

Aaron E. Putnam

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U.S.A.

History of Employment

Present Position: *George H. Denton Associate Professor of Earth Sciences, University of Maine*
(Promotion to Professor effective September 2026)

2013 – 2015 *Lamont Assistant Research Professor, Lamont-Doherty Earth Observatory of Columbia University*

2011 – 2013 *Lamont-Doherty Earth Observatory Postdoctoral Research Scientist*

Education

Ph.D. in Earth Sciences	University of Maine	2011
M.S. in Earth Sciences	University of Maine	2006
B.S. (Hons.) in Geology	Bates College	2004
Undergraduate study abroad term	University of Iceland	2002

Research Interests

I am interested in what drives late-Pleistocene glacial cycles and their rapid terminations, and the role of millennial-scale climate oscillations in ice ages. My primary approach involves reconstructing signatures of mountain-glacier and ice-sheet change in both polar hemispheres during and since the last glacial cycle. I employ glacial geomorphological mapping, ^{10}Be surface-exposure dating and ^{14}C -dating techniques, and glaciological modeling to generate bipolar glacier-derived climate reconstructions. A goal is to derive insights into the planetary energy imbalance and attendant climate dynamics, based on the physical record of glacial ice masses, during episodes of rapid transient climate change. Recent field sites have included Kā Tiriti o Te Moana/Southern Alps, New Zealand, and Patagonia in the Southern Hemisphere; and the mountain chains of Asia, the western Cordillera of North America, and southwestern Scandinavia in the Northern Hemisphere. I have recently collaborated with paleoceanographers and climate modelers on reconstructing and interpreting signatures of mid-depth oceanic warming at western boundary regions in both hemispheres during the last termination. I am PI on a collaborative NSF-funded effort to reconstruct Laurentide Ice Sheet recession across Maine, and corresponding meltwater fluxes into the Gulf of Maine, during the last termination (our latest paper on this is now published in *Paleoceanography and Paleoclimatology*). Finally, I have also utilized geologic evidence of past hydroclimatic change to gain insight into how the distribution of precipitation might change under near-term global warming. Overall, I am interested in what clues the natural world can teach us about how the climate system has behaved in the past, and how that might inform predictions of ice and climate in the future.

Selected recent publications (* - student author)

- 1) *Herlinger, J.F., Allen, K.A., Hall, B.L., **Putnam, A.E.**, Handley, M.J., Lowell, T.V., Russell, J.L., 2026. Intensified meltwater influx during Heinrich Stadial 1 recorded in the Gulf of Maine, USA. *Paleoceanography and Paleoclimatology* 41, e2026PA005442.
- 2) Bromley, G.R.M., Bunce, C., Hall, B.L., **Putnam, A.E.**, McDermott, F., 2026. Deglaciation of the Burren glacio-karst, Ireland, during Termination 1: Implications for North Atlantic climate and karstification. *Journal of Quaternary Science*, doi: 10.1002/jqs.70068.
- 3) Shu, P., Zhou, W., **Putnam, A.E.**, Li, B., Kang, S., Sha, Y., Kong, W., Shi, Z., Ming, G., Wang, H., Sun, Y., Wright, D.K., Liu, W., Liu X., Cheng, P., Song, Y., Niu, D., Dodson, J.R., Du, H., Zhao, J., Zhang, Z., Qiu, Y., An, Z., 2025. Intensified monsoonal rainstorm events over westerly-dominated Asian interior during the warm mid-Holocene. *Nature Communications Earth & Environment* 6, 72.

- 4) Hall, B.L., **Putnam, A.E.**, Lowell, T.V., Denton, G.H., Russell, J.L., Soteres, R.L., *Spoth, M.M., *Miles, M.L., Thomas, S.G., Moreno, P.I., Schwartz, R., Schaefer, J.M., 2026. Rapid thinning of the Cordillera Darwin icefield at the onset of Termination I. *Quaternary Science Reviews* 373, 109754. (Note: Hall, Putnam, Lowell share lead authorship)
- 5) *Strand, P.D., **Putnam, A.E.**, Schaefer, J.M., Denton, G.H., Barrell, D.J.A., 2024. Tracking rapid ice recession in a major Southern Alps valley during the last glacial termination. *Quaternary Science Reviews* 335, 108737.
- 6) **Putnam, A.E.**, Denton, G.H., Schaefer, J.M., 2023. A ¹⁰Be chronology of the Esmark Moraine and Lysefjorden region, southwestern Norway: Evidence for coeval glacier resurgence in both polar hemispheres during the Antarctic Cold Reversal. *Quaternary Science Reviews* 316, 108259.
- 7) Bromley, G., **Putnam, A.**, Hall, B., Rademaker, K., Thomas, H.*, Balter-Kennedy, A.*, Barker, S., Rice, D., 2023. Lateglacial shifts in seasonality reconcile conflicting North Atlantic temperature signals. *Journal of Geophysical Research – Earth Surface* 128, e2022JF006951.
- 8) *Audet, A.C., **Putnam, A.E.**, Russell, J.L., Lorrey, A., Mackintosh, A., Andersen, B., Denton, G.H., 2022. Correspondence among mid-latitude glacier equilibrium line altitudes, atmospheric temperatures, and westerly wind fields. *Geophysical Research Letters* 49, e2022GL099897.
- 9) Denton, G.H., Toucanne, S., **Putnam, A.E.**, Barrell, D.J.A., Russell, J.L., 2022. Heinrich Summers. *Quaternary Science Reviews* 295, 107750.
- 10) **Putnam, A.E.**, 2022. Sediment study finds the pulsebeat of tropical glaciers. *Nature* 607, 241-243.
- 11) *Strand, P.D., **Putnam, A.E.**, Sambuu, O., Putnam, D.E., Denton, G.H., Schaefer, J.M., *Radue, M.J., *Dorj, A., *Amarsaikhan, P., Stevens, J., Cole, D., 2022. A ¹⁰Be moraine chronology of the Last Glaciation and Termination at 49°N in the Mongolian Altai of Central Asia. *Paleoceanography and Paleoclimatology* 37, e2022PA004423.
- 12) Denton, G.H., **Putnam, A.E.**, Russell, J.L., Barrell, D.J.A., Schaefer, J.M., Kaplan, M.R., *Strand, P.D., 2021. The Zealandia Switch: Ice age climate shifts viewed from Southern Hemisphere moraines. *Quaternary Science Reviews* 257, 106771.
- 13) **Putnam, A.E.**, Broecker, W.S., 2017. Human-induced changes in the distribution of rainfall. *Science Advances* 3, e1600871.
- 14) **Putnam, A.E.**, Putnam, D.E., Andreu-Hayles, L., Cook, E.R., Palmer, J.D., Clark, E.H., Wang, C., Chen, F., Denton, G.H., Boyle, D.P., Bassett, S.D., Birkel, S.D., Martin-Fernandez, J., Hajdas, I., Southon, J., Garner, C.B., Cheng, H., and Broecker, W.S., 2016. Little Ice Age wetting of interior Asian deserts and the rise of the Mongol Empire. *Quaternary Science Reviews* 131, 33-50.

Honors

National Science Foundation CAREER Award: “The Last Glacial Termination in Interior Asia”
 Lamont-Doherty Earth Observatory Postdoctoral Fellowship
 Outstanding Ph.D. Award – College of Natural Sciences, Forestry, and Agriculture, University of Maine.
 Gary Comer Abrupt Climate Change Fellowship

Professional Society Memberships

American Geophysical Union
 Geological Society of Maine
 Phi Kappa Phi
 The Changelings (abrupt climate change study group sponsored by the Comer Family Foundation)
 Geological Society of America
 International Carnivorous Plant Society
 Sigma Xi