

Curriculum Vita: David Archer

PERSONAL

Date of Birth: 15 September 1960
Citizenship: US
Current Address: Department of the Geophysical Sciences
5734 South Ellis Avenue
University of Chicago
Chicago, Ill 60637

EDUCATION

B.S., 1983, Indiana University, Biochemistry
Ph.D., August, 1990, University of Washington, Oceanography
Dissertation: Dissolution of Calcite in Deep Sea Sediments: an In Situ Microelectrode Study

EMPLOYMENT

June 2001- present: Full Professor of Geophysical Sciences, University of Chicago
June 1997 – June 2001: Associate Professor of Geophysical Sciences, University of Chicago
September 1993 - May 1997: Assistant Professor of Geophysical Sciences, University of Chicago
August 1992 - September 1993: Postdoctoral Research Scientist at Lamont Doherty
September, 1990 - July 1992: Lamont Fellow Postdoctoral Fellowship at Lamont Doherty Earth Observatory of Columbia University
1994 - present: Adjunct Professor, Lamont Doherty Earth Observatory
January 1996 - present: Adjunct Professor of Environmental Sciences, University of Chicago

RESEARCH INTEREST

The carbon cycle of the Earth and its interaction with global climate.

AWARDS

Lamont Postdoctoral Fellowship, 1990
Packard Foundation Fellowship in Science and Engineering, 1996
Walter Kistler Book Award, 2009
AGU Fellowship 2010

SYNERGISTIC ACTIVITIES

Wrote a textbook for non-science majors about global warming, now in second edition.
Blackwell, September 2011
Developed a class for Coursera.org called Global Warming: The Science of Climate Change, currently ~12,000 users
Developed and maintain OpenClimate101, an open-access on-line climate science class based on PHSC13400 at the University of Chicago, currently ~4000 users
Wrote and co-wrote several climate outreach books for nonscientists and educators
The Long Thaw, How humans are changing the next 100,000 years of Earth's climate
The Climate Crisis, An introductory guide to climate change
The Warming Papers, The scientific foundation for the climate change forecast
Developed and maintain climatemodels.uchicago.edu, a suite of on-line interactive models on:
Climate physics and the greenhouse effect
The global carbon and methane cycles and their impact on climate
Fossil fuel extraction and utilization
Browsers for climate record data and AR5 model results

Served on National Research Council Committees on Ocean Acidification (2010) and Abrupt Climate Change Impacts (2013)
Contributing editor for climate science web site realclimate.org

PUBLICATIONS

Committee on Understanding and Monitoring Abrupt Climate Change and its Impacts (2014)
Abrupt Impacts of Climate Change: Anticipating Surprises. National Research Council, Washington, D.C.

Archer D.E. and T. Jokulsdottir. (2013) The biological pump and atmospheric CO₂. Treatise on Geochemistry, Second Edition, Volume 6, The Oceans and Marine Geochemistry, edited by M. Mottl.

Archer, D.E. (2013) The state of climate negotiations: a personal scientific commentary. Carbon balance and management, vol. 8 (1), doi: 10.1186/1750-0680-8-5.

Archer, D.E., B.A. Buffett, and P.C. McGuire (2012) A two-dimensional model of the passive coastal margin deep sedimentary carbon and methane cycles. *Biogeosciences.*, 9, 1-20, doi:10.5194/bg-9-1-2012, 2012

Archer, D.E. and B.A. Buffett (2012) A two-dimensional model of the methane cycle in a sedimentary accretionary wedge. *Biogeosciences*, 9, 3323-3336, doi:10.5194/bg-9-3323-2012, 2012

Siedlecki, S.A., A. Mahadevan, and D. Archer (2012). Mechanism for export of sediment-derived iron in an upwelling regime. *Geophys. Res. Lett.* 39: L03601, doi:10.1029/2011GL050366

Brovkin, V., A. Ganopolski, D. Archer, and G. Munhoven (2012) Glacial CO₂ cycle as a succession of key physical and biogeochemical processes. *Clim. Past*, 8, 251-264.

Siedlecki, S.A., D.E. Archer and A. Mahadevan. (2011) Modeling mechanisms for nutrient supply and ventilation of benthic gases at the continental shelf break. *J. Geophys. Res.* 116: WOS:000292384500001.

Archer, D. (2011) *Global Warming: Understanding the Forecast*, Second Edition. Wiley.

Pfister, C.A., S.J. McCoy, J.T. Wootton, P.A. Martin, A.S. Colman, and D. Archer (2011) Rapid Environmental Change over the Past Decade Revealed by Isotopic Analysis of the California Mussel in the Northeast Pacific. *PLOS ONE* 6 (10) e25766 doi:10.1371/journal.pone.0025766

Archer, D. and Pierrehumbert, R. (2010) *The Warming Papers: An annotated compendium of classic papers on the science of anthropogenic climate change.* Wiley.

Archer, D. (2010) How it went down last time. *Nature Geoscience* 3: 819-829 (unrefereed News and Views piece).

Archer, D. (2010) *The Global Carbon Cycle: Princeton Primer Series in Climate Science.* Princeton University Press.

Morel, F.M.M., D. Archer, J. Barry, G.D. Brewer, J.E. Corredor, S.C. Doney, V.J. Fabry, G.E.

- Hofmann, D.S. Holland, J.A. Kleypas, F.J. Millero, U. Riebesell (2010) Ocean Acidification: A national strategy to meet the challenges of a changing ocean. National Research Council of the National Academies, 188 pages.
- Archer, D. and S. Rahmstorf (2010). *The Climate Crisis: An Introductory Guide to Climate Change*. Cambridge University Press.
- Kleinen, T., V. Brovkin, W. von Bloh, D. Archer, and G. Munhoven (2010), Holocene carbon cycle dynamics, *Geophys. Res. Lett.*, 37, L02705, doi:10.1029/2009GL041391
- Archer, D., M. Eby, V. Brovkin, A. Ridgwell, L. Cao, U. Mikolajewicz, K. Caldeira, K. Matsumoto, G. Munhoven, A. Montenegro, and K. Tokos (2009) Atmospheric lifetime of fossil-fuel carbon dioxide. *Annual Reviews of Earth and Planetary Sciences* 37:117–34, doi 10.1146/annurev.earth.031208.100206.
- Archer, D., Buffett, B., and Brovkin, V. (2009) Ocean methane hydrates as a slow tipping point in the global carbon cycle. *Proc. Nat. Acad. Sci.* doi 10.1073
- Archer, D. (2009) Carbon cycle - Checking the thermostat. *Nature Geoscience* 1 (5) 289-290 (unrefereed News and Views piece).
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- Eby, M. K. Zickfeld, A. Montenegro, D. Archer, K. J. Meissner and A. J. Weaver (2009) Lifetime of anthropogenic climate change: Millennial time-scales of potential CO₂ and surface temperature perturbations. *Journal of Climate* 22 (10), 2501–2511.
- Honisch B, N.G. Hemming, D. Archer, M. Siddall, J.F. McManus (2009) Atmospheric carbon dioxide concentration across the mid-Pleistocene transition. *Science* 324: 1551-1554.
- Krey, V, J.G. Canadell, N. Nakicenovic, A. Yuichi, H. Andruleit, D. Archer, A. Grubler, N.T.M. Hamilton, A. Johnson, V. Kostov, J.-F. Lamarque, N. Langhorne, E.G. Nisbet, B. O'Neill, K. Riahi, M. Riedel, W. Wang and V. Yakushev (2009) Gas hydrates: entrance to a methane age or climate threat? *Environ. Res. Lett.* 4 (2009) 034007 doi:10.1088/1748-9326/4/3/034007.
- Schmidt, G. and D. Archer (2009) Too much of a bad thing. *Nature* 458: 1117 (unrefereed News and Views piece).
- Archer, D. (2008) *The Long Thaw: How Humans are Changing the Next 100,000 Years of Earth's Climate*. A book for a popular audience, Princeton University Press.
- Archer, D., and V. Brovkin (2008). Millennial lifetime of fossil fuel CO₂. *Climatic Change*. DOI: 10.1007/s10584-008-9413-1.
- Brook, E. (lead author) and D. Archer, E Dlugokencky, S. Frohling, and D. Lawrence (contributing authors, alphabetical) (2008). Potential for Abrupt Changes in Atmospheric Methane. in *Abrupt Climate Change*, Chapter 4, CCSP SAP 3.4.
- Correll, R.W., S.J. Hassol, J. Melillo (lead authors), D. Archer, E. Euskirchen, F. S. Chapin, A.D.

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- Caldeira, K, D. Archer, J.P. Barry, R.G.J. Bellerby, P.G. Brewer, L. Cao, A.G. Dickson, S.C. Doney, H. Elderfield, V.J. Fabry, R.A. Feely, J.-P. Gattuso, P.M. Haugan, O. Hoegh-Guldberg, A.K. Jain, J.A. Kleypas, C. Langdon, J.C. Orr, A. Ridgwell, C.L. Sabine, B.A. Seibell, Y. Shirayama, C. Turley, A.J. Watson, R.E. Zeebe (2007) Comment on “Modern-age buildup of CO₂ and its effects on seawater acidity and salinity”. *Geophys. Res. Letters*. 34, L18608, doi:10.1029/2006GL027288.
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- Archer, D. (2007) Methane hydrate stability and anthropogenic climate change. *Biogeosciences* 4 (4): 521-544 2007
- Archer, D. (2006) *Global Warming: Understanding the Forecast*. A textbook for non-science major undergraduates, Blackwell Press, London.
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doi:10.1029/2004GC000854
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