

Jeremy D. Shakun

Associate Professor
Department of Earth & Environmental Sciences

Boston College
Devlin Hall, 140 Commonwealth Ave.
Chestnut Hill, MA 02467

Ph. 617-552-1625
Fax. 617-552-2462
Email: jeremy.shakun@bc.edu

Appointments

2019-Present Associate Professor, Boston College, Earth & Environmental Sciences
2013-2019 Assistant Professor, Boston College, Earth & Environmental Sciences
Winter 2013 Visiting Instructor, Middlebury College, Geology
Fall 2012 Lecturer, Northeastern University, Earth and Environmental Sciences
2010-2013 Postdoctoral Fellow at Boston University, Woods Hole Oceanographic Institution, Harvard University, Lamont Doherty Earth Observatory
Fall 2009 Lecturer, Oregon State University, Geosciences
2006-2010 Research Assistant, Oregon State University, Geosciences
2005-2006 Teaching Assistant, Oregon State University, Geosciences
2003-2005 Research and Teaching Assistant, University of Massachusetts, Geosciences
Summer 2002 Field mapping, USGS EDMAP Program, Uinta Mountains, Utah

Education

2012 NOAA Climate and Global Change Postdoctoral Fellow
"Ice sheet sensitivity to radiative forcing: Testing multiple hypotheses for the 41-kyr world"
advisor: Maureen E. Raymo
2010 Ph.D., Geology, Oregon State University
"Analyzing large paleoclimate datasets: Implications for past and future climate change"
advisor: Peter U. Clark
Minor degrees: Oceanography, advisor: Alan C. Mix; Atmospheric Science, advisor: Jeffrey Shaman
2006 M.S., Geology, University of Massachusetts, Amherst
"A high-resolution speleothem record of Indian Ocean climate over the last glacial termination"
advisor: Stephen J. Burns
2003 B.A., Geology, Summa Cum Laude, Middlebury College
"Last Glacial Maximum equilibrium-line altitudes and paleoclimate, northeastern Utah"
advisor: Jeffrey S. Munroe

Philosophy

I am a paleoclimatologist who uses the geologic record to understand the behavior of the climate system on decadal to million-year time scales. Given the complexity and interdisciplinary nature of climate science, my research takes a broad and highly collaborative approach. I generate new reconstructions of climate change from glacier, cave, and marine deposits using various geochemical techniques as well as mine existing data to address central questions in paleoclimatology. This work involves a balance between field, laboratory, and statistical components, and collaboration with various types of specialists. I am keenly interested in effectively communicating science to students and nonscientists. I believe this can best be accomplished by providing a holistic perspective that links the detailed techniques and problems in earth science to the big-picture issues surrounding global change.

Grants

- 2018 NSF EAR-1805620 “*Collaborative Research: Holocene glacier length variations along the spine of the American Cordilleras and their climatic significance*”; start date 7/1/18; PI: Shakun; Co-PIs: Goehring, Marcott; \$78,559 (BC portion)
- 2016 NSF OPP-1607816 “*Collaborative Research: Speleothem records of permafrost thaw and paleoclimate in the North American Arctic*”, start date 9/1/16; PI: Shakun; Co-PIs: McGee, Wong; \$117,761 (BC portion)
- 2016 NSF EAR-1603175 “*Collaborative Research: Constraining the timing and rate of southeastern Laurentide Ice Sheet thinning during the last deglaciation with cosmogenic nuclide dipsticks*”, start date 8/1/16; PI: Shakun; Co-PIs: Bierman, Davis; \$70,095 (BC portion)
- 2016 NSF EAR-1535824 “*Early Career: Upgrade of isotope ratio mass spectrometer at Boston College*”, start date 3/1/16; PI: Wong; Co-PI: Shakun; \$162,557 (BC portion)
- 2014 NSF AGS-1449148 “*Workshop – Past as prologue: Holocene climate as context for future climate change; Mount Hood, Oregon; October 14-16, 2014*”, start date 9/1/14; PI: Shakun; Co-PI: Marcott; \$49,993 (BC portion)
- 2014 Past Global Changes “*Workshop – Past as prologue: Holocene climate as context for future climate change; Mount Hood, Oregon; October 14-16, 2014*”, start date 9/1/14; PI: Shakun; Co-PI: Marcott; \$10,000 (BC portion)
- 2010 NSF PLR-1023191 “*Deciphering 6 My of Greenland ice sheet history using in situ 10-Be from marine sediment cores*”, start date 9/1/10; PI: Bierman (Shakun co-wrote proposal but ineligible for PI status); \$324,613 (to U. of Vermont)
- 2007 NSF BCS-0728358 “*Doctoral Dissertation Research: Developing a cosmogenic chronology of tropical glaciation in the Peruvian Andes*”, start date 7/15/07; PI: Clark (Shakun wrote proposal but ineligible for PI status); \$12,000 (to OSU)

Awards

- 2018 Professor of the Year, Awarded by students of the Department of Earth and Environmental Sciences at Boston College
- 2015 EGU Climate Division Outstanding Young Scientist Award
- 2015 Professor of the Year, Awarded by students of the Department of Earth and Environmental Sciences at Boston College
- 2010 NOAA Climate and Global Change Postdoctoral Fellowship
- 2009 Lance Forsythe Memorial Fellowship for Renaissance thinking, Oregon State University
- 2003 Phi Beta Kappa
- 2003 Charles Doll Award, Vermont Geological Society
- 1999 Salutatorian, Seton Catholic Central H.S., Binghamton, NY

Invited Professional Lectures

- 2019 Boston College, Institute for Scientific Research: *Arctic permafrost stability over the past 1.5 million years inferred from cave deposits*
- 2019 University of Vermont, Greenland Ice Sheet workshop: *The history of the Greenland Ice Sheet as viewed from the seafloor*
- 2019 University of Connecticut, Department of Geosciences: *Increasing Pleistocene interglacial permafrost stability from Arctic cave deposits*
- 2019 Tulane University, Department of Earth and Environmental Sciences: *Constraining the collapse of the Laurentide Ice Sheet in New England with cosmogenic nuclide dipsticks*
- 2018 University of Massachusetts-Amherst, Department of Geosciences: *Constraining the collapse of the Laurentide Ice Sheet in New England with cosmogenic nuclide dipsticks*
- 2018 Harvard University, Department of Earth and Planetary Sciences: *Eight million years of polar ice sheet variability from cosmogenic nuclides in marine sediments*

- 2017 PALSEA2 workshop, Cancun, Mexico: *Minimal East Antarctic Ice Sheet retreat onto land during the past 8 Myr*
- 2017 GSA annual meeting, Seattle, WA, *Pliocene Greenland Ice Sheet growth recorded by in situ ¹⁰Be decrease in multiple marine sediment cores*
- 2017 Woods Hole Oceanographic Institution, Marine Chemistry and Geochemistry: *Polar ice sheet variability over the last 8 Myr from cosmogenic nuclides in marine sediments*
- 2016 Boston University, Biogeosciences Seminar: *The long view on climate change, from the Ice Age to the Anthropocene*
- 2016 AMQUA Biennial meeting, Santa Fe, NM: *From the Ice Age the Anthropocene: What the last 21,000 years tells us about 21st century climate change and beyond*
- 2015 AGU fall meeting, San Francisco, CA: *An 800-kyr record of global surface ocean $\delta^{18}O$ and implications for ice volume-temperature coupling*
- 2015 MIT, Oceans/Climate Seminar: *Eight million years of Greenland and Antarctic Ice Sheet dynamics from in situ cosmogenic nuclides in marine sediments*
- 2015 University of Wisconsin-Madison, Department of Geology and Geophysics: *An 800-kyr record of global surface ocean $\delta^{18}O$ and implications for ice volume-temperature coupling*
- 2015 EGU annual meeting, Vienna, Austria: *An 800-kyr record of global surface ocean $\delta^{18}O$ and implications for ice volume-temperature coupling*
- 2014 Dartmouth College, Earth Science Department: *What are the two pillars of paleoclimatology telling us about past (and future) climate change: Separating signal from noise in ocean and ice cores*
- 2014 Royal Swedish Academy of Sciences, Stockholm, Sweden: *How unique is recent climate change in the context of the Holocene?*
- 2013 MIT, Chemical Oceanography and Geobiology Seminar: *The oxygen isotopic composition of the global surface ocean during the past 800,000 years: Implications for climate and ice volume changes over glacial cycles*
- 2013 International Conference on Paleoceanography, Barcelona, Spain: *Changes in global temperature over the past 21,000 years*
- 2013 ECORD Summer School, Bremen, Germany: *Deglacial climate change: from chronologies to causation*
- 2013 Northeast GSA, Bretton Woods, NH: *Near-synchronous global glacier retreat during the last deglaciation associated with increasing atmospheric CO₂*
- 2012 SynTraCE-21 workshop, Brown University: *Near-synchronous global glacier retreat during the last deglaciation associated with increasing atmospheric CO₂*
- 2012 University of Minnesota, National Center for Earth-Surface Dynamics: *The last global warming: what the last 21,000 years tells us about 21st century climate change*
- 2012 Harvard University, Department of Earth and Planetary Sciences: *CO₂ and the last global warming*
- 2011 IODP workshop on Greenland Ice Sheet history, Corvallis, OR: *Deciphering 6 Myr of Greenland Ice Sheet history using in situ ¹⁰Be from marine sediment cores*
- 2011 COST-INTIMATE workshop, Copenhagen, Denmark: *The Syntrace-21 data synthesis: Global and regional climate modes during the last deglaciation and their forcing mechanisms*
- 2011 University of Vermont, Geology Department: *A warm-up to global warming: What the last 21,000 years tells us about 21st century climate change*
- 2011 ACER-INTIMATE workshop, Bordeaux, France: *Global and regional climate modes during the last deglaciation: Separating signal from noise*
- 2011 INQUA Congress, Bern, Switzerland: *Global climate modes during the last deglaciation and implications for the mechanisms of deglacial climate change*
- 2011 Middlebury College, Geology Department: *A warm-up to global warming: What the last 21,000 years tells us about 21st century climate change*
- 2010 AGU fall meeting, San Francisco, CA: *The proxy record of global surface temperature variations during the last deglaciation and implications for climate change mechanisms*
- 2010 Brown University, Department of Geological Sciences: *The role of CO₂ during the last deglaciation*
- 2010 Woods Hole Oceanographic Institution, Paleolunch: *The role of CO₂ during the last deglaciation*

2010 SynTraCE-21 workshop, Mt. Hood, OR: *Surface climate evolution during the last deglaciation in proxy records and the SynTraCE-21 model simulation*

Professional Activities

- 2018- Co-leader (with Natasha Barlow, Alessio Rovere, and Jacky Austermann) of PALSEA (PALeo
2021 constraints on SEA level rise), a PAGES-INQUA working group
- 2019 Co-convener (with Anders Carlson and Tamara Pico) of INQUA session: *Into the Ice Age: Exploring the distribution and volume of ice sheets during past glaciations*
- 2018- Co-guest editor (with Glenn Milne and Natasha Barlow) of a special issue of PAGES Magazine on the status of paleo-sea level research
- 2018 Co-convener (with Jacky Austermann and Rob Barnett) of AGU session: *Sea level and ice sheet reconstructions over glacial cycles*
- 2018 Co-convener (with several others) of Goldschmidt session: *Dynamics and mechanisms of warm climates and climate transitions*
- 2018 Co-convener (with several others) of EGU session: *Quaternary climate transitions and climate-carbon cycle interactions*
- 2017 Co-leader (with Thom Davis) of NEIGC field trip: *Testing the cosmogenic nuclide dipstick model for deglaciation of Mount Washington*
- 2016 Co-convener of Northeast GSA session (with Lee Corbett and Aaron Putnam): *Glacial Landscapes as Recorders of Geomorphic Process and Climate Change*
- 2015 Attended *On the cutting edge: Early Career Geoscience Faculty Workshop: Teaching, Research and Managing your Career*
- 2015 Co-convener (with Thom Davis) of Northeast GSA session: *Climate Change in Space and Time: An Update*
- 2014 Co-leader (with Shaun Marcott) of three-day workshop with 45 scientists at Mt. Hood, OR: *Past as Prologue: Holocene Climate as Context for Future Climate Change*
- 2014- Global and Planetary Change editorial board
- 2014 NSF Past Perspectives on Climate Change review panel member
- 2013 Contributing Author to IPCC 5th Assessment Report Paleoclimate chapter
- 2013 Attended *NSF Expert Witness Training Academy*, William Mitchell College of Law
- 2011 Attended *On the cutting edge: Preparing for an academic career in the geosciences* workshop
- 2010 Co-convener (with Shaun Marcott) of AGU session: *The Dynamics of Glacial Cycles*
- 2008 Co-convener (with Shaun Marcott) of AGU session: *Perspectives on the Past and Future of Paleoceanography and Paleoclimatology*
- 2007 Attended UC-Irvine *Radiocarbon in ecology and earth system science* short course
- 2006 Co-convener (with Shaun Marcott) of AGU session: *The Driver of Quaternary Climate Change: Tropics Versus High Latitudes*

Peer Review

- Manuscripts for Nature, Science, Nature Geoscience, Proceedings of the National Academy of Sciences, Quaternary Science Reviews, Geophysical Research Letters, Journal of Climate, GSA Today, Earth and Planetary Science Letters, Physical Geography
- Proposals for NSF-EAR Global Change, NSF-AGS Paleoclimate, NSF-OPP Arctic Natural Sciences, NSF-OPP Antarctic Glaciology, NSF-OPP Antarctic Earth Sciences, NSF-OCE Marine Geology and Geophysics, National Geographic Society, American Philosophical Society

Theses Supervised

Masters

Current Drew Gorin

Holocene glacier length variations along the American Cordilleras from proglacial ¹⁴C-¹⁰Be measurements

- Current Danielle LeBlanc
Using cosmogenic nuclides in ice-rafted debris to constrain ice sheet dynamics associated with Heinrich events
- 2018 Chris Halsted
Constraining Laurentide Ice Sheet thinning in New England with ¹⁰Be dipsticks
- 2018 Celeste Gambino
A uranium-lead chronology of speleothem deposition in the Canadian Arctic
- 2018 Cole Vickers
Coherent Holocene expansion of a tropical Andean and African glacier
- 2017 Nicole Biller
Widespread Arctic permafrost thaw during Marine Isotope Stage 11 recorded by speleothems
- 2017 Alexandria Koester
Rapid thinning of the Laurentide Ice Sheet in coastal Maine during late Heinrich Stadial 1

Undergraduate

- Current Parker Walsh
Deciphering controls on speleothem growth rates from a global late Quaternary dataset
- Current Hannah Fagan
Global and regional temperature evolution during the last glacial period, 40-20 ka
- 2019 Alex Chansky
Visualizing 20th and 21st century warming with a dynamic map of southward shifting US states
- 2019 Alexandria Kleinschmidt
Speleothem records of Holocene climate variability from the southern Canadian Rockies
- 2017 Peter Brennan
Late Pleistocene speleothem records of Canadian permafrost and climate
- 2016 Heather Roman-Stork
A late Holocene speleothem record of Caribbean climate from Puerto Rico
- 2016 Courtney Cameron
What controls views on climate change at Boston College?
- 2015 Kristy Barnes
A paleoclimate reconstruction using beetles at Arclid Quarry, Cheshire
- 2015 Andrew Jones
Testing the freshwater routing hypothesis for abrupt climate change with a Hudson River paleodischarge record
- 2015 Christine Pang
Global warming or global cooling? Reconstructing ocean heat content changes over the past 10,000 Years
- 2015 Caitlin Rixey
A statistical analysis of causes of temperature variability over glacial cycles

Teaching

At Boston College:

- Exploring the Earth (EESC1132); 45 students; Fall 2015
- Climate Change and Society (EESC1174); 180-200 students; Spring 2014, 2016, 2018, 2019, 2020
- Environmental Systems: Climate Change (EESC2205); 27-45 students; Spring 2015, Fall 2015, Fall 2016, Spring 2018, Fall 2019
- Stratigraphy and Sedimentology (EESC2264); 11 students; Spring 2015
- Paleoclimate Dynamics (EESC4463); 19-27 students; Spring 2016, Fall 2017, Fall 2019
- Climate Change Debates (EESC5549); 11-12 students; Fall 2014, 2016, 2018
- Earth System Seminar (EESC6691); 7-8 students; Fall 2014, 2017, 2018

Prior to Boston College:

- Stratigraphy and Sedimentology (GEO470); Oregon State University; 17 students; Fall 2009
- Dynamic Earth (ENVR1200); Northeastern University; 60 students; Fall 2012
- Past and Future Climate (GEOL2008); Middlebury College; 23 students; January 2013

Boston College and Departmental Service

- Director of Undergraduate Studies, Department of Earth and Environmental Sciences, 2018-present
- Environmental Studies participating faculty, 2019-present
- Search Chair for Assistant Professor in Geochemistry of Near-Surface Processes, Fall 2018
- Academic advisor (~10 students per year), 2013-present
- Freshman summer advising (8 students per year), 2016-2017
- Undergraduate Committee, Department of Earth and Environmental Sciences, 2013-2018
- Department of Earth and Environmental Sciences Seminar Series organizer, 2015-2018
- Department of Earth and Environmental Sciences presentation on Admitted Students Day, 2015-2018
- Department of Earth and Environmental Sciences Graduate Program Development Subcommittee, Fall 2016
- Search Committee for Associate Director of the Environmental Studies Program, Fall 2015

Public Outreach/Service

- 2020 Scientist in NOVA documentary “Polar Extremes”
- 2018 Lecture to Framingham State University freshman seminar: *How paleoclimatology helps us understand current climate change*
- 2018 Informal reviewer for PBS documentary “[Decoding the weather machine](#)”
- 2018 Taught middle/high school teachers and informal science educators at the Museum Institute for Teaching Science [professional development seminar](#), Clark University, MA
- 2017 Taught middle/high school teachers at the Museum Institute for Teaching Science professional development institute “[New visions for a changing world: Towards a pedagogy of climate change](#)”, Framingham State University, MA
- 2017 [Climate Feedback reviewer](#) – a worldwide network of scientists who collectively assess the credibility of influential climate change media coverage
- 2017 Newbury, MA library talk: *Climate change: What we know, what we don't, and why we disagree*
- 2017 Peabody, MA library talk: *Climate change: What we know, what we don't, and why we disagree*
- 2017 Nashua, NH library talk: *Climate change: What we know, what we don't, and why we disagree*
- 2017 Campion Center for elder Jesuits: *Ice cave stalagmites: Records of past permafrost thaw in the North American Arctic*
- 2017 Science advisor to the [2 Degrees Institute](#), a British Columbia-based organization that seeks to educate and empower people to make the changes needed to limit global warming to 2°C
- 2016 Metheun, MA library talk: *Climate change: What we know, what we don't, and why we disagree*
- 2016 Wrote a climate change primer for the online platform WebPort Global, [Climate change and decarbonization](#)
- 2016 Boston Museum of Science talk: *The long view on climate change*
- 2015 Boston College faculty panel, [What are my hopes for COP21 and beyond?](#)
- 2015 Weston, MA Golf Club talk: *From the ice age to the Anthropocene: What the last 21,000 years tell us about 21st century climate change*
- 2015 Golf Course Superintendents Association of Cape Cod talk: *Climate change: What we know, what we don't, and why we disagree*
- 2014- [Climate Voices](#) national speaker network member, which helps connect organizations interested in learning about climate change with local scientific experts

- 2014 Weston Observatory Colloquium Series, Weston, MA talk: *Climate change: What we know, what we don't, and why we disagree*
- 2014 Boston College Fossil Free [divestment panel](#)
- 2014 Mensa annual gathering, Boston, MA talk: *Past climate insights into our warmer future*
- 2014 Participant in [97 Hours of Consensus](#) social media campaign on climate change
- 2014 Contributor to Climate Change National Forum blog, [Teaching climate change through six questions](#)
- 2013 Weston Observatory Colloquium Series, Weston, MA talk: *From the Ice Age to the Anthropocene: What the last 21,000 years tells us about 21st century climate change*
- 2013 Contributor to PBS Learning Media web-based exercise for high school students, [Ancient Ice and Future Climate](#)
- 2010 Scientist on Science Channel's [Deadly Descent](#)

Peer-Reviewed Publications (*denotes Shakun advised student)

-
- In review *Koester, A. J., **Shakun, J. D.**, Bierman, P. R., Davis, P. T., Corbett, L. B., Goehring, B. M., *Vickers, A. C., Zimmerman, S. R. Laurentide Ice Sheet thinning and erosive regimes at Mount Washington, New Hampshire, inferred from multiple cosmogenic nuclides. *Quaternary Science Reviews*.
- 2019 Capron, E., Rovere, A., Austermann, J., Axford, Y., Barlow, N. L. M., Carlson, A. E., de Vernal, A., Dutton, A., Kopp, R. E., McManus, J. F., Menviel, L., Otto-Bliesner, B. L., Robinson, A., **Shakun, J. D.**, Tzedakis, P. C., and Wolff, E. W. Challenges and research priorities to understand interactions between climate, ice sheets and global mean sea level during past interglacials. *Quaternary Science Reviews*.
- 2019 Barth, A. M., Marcott, S. A., Licciardi, J. M., and **Shakun, J. D.** Deglacial thinning of the Laurentide Ice Sheet in the Adirondack Mountains, New York, USA revealed by ³⁶Cl exposure dating. *Paleoceanography and Paleoclimatology*.
- 2019 Marcott, S. A., Clark, P. U., **Shakun, J. D.**, Brook, E. J., Davis, P. T., Caffee, M. W. ¹⁰Be age constraints on latest Pleistocene and Holocene cirque glaciation across the western United States. *npj Climate and Atmospheric Science*.
- 2019 Corbett, L. B., Bierman, P. R., Wright, S. F., **Shakun, J. D.**, Davis, P. T., Goehring, B. M., *Halsted, C. T., *Koester, A. J., Caffee, M. W., Zimmerman, S. R. Analysis of multiple cosmogenic nuclides constrains Laurentide Ice Sheet history and process on Mt. Mansfield, Vermont's highest peak. *Quaternary Science Reviews*, 205, 234-246.
- 2018 **Shakun, J. D.**, Corbett, L. B., Bierman, P. R., Underwood, K., Rizzo, D., Zimmerman, S. R., Caffee, M. W., Naish, T., Golledge, N., and Hay, C. Minimal East Antarctic Ice Sheet retreat onto land during the past eight million years. *Nature*, 558, 284-287.
- 2018 Bierman, P. R., Rood, D. H., **Shakun, J. D.**, Portenga, E., and Corbett, L. B. Directly dating postglacial Greenlandic land-surface emergence at high resolution using in situ ¹⁰Be. *Quaternary Research*, doi:10.1017/qua.2018.6.
- 2017 Hansen, J., Sato, M., Kharecha, P., von Schuckmann, K., Beerling, D. J., Cao, J., Marcott, S. A., Masson-Delmotte, V., Prather, M. J., Rohling, E. J., **Shakun, J. D.**, and Smith, P. Young people's burden: Requirement of negative CO₂ emissions. *Earth System Dynamics*, 8, 577-616.
- 2017 **Shakun, J. D.** Modest global-scale cooling despite extensive early Pleistocene ice sheets. *Quaternary Science Reviews*, 165, 25-30.
- 2017 *Koester, A., **Shakun, J. D.**, Bierman, P. R., Davis, P. T., Corbett, L. B., Braun, D., and Zimmerman, S. Rapid thinning of the Laurentide Ice Sheet in coastal Maine during late Heinrich Stadial 1. *Quaternary Science Reviews*, 163, 180-192.

- 2016 Bierman, P. R., **Shakun, J. D.**, Corbett, L. B., Rood, D. H., and Zimmerman, S. A persistent and dynamic East Greenland Ice Sheet over the past 7.5 million years. *Nature*, 540, 256-260.
 ➤ Highlighted in corresponding Nature News and Views article
- 2016 **Shakun, J. D.**, Raymo, M. E., and Lea, D. W. An early Pleistocene Mg/Ca- $\delta^{18}\text{O}$ record from the Gulf of Mexico: Evaluating ice sheet size and pacing in the 41-kyr world. *Paleoceanography*, doi:10.1002/2016PA002956.
- 2016 Clark, P. U., **Shakun, J. D.**, Marcott, S. A., Mix, A. C., Eby, M., Kulp, S., Levermann, A., Milne, G. A., Pfister, P. L., Santer, B. D., Schrag, D. P., Solomon, S., Stocker, T. F., Strauss, B. H., Weaver, A. J., Winkelmann, R., Archer, D., Bard, E., Goldner, A., Lambeck, K., Pierrehumbert, R. T., and Plattner, G.-K. Consequences of twenty-first-century policy for multi-millennial climate and sea-level change. *Nature Climate Change*, 6, 360-369.
- 2015 **Shakun, J. D.**, Clark, P. U., Marcott, S. A., Brook, E. J., Lifton, N. A., Caffee, M., and Shakun, W. R. Cosmogenic dating of Late-Pleistocene glaciation, southern tropical Andes, Peru. *Journal of Quaternary Science*, doi:10.1002/jqs.2822.
- 2015 **Shakun, J. D.**, Clark, P. U., He, F., Lifton, N. A., Liu, Z., and Otto-Bliesner, B. L. Regional and global forcing of glacier retreat during the last deglaciation. *Nature Communications*, 6, doi:10.1038/ncomms9059.
 ➤ Highlighted in Science magazine, Editors' Choice, Sept. 11, 2015, 349, 1179.
- 2015 Cross, M., McGee, D., Broecker, W. S., Quade, J., **Shakun, J. D.**, Cheng, H., Lu, Y., and Edwards, R. L. Great Basin hydrology, paleoclimate, and connections with the North Atlantic: A speleothem trace element and stable isotope record from Lehman Caves, NV. *Quaternary Science Reviews*, doi:10.1016/j.quascirev.2015.06.016.
- 2015 **Shakun, J. D.**, Lea, D. W., Lisiecki, L. E., and Raymo, M. E. An 800-kyr record of global surface ocean $\delta^{18}\text{O}$ and implications for ice volume-temperature coupling. *Earth and Planetary Science Letters*, 426, 58-68.
- 2014 Nelson, A., Bierman, P. R., **Shakun, J. D.**, and Rood, D. Using *in situ* cosmogenic ^{10}Be as a sediment source tracer in Greenland's paraglacial environment. *Earth Surface Processes and Landforms*, doi: 10.1002/esp.3565.
- 2013 Marcott, S. A., **Shakun, J. D.**, Clark, P. U., and Mix, A. C. A reconstruction of global and regional temperature for the last 11,300 years. *Science*, 339, 1198-1201.
- 2013 He, F., **Shakun, J. D.**, Clark, P. U., Carlson, A. E., Liu, Z., Otto-Bliesner, B. L., and Kutzbach, J. E. Northern Hemisphere forcing of Southern Hemisphere climate during the last deglaciation. *Nature*, 494, 81-85.
- 2012 Schmittner, A., Urban, N., **Shakun, J. D.**, Mahowald, N. M., Clark, P. U., Bartlein, P. J., Mix, A. C., and Rosell-Mele, A. Response to Comment on "Climate sensitivity estimated from temperature reconstructions of the Last Glacial Maximum." *Science*, 337, 1294.
- 2012 **Shakun, J. D.**, Clark, P. U., He, F., Marcott, S. A., Mix, A. C., Liu, Z., Otto-Bliesner, B. L., Schmittner, A., and Bard, E. Global warming preceded by increasing carbon dioxide concentrations during the last deglaciation. *Nature*, 484, 49-54.
 ➤ Highlighted in corresponding Nature News and Views article
- 2012 Clark, P. U., **Shakun, J. D.**, Baker, P. A., Bartlein, P. J., Brewer, S., Brook, E. J., Carlson, A. E., Cheng, H., Kaufman, D. S., Liu, Z., Marchitto, T. M., Mix, A. C., Morrill, C., Otto-Bliesner, B., Pahnke, K., Russell, J. M., Whitlock, C., Adkins, J. F., Blois, J. L., Clark, J., Colman, S. C., Curry, W. B., Flower, B. P., He, F., Johnson, T. C., Lynch-Stieglitz, J., Markgraf, V., McManus, J. F., Mitrovica, J. X., Moreno, P.

- I., and Williams, J. W. Global climate evolution during the last deglaciation. *Proceedings of the National Academy of Sciences*, doi:10.1073/pnas.1116619109
- 2011 Schmittner, A., Urban, N., **Shakun, J. D.**, Mahowald, N. M., Clark, P. U., Bartlein, P. J., Mix, A. C., and Rosell-Mele, A. Climate sensitivity estimated from temperature reconstructions of the Last Glacial Maximum. *Science*, 334, 1385-1388.
 ➤ Highlighted in corresponding Science Perspective article
- 2011 **Shakun, J. D.**, Burns, S. J., Clark, P. U., Cheng, H., and Edwards, R. L. Milankovitch-paced Termination II in a Nevada speleothem? *Geophysical Research Letters*, 38, L18701, doi:10.1029/2011GL048560.
- 2010 **Shakun, J. D.** and Carlson, A. E. A global perspective on Last Glacial Maximum to Holocene climate change. *Quaternary Science Reviews*, 29, 1801-1816.
- 2009 **Shakun, J. D.** and Shaman, J. Tropical origins of north and south Pacific decadal variability. *Geophysical Research Letters*, 36, L19711, doi:10.1029/2009GL040313.
- 2009 Clark, P. U., Dyke, A. S., **Shakun, J. D.**, Carlson, A. E., Clark, J., Wohlfarth, B., Mitrovica, J., Hostetler, S. W., McCabe, A. M. The Last Glacial Maximum. *Science*, 325, 710-714.
- 2007 **Shakun, J. D.**, Burns, S. J., Fleitmann, D., Kramers, J., Matter, A., and Al-Subary, A. A high-resolution, absolute-dated deglacial speleothem record of Indian Ocean climate from Socotra Island, Yemen. *Earth and Planetary Science Letters*, 259, 442-456.
- 2006 Munroe, J. S., Laabs, B. J. C., **Shakun, J. D.**, Singer, B. S., Mickelson, D. M., Refsnider, K., and Caffee, M. W. Latest Pleistocene advance of alpine glaciers in the southwestern Uinta Mountains, Utah, USA: Evidence for the influence of local moisture sources. *Geology*, 34, 841-844.

Other Publications

-
- 2018 Sandstrom, M. R., Skrivaneck, A., **Shakun, J. D.** Dynamic ice sheet and sea level response to past climate change. *Eos*, 99, doi.org/10.1029/2018EO0981712018
- 2018 **Shakun, J. D.** Pollen weighs in on a climate conundrum. *Nature*, 554, 39-40.
- 2017 Marcott, S. A. and **Shakun, J. D.** A record of ice sheet demise. *Science*, 358, 721-722.
- 2015 Marcott, S. A. and **Shakun, J. D.** Holocene climate change and its context for the future. *PAGES Newsletter*, 23, 28.
- 2015 **Shakun, J. D.** "Ice Ages" in *Discoveries in Modern Science: Exploration, Invention, Technology* (Ed. James Trefil). Macmillan, Farmington Hills, 535-541.

Conference Abstracts (*denotes Shakun advised student)

-
- 2019 *LeBlanc, D., **Shakun, J.D.**, Bierman, P.R., Corbett, L.B. Using cosmogenic nuclides in ice-rafted debris to constrain ice sheet dynamics associated with Heinrich events. AGU annual meeting, San Francisco, CA.
- 2019 *Gorin, A.L., **Shakun, J.D.**, Goehring, B.M., Marcott, S.M., Bromley, G.R., Clark, D.H., Hein, A., Kelly, M.A., Menounos, B. Holocene glacier length variations along the American cordillera from the ¹⁴C-¹⁰Be chronometer. AGU annual meeting, San Francisco, CA.
- 2019 Landon, W., Corbett, L.B., Bierman, P.R., **Shakun, J.D.**, Rood, D.H. Rapid post-glacial emergence rates measured with ¹⁰Be match GPS-determined contemporary uplift rates in southeast Greenland. GSA annual meeting, Phoenix, AZ.
- 2019 *Halsted, C.T., **Shakun, J.D.**, Corbett, L.B., Bierman, P.R., Davis, P.T., Goehring, B.M., *Koester, A.J., Caffee, M.W. Reconstructing the deglacial thinning history of the southeastern Laurentide Ice Sheet using in-situ cosmogenic ¹⁰Be and ¹⁴C: A glacial dipstick approach. GSA annual meeting, Phoenix, AZ.

- 2019 Davis, P.T., Marcott, S.A., Vavrus, C., Barth, A., **Shakun, J.D.**, Caffee, M.W. Precise cosmogenic measurements in support of Younger Dryas age for Fourth of July cirque outer moraine, Colorado Front Range, USA. GSA annual meeting, Phoenix, AZ.
- 2019 *Halsted, C.T., **Shakun, J.D.**, Corbett, L.B., Bierman, P.R., Davis, P.T., Goehring, B.M., *Koester, A.J., Caffee, M.W. Reconstructing the paleo-elevation and erosion patterns of the southeastern Laurentide Ice Sheet using in-situ cosmogenic ^{10}Be and ^{14}C . IUGG annual meeting, Montreal, Canada.
- 2019 *Halsted, C.T., **Shakun, J.D.**, Corbett, L.B., Bierman, P.R., Davis, P.T., Goehring, B.M., *Koester, A.J., Caffee, M.W. Assessing the erosivity and deglacial thinning history of the southeastern Laurentide Ice Sheet using in-situ cosmogenic ^{10}Be and ^{14}C . INQUA quadrennial meeting, Dublin, Ireland.
- 2019 *Biller, N., **Shakun, J.D.**, McGee, D., Wong, C. I., Reyes, A.V., Hardt, B., Tal, I., Ford, D.C., Lauriol, B., Reyes, A. Increasing Pleistocene permafrost stability and carbon cycle conundrums. INQUA quadrennial meeting, Dublin, Ireland.
- 2019 *Halsted, C.T., **Shakun, J.D.**, Corbett, L.B., Bierman, P.R., Davis, P.T., *Koester, A.J., Caffee, M.W. Determining the timing and rate of southeastern Laurentide Ice Sheet thinning using *in-situ* cosmogenic ^{10}Be . Northeast GSA meeting, Portland, ME.
- 2019 Fowler, B.K., Davis, P.T., **Shakun, J.D.**, Bierman, P.R., Corbett, L.B., Mattison, P., Mattison, R. A new cosmogenic exposure age for emplacement of New Hampshire's Madison Boulder, reputedly the largest Erratic in North America. Northeast GSA meeting, Portland, ME.
- 2019 Braun, D.D., Thompson, W.B., Davis, P.T., **Shakun, J.D.**, Bierman, P.R., Corbett, L.B. Correlation of the eastern Maine Pineo Ridge system to moraines on Mount Desert Island through LiDAR imagery and ^{10}Be surface exposure ages. Northeast GSA meeting, Portland, ME.
- 2019 Jackson, M.S., Kelly, M.A., Russell, J.M., Doughty, A.M., *Vickers, A., **Shakun, J.D.**, Goehring, B.M., Howley, J.A., Chipman, J.W., Cavagnaro, D.B., Zimmerman, S.R.H., Nakileza, R. Holocene glaciation in the African and South American tropics. Northeast GSA meeting, Portland, ME.
- 2018 **Shakun, J.D.**, *Halsted, C.T., *Koester, A.J., Bierman, P.R., Davis, P.T., Corbett, L.B., Goehring, B.M., Zimmerman, S.R., Caffee, M. 2018. Constraining the timing and rate of southeastern Laurentide Ice Sheet thinning during the last deglaciation with cosmogenic nuclide dipsticks. AGU annual meeting, Washington D.C.
- 2018 Lisiecki, L.E., Peterson, C., **Shakun, J.D.** A marine perspective on Marine Isotope Stage 4. AGU annual meeting, Washington D.C.
- 2018 Marcott, S.A., Barth, A.M., Licciardi, J.M., **Shakun, J.D.** Deglacial thinning of the Laurentide Ice Sheet in the Adirondack Mountains, New York, revealed by ^{36}Cl exposure dating. AGU annual meeting, Washington D.C.
- 2018 Corbett, L.B., Bierman, P.R., Wright, S.F., **Shakun, J.D.**, Davis, P.T., *Halsted, C.T., Goehring, B.M., *Koester, A.J., Caffee, M.W., Zimmerman, S.H. Multiple cosmogenic nuclides constrain Laurentide Ice Sheet history and process on Mt. Mansfield, Vermont's highest peak. GSA annual meeting, Indianapolis, IN.
- 2018 *Halsted, C.T., **Shakun, J.D.**, Corbett, L.B., Bierman, P.R., Davis, P.T., Caffee, M.W. *Koester, A.J. Determining the timing and rate of southeastern Laurentide Ice Sheet thinning using *in-situ* ^{10}Be dipsticks. GSA annual meeting, Indianapolis, IN.
- 2018 **Shakun, J.D.**, *Biller, N., McGee, D., Hardt, B.F., Wong, C.I., Ford, D., Lauriol, B., Reyes, A.V. Widespread permafrost thaw during the Marine Isotope Stage 11 from Arctic speleothems. PALSEA-QUIGS workshop, Rutgers, NJ.

- 2018 *Gambino, C., McGee, D., Ramezani, J., Khadivi, S., **Shakun, J.D.**, Wong, C. Direct U-Pb age constraints on Arctic speleothem formation and their implications for climate change in deep time. Goldschmidt annual meeting, Boston, USA.
- 2018 **Shakun, J.D.**, Bierman, P.R., Corbett, L.B., Underwood, K., Rizzo, D., Zimmerman, S., Caffee, M., Naish, T., Golledge, N., Hay, C. Eight million years of polar ice sheet variations from cosmogenic nuclides in marine sediments. Goldschmidt annual meeting, Boston, USA.
- 2018 Ramezani, J., *Gambino, C., **Shakun, J.D.**, McGee, D., Khadivi, S. Direct U-Pb age constraints on Arctic speleothem formation and their implications for climate change in deep time. EGU annual meeting, Vienna, Austria.
- 2018 Davis, P.T., **Shakun, J.D.**, Bierman, P.R., *Koester, A.J., Corbett, L.B., *Halsted, C.T. Boise Rock, not the glacial erratic that we thought, but rather part of the landslide history of Franconia Notch, New Hampshire. Northeast GSA meeting, Burlington, VT.
- 2018 Corbett, L.B., Bierman, P.R., **Shakun, J.D.**, Davis, P.T., Goehring, B.M., *Koester, A.J., *Halsted, C.T. Constraining glacial history and process on Mount Mansfield, Vermont's highest peak, with in situ cosmogenic ^{10}Be and ^{14}C . Northeast GSA meeting, Burlington, VT.
- 2018 *Halsted, C.T., Shakun, J.D., Bierman, P.R., Davis, P.T., Corbett, L.B., Caffee, M.W. Measuring ^{10}Be ages from top to bottom in Franconia Notch, NH, to constrain Laurentide Ice Sheet history. Northeast GSA meeting, Burlington, VT.
- 2017 **Shakun, J.D.**, *Biller, N., McGee, D., Hardt, B.F., Wong, C.I., Ford, D., Lauriol, B. Widespread permafrost thaw during the Marine Isotope Stage 11 from Arctic speleothems. AGU annual meeting, New Orleans, LA.
- 2017 *Gambino, C., **Shakun, J.D.**, McGee, D., Ramezani, J., Khadivi, S., Wong, C.I. A uranium-lead chronology of speleothem deposition in the Canadian Arctic. AGU annual meeting, New Orleans, LA.
- 2017 *Vickers, A., Shakun, J.D., Goehring, B., Kelly, M.A., Jackson, M.S., Jomelli, V. Tropical Andean and African glacier extent through the Holocene asses with proglacial *in situ* ^{14}C and ^{10}Be measurements. AGU annual meeting, New Orleans, LA.
- 2017 **Shakun, J.D.**, Corbett, L.B., Bierman, P.R., Underwood, K., Rizzo, D.M., Zimmerman, S.R., Caffee, M.W., Naish, T. INVITED. Minimal East Antarctic Ice Sheet retreat onto land during the past 8 Myr. PALSEA2 workshop, Cancun, Mexico.
- 2017 **Shakun, J.D.**, Corbett, L.B., Bierman, P.R., Zimmerman, S.H. INVITED. Pliocene Greenland Ice Sheet growth recorded by *in situ* ^{10}Be decrease in multiple marine sediment cores. GSA annual meeting, Seattle, WA.
- 2017 Corbett, L.B., Bierman, P.R., Neumann, T.A., Graly, J.A., **Shakun, J.D.**, Caffee, M.W., Dunai, T., Zimmerman, S.H. Analysis of three cosmogenic isotopes in subglacial cobbles helps unravel Greenland's exposure and erosion history. GSA annual meeting, Seattle, WA.
- 2017 Barth, A.M., Marcott, S.A., Horvath, A., **Shakun, J.D.**, Licciardi, J.M. Early deglacial thinning of the Laurentide Ice Sheet followed by rapid regional deglaciation. GSA annual meeting, Seattle, WA.
- 2017 *Koester, A.J., **Shakun, J.D.**, Bierman, P.R., Davis, P.T., Corbett, L.B., Goehring, B.M., Vickers, A., Zimmerman, S.H. Rapid thinning of the Laurentide Ice Sheet at Mt. Washington, NH, during the Bølling warming, constrained by analysis of cosmogenic ^{14}C and ^{10}Be . GSA annual meeting, Seattle, WA.
- 2017 Bierman, P.R., Corbett, L.B., **Shakun, J.D.**, Schmidt, A.H. Counting atoms to place human impacts in a geologic context. GSA annual meeting, Seattle, WA.
- 2017 Vavrus, C., Barth, A.M., Marcott, S.A., Ceperley, E.G., **Shakun, J.D.**, Caffee, M.W. A late Holocene

- ¹⁰Be based glacial chronology for the Beartooth Mountains, southwestern Montana. GSA annual meeting, Seattle, WA.
- 2017 Bierman, P.R., Corbett, L.B., **Shakun, J.D.** Deciphering the history and processes of Greenland's Ice Sheet(s) over thousands to millions of years using cosmogenic nuclides. NSF workshop 'How stable is the Greenland Ice Sheet?', Buffalo, NY.
- 2017 Marcott, S.A., Marsicek, J., Rouston, C., **Shakun, J.D.**, Kaufman, D., McKay, N. Holocene climate change: A data perspective. Pages Global Changes quadrennial meeting, Zaragoza, Spain.
- 2017 McGee, D., *Biller, N., **Shakun, J.D.**, Hardt, B., *Gambino, C., Ford, D., Lauriol, B. Pleistocene permafrost thawing history of the North American Arctic and cordillera from U-Th and U-Pb dating of cave speleothems. Pages Global Changes quadrennial meeting, Zaragoza, Spain.
- 2016 *Koester, A.J., **Shakun, J.D.**, Bierman, P.R., Davis, P.T., Corbett, L.B., Zimmerman, S.H. Rapid thinning of the Laurentide Ice Sheet in coastal Maine, USA during late Heinrich Stadial 1. AGU annual meeting, San Francisco, CA.
- 2016 **Shakun, J.D.**, Clark, P.U., Marcott, S.A., He, F., Mix, A.C., Liu, Z., Otto-Bliesner, B.L., Eby, M., Levermann, A., Winkelmann, R. INVITED. From the ice age to the Anthropocene: What the last 21,000 years tells us about 21st century climate change and beyond. American Quaternary Association biennial meeting, Sante Fe, NM.
- 2016 *Biller, N., **Shakun, J.D.**, McGee, D., Hardt, B.F., Ford, D., Lauriol, B. Pleistocene permafrost thawing history of the North American Arctic and cordillera from U-Th dating of cave speleothems. Northeast GSA meeting, Albany, NY.
- 2016 **Shakun, J.D.**, Corbett, L.B., Bierman, P.R. Eight million years of land-based Antarctic Ice Sheet stability record by *in situ* ¹⁰Be from the ANDRILL-1B core. Northeast GSA meeting, Albany, NY.
- 2016 *Roman-Stork, H., **Shakun, J.D.**, Burns, S.J., Cheng, H., Edwards, R.L. A late Holocene paleoclimate reconstruction from Puerto Rico based on a cave speleothem. Northeast GSA meeting, Albany, NY.
- 2015 **Shakun, J.D.**, Corbett, L.B., Bierman, P.R. Eight million years of land-based Antarctic Ice Sheet stability record by *in situ* ¹⁰Be from the ANDRILL-1B core. AGU annual meeting, San Francisco, CA.
- 2015 Neary, A., McGee, D., Tal, I., **Shakun, J.D.** Investigation into MIS 11 in the U.S. Great Basin using trace elements and stable isotopes from two Lehman Caves stalagmites. AGU annual meeting, San Francisco, CA.
- 2015 *Biller, N., **Shakun, J.D.**, McGee, D., Hardt, B.F., Ford, D., Lauriol, B. Pleistocene permafrost thawing history of Alaska, the Yukon, and the Northwest Territories from U-Th dating of cave speleothems. AGU annual meeting, San Francisco, CA.
- 2015 **Shakun, J.D.**, Lea, D.W., Lisiecki, L.E., Raymo, M.E. INVITED. An 800-kyr record global surface ocean $\delta^{18}\text{O}$ and implications for ice volume-temperature coupling. AGU annual meeting, San Francisco, CA.
- 2015 **Shakun, J.D.**, Lea, D.W., Lisiecki, L.E., Raymo, M.E. INVITED. An 800-kyr record global surface ocean $\delta^{18}\text{O}$ and implications for ice volume-temperature coupling. EGU annual meeting, Vienna, Austria.
- 2015 **Shakun, J.D.**, Lea, D.W., Lisiecki, L.E., Raymo, M.E. An 800-kyr record global surface ocean $\delta^{18}\text{O}$ and implications for ice volume-temperature coupling. Northeast GSA meeting, Bretton Woods, NH.
- 2014 Bierman, P.R., Corbett, L.B., **Shakun, J.D.**, Rood, D.H. Cosmogenic isotopic tracing of sediment generated by the Greenland Ice Sheet. AGU annual meeting, San Francisco, CA.

- 2014 Marcott, S.A., **Shakun, J.D.**, Clark, P.U., Mix, A.C., Pierrehumbert, R., Goldner, A.P. Long-term perspective underscores need for stronger near-term policies on climate change. AGU annual meeting, San Francisco, CA.
- 2014 Hoffman, J.S., Clark, P.U., Piasias, N.G., Marcott, S.A., **Shakun, J.D.** Estimating age model uncertainties for the last interglaciation. AGU annual meeting, San Francisco, CA.
- 2014 **Shakun, J.D.**, Lea, D.W., Lisiecki, L.E., Raymo, M.E. An 800-kyr record global surface ocean $\delta^{18}\text{O}_{\text{sw}}$ and implications for ice volume-temperature coupling. AGU annual meeting, San Francisco, CA.
- 2014 **Shakun, J.D.**, Lea, D.W., Lisiecki, L.E., Raymo, M.E. SST and ice volume over the past eight interglacials. PAGES Holocene workshop, Mt. Hood, OR.
- 2014 **Shakun, J.D.** INVITED. How unique is recent climate change in the context of the Holocene? Swedish Royal Academy of Sciences conference on "Climate Change in the light of IPCC AR5", Stockholm, Sweden.
- 2013 **Shakun, J.D.**, Bierman, P.R. A 7 Myr record Greenland glaciation and erosion from *in situ* ^{10}Be in marine sediments. AGU annual meeting, San Francisco, CA.
- 2013 Lea, D.W., Saraswat, R., DiNezio, P.N., Tierney, J.E., **Shakun, J.D.**, Blaauw, M. The hydrological response of the Indian Ocean during the LGM and deglaciation. AGU annual meeting, San Francisco, CA.
- 2013 He, F., **Shakun, J.D.**, Clark, P.U. Transient simulation of global changes of the hydrological cycle during the last deglaciation. AGU annual meeting, San Francisco, CA.
- 2013 Bierman, P.R., **Shakun, J.D.** *In situ* produced ^{10}Be in marine sediment records 7 million years of Greenland Ice Sheet erosion in response to changing climate. GSA annual meeting, Denver, CO.
- 2013 Bierman, P.R., Corbett, L.B., Graly, J.A., Neumann, T.A., Rood, D.H., **Shakun, J.D.**, Nelson, A.H. The Greenland Ice Sheet erodes its bed in some places but not in others. International Association of Geomorphologists, Paris, France.
- 2013 Bierman, P.R., Rood, D., Corbett, L.B., Nelson, A.H., **Shakun, J.D.** Using ^{10}Be in sediment to understand the long-term behavior of the Greenland Ice Sheet. EGU annual meeting, Vienna, Austria.
- 2013 **Shakun, J.D.** 2013. Global temperature changes during the past 21,000 years. International Conference on Paleooceanography quadrennial meeting, Barcelona, Spain.
- 2013 **Shakun, J.D.**, Clark, P.U., He, F., Lifton, N., Liu, Z., Otto-Bliesner, B.L. INVITED. Near-synchronous global glacier retreat during the last deglaciation associated with increasing atmospheric CO_2 . Northeast GSA meeting, Bretton Woods, NH.
- 2013 Nelson, A.H., Bierman, P.R., **Shakun, J.D.**, Rood, D.H. ^{10}Be concentration in Greenland sediment indicates source and exposure history. Northeast GSA meeting, Bretton Woods, NH.
- 2013 Bierman, P.R., Corbett, L.B., Rood, D.H., **Shakun, J.D.**, Nelson, A.H. Where does sediment in the Greenland Ice Sheet come from? Northeast GSA meeting, Bretton Woods, NH.
- 2012 Nelson, A.H., **Shakun, J.D.**, Bierman, P.R., Rood, D.H. ^{10}Be concentration in sediment indicates exposure, erosion, and transportation along the Greenland Ice Sheet margin. AGU annual meeting, San Francisco, CA.
- 2012 Lea, D.W., Saraswat, R., **Shakun, J.D.** A large hydrologic shift associated with the last deglaciation in the tropics. AGU annual meeting, San Francisco, CA.
- 2012 Marcott, S.A., Clark, P.U., **Shakun, J.D.**, Hostetler, S.W., Brook, E.J., Alder, J.R., Bartlein, P.J., Novak,

- A.M., Caffee, M.W., Davis, P.T. ^{10}Be -based chronologies of late Pleistocene and Holocene cirque glaciation across western North America. GSA annual meeting, Charlotte, NC.
- 2012 **Shakun, J.D.**, Clark, P.U., He, F., Liu, Z., Otto-Bliesner, B.L. INVITED. Near-synchronous global glacier retreat during the last deglaciation associated with increasing atmospheric CO_2 . SynTraCE-21 workshop, Providence, RI.
- 2011 Schmittner, A., Urban, N., **Shakun, J.D.**, Mahowald, N.M., Clark, P.U., Bartlein, P.J., Mix, A.C., Rosell-Melé, A. Climate sensitivity estimated from temperature reconstructions of the Last Glacial Maximum. AGU annual meeting, San Francisco, CA.
- 2011 **Shakun, J.D.**, Raymo, M.E., Lea, D.W., Klinkhammer, G.P. An early Pleistocene $\text{Mg}/\text{Ca}-\delta^{18}\text{O}$ record from the Gulf of Mexico: Evaluating ice sheet size and pacing in the 40-kyr world. AGU annual meeting, San Francisco, CA.
- 2011 **Shakun, J.D.**, Bierman, P.R., Nelson, A., Rood, D.H. INVITED. Deciphering 6 Myr of Greenland Ice Sheet history using *in situ* ^{10}Be from marine sediment cores. IODP workshop on Greenland Ice Sheet history, Corvallis, OR.
- 2011 **Shakun, J.D.**, Carlson, A.E., Clark, P.U., He, F., Liu, Z., Otto-Bliesner, B.L., Marcott, S.A., Mix, A.C., Schmittner, A., Bard, E. INVITED. Global and regional climate modes during the last deglaciation. ACER-INTIMATE workshop, Bordeaux, France.
- 2011 **Shakun, J.D.**, Clark, P.U., Baker, P.A., Bard, E., Barlein, P.J., Brewer, S., Brook, E.J., Carlson, A.E., Cheng, H., Kaufman, D.S., Liu, Z., Marchitto, T.M., Marcott, S.A., Mix, A.C., Morrill, C., Otto-Bliesner, B.L., Pahnke, K., Russell, J.M., Schmittner, A., Whitlock, C., Adkins, J.F., Blois, J.L., Clark, J., Colman, S.C., Curry, W.B., Flower, B.P., He, F., Johnson, T.C., Lynch-Stieglitz, J., Markgraf, V., McManus, J.F., Mitrovica, J.X., Moreno, P.I., Williams, J.W. INVITED. The SynTraCE-21 data synthesis: Global and regional climate modes during the last deglaciation and their forcing mechanisms. COST-INTIMATE workshop, Copenhagen, Denmark.
- 2011 **Shakun, J.D.** INVITED. Global climate modes during the last deglaciation and implications for climate change mechanisms. INQUA quadrennial meeting, Bern, Switzerland.
- 2010 **Shakun, J.D.**, Burns, S.J., Clark, P.U., Cheng, H., Edwards, R. Milankovitch-paced Termination II in a Nevada speleothem. AGU annual meeting, San Francisco, CA.
- 2010 **Shakun, J.D.**, Mix, A.C., Clark, P.U. INVITED. The proxy record of global surface temperature variations during the last deglaciation and implications for climate change mechanisms. AGU annual meeting, San Francisco, CA.
- 2010 Marcott, S.A., **Shakun, J.D.**, Clark, P.U., Mix, A.C., Pisias, N.G. Global Holocene temperature variations. AGU annual meeting, San Francisco, CA.
- 2010 **Shakun, J.D.**, Clark, P.U., He, F., Liu, Z., Otto-Bliesner, B.L., Marcott, S.A., Bard, E. INVITED. The role of CO_2 during the last deglaciation. SynTraCE-21 workshop, Mt. Hood, OR.
- 2009 **Shakun, J.D.**, Carlson, A.E. A global perspective on deglacial climate change. AGU annual meeting, San Francisco, CA.
- 2009 Marcott, S.A., Clark, P.U., **Shakun, J.D.**, Brook, E., Novak, A., Davis, P.T., Caffee, M.W. A latest Pleistocene and Holocene chronology of alpine glaciation for western North America. AGU annual meeting, San Francisco, CA.
- 2009 **Shakun, J.D.** Forcing of deglacial climate change and implications for greenhouse warming. Past Global Changes Young Scientists' Meeting, Corvallis, OR.
- 2009 Marcott, S.A., Clark, P.U., **Shakun, J.D.**, Brook, E.J., Novak, A.M., Davis, P.T., Caffee, M.W.

A latest Pleistocene and Holocene chronology of alpine glaciation for western North America. GSA annual meeting, Portland, OR.

- 2009 Marcott, S.A., Clark, P.U., **Shakun, J.D.**, Brook, E.J., Novak, A., Caffee, M.W. A latest Pleistocene and Holocene chronology of alpine glaciation for the western United States. Past Global Changes Young Scientists' Meeting, Corvallis, OR.
- 2008 **Shakun, J.D.**, Shaman, J. Southern Hemisphere PDO?: Interhemispheric symmetry suggests tropical forcing of Pacific decadal variability. AGU annual meeting, San Francisco, CA.
- 2008 **Shakun, J.D.**, Clark, P.U., Marcott, S.A., Brook, E.J., Caffee, M.W. ¹⁰Be constraints on the timing of the Last Glacial Maximum and deglaciation in the northern Peruvian Andes. American Quaternary Association biennial meeting, State College, PA.
- 2007 **Shakun, J.D.**, Clark, P.U., Marcott, S.A., Brook, E.J., Caffee, M.W. ¹⁰Be constraints on the timing of the Last Glacial Maximum and deglaciation in the northern Peruvian Andes. AGU annual meeting, San Francisco, CA.
- 2007 Marcott, S.A., Clark, P.U., **Shakun, J.D.**, Brook, E.J. A Holocene chronology of alpine glaciation for the western United States. AGU annual meeting, San Francisco, CA.
- 2005 **Shakun, J.D.**, Burns, S.J., Fleitmann, D., Kramers, J., Matter, A., Al-Subary, A. A record of changes in the Indian Monsoon from ~29 to 11 ka based on a stalagmite from Socotra Island, Yemen. AGU annual meeting, San Francisco, CA.
- 2005 Laabs, B.J.C., Munroe, J.S., **Shakun, J.D.**, Caffee, M. New evidence of synchronicity between deglaciation of the Uinta Mountains and the fall of Lake Bonneville. GSA annual meeting, Salt Lake City, UT.
- 2003 **Shakun, J.D.**, Munroe, J.S., Laabs, B.J.C. Last Glacial Maximum equilibrium-line altitudes and paleoclimate, northeastern Utah. GSA annual meeting, Seattle, WA.
- 2003 Laabs, B.J.C., **Shakun, J.D.**, Munroe, J.S., Mickelson, D.M., Singer, B.S., Caffee, M. Cosmogenic-exposure age limits on the Last Glacial Maximum in the south-central Uinta Mountains, northeastern Utah. GSA annual meeting, Seattle, WA.

Media Interviews

- 1-24-18 NBC Boston: [The Climate Project: A Changing New England](#)
- 2-24-17 NPR: Hottest February day in Boston's history
- 10-26-16 WGBH Greater Boston: [Election 2016: The candidates on climate change](#)
- 10-26-16 KCBS News Radio, San Francisco: CO2 crosses 400 parts per million threshold
- 10-18-16 Gizmodo: [NASA already says 2016 will be the hottest year on record](#)
- 9-26-16 Nature Magazine News: [Longest historic temperature record stretches back 2 million years](#)
- 9-26-16 National Geographic: [Global warming is real – but 13 degrees? Not so fast.](#)
- 6-14-16 WGBH Science for the Public: [What Arctic caves reveal about ancient climate cycles](#)
- 5-14-16 WBZ Radio, Boston Sunday Review
- 11-29-15 Washington Post: [The great thaw](#)
- 5-5-15 WBZ Radio: NightSide with Dan Rea
- 12-22-14 The Verge: [Meet the US Senate's most important anti-environmentalist](#)
- 11-10-14 Boston Globe: [In Tufts microbe count, clues to future sea levels](#)
- 8-20-14 Ars Technica: [Models challenge temperature reconstruction of last 12,000 years](#)
- 4-26-14 WBZ Radio, Boston Sunday Review
- 8-19-13 E&E ClimateWire: [Lawmaker looks to geologic past to dispute climate change and wins unicorn](#)
- 3-24-13 [Interview](#) on KKNW News Radio Vancouver on Holocene temperature changes
- 3-7-13 NYT Dot Earth: [Scientists find an abrupt warm jog after a very long cooling](#)

- 3-7-13 [Interview](#) on KCBS Radio San Francisco on Holocene temperature changes
4-10-12 Interview on Al Jazeera News on CO₂'s role in ending the last ice age
4-6-12 [Interview](#) with Nature blog: From the Lab Bench

Media Coverage of Research

- 6-24-18 Daily Mail: [‘Catastrophic collapse’ of the West Antarctic ice sheet could be delayed due to rapidly rising bedrock below the continent](#)
6-14-18 Western Journal: [New Study: Earth’s biggest ice sheet unharmed during warmer period in history](#)
6-13-18 Phys.org: [Much of East Antarctica remained frozen during past 8 million years](#)
6-13-18 Popular Mechanics: [Antarctica’s ice may be more durable than we thought](#)
8-8-17 GreenBiz: [Climate change is running a \\$535 trillion debt](#)
7-24-17 NPR On Point: [Cleaning up the carbon in our skies](#)
7-24-17 National Review: [Stop enjoying summer, climate activists advise](#)
7-24-17 Eco-Business: [World’s young face \\$535 trillion bill for climate](#)
7-18-17 Phys.org: [Removing CO2 from the air required to safeguard children’s future](#)
7-18-18 ThinkProgress: [Former NASA scientist releases new paper supporting youth climate case against Trump](#)
7-13-17 WGBH: [Scientists try to predict sea level rise by looking at end of last ice age](#)
12-9-16 Huffington Post: [Greenland’s ice sheet is way less stable than we thought, and that’s bad news for the world](#)
12-7-16 Time: [New studies say Greenland’s ice sheet could melt far faster than scientists believed](#)
12-7-16 Scientific American: [Greenland once lost nearly all of its ice - and could again](#)
12-7-16 Popular Science: [The mystery of Greenland’s icy history could help us survive climate change](#)
12-7-16 Christian Science Monitor: [Meltdown: Did Greenland once lose all of its ice, or didn’t it?](#)
12-7-16 International Business Times: [Greenland’s ice sheet once did a vanishing trick that lasted 280,000 years](#)
12-7-16 Yahoo! News: [Greenland’s ice-free past exposes sea level rise danger](#)
12-7-16 Boston College News: [Greenland’s Glacial Pace](#)
10-6-16 Inside Climate News: [Removing CO2 From the Air Only Hope for Fixing Climate Change, New Study Says](#)
10-5-16 The Nation: [Tax fossil fuels or risk kids’ future: US scientist](#)
10-4-16 New York Post: [Our kids are screwed thanks to climate change: scientist](#)
10-4-16 The Guardian: [Planet at its hottest in 115,000 years thanks to climate change, experts say](#)
10-4-16 Newsweek: [Temperature of earth reaches highest level in 115,000 years](#)
10-4-16 The Guardian: [By failing to rein in climate change, our children’s rights are being disregarded](#)
9-16-16 NPR: [Epic climate cartoon goes viral, but it has one key problem](#)
9-12-16 XKCD webcomic: [A time line of Earth’s average temperature](#)
9-12-16 Popular Science: [If this timeline doesn’t convince you climate change is real, nothing will](#)
2-15-16 Vox: [The decisions we make about climate change today will reverberate for millennia. No pressure.](#)
2-9-16 Tech Times: [Effects of man-made climate change will be felt for 10,000 years: study](#)
2-9-16 CBS News: [Climate change likely to persist for the next 10,000 years](#)
2-8-16 The Guardian: [Sea-level rise ‘could last twice as long as human history’](#)
2-8-16 Washington Post: [What the Earth will be like in 10,000 years, according to scientists](#)
8-25-15 Science 2.0: [Global warming implicated in ending the “ice age”](#)
8-22-15 Business Standard: [Carbon dioxide melted ice age glaciers: study](#)
8-21-15 Phys.org: [As ice age ended, greenhouse gas rise was lead factor in melting of Earth’s glaciers](#)
8-21-15 International Business Times: [Glacial retreat at end of ice age caused by carbon dioxide: study](#)
12-29-13 CNN: [Top space and science stories of 2013](#)
12-27-13 Carbon Brief: [Hockey sticks to huge methane burps: Five papers that shaped climate science in 2013](#)
12-20-13 Climate Progress: [These charts happened: 2013 in climate and energy graphs](#)
9-23-13 BBC News: [Human role in warming ‘more certain’ – UN climate chief](#)
3-21-13 [Climate News](#) from Senators Whitehouse (RI-D), Boxer (CA-D), and Merkley (OR-D)
3-12-13 [Rachel Maddow Show](#)

3-12-13 Congressman Peter DeFazio (OR-D) House floor [statement](#)

3-10-13 Forbes: [What excellent news: earth warmer than in most of the past 11,300 years](#)

3-9-13 The Atlantic: [We're Screwed: 11,000 years' worth of climate data prove it](#)

3-9-13 Wired.com: ['Hockey stick' climate graph gets more dramatic](#)

3-8-13 CNN: [Global warming is epic, long-term study says](#)

3-8-13 NPR: [Past century's global temperature change is fastest on record](#)

3-8-13 Scientific American: [Global average temperatures are close to 11,000-year peak](#)

3-8-13 Bloomberg Businessweek: [Recent heat spike unlike anything in 11,000 years](#)

3-7-13 NBC News: [Warming fastest since dawn of civilization, study shows](#)

3-7-13 New York Times: [Global temperatures highest in 4000 years](#)

3-7-13 Bloomberg: [Earth warmer than in most of the past 11,300 years](#)

3-7-13 Wall Street Journal: [Earth hotter now than most of past 11,000 years](#)

3-7-13 NYT Dot Earth: [Scientists find an abrupt warm jog after a very long cooling](#)

3-7-13 New Scientist: [True face of climate's hockey stick graph revealed](#)

3-7-13 Huffington Post: [Climate to warm beyond levels not seen for 11,300 years](#)

3-7-13 Nature News: [Global temperatures are close to 11,000-year peak](#)

3-7-13 Wall Street Journal: [In study, past decade ranks among hottest](#)

3-7-13 MSN: [Earth's 20th-century heat spike unlike anything in 11,000 years](#)

3-7-13 Christian Science Monitor: [Global temperature rise is fastest in at least 11,000 years, study says](#)

3-7-13 Slate: [The earth is warming faster now than it has in 11,000 years](#)

3-7-13 The Independent: [The world is the hottest it has been since the end of the ice age – and the temperature's still rising](#)

2-28-13 New York Times: [Study of Ice Age bolsters carbon and warming link](#)

1-10-13 Addison Independent: [Nationally acclaimed scientists to offer climate change insights locally](#)

11-5-12 New Scientist: [The great thaw: Charting the end of the ice age](#)

10-29-12 Scientific American: [Global Warming: Faster than expected?](#)

6-1-12 Physics Today: [Carbon dioxide drove the ending of the last glacial epoch](#)

4-6-12 Science: [Case closed: CO2 helped end last ice age](#)

4-5-12 NPR: [Shake it off: Earth's wobble may have ended ice age](#)

4-5-12 Huffington Post: [CO2 rise ended ice age](#)

4-5-12 Christian Science Monitor: [Ice age study delivers blow to global warming skeptics](#)

4-4-12 US News & World Report: [Carbon dioxide increase caused end of ice age](#)

4-4-12 NBC News: [Study aims to settle climate battle over temperatures, CO2](#)

4-4-12 BBC: [CO2 'drove end to last ice age'](#)

4-4-12 Nature: [Bolstering the link](#)

4-4-12 Nature: [How carbon dioxide melted the world](#)

4-4-12 Scientific American: [What thawed the last ice age?](#)

4-4-12 Science: [Greenhouse gas is no weakling](#)

4-4-12 Huffington Post: [Ice age thawing and carbon dioxide levels linked in new study](#)

4-4-12 NBC News: [Carbon dioxide linked to end of last ice age](#)

11-29-11 BBC: [CO2 climate sensitivity 'overestimated'](#)

11-29-11 Reason.com: [The sky is falling less?](#)

11-28-11 Washington Post: [More dire global warming forecasts unlikely, study finds](#)

11-28-11 Discovery News: [Hot air ahead of climate meeting](#)

11-26-11 The Economist: [Good news at last?](#)

11-25-11 International Business Times: [Climate change not so extreme, based on new model](#)

11-25-11 USA Today: [Carbon dioxide doubling impact has limit](#)

11-25-11 LA Times: [CO2 sensitivity probably less than most extreme projections](#)

11-25-11 Forbes: [Climate change: Not as bad as we thought it was going to be](#)

11-25-11 The Register: [Global warming much less serious than thought – new science](#)

11-25-11 Bits of Science: [Good news? According to paleo research median CO2 climate sensitivity could be 0.7](#)

[degrees lower](#)

11-25-11 NYT Dot Earth: [Study finds limited sensitivity of climate to CO2](#)

11-25-11 Environmental Research Web: [Is climate sensitivity lower than IPCC finding?](#)

11-25-11 Investors.com: [Global warming models called into question by new study](#)

11-25-11 ABC Science: [Global warming rate less than feared](#)

11-24-11 New York Times: [How much will the earth warm up?](#)

11-24-11 Time: [New study suggests climate change may be \(slightly\) less severe than feared](#)

11-24-11 New Scientist: [CO2 may not warm the planet as much as thought](#)

11-24-11 Physorg.com: [Climate sensitivity to CO2 more limited than extreme projections – research](#)

8-7-09 Science Daily: [Long debate ended over cause, demise of ice ages? Research into earth's wobble](#)