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Peter U. Clark

Year hired: 1988

Specialty: Glacial geology, Quaternary stratigraphy, paleoclimatology

Research interests: History and dynamics of former glaciers and ice sheets, paleoclimatology.

Research Collaborations: [Paleovar](#)

Recent Graduate Student Ersek, V., PhD 2008, Past Climate Variability in

Titles: Southwestern Oregon and Relationships with Regional and Hemispheric Climate. Currently post-doc at Oxford University, UK.

Anslow, F.A., PhD 2008, Modeling and Dating Glacier Fluctuations and Their Relations to Pacific Ocean Climate. Currently post-doc at University of British Columbia, Canada.

Carlson, A.E., PhD, 2006, Dynamics of the Laurentide Ice Sheet. Post-doc at Woods Hole Oceanographic Institution, now Assistant Professor, University of Wisconsin, Madison.

Rinterknecht, V.R., PhD 2003, Cosmogenic ^{10}Be Chronology for the Last Deglaciation of the Southern Scandinavian Ice Sheet. Post-doc at Lamont-Doherty Earth Observatory, now Lecturer at University of St. Andrews, Scotland.

Roy, M., PhD 2003, Constraints on the Origin of the Middle Pleistocene Transition from the Glacial Sedimentary Record of the North-Central United States. Post-doc at Lamont-Doherty Earth Observatory, now Assistant Professor at University of Quebec at Montreal, Canada.

Vacco, D.A., MS 2003, A Speleothem Climate Record of the Last Deglaciation from the Pacific Northwest, USA. PhD at Pennsylvania State University (2009), now lecturer at Pennsylvania State University.

Poellot, C.D., MS 2000, Ice Surface Reconstruction and Energy Balance Modeling of Alpine Glaciers. Whereabouts unknown.

Breemer, C.W., MS 2000, Subglacial Hydrology of the Lake Michigan Lobe, Laurentide Ice Sheet. Currently Hydrogeologist, GeoEngineers, Portland, OR.

Licciardi, J.M., PhD 2000, Alpine glacier and pluvial lake records of late Pleistocene climate variability in the western United States. Post-doc at Woods Hole Oceanographic Institution, now Associate Professor, University of New



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Hampshire.

Mammone, K.A., MS 1997, Sediment Provenance and Transport on the Siberian Arctic Shelf. Whereabouts unknown.

Bevis, K.A., PhD 1995, Reconstruction of Late Pleistocene paleoclimatic characteristics in the Great Basin and adjacent areas. Currently Associate Professor, Hanover College, Indiana.

Jenson, J.W. PhD 1993, A Nonlinear Numerical Model of the Lake Michigan Lobe, Laurentide Ice Sheet. Currently Professor, Water and Environmental Research Institute, University of Guam.

Recent Publications: (Click on a journal title to view the article)

Clark, P.U., Dyke, A.S., Shakun, J.D., Carlson, A.E., Clark, J., Wohlfarth, B., Mitrovica, J.X., Hostetler, S.W., and McCabe, A.M., 2009, The Last Glacial Maximum: Science, in press.

Liu, Z., Otto-Bliesner, B.L., He, F., Brady, E., Tomas, R., Clark, P.U., Carlson, A.E., Lynch-Stieglitz, J., Curry, W., Brook, E., Erickson, D., Jacob, R., Kutzbach, J., and Cheng, J., 2009, [Transient simulation of last deglaciation with a new mechanism for Bølling-Allerød warming](#): Science, v. 325, p. 310-314.

Carlson, A.E., Clark, P.U., Haley, B., and Klinkhammer, G.P., 2009, [Routing of western Canadian Plains runoff during the 8.2 ka cold event](#): Geophysical Research Letters, v. 36, L14704, doi:10.1029/2009GL038778.

Siddall, M., Stocker, T.S., and Clark, P.U., 2009, [Constraints on future sea-level rise from past sea-level change](#): Nature Geoscience, Published online: 26 July 2009, doi:10.1038/NGE0587.

Clark, J., McCabe, A.M., Schnabel, C., Clark, P.U., McCarron, S., Freeman, S.P.H.T., Maden, C. and Xu, S., 2009, [A cosmogenic ¹⁰Be chronology of the last deglaciation of western Ireland, and implications for sensitivity of the Irish Ice Sheet to climate change](#): Geological Society of America Bulletin, v. 121, p. 3-16, doi: 10.1130/B26288.1

Clark, J., McCabe, A.M., Schnabel, C., Clark, P.U., Freeman, S.P.H.T., Maden, C., and Xu, S., 2009, [¹⁰Be chronology of the last deglaciation of County Donegal, northwestern Ireland](#): Boreas, v. 38, p. 111-118, doi 10.1111/j.1502-3885.2007.00040.x.

Mitrovica, J.X., Gomez, N., and Clark, P.U., 2009, [Enhanced sea-level rise following a collapse of the West Antarctic Ice Sheet](#): Science, v. 323, p. 753.

Ersek, V., Cheng, H., Hostetler, S.W., Anslow, F.S., Clark, P.U., Mix, A.C., and Edwards, R.L., 2009, [Environmental influences on speleothem growth in southwestern Oregon during the last 380,000 years](#): Earth and Planetary Science Letters, v. 279, p. 316-325.

Clark, P.U., and Weaver, A.J., Coordinating Lead Authors, 2008, *Abrupt Climate Change*, U.S. Climate Change Research

Sane, S., Desai, C.S., Jenson, J.W., Contractor, D.N., Carlson, A.E., and Clark, P.U., 2008, [Application of the Disturbed State Concept \(DSC\) model to two Pleistocene tills](#): Quaternary Science Reviews, v. 27, p. 267-283.

Clark, P.U., Delworth, T.L., and Weaver, A.J., 2008, [Freshwater forcing: Will history repeat itself?](#): Science, v. 320, p. 316.

Anslow, F.S., Hostetler, S.W., Bidlake, W.R., and Clark, P.U., 2008, [Distributed energy balance modeling of South Cascade Glacier, Washington, and assessment of model uncertainty](#): Journal of Geophysical Research, v. 113, F02019, doi:10.1029/2007JF000850.

Rinterknecht, V.R., Bitinas, A., Clark, P.U., Raisbeck, G.M., Yiou, F., and Brook, E.J., 2008, [Timing of the last deglaciation in Lithuania](#): Boreas, v. 37, p. 426-433.

Carlson, A.E., and Clark, P.U., 2008, [Rapid climate change and Arctic Ocean freshening](#): Comment: Geology, doi: 10.1130/G24786C.1.

McCabe, A.M., Clark, P.U., Clark, J., and Dunlop, P., 2007, [Radiocarbon constraints on ice sheet readvance in the north Irish Sea Basin during the last deglaciation](#): Quaternary Science Reviews, v. 26, p. 1204-1211.

Carlson, A.E., Jenson, J.W., and Clark, P. U., 2007, [Subglacial hydrology of the James Lobe of the Laurentide Ice Sheet](#): Quaternary Science Reviews, v. 26, p. 1384-1397.

Rinterknecht, V.R., Pavlovskaya, I.E., Clark, P.U., Raisbeck, G.M., Yiou, F., and Brook, E.J., 2007, [Timing of the last deglaciation in Belarus](#): Boreas, v. 36, p. 307-313.

Clark, P.U., Hostetler, S.W., Pisias, N.G., Schmittner, A., and Meissner, K.J., 2007, [Mechanisms for a ~7-kyr climate and sea-level oscillation during marine isotope stage 3, in Schmittner, A., Chiang, J., and Hemming, S., Eds., Ocean Circulation: Mechanisms and Impacts](#), American Geophysical Union, Geophysical Monograph 173, Washington, D.C., pp. 209-246.

Carlson, A.E., Clark, P.U., Raisbeck, G.M., and Brook, E.J., 2007, [Rapid Holocene deglaciation of the Labrador sector of the Laurentide Ice Sheet](#): Journal of Climate, v. 20, p. 5126-5133.

Roy, M., Clark, P.U., Duncan, R.A., and Hemming, S.R., 2007, [Insights into the late Cenozoic configuration of the Laurentide Ice Sheet from ⁴⁰Ar/³⁹Ar dating of glacially transported minerals in midcontinent tills](#): Geochemistry, Geophysics, Geosystems, v. 8, Q09006, doi: 10.1029/2006GC001572.

Carlson, A.E., Clark, P.U., Haley, B., Klinkhammer, G.P., Simmons, K., Brook, E.J., and Meissner, K., 2007, [Geochemical proxies of freshwater routing during the Younger Dryas cold event](#): Proceedings of the National Academy of Sciences, v. 104, p. 6556-6561.

McCabe, A.M., Clark, P.U., Smith, D.E., and Dunlop, P., 2007, [A revised model for the last deglaciation of eastern Scotland](#): Journal of the Geological Society of London, v. 164, p. 313-316.

McCabe, A.M., Clark, P.U., and Clark, J., 2007, [Radiocarbon constraints on the history of the western Irish Ice Sheet prior to the Last Glacial Maximum](#): Geology, v. 35, p. 147-150.

Clark, P.U., Archer, D., Pollard, D., Blum, J.D., Rial, J.A., Brovkin, V., Mix, A.C., Pisias, N.G., and Roy, M., 2006, [The Middle Pleistocene transition: Characteristics, mechanisms, and implications for long-term changes in atmospheric pCO₂](#): Quaternary Science Reviews, v. 25, p. 3150-3184.

Meissner, K.M., and Clark, P.U., 2006, [The impact of floods versus routing on the thermohaline circulation](#): Geophysical Research Letters, v. 33, doi:10.1029/2006GL026705.

Rinterknecht, V.R., Clark, P.U., Raisbeck, G.M., Yiou, F., Bitinas, A., Brook, E.J., Marks, L., Zelcs, V., Lunkka, J.-P., Pavlovskaya I.E., Piotrowski, J.A., and Raukas, A., 2006, [The last deglaciation of the southeastern sector of the Scandinavian Ice Sheet](#): Science, v. 311, p. 1449-1452.

Vacco, D.A., Clark, P.U., Mix, A.C., Cheng, H., and Edwards, R.L., 2005, [A speleothem record of Younger Dryas cooling from the Klamath Mountains, Oregon](#): Quaternary Research, v. 64, p. 249-256.

Alley, R.B., Clark, P.U., Huybrechts, P., and Joughin, I., 2005, [Ice-sheet and sea-level changes](#): Science, v. 310, p. 456-460.

McCabe, A.M., Clark, P.U., and Clark, J., 2005, [AMS 14C dating of deglacial events in the Irish Sea Basin and other sectors of the British-Irish Ice Sheet](#): Quaternary Science Reviews, v. 24, p. 1673-1690.

Bassett, S.E., Milne, G.A., Mitrovica, J.X., and Clark, P.U., 2005, [Ice sheet and solid earth influences on far-field sea-level histories](#): Science, v. 309, p. 925-928.

Rinterknecht, V.R., Marks, L., Piotrowski, J., Raisbeck, G.M., Yiou, F., Brook, E.J., and Clark, P.U., 2005, [Cosmogenic 10Be ages on the Pomeranian Moraine, Poland](#): Boreas, v. 34, p. 186-191.

Rinterknecht, V.R., Clark, P.U., Raisbeck, G.M., Yiou, F., Brook, E.J., Tschudi, S., and Lunkka, J.P., 2004, [Cosmogenic 10Be dating of the Salpausselka I Moraine in southwestern Finland](#): Quaternary Science Reviews, v. 23, p. 2283-2289.

Roy, M., Clark, P.U., Raisbeck, G.M., and Yiou, F., 2004, [Geochemical constraints on the origin of the middle Pleistocene transition from the glacial sedimentary record of the north-central U.S.](#): Earth and Planetary Science Letters, v. 227, p. 281-296.

Clark, P.U., McCabe, A.M., Mix, A.C., and Weaver, A.J., 2004, [Rapid rise of sea level 19,000 years ago and its global implications](#): Science, v. 304, p. 1141-1144.

Cottet-Puinel, M., Weaver, A., Hillaire-Marcel, C., de Vernal, A., Clark, P.U., and Eby, M., 2004, [Variation of Labrador Sea deep water formation over the last glacial cycle in a climate model of intermediate complexity](#): Quaternary Science Reviews, v. 23, p. 449-465.

Licciardi, J.M., Clark, P.U., Brook, E.J., Elmore, D., and Sharma, P., 2004, [Variable responses of western USA glaciers during the last deglaciation](#): Geology, v. 32, p. 81-84.

Roy, M., Clark, P.U., Barendregt, R.W., Glassman, J.R., Enkin, R.J., and Baker, J., 2004, [Glacial stratigraphy and paleomagnetism of late Cenozoic deposits of the north-central U.S.](#): Geological Society of America Bulletin, v. 116, p. 30-41.

McCabe, A.M., and Clark, P.U., 2003, [Deglacial chronology from County Donegal, Ireland: Implications for deglaciation of the British-Irish Ice Sheet](#): Journal of the Geological Society of London, v. 160, p. 847-855.

Clark, P.U., Brook, E.J., Raisbeck, G.M., Yiou, F., and Clark, J., 2003, [Cosmogenic ¹⁰Be ages of the Saglek Moraines, Torngat Mountains, Labrador](#): Geology, v. 31, p. 617-620.

Weaver, A.J., Saenko, O.A., Clark, P.U., and Mitrovica, J.X., 2003, [Meltwater pulse 1A from Antarctica as a trigger of the Bolling-Allerod warm period](#): Science, v. 299, p. 1709-1713.

Dyke, A.S., Andrews, J.T., Clark, P.U., England, J.H., Miller, G.H., Shaw, J., and Veillette, J., 2002, [The Laurentide and Inuitian Ice Sheets during the Last Glacial Maximum](#): Quaternary Science Reviews, v. 21, p. 9-32.

Marshall, S.J., and Clark, P.U., 2002, [Basal temperature evolution of North American ice sheets and implications for the 100-kyr cycle](#): Geophysical Research Letters, v. 29, doi: 10.1029/2002GL015192.

Clark, P.U., 2002, [Early deglaciation in the tropical Andes](#): Science, v. 298, doi: 10.1126/science.1111111 (www.sciencemag.org/cgi/content/full/298/5591/7a).

Bremer, C.W., Clark, P.U., and Haggerty, R., 2002, [Subglacial hydrology of the late-Pleistocene Lake Michigan Lobe, Laurentide Ice Sheet](#): Geological Society of America Bulletin, v. 114, p. 665-674.

Clark, P.U., Mitrovica, J.X., Milne, G.A., and Tamisiea, M., 2002, [Sea-level fingerprinting as a direct test for the source of global meltwater pulse 1A](#): Science, v. 295, p. 2438-2441.

Clark, P.U., and Mix, A.C., eds., 2002, [Ice Sheets and Sea Level of the Last Glacial Maximum](#): Quaternary Science Reviews, v. 21, nos. 1-3, 454 p.

Clark, P.U., Pisias, N.G., Stocker, T.F., and Weaver, A.J., 2002, [The role of the thermohaline circulation in abrupt climate change](#): Nature, v. 415, p. 863-869.

Clark, P.U., Marshall, S.J., Clarke, G.K.C., Hostetler, S.W., Licciardi, J.M., and Teller, J.T., 2001, [Freshwater forcing of abrupt climate change during the last glaciatiion](#): Science, v. 293, p. 283-287.

Licciardi, J.M., Clark, P.U., Brook, E.J., Pierce, K.L., Kurz, M.D., Elmore, D., and Sharma, P., 2001, [Cosmogenic ³He and ¹⁰Be chronologies of the northern Yellowstone Ice Cap, Montana, USA](#): *Geology*, v. 29, p. 1095-1098.

Clark, P.U., and Mix, A.C., 2000, [Ice sheets by volume](#): *Nature*, v. 406, p. 689-690.

Hostetler, S.W., Bartlein, P.J., Clark, P.U., Small, E.E., and Soloman, A.M., 2000, [Mesoscale climate and surface-atmosphere feedbacks along the southern margin of the Laurentide Ice Sheet 11,000 years ago](#): *Nature*, v. 405, p. 334-337.

Hostetler, S.W., and Clark, P.U., 2000, [Tropical climate at the last glacial maximum inferred from glacier mass-balance modeling](#): *Science*, v. 290, p. 1747-1750.

Alley, R.B., and Clark, P.U., 1999, [The deglaciation of the northern hemisphere: A global perspective](#): *Annual Reviews of Earth and Planetary Sciences*, v. 27, p. 149-182.

Clark, P.U., Alley, R.B., and Pollard, D., 1999, [Northern Hemisphere ice-sheet influences on global climate change](#): *Science*, v. 286, p. 1104-1111.

McCabe, A.M., and Clark, P.U., 1998, [Ice-sheet variability around the North Atlantic Ocean during the last deglaciation](#): *Nature*, v. 392, p. 373-377.

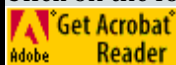
Courses taught: Geo 201 Earth System Science (4 cr)
Geo 308 Global Change and Earth Sciences (3 cr)
Geo 322 Surface Processes (4 cr)
Geo 481/581 Glacial Geology (4 cr)
Geo 488/588 Quaternary Stratigraphy of North America (3 cr)
Geo 593 Topics in Quaternary Geology (2 cr)
Geo 633 Geochronology & Isotope Geology (3 cr)

Degrees: PhD in Geology, University of Colorado, 1984
MS in Geology, University of Waterloo, 1980
BS (with Honors), St. Lawrence University, 1978

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