, Antarctica: implications for marine ice sheet dynamics, ice flow, and deglaciation of the Ross Sea Embayment” Oral presentation, Geological Society of America Abstracts with Programs. vol. 49, no. 6, Seattle, WA, October 2017. doi: 10.1130/abs/2017AM-305311
19. Kim, S., Yoon, H.I., Yoo, K., Lee, J.L., Lee, M.K., Khim, B.K., Domack, E.W., **Christ, A.J.**, 2016. “Record of Holocene paleoclimate change in outer Bigo Bay, West Antarctic Peninsula”. Scientific Committee on Antarctic Research: Biennial Meetings & Open Science Conference, Kuala Lumpur, Malaysia, August 2016.
20. Domack, E.W., Shevenell, A., Smith, K., Rosenheim, B., Ishman, S., Leventer, A., Subt, C., Peck, D., Yoon, H., Yoo, K., Wellner, J., Seong, Y.B., Evans, J., **Christ, A.J.**, Jeong, A., 2016 “A high resolution record of trans-Antarctic peninsula ice stream retreat and a comparison of potential forcing mechanisms”. Scientific Committee on Antarctic Research: Biennial Meetings & Open Science Conference, Kuala Lumpur, Malaysia, August, 2016.
21. **Christ, A.J.,** Talaia-Murray, M., Domack, E.W., Leventer, A., Lavoie, C., Brachfeld, S., Yoo, K., Gilbert, R., Jeong, S., Wellner, J., 2014. "Late Holocene glacial advance and ice shelf growth in Barilari Bay, Graham Land, west Antarctic Peninsula". Oral presentation, Geological Society of America Meeting Abstract, vol. 46, no. 6, Vancouver, Canada, October 2014.
22. Domack, E.W., **Christ, A.J.,** Brachfeld, S., 2013. "Chronology of Late Holocene paleoenvironmental variability of Barilari Bay, west Antarctic Peninsula". Oral presentation, Larsen Ice Shelf System (LARISSA) Research Group Meeting. Lamont-Doherty Earth Observatory, Columbia University, NY, May 2013.
23. Elking, N.C., Talaia-Murray, M., **Christ, A.J**., Domack, E.W., 2012 "Establishing a High-Resolution Record of the Little Ice Age in Barilari Bay, Graham Land". Poster presentation at the 12th Scientific Committee on Antarctic Research (SCAR) Meeting. Portland State University, Portland, OR, July 2012.
24. **Christ, A.J.,** Slape, K.N., URS Corporation, 2012. "Leavenworth Creek Data Gap Analysis Report". Oral presentation to the U.S. Forest Service, U.S. Geological Survey, U.S. Environmental Protection Agency, and

Colorado Department of Public Health and Environment regarding stream quality degradation in a high alpine stream due to historic mining activities. United States Forest Service, Region 2 Office, Lakewood, CO, April 2012.

25. Jeong S., Gunter M., Leventer A., Domack, E.W., Vadman, K., Brachfeld, S., Rosenheim, B., Santoro, J., **Christ, A.J.**, 2011. "Diatom-based reconstruction of Holocene oceanographic conditions across the western Antarctic Peninsula shelf." Poster Presentation. 11th International Symposium on Antarctic Earth Sciences, Abstract P07.23, Edinburgh, Scotland, July 2011.
26. **Christ, A.J.,** 2011. "Late Holocene paleoenvironmental history of Barilari Bay, Graham Land, west Antarctic Peninsula." Oral presentation. Larsen Ice Shelf System Antarctica (LARISSA) Research Group Meeting, National Snow and Ice Data Center, University of Colorado Boulder, June 2011.
27. **Christ, A.J.,** 2011. "Late Holocene paleoenvironmental history of Barilari Bay, Graham Land, west Antarctic Peninsula." Poster presentation. Central New York Earth Science Student Symposium, Syracuse University, April, 2011.
28. Peers, C., Verreydt, W., Kirievskaya, D., Sanchez Cervera, C., Povea de Castro, P., Jeong, S., Gao, S.J., **Christ, A.J.,** Kirshner, A.E., Domack, E.W., and the LARISSA undergraduate Team, 2011. "Ice shelves along the Western Antarctic Peninsula during the Little Ice Age: observations from the LARISSA project in Barilari Bay, Graham Land". Poster presentation. Geophysical Research Abstracts, Vol. 13, EGU2011-12184. European Geophysical Union General Assembly, Vienna, Austria, April 2011.
29. Kirshner, A.E, **Christ, A.J**., Allinger, T., Armbruster, G., Crawford, A., Elking, N., Gao, J., Gunter, M., Kirievskaya, D., Jeong, S.M., Peers, C., Castro P., Reardon, D., Sánchez Cervera, C., Talaia-Murray, M., Verreydt, W., Ward, M., 2010. "Evidence for more extensive Ice Shelves along the Western Antarctic Peninsula during the Little Ice Age: observations from the LARISSA project in Barilari Bay, Graham Land". Poster presentation, American Geophysical Union annual meeting, Abstract No. GC43E-1006, San Francisco, December 2010.

PRESS COVERAGE

Christ et al., 2021 (PNAS) received wide coverage in the international, national, and local press.

Major news outlets

Washington Post (syndicated by many outlets including Irish Independent, Seattle Times, Stars and Stripes); CNN (syndicated by many TV stations including WTOP-FM (Washington, DC), KMIZ-TV (Columbia, MO), KVIA-TV (El Paso, TX), KTVI-TV (St. Louis, MO)); Nature; Wired; The Times of London; Le Monde; New York Daily News; The Weather Channel.

Radio & podcast interviews

Science Friday (NPR); Quirks & Quarks (CBC radio); Radio EcoShock (syndicated on 105 non-profit radio stations); Nature Bats Last (Progressive Radio Network); Parsing Science (science podcast)

Science magazines and websites

Popular Science; Forbes; Atlas Obscura; Cosmos; Inside Climate News; BBC Science Focus; Esquire; IFL Science; Earther (Gizmodo); CNET; Live Science; SciTech Daily; Earth.com; Science Alert; Real Clear Science; State of the Planet; Science Daily; Environmental News Network; Barrons; Courthouse News; Ecowatch; Nature World News; Science Times; New Atlas; Ecowatch; Business Insider; Technology Times; Science X; BFM-TV; Explica.co; EarthSky

International coverage

AFP (Agence France Press news wire); Le Parisien (France); The Daily Mail; MSN (India); 45Secondes (France); Damals (Germany); The Independent; Nico Nico News (Japan); Geo (Germany); Australian Times; Videnskab.dk; Science et Avenirs; Gizmodo Australia; The Hindu; Sky News; TV5Monde; Wissenschaft.de; Scientias; Furtura Sciences; Science Post; Ulyces; France24; El Bravo; Milenio; The Australian (paywall); El Diario de Chihuahua (Mexico); Kompas.com (Jakarta)

Television

KSL-TV5 (Utah); WCAX-3 (Vermont)

The Conversation:

Paul Bierman and I published a short essay summarizing the significance of our research in *The Conversation*, a media outlet written by experts for general audiences. Hundreds of outlets syndicated our article, including: Associated Press; Public Radio International; Agenda (World Economic Forum); Houston Chronicle; Yahoo! News; Arctic Today; Albany Times Union; Stamford Advocate; San Antonio Express-News; Shelton Herald; MENAFN; Fredericksburg Free Lance-Star; Martinsville Bulletin; Morganton News Herald; Roanoke Times; McDowell News; Greensboro News & Record; North Platte Telegraph; The Daily Progress; The Statesville Record; The Idaho Press; The News and Advance; Grand Island Independent; Waco Tribune Herald; Winston-Salem Journal; Yakima Herald Republic; Natural Resources, among others.

PROFESSIONAL SOCIETIES

Geological Society of America, American Geophysical Union, Association for Polar Early Career Scientists, American Quaternary Association, European Geophysical Union

PEER-REVIEW SERVICE

Geology, GSA Bulletin, Boreas, Quaternary Geochronology

PROFESSIONAL SERVICE

2021 *Proposal reviewer*, Office of Polar Programs, National Science Foundation

2021 *Session convener*, EGU 2021, *CL4.25: Polar regions – climate, oceanography, tectonics, and geohazards*

2020 *Session co-convener*, EGU 2020, *CL4.25: Polar regions – climate, oceanography, tectonics, and geohazards*

ACADEMIC ADVISORS

Post-Doc: *Paul R. Bierman*, University of Vermont

Ph.D.: *Paul R. Bierman*, University of Vermont/Boston University (2018 – 2019)

David R. Marchant, Boston University (2013 – 2017)

B.A.: *Eugene W. Domack*, Hamilton College

SKILLS

Communication: public speaking, media interviews, graphic design, social media

Computer: ArcGIS 10.5, QGIS, GDAL, ENVI, R, MatLab, Python, Adobe Creative Suite (Illustrator & Photoshop), geospatial data management, digital photography

Laboratory: radiocarbon sample preparation, sediment distillation and sampling for volcanic crystals, cosmogenic nuclide sample preparation and extraction, scanning electron microscopy, ice core sampling, Malvern particle size analysis, wet sieving, foraminifera picking for radiocarbon analysis, rock and sediment sample repository organization

Field: cosmogenic nuclide rock sampling, soil pit excavation and sedimentological description, sampling fossil organic matter for radiocarbon dating, ice core hand auger drilling, differential GPS surveys, camp management, field logistics & operations, sample management, domestic and international shipping (including heavy, expensive, frozen, and/or radioactive materials), oceanographic water sampling, marine sediment core collection and sub-sampling (Kasten cores, gravity cores, multi-cores), sediment trap retrieval and subsampling, ground water sampling (passive diffusion bags, hand bailing, well pumping), surface water flow rate measurements, surface water sampling, Geoprobe and hollow stem auger drill logging and sediment sampling, monitoring well and piezometer completion, groundwater level measurement, LNAPL remediation well operation