

## CURRICULUM VITAE

### Delia W. Oppo

Paleoceanographer  
Woods Hole Oceanographic Institution  
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### Education

- 1989            Ph. D. Geology, Columbia University, New York, NY.  
                  Advisor, D. Richard G. Fairbanks  
1981            B. S. Mathematics, State University of New York at Albany.

### Primary Research Interests

External and internal influences on the Earth's climate system. Variations in surface hydrography, oceanic nutrient and carbon distribution, deepwater circulation, tropical hydrology. Proxy calibration.

### Employment/Professional Experience

- 2006 - present            Senior Scientist, Woods Hole Oceanographic Institution.  
1996 –2006            Associate Scientist, Woods Hole Oceanographic Institution.  
1991 - 1996            Assistant Scientist, Woods Hole Oceanographic Institution.  
1990 - 1991            Visiting Investigator, Woods Hole Oceanographic Institution.  
1989 - 1990            Postdoctoral Scholar, Woods Hole Oceanographic Institution.  
                              Postdoctoral Advisor - Dr. William B. Curry.  
1985-1989            Graduate Research Assistant, Stable Isotope Mass Spectrometer Lab,  
                              Lamont-Doherty Geological Observatory.  
1983-1985            Graduate Research Assistant, Arctic Oceanography Group,  
                              Lamont-Doherty Geological Observatory.

### Shipboard Experience

- 2014    Chief Scientist, Endeavor 539, coring south of Iceland  
2010    One of two Co-chief Scientist on Knorr 197-3, coring cruise to Demerara Rise, western tropical North Atlantic.  
2003    Co-chief Scientist on Baruna Jaya VIII, coring cruise to Indonesian seas (Y. Rosenthal Chief Scientist).  
1998    One of two Co-chief Scientist on Knorr 159-5, coring cruise to Brazilian Margin.  
1993    One of two Co-chief Scientist on Ewing 93-02 to the subpolar North Atlantic (site survey cruise for Leg 162).  
1988    Shipboard Scientist on N.U.S.C. Ranger 88-13, coral drilling cruise off Barbados.

**Professional Affiliation:** American Geophysical Union

### Honors

- 2014            AGU Fellow  
2010-2016    WHOI Geology and Geophysics J. Seward Johnson Chair in Oceanography  
2009            Emiliani Lecturer, AGU, Holocene Changes in the Indonesian Throughflow  
2006-2008    Claudia S. Heyman Fellow of WHOI's Ocean and Climate Change Institute  
2000-2001    JOI/USSAC Distinguished Lecturer  
1996            Editors' Citation for Excellence in Refereeing for AGU Journal  
                              *Paleoceanography*

### Professional Activities

Organizing Committee, 2016 U.S. AMOC-Paleo Workshop, 2015  
 PAGES Ocean2k Data Synthesis Phase co-leader, 2013-2014  
 Organizing Committee, 11<sup>th</sup> International Conference on Paleoceanography, 2013  
 Chair, Editor Search Committee for AGU journal *Paleoceanography*, 2009.  
 NSF proposal review panelist: Marine Geology and Geophysics, 2008.  
 Associate Editor, *Paleoceanography*, 2000-2004.  
 Member, AGU Committee on Paleoceanography and Paleoclimatology, 2000 - 2002.  
 Member, AGU Executive Committee, Focus Group on Paleoceanography and Paleoclimatology (2003 - 2006).  
 Member, Interim Planning Committee, interim ODP 2000-2003.  
 Proponent, ODP Leg 162.  
 Member, JOIDES ODP-Detailed Planning Group for Leg 162, 1993.  
 Member, JOIDES ODP-Detailed Planning Group for Leg 172, 1996.  
 Member, JOIDES Ocean History Panel, ODP, 1994 - 1996.  
 Participant, JOIDES-sponsored Conference for Multi-Platform Exploration, 1999.  
 Member, organizing committee: 7<sup>th</sup> International Conference on Paleoceanography, 2001.  
 Member, AGU Direction and Review Committee for the journal *Paleoceanography*, 1997.  
 Editorial Board: *Geology* 1999-2001.  
 NSF proposal review panelist: Marine Geology and Geophysics, 1999.  
 Member, AGU Committee on Paleoceanography, 1994 - 1996.  
 NSF proposal review panelist: Minority Research Centers of Excellence, 1993.  
 NOAA proposal review panelist - Paleoclimatology Program, 1994.  
 Fall AGU, 1996: Co-convener Union session: North Atlantic Variability and Global Climate.  
 Spring AGU, 1997; Fall AGU, 1998: Co-convener Paleoceanography & Paleoclimatology sessions.

### Education Activities

#### MIT/WHOI Joint Program Activities:

Education Coordinator	Geology & Geophysics Dept. Sept 2010-present
Member:	Joint Committee for Marine Geology and Geophysics (1999-2002)
Ph. D. Advisor:	Rosemarie Came (Ph. D. 2005) Kristina Dahl (Ph. D. 2005) Fern Gibbons (Ph. D. 2011)
Ph. D. Coadvisor:	Thomas Marchitto (Ph. D. 1999) Matthew Makou (Ph. D. 2006) Casey Saenger (Ph. D. 2009) Alice Alpert (Ph. D. 2016)
Ph. D. Thesis Committee:	Yair Rosenthal (Ph.D. 1994) Robert Ackert (Ph. D. 2000) Jon Woodruff (Ph. D. 2008) Philip Lane (Ph. D. 2011) Camillo Ponton (Ph. D. 2012) Michael Toomey (Ph. D. 2013) Meagan Gonnee (Ph. D. 2013) Andrea Dubin (Ph. D. 2015) Ning Zhao (Ph. D. 2017) Christopher Kinsley (Ph. D. expected 2017).
Ph. D. Committee Chair	David Lund (Ph. D. 2005) Elizabeth Drenkard (Ph. D. 2014)
Generals Project Advisor or Coadvisor:	Michael Horowitz (M.S. 1998) Rosemarie Came (Ph. D. 2005)

- Mea Cook (Ph. D. 2006)  
 Matthew Makou (Ph. D. 2006)  
 Casey Saenger (Ph. D. 2009)  
 James Saenz (Ph. D. 2010)  
 Fern Gibbons (Ph. D. 2011)  
 Sara Bosshart (M.S 2012)  
 Andrea Dubin (Ph.. D. 2015)  
 Alice Alpert (Ph. D. 2016)
- Generals Exam Committee: Sharon Hoffman (Ph. D. 2008), Phil Lane (Ph. D. 2011) Camillo Ponton (Ph. D. 2012), Andrea Burke (Ph. D. 2011) Michael Toomey (Ph. D. 2013) Elizabeth Drenkard (Ph. D. 2014), Ning Zhao (Ph.D. 2017), Hannah Barkley (Ph. D. 2016) Thomas De Carlo (Ph. D. 2016) Christopher Kinsley (Ph. D. expected 2017). Adam Sarafian (Ph. D. Expected 2017) Nat Wilson (Ph. D. Expected 2017). Christine Chen (Ph. D. Expected 2018), Matthew Osman (Ph. D. Expected 2019). Katie Castagno ((Ph. D. Expected 2019).
- Thesis Proposal Chair: J. Woodruff (Ph. D. 2008), E. Drenkard (Ph. D. 2014), N. Zhao (Ph. D. 2017). Christopher Kinsley (Ph. D. Expected 2017) Christine Chen (Ph. D. Expected 2018)
- Co-teaching: Topics In Paleoceanography (Seminar):  
 Millennial Scale Climate Change (1994, 1999)  
 Milankovitch Revisited (2000)  
 Assorted Topics (Spring, 2002)  
 Tropical Climate Change (Fall, 2002, 2005)  
 Subsurface Ocean Circulation (Fall, 2003, 2012)  
 Deglacial Climate Change (Fall, 2004)  
 Past Changes in Atmospheric CO<sub>2</sub> (Fall, 2007)  
 Indian Ocean Paleoclimate (Fall, 2008)  
 Ice Ages (Fall 2009)  
 The Anthropogene Hypothesis (Fall 2010)  
 The Cenozoic Ocean (Fall 2012)  
 Deglacial Atmospheric CO<sub>2</sub> Change (Fall 2014)  
 Monsoons: Past, Present, Future (Fall, 2015)  
 Temperature records of the last Millennium (Fall 2016)
- Postdoctoral Mentees: Jerry McManus, 1997; Brenda Hall, 1999; Sarah Das, 2002; William Thompson, 2004; Youbin Sun, 2004; Anders Carlson, 2006; Kuo-Fang Huang, 2010-2013; David Thornalley, 2011-2013; Nathalie Dubois, 2012-2013; Jennifer Arbuszewski 2011-2015, Jake N. Howe, 2016.
- WHOI Summer Fellows: Michael Horowitz, 1994, Laurie Deiner, 1995, Matthew Makowski, 1997, Jessica Kelleher, 1998, James Saenz, 2003. Sara Sanchez, 2010, Sebastian Vivancous (2012). Yuxin Zhou (2015), Sarah McGrath (2016), Nicholas Lavoie (2016).
- Guest Students: Karen Costa, UFRGS, Brazil (1998-1999)  
 Felipe Toledo, UFRGS, Brazil (1998-1999)  
 Allison Jacobel, Macalester U. (2009)  
 Nil Irvali, U. Bergren (2010)  
 Leaf Elliot, Williams College (2012)  
 Andrew Gorin, Middlebury College (2013)  
 Maya Gilchrist (2016)

*Non-WHOI Education Activities:*

Undergraduate Thesis Reader: Intan Nurhati, Wesleyan University (2005)  
 Ph.D Thesis committee: Stefanie Dannenmann, SUNY Albany (Ph. D., 2001).  
 Outside Ph. D. Reader: Randye Ruttberg (Columbia University, February 2000).  
 William D'Andrea (Brown University, September, 2008).  
 Jessica Tierney (Brown University, April, 2010)  
 Nathalie Dubois (Dalhousie University, June, 2010)  
 M.S. Thesis committee: Tara Ingalsbe (Florida Gulf Coast U.; M. S. 2015).  
 K-12 Activities: Project SepTeMber: The Falmouth Kids Global Climate  
 Change Institute.  
 Informal gatherings with 5<sup>th</sup>-8<sup>th</sup> grade teachers.  
 Interviewed by classrooms (topic global climate change)  
 Falmouth Area High School Summer Climate  
 Internship Program (Designed and co-lead a 1-week internship  
 program for area High School students) (2009, 2010, 2012,  
 2013, 2014).  
 Mentored area H.S. Science Fair projects; Helped design and  
 provided samples for others (2010-2013)

### **Invited Professional Talks** (not including AGU and Workshops)

Brown University: Paleoceanography Seminar, 1990.  
 University of Rhode Island, Department Colloquium: 1993.  
 Sediment waves and sediment drifts: monitors of global change in deep water circulation, Kiel  
 Germany, 1993.  
 NOAA Abrupt Change Workshop, LDEO, 1994.  
 MIT, Chemical Oceanography Seminar: 1994.  
 NSF-sponsored workshop, Atlantic Inter-hemispheric Transport, LDEO, 1995.  
 University of Rhode Island, Department Colloquium: 1996.  
 MIT, Chemical Oceanography Seminar: 1996.  
 Petrobras, Brazil, Special Seminar, 1997.  
 Brown University: Department Colloquium, 1998.  
 Friends of Termination II, LDEO, 1998.  
 Marine Isotope Stage 11, San Francisco, 1998.  
 University of Southern California, Department Colloquium, 1999.  
 State University of New York at Albany/RPI Joint Seminar Series, 1999.  
 Middlebury College, 2000.  
 University of Pennsylvania, 2000.  
 University South Florida, 2001.  
 University of Southern Connecticut, 2001.  
 MIT, Chemical Oceanography Seminar: 2002.  
 Rice University, 2004.  
 Brown University: Earth System History Seminar, 2004.  
 Lamont-Doherty Earth Observatory, Friday Colloquium, 2005.  
 Harvard University, Climate Tea Series, 2005.  
 Bremen University, MARUM, 2007.  
 Brown University: Department Colloquium, 2009.  
 MIT PAOC Retreat, Invited Speaker, 2011.  
 Institute of Earth Environment, Chinese Academy of Sciences Xi'an, China Sept. 2012  
 University of Science and Technology of China, Hefei, China Sept. 2012  
 Bremen University, MARUM, 2015.  
 MIT, 2015.

### **Workshops Attended**

NSF-ESH sponsored Workshop, tropical climate change, Arlington VA (July, 2002).  
 NSF-ESH sponsored Workshop, abrupt climate change, WHOI, MA (October, 2003).  
 NSF-ESH sponsored Workshop, Holocene climate change, Washington DC (May 2005).  
 PAGES-IMAGES sponsored workshop, Indonesian Throughflow, Kiel, Germany, July 2006.  
 ESF sponsored workshop, The Ocean's Role in Abrupt Climate Change, Obergurgl, Austria, (May, 2007).  
 The Lake Towuti Drilling Program (LTDP) Workshop, Brown Univ., Inv. Speaker (Jan 2011).  
 SynTraCE-21 Workshop, Brown U. Invited Speaker, (Nov. 2012).  
 Conference on Isotopes, Bern Switzerland, Keynote Speaker (Aug, 2013)  
 2013 USA/UK AMOC Conference, Baltimore MD, Invited Speaker (July, 2013)

### WHOI Committees

Joint Program Student Admissions Committee, 1994.  
 Linda Morse-Porteous Selection Committee, 1997.  
 Chair, Search Committee for G&G Johnson Chair, 1999.  
 Review Committee, Mellon Independent Study Awards, 1999.  
 Stommel Medal Selection Committee, 2000.  
 Chair, Selection Committee: Mary Sears Award, 2002.  
 Ocean and Climate Change Institute Advisory Committee; 2001-2003.  
 G&G Chair Search Committee, 2004.  
 Postdoctoral Selection Committee, 2004-2006.  
 Postdoctoral Mentoring Committee, 2002-2006 (Chair 2004-2006).  
 Chair, Internal Ad-hoc Promotion Committee, Lisan Yu, 2003.  
 Chair, Search Committee for NOSAMS Director, 2004.  
 Internal Ad-hoc Promotion Committee, Olivier Marchal, 2005.  
 Ad-Hoc Mentoring Committees: Karen Bice, Sarah Das, Bill Thompson, Anne Cohen, Jeff Donnelly, Weifu Guo, Sune Nielsen, Jessica Tierney  
 WHOI Retirement Benefits Task Force, 2005-2009  
 Ocean and Climate Change Institute Proposal Review Committee, 2005, 2007, 2008.  
 Chair, G&G Chair Search Committee, 2008.  
 Staff Committee, 2008 - 2009  
 Chair, G&G Hiring Search Committee, 2009.  
 Curriculum Committee, 2010.  
 Post-Doc Mentoring Committee (2011-present)  
 VP-Dean Pre-search committee (2016)

### 102 Peer-reviewed publications Student and post-doctoral coauthors in *italics*.

1. Lund, S., Oppo, D. W., & Curry, W. (2017). Late Quaternary paleomagnetic secular variation recorded in deep-sea sediments from the Demerara Rise, equatorial west Atlantic Ocean. *Physics of the Earth and Planetary Interiors*, 272, 17-26.  
doi:[10.1016/j.pepi.2017.04.010](https://doi.org/10.1016/j.pepi.2017.04.010).
2. Gu, S., Liu, Z., Zhang, J., Rempfer, J., Joos, F. & Oppo, D. W. (2017). Coherent response of Antarctic Intermediate Water and Atlantic Meridional Overturning Circulation during the last deglaciation: reconciling contrasting neodymium isotope reconstructions from the tropical Atlantic. *Paleoceanography*, 32,  
doi:[10.1002/2017PA003092](https://doi.org/10.1002/2017PA003092).
3. Zhang, J., Liu, Z., Brady, E. C., Oppo, D. W., Clark, P. U., Jahn, A., Marcott, S. A., & Lindsay, K. (2017) Asynchronous warming and  $\delta^{18}\text{O}$  evolution of deep Atlantic water masses during the last deglaciation. *PNAS*, doi: [10.1073/pnas.1704512114](https://doi.org/10.1073/pnas.1704512114).
4. Schmittner, A., H. C. Bostock, O. Cartapanis, W. B. Curry, H. L. Filipsson, E. D. Galbraith, J. Gottschalk, J. C. Herguera, B. Hoogakker, S. L. Jaccard, L. E. Lisiecki, D.

- C. Lund, G. Martínez-Méndez, J. Lynch-Stieglitz, A. Mackensen, E. Michel, A. C. Mix, D. W. Oppo, C. D. Peterson, J. Repschläger, E. L. Sikes, H. J. Spero and C. Waelbroeck (2017) Calibration of the carbon isotope composition ( $\delta^{13}\text{C}$ ) of benthic foraminifera, *Paleoceanography*, 32, 512–530, doi:[10.1002/2016PA003072](https://doi.org/10.1002/2016PA003072).
5. Howe, J. N. W., A. M. Piotrowski, D. W. Oppo, K. F. Huang, S. Mulitza, C. M. Chiessi, J. Blusztajn, Antarctic Intermediate circulation in the South Atlantic over the past 25,000 years, *Paleoceanography* 30, doi:10.1002/2016PA002975.
  6. Alpert, A. E., A. L. Cohen, D. W. Oppo, T. M. DeCarlo, J. M. Gove, and C. W. Young (2016), Comparison of equatorial Pacific sea surface variability and trends with Sr/Ca records from multiple corals. *Paleoceanography*, 30, doi: [10.1002/2015PA002897](https://doi.org/10.1002/2015PA002897).
  7. Oppo, D. W., W. B. Curry, and J. F. McManus (2015), What do benthic  $\delta^{13}\text{C}$  and  $\delta^{18}\text{O}$  data tell us about Atlantic circulation during Heinrich Stadial 1?, *Paleoceanography*, 30, doi:[10.1002/2014PA002667](https://doi.org/10.1002/2014PA002667).
  8. McGregor, H. V., M.N. Evans, H. Goosse, G. Leduc, B. Martrat, J.A. Addison, P.G. Mortyn, D.W. Oppo, M.-S. Seidenkrantz, M.-A. Sicre, S.J. Phipps, K. Selvaraj, K. Thirumalai, H.L. Filipsson, and V. Ersek (2015) Robust global ocean cooling trend for the pre-industrial Common Era, *Nat. Geoscience* DOI: 10.1038/NGEO2510.
  9. Mokeddem, Z., J. F. McManus, D. W. Oppo, Oceanographic dynamics and the end of the last interglacial in the subpolar North Atlantic, *PNAS* 111 (31) 11263-11268, 2014.
  10. Dubois, N., D. W. Oppo, V. V. Galy, M. Mohtadi, S. van der Kaars, J.E. Tierney, Y. Rosenthal, T. I. Eglinton, A. Lückge, B. K. Linsley, Indonesian vegetation response to changes in rainfall seasonality over the past 25,000 years, *Nature Geoscience*, DOI: 10.1038/NGEO2182, 2014.
  11. Gibbons, F.T., Oppo, D.W., Mohtadi, M., Rosenthal, Y., Cheng, J., Liu, Z., Linsley, B.K., Deglacial  $\delta^{18}\text{O}$  and hydrologic variability in the tropical Pacific and Indian Oceans. *Earth Planet. Sci. Lett.* 387, 240–251, 2014.
  12. Mohtadi, M., M. Prange, D. W. Oppo, R. De Pol-Holz, U.Merkel, X. Zhang, S. Steinke, A. Lückge. North Atlantic Forcing of Tropical Indian Ocean Climate, *Nature*, 509,76–80. doi:10.1038/nature13196, 2014.
  13. Huang, K. F., D. W. Oppo, W. B. Curry, Decreased influence of Antarctic intermediate water in the tropical Atlantic during North Atlantic cold events. *Earth Planet. Sci. Lett.*, 389, 200-208, 2014
  14. Rosenthal, Y., BK Linsley, Oppo, DW, Pacific Ocean Heat Content during the past 10,000 years, *Science*, 342 617-621, 2013.
  15. Thornalley, D. J. R., Blaschek, M., Davies, F. J., Praetorius, S., Oppo, D. W., McManus, J. F., Hall, I. R., Kleiven, H., Renssen, H., and McCave, I. N.: Long-term variations in Iceland–Scotland overflow strength during the Holocene, *Clim. Past Discuss.*, 9, 1627-1656, doi:10.5194/cpd-9-1627-2013, 2013.
  16. Tierney, J. E., D. W. Oppo, A. N. LeGrande, Y. Huang, Y. Rosenthal, and B. K. Linsley, The influence of Indian Ocean atmospheric circulation on Warm Pool hydroclimate during the Holocene epoch, *J. Geophys. Res.*, 117, D19108, doi:10.1029/2012JD018060, 2012.
  17. Moros, M., E. Jansen, D. W. Oppo, J.S Giraudeau, A. Kuijpers, Reconstruction of the late Holocene changes in the Sub-Arctic Front position at the Reykjanes Ridge, North Atlantic, *The Holocene*, 22, 877-888, 2012.
  18. Vásquez-Bedoya, L. F.; Cohen, A. L.; Oppo, D. W., Blanchon, P. Corals record

- persistent multidecadal SST variability in the Atlantic Warm Pool since 1775 AD *Paleoceanography* 27, 3, PA3231 <http://dx.doi.org/10.1029/2012PA002313>, 2012.
19. Huang, K.-F., J. Blusztajn, D. W. Oppo, W. B. Curry and B. Peucker-Ehrenbrink, High-precision and accurate determinations of neodymium isotope compositions at nanogram levels in natural materials by MC-ICP-MS, *J. Anal. At. Spectrom.*, 2012, DOI: 10.1039/C2JA30123G, 2012.
  20. Muller, J., J. F. McManus, D. W. Oppo, and R. François, Strengthening of the Northeast Monsoon over the Flores Sea, Indonesia, at the time of Heinrich event 1, *Geology*, 40, 635–638, 2012.
  21. Irvani, N., U. S. Ninnemann, E. V. Galaasen, Y. Rosenthal, D. Kroon, D. W. Oppo, H. F. Kleiven, K. F. Darling, and C. Kissel (2012), Rapid switches in subpolar North Atlantic hydrography and climate during the Last Interglacial (MIS 5e), *Paleoceanography*, 27, PA220, doi:10.1029/2011PA002244
  22. Oppo, D. W. & Curry, W. B. Deep Atlantic Circulation During the Last Glacial Maximum and Deglaciation. *Nature Education Knowledge* 3(10):1, 2012.
  23. Mohtadi M., Oppo D.W., Lückge A., De Pol-Holz R, Steinke S., Groeneveld J., Hemme N., Hebbeln D., 2011. Reconstructing the thermal structure of the upper ocean: insights from planktic foraminifera shell chemistry and alkenones in modern sediments of the tropical eastern Indian Ocean. *Paleoceanography* 26, PA3219, doi:10.1029/2011PA002132.
  24. Mohtadi M., Oppo D.W., Lückge A., De Pol-Holz R, Steinke S., Groeneveld J., Hemme N., Hebbeln, Glacial to Holocene swings of the Australian-Indonesian monsoon, *Nature Geosciences* DOI: 10.1038/NGEO1209 (2011).
  25. Yan, H., L. Sun, D. W. Oppo, Y. Wang, Z. Liu, Z. Xie, X. Liu, South China Sea hydrological changes and Pacific Walker variations over the last millennium. *Nature Communications* 2, 293 doi:10.1038/ncomms1297 (2011).
  26. Saenger, C., R. E. Came, D. W. Oppo, L. D. Keigwin, and A. L. Cohen. 2011, Regional climate variability in the western subtropical North Atlantic during the past two millennia, *Paleoceanography*, 26, PA2206, doi:10.1029/2010PA002038.
  27. Rosenthal, Y., A. Morley, C. Barras, M. E. Katz, F. Jorissen, G. Reichert, D. W. Oppo, and B. K. Linsley, Temperature calibration of Mg/Ca ratios in the intermediate water benthic foraminifer *Hyalinea balthica*, *Geochem. Geophys. Geosyst.*, 12, Q04003, doi:10.1029/2010GC003333. 2011.
  28. Linsley, B. K., Y. Rosenthal, and D. W. Oppo, Holocene evolution of the Indonesian throughflow and the western Pacific warm pool, *Nature Geoscience*, 3, 578–583, 2010.
  29. Chen, M.-T., X. P. Lin, Y.-P. Chang, Y.-C. Chen, L. Lo, C.-C. Shen, Y. Yokoyama, D. W. Oppo, W. G. Thompson, and R. Zhang Dynamic millennial-scale climate changes in the northwestern Pacific over the past 40,000 years, *Geophys. Res. Lett.*, 37, L23603, doi:10.1029/2010GL045202, 2010.
  30. Makou, M. C., D. W. Oppo, W. B. Curry, South Atlantic intermediate water mass geometry for the last glacial maximum from foraminiferal Cd/Ca, *Paleoceanography* 25, PA4101, doi:10.1029/2010PA001962, 2010.
  31. Benway, H. M., J. F. McManus, D. W. Oppo, J. L. Cullen, Hydrographic changes in the eastern North Atlantic during the last deglaciation. *Quaternary Science Reviews* 29, 3336-3345, 2010.

32. Tierney, J. E., D. W. Oppo, Y. Rosenthal, J. M. Russell, and B. K. Linsley, Coordinated hydrological regimes in the Indo-Pacific region during the past two millennia, *Paleoceanography*, 25, PA1102, doi:10.1029/2009PA001871, 2010.
33. Makou, M. C., T. I. Eglinton, D. W. Oppo, K. A. Hughen, Postglacial changes in El Niño and La Niña behavior *Geology*, 38, p. 43-46, doi:10.1130/G30366.1, 2010.
34. Voelker, A. H. L., Rodrigues, T., Billups, K., Oppo, D., McManus, J., Stein, R., Hefter, J., and Grimalt, J. O. Variations in mid-latitude North Atlantic surface water properties during the mid-Brunhes (MIS 9–14) and their implications for the thermohaline circulation, *Clim. Past*, 6, 531-552, doi:10.5194/cp-6-531, 2010
35. Oppo, DW, Y Rosenthal, BK Linsley, 2000-year-long temperature and hydrology reconstructions from the Indo-Pacific Warm Pool, *Nature*, 460 1113-1116, doi:10.1038/nature08233, 2009.
36. Saenger, C., A. L. Cohen, D. W. Oppo, R. B. Halley, J. E. Carilli, Surface temperature trends and variability in the low-latitude North Atlantic since 1552, *Nature Geosciences*, 1-4, doi:10.1038/NCEO552, 2009.
37. Saenger C., P. Chang, L. Ji, D. W. Oppo, A. L. Cohen, Tropical Atlantic climate response to low-latitude and extratropical sea-surface temperature: a Little Ice Age perspective, *Geophys. Res. Letts.* 36, L11703, doi:10.1029/2009GL038677 (2009).
38. Langton S.J., Linsley B.K., Robinson R., Rosenthal Y., Oppo D.W., Eglinton T.I., Howe S.S., Djajadihardja Y.S., and F. Syamsudin. 3500 year record of centennial-scale climate variability from the Western Pacific Warm Pool *Geology*. 36(10): 795–798; doi: 10.1130/G24926A, 2008.
39. Sun, Y., F. Wu, S. C. Clemens, D. W. Oppo, Processes controlling the geochemical composition of the South China Sea sediments during the last climatic cycle, *Chemical Geology*, 257. 243–249, 2008.
40. Carlson, A., A. E. LeGrande, D. W. Oppo, G. Schmidt, J. Licciardi, F. Anslow, L. Obbink, Rapid early Holocene Deglaciation of the Laurentide Ice Sheet and Sea Level Rise, *Nature Geoscience*, 1, 620-624, 10.1038/ngeo285, 2008.
41. Carlson, A., D. W. Oppo, R. E. Came, A. E. LeGrande, L. D. Keigwin, and W. B. Curry, Subtropical Atlantic salinity variability and Atlantic meridional circulation during the last deglaciation, *Geology*, v. 36; no. 12; p. 991–994; doi: 10.1130/G25080A, 2008.
42. Saenger, C., A. L. Cohen, D. W. Oppo, and D. Hubbard, Interpreting sea surface temperature from strontium/calcium ratios in *Montastrea* corals: Link with growth rate and implications for proxy reconstructions, *Paleoceanography*, 23, PA3102, doi:10.1029/2007PA001572 , 2008.
43. Praetorius, S. K., J. F. McManus, D. W. Oppo and W. B. Curry, Episodic reductions in bottom-water currents since the last ice age. *Nature Geosciences*, 449 – 452, 2008.
44. Came, R. E., D. W. Oppo, W. B. Curry, and J. Lynch-Stieglitz, Deglacial variability in the surface return flow of the Atlantic meridional overturning circulation, *Paleoceanography*, doi:10.1029/2007PA001450, 2008.
45. Oppo, D.W., Schmidt, G.A., and LeGrande, A.N., Seawater isotope constraints on tropical hydrology during the Holocene: *Geophysical Research Letters*, v. 34, doi: 10.1029/2007GL030017, 2007.
46. Came, R. E., W. B. Curry, D. W. Oppo, A. J. Broccoli, R. J. Stouffer, North Atlantic intermediate depth variability during the Younger Dryas: Evidence from benthic foraminiferal Mg/Ca and the GFDL R30 coupled climate model, *Geophysical*



- Monograph Series, Volume 173: Ocean Circulation: Mechanisms and Impacts (Andreas Schmittner, John Chiang, Sidney Hemmings, Editors) p 247-264, 2007.
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