

## Jeremy D. Shakun

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### Appointments

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2013-Present	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

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

### Philosophy

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I use 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 global change 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.

## Courses Taught

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Climate Change and Society, Earth System Seminar, Climate Change Debates, Paleoclimate Dynamics, Environmental Systems: Climate Change, Dynamic Earth, Exploring the Earth, Sedimentology and Stratigraphy

## Theses Supervised

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### Masters

Current Chris Halsted

*Constraining Laurentide Ice Sheet thinning in New England with  $^{10}\text{Be}$  dipsticks*

Current Celeste Gambino

*U-Pb dating of Arctic cave speleothems*

Current Cole Vickers

*Current tropical glacier extent in the context of the Holocene*

2017 Nicole Biller

*Late Pleistocene permafrost thawing history of Alaska and the Yukon from cave speleothems*

2017 Alexandria Koester

*Rapid thinning of the Laurentide Ice Sheet in coastal Maine during late Heinrich Stadial 1*

### Undergraduate

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*

## Grants

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- NSF EAR-1805620 “Collaborative Research: Holocene glacier length variations along the spine of the American Cordilleras and their climatic significance”; PI: Shakun; Co-PIs: Goehring, Marcott; Pending
- 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)
- 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)
- 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)

- 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)
- 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)
- 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)
- 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)

### Professional Activities

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- 2018- PALSEA (PALeo constraints on SEA level rise working group) co-leader
- 2018 Convener of Goldschmidt session: *Warm paleoclimates from interglacials to greenhouses*
- 2018 Convener of EGU session: *Climate-carbon cycle interactions of the Pleistocene*
- 2018 Convener of EGU session: *Interglacial climate change: Patterns, processes, and impacts*
- 2017 Co-leader of NEIGC field trip: *Testing the cosmogenic nuclide dipstick model for deglaciation of Mount Washington*
- 2016 Convener of Northeast GSA session: *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 Convener of Northeast GSA session: *Climate Change in Space and Time: An Update*
- 2014 Led three-day workshop *Past as Prologue: Holocene Climate as Context for Future Climate Change* at Mt. Hood, OR
- 2014 Joined Global and Planetary Change editorial board
- 2014 NSF P2C2 review panel member
- 2013 Contributing Author to IPCC AR5 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 Convener of AGU session: *The Dynamics of Glacial Cycles*
- 2008 Convener 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 Convener of AGU session: *The Driver of Quaternary Climate Change: Tropics Versus High Latitudes*

### Peer Review

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Nature, Science, Nature Geoscience, Quaternary Science Reviews, Geophysical Research Letters, Journal of Climate, GSA Today, Earth and Planetary Science Letters, Physical Geography, NSF ANS, NSF P2C2

### Awards

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- 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 Talks

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- 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  $^{10}\text{Be}$  decrease in multiple marine sediment cores*
- 2017 Woods Hole Oceanographic Institution Marine Chemistry and Geochemistry Seminar: *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 21<sup>st</sup> century climate change and beyond*
- 2015 AGU fall meeting, San Francisco, CA: *An 800-kyr record of global surface ocean  $\delta^{18}\text{O}$  and implications for ice volume-temperature coupling*
- 2015 MIT Oceans/Climate Seminar, Cambridge, MA: *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, Weeks Lecture: *An 800-kyr record of global surface ocean  $\delta^{18}\text{O}$  and implications for ice volume-temperature coupling*
- 2015 EGU annual meeting, Vienna, Austria: *An 800-kyr record of global surface ocean  $\delta^{18}\text{O}$  and implications for ice volume-temperature coupling*
- 2015 Golf Course Superintendents Association of Cape Cod: *Climate change: What we know, what we don't, and why we disagree*
- 2014 Weston Observatory Colloquium Series, Weston, MA: *Climate change: What we know, what we don't, and why we disagree*
- 2014 Mensa annual gathering, Boston, MA: *Past climate insights into our warmer future*
- 2014 Dartmouth College, Earth Science Department, Hanover, NH: *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, Cambridge, MA: *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 Framingham State University Seminar, Framingham, MA: *From the Ice Age to the Anthropocene: What the last 21,000 years tells us about 21<sup>st</sup> century climate change*
- 2013 Weston Observatory Colloquium Series, Weston, MA: *From the Ice Age to the Anthropocene: What the last 21,000 years tells us about 21<sup>st</sup> century climate change*
- 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  $\text{CO}_2$*
- 2012 SynTraCE-21 workshop, Brown University, Providence, RI: *Near-synchronous global glacier retreat during the last deglaciation associated with increasing atmospheric  $\text{CO}_2$*
- 2012 University of Minnesota, National Center for Earth-Surface Dynamics, Minneapolis, MN: *The last global warming: what the last 21,000 years tells us about 21<sup>st</sup> century climate change*

- 2012 Harvard University, Department of Earth and Planetary Sciences, ClimaTea: *CO<sub>2</sub> 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 <sup>10</sup>Be 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, Burlington, VT: *A warm-up to global warming: What the last 21,000 years tells us about 21<sup>st</sup> 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, Middlebury, VT: *A warm-up to global warming: What the last 21,000 years tells us about 21<sup>st</sup> 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, Providence, RI: *The role of CO<sub>2</sub> during the last deglaciation*
- 2010 Woods Hole Oceanographic Institution, Paleolunch, Woods Hole, MA: *The role of CO<sub>2</sub> 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*
- 2009 Oregon State University, Global Environmental Change Organization, Corvallis, OR: *Ice age lessons for global warming*
- 2009 Hatfield Marine Science Center, Newport, OR: *Ice age lessons for global warming*

## Public Outreach

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- 2017 Taught middle and 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 Methuen, 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 21<sup>st</sup> 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 21<sup>st</sup> century climate change*
- 2013 Contributor to PBS Learning Media web-based exercise for high school students, [Ancient Ice and Future Climate](#)
- 2010 Mission scientist on an episode of Science Channel's [Deadly Descent](#) in which a team of cavers collected stalagmites in Puerto Rico for paleoclimate reconstruction

### Media Interviews

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- 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 CKNW 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 CO<sub>2</sub>'s role in ending the last ice age
- 4-6-12 [Interview](#) with Nature blog: From the Lab Bench

### Publications

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- Shakun, J. D.**, Corbett, L. B., Bierman, P. R., Underwood, K., Rizzo, D., Zimmerman, S. R., Caffee, M. W., Naish, T., Golledge, N. Minimal East Antarctic Ice Sheet retreat onto land during the past 8 Myr. *Nature*, *in review*.
- Bierman, P. R., Rood, D. H., **Shakun, J. D.**, Portenga, E., and Corbett, L. B. Directly dating post-glacial Greenlandic emergence at high resolution using *in situ* <sup>10</sup>Be. *Quaternary Research*, *accepted*.
- Shakun, J. D.** 2018. Pollen weighs in on a climate conundrum. *Nature*, 554, 39-40.
- Marcott, S. A. and **Shakun, J. D.** 2017. A record of ice sheet demise. *Science*, 358, 721-722.
- 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. 2017. Young people's burden: Requirement of negative CO<sub>2</sub> emissions. *Earth System Dynamics*, 8, 577-616.
- Shakun, J. D.** 2017. Modest global-scale cooling despite extensive early Pleistocene ice sheets. *Quaternary Science Reviews*, 165, 25-30.

- Koester, A., **Shakun, J. D.**, Bierman, P. R., Davis, P. T., Corbett, L. B., Braun, D., and Zimmerman, S. 2017. Rapid thinning of the Laurentide Ice Sheet in coastal Maine during late Heinrich Stadial 1. *Quaternary Science Reviews*, 163, 180-192.
- Bierman, P. R., **Shakun, J. D.**, Corbett, L. B., Rood, D. H., and Zimmerman, S. 2016. 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
- Shakun, J. D.**, Raymo, M. E., and Lea, D. W. 2016. 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.
- 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. 2016. Consequences of twenty-first-century policy for multi-millennial climate and sea-level change. *Nature Climate Change*, 6, 360-369.
- Shakun, J. D.**, Clark, P. U., Marcott, S. A., Brook, E. J., Lifton, N. A., Caffee, M., and Shakun, W. R. 2015. Cosmogenic dating of Late-Pleistocene glaciation, southern tropical Andes, Peru. *Journal of Quaternary Science*, doi:10.1002/jqs.2822.
- Shakun, J. D.**, Clark, P. U., He, F., Lifton, N. A., Liu, Z., and Otto-Bliesner, B. L. 2015. 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.
- Cross, M., McGee, D., Broecker, W. S., Quade, J., **Shakun, J. D.**, Cheng, H., Lu, Y., and Edwards, R. L. 2015. 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.
- Shakun, J. D.**, Lea, D. W., Lisiecki, L. E., and Raymo, M. E. 2015. 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.
- Marcott, S. A. and **Shakun, J. D.** 2015. Holocene climate change and its context for the future. *PAGES Newsletter*, 23, 28.
- Shakun, J. D.** 2015. "Ice Ages" in *Discoveries in Modern Science: Exploration, Invention, Technology* (Ed. James Trefil). Macmillan, Farmington Hills, 535-541.
- Nelson, A., Bierman, P. R., **Shakun, J. D.**, and Rood, D. 2014. Using *in situ* cosmogenic  $^{10}\text{Be}$  as a sediment source tracer in Greenland's paraglacial environment. *Earth Surface Processes and Landforms*, doi: 10.1002/esp.3565.
- Marcott, S. A., **Shakun, J. D.**, Clark, P. U., and Mix, A. C. 2013. A reconstruction of global and regional temperature for the last 11,300 years. *Science*, 339, 1198-1201.
- He, F., **Shakun, J. D.**, Clark, P. U., Carlson, A. E., Liu, Z., Otto-Bliesner, B. L., and Kutzbach, J. E. 2013. Northern Hemisphere forcing of Southern Hemisphere climate during the last deglaciation. *Nature*, 494, 81-85.
- Schmittner, A., Urban, N., **Shakun, J. D.**, Mahowald, N. M., Clark, P. U., Bartlein, P. J., Mix, A. C., and Rosell-Mele, A. 2012. Response to Comment on "Climate sensitivity estimated from temperature reconstructions of the Last Glacial Maximum." *Science*, 337, 1294.
- 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. 2012. Global warming preceded by increasing carbon dioxide concentrations during the last deglaciation. *Nature*, 484, 49-54.  
➤ Highlighted in corresponding Nature News and Views article
- 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. 2012. Global climate evolution during the last deglaciation. *Proceedings of the National Academy of Sciences*, doi:10.1073/pnas.1116619109
- Schmittner, A., Urban, N., **Shakun, J. D.**, Mahowald, N. M., Clark, P. U., Bartlein, P. J., Mix, A. C., and Rosell-Mele, A. 2011. Climate sensitivity estimated from temperature reconstructions of the Last Glacial Maximum. *Science*, 334, 1385-1388.
- Highlighted in corresponding Science Perspective article
- Shakun, J. D.**, Burns, S. J., Clark, P. U., Cheng, H., and Edwards, R. L. Milankovitch-paced Termination II in a Nevada speleothem? 2011. *Geophysical Research Letters*, 38, L18701, doi:10.1029/2011GL048560.
- Shakun, J. D.** and Carlson, A. E. A global perspective on Last Glacial Maximum to Holocene climate change. 2010. *Quaternary Science Reviews*, 29, 1801-1816.
- Awarded as a “highly cited paper” by Quaternary Science Reviews
- Shakun, J. D.** and Shaman, J. 2009. Tropical origins of north and south Pacific decadal variability. *Geophysical Research Letters*, 36, L19711, doi:10.1029/2009GL040313.
- Clark, P. U., Dyke, A. S., **Shakun, J. D.**, Carlson, A. E., Clark, J., Wohlfarth, B., Mitrovica, J., Hostetler, S. W., McCabe, A. M. 2009. The Last Glacial Maximum. *Science*, 325, 710-714.
- Shakun, J. D.**, Burns, S. J., Fleitmann, D., Kramers, J., Matter, A., and Al-Subary, A. 2007. A high-resolution, absolute-dated deglacial speleothem record of Indian Ocean climate from Socotra Island, Yemen. *Earth and Planetary Science Letters*, 259, 442-456.
- Munroe, J. S., Laabs, B. J. C., **Shakun, J. D.**, Singer, B. S., Mickelson, D. M., Refsnider, K., and Caffee, M. W. 2006. 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.

### Conference Abstracts

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(\*denotes student advised by JDS)

- Ramezani, J., \*Gambino, C., **Shakun, J.D.**, McGee, D., Khadivi, S. 2018. Direct U-Pb age constraints on Arctic speleothem formation and their implications for climate change in deep time. EGU annual meeting, Vienna, Austria.
- Shakun, J.D.**, \*Biller, N., McGee, D., Hardt, B.F., Wong, C.I., Ford, D., Lauriol, B. 2017. Widespread permafrost thaw during the Marine Isotope Stage 11 from Arctic speleothems. AGU annual meeting, New Orleans, LA.
- \*Gambino, C., **Shakun, J.D.**, McGee, D., Ramezani, J., Khadivi, S., Wong, C.I. 2017. A uranium-lead chronology of speleothem deposition in the Canadian Arctic. AGU annual meeting, New Orleans, LA.
- \*Vickers, A., Shakun, J.D., Goehring, B., Kelly, M.A., Jackson, M.S., Jomelli, V. 2017. Tropical Andean and African glacier extent through the Holocene asses with proglacial *in situ* <sup>14</sup>C and <sup>10</sup>Be measurements. AGU annual meeting, New Orleans, LA.
- Shakun, J.D.**, Corbett, L.B., Bierman, P.R., Underwood, K., Rizzo, D.M., Zimmerman, S.R., Caffee, M.W., Naish, T. 2017. INVITED. Minimal East Antarctic Ice Sheet retreat onto land during the past 8 Myr. PALSEA2 workshop, Cancun, Mexico.
- Shakun, J.D.**, Corbett, L.B., Bierman, P.R., Zimmerman, S.H. 2017. INVITED. Pliocene Greenland Ice Sheet growth recorded by *in situ* <sup>10</sup>Be decrease in multiple marine sediment cores. GSA annual meeting, Seattle, WA.
- Corbett, L.B., Bierman, P.R., Neumann, T.A., Graly, J.A., **Shakun, J.D.**, Caffee, M.W., Dunai, T., Zimmerman, S.H. 2017. Analysis of three cosmogenic isotopes in subglacial cobbles helps unravel Greenland’s exposure and erosion history. GSA annual meeting, Seattle, WA.
- Barth, A.M., Marcott, S.A., Horvath, A., **Shakun, J.D.**, Licciardi, J.M. 2017. Early deglacial thinning of the Laurentide Ice Sheet followed by rapid regional deglaciation. GSA annual meeting, Seattle, WA.
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### **Media Coverage of Research**

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- 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](#)
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- 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?](#)
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- 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](#)
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- 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](#)
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- 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](#)

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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)

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

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