

Daniel M. Sigman – Publications

In press:

1. Meckler, A. N., G. H. Haug, D. M. **Sigman**, B. Plessen, L. C. Peterson, and H. R. Thierstein, Detailed sedimentary N isotope records from Cariaco Basin for Terminations I and V: Local and global implications, *Global Biogeochemical Cycles*, in press.
2. Lehmann, M. F., D. M. **Sigman**, D. C. McCorkle, J. Granger, B. G. Brunelle, and G. Cane, The distribution of nitrate $^{15}\text{N}/^{14}\text{N}$ in marine sediments and the impact of benthic nitrogen loss on the isotopic composition of oceanic nitrate, *Geochimica et Cosmochimica Acta*, in press.
3. De Pol-Holz, R., R. S. Robinson, D. Hebbeln, D. M. **Sigman**, O. Ulloa, Controls on sedimentary N isotopes along the Chile margin, *Deep-Sea Research*, in press.
4. Galbraith, E. D., D. M. **Sigman**, R. S. Robinson, T. F. Pedersen, “Nitrogen in Past Marine Environments”, in *Nitrogen in the Marine Environment* (2nd edition), edited by D. A. Bronk, M. R. Mulholland, and D. G. Capone, in press.
5. de Boer, A. M., J. R. Toggweiler, and D. M. **Sigman**, Atlantic dominance of the meridional overturning circulation, *Journal of Physical Oceanography*, in press.

2007:

6. Galbraith, E. D., S. L. Jaccard, T. F. Pedersen, D. M. **Sigman**, G. H. Haug, M. Cook, J. R. Southon and R. Francois, Carbon dioxide release from the North Pacific abyss during the last deglaciation, *Nature*, 449, doi:10.1038/nature06227.
7. **Sigman**, D. M. A. M. de Boer, and G. H. Haug, Antarctic stratification, atmospheric water vapor, and Heinrich events: A hypothesis for late Pleistocene deglaciations, in *Past and Future Changes of the Oceanic Meridional Overturning Circulation: Mechanisms and Impacts*, Schmittner, A., J. H. C. Chiang, and S. R. Hemming, Eds., AGU Geophysical Monograph 173, 335-350, 2007.
8. Houlton, B. Z., D. M. **Sigman**, E. A. G. Schuur, and L. O. Hedin, A climate-driven switch in plant nitrogen acquisition within tropical forest communities, *Proceedings of the National Academy of Sciences*, 104, 21, 8902–8906, doi:10.1073/pnas.0609935104, 2007.
9. de Boer, A. M., D. M. **Sigman**, J. R. Toggweiler, and J. L. Russell, The effect of global ocean temperature change on deep ocean ventilation, *Paleoceanography*, 22, PA2210, doi:10.1029/2005PA001242, 2007.
10. Savarino, J., J. Kaiser, S. Morin, D. M. **Sigman**, and M. H. Thieme, Nitrogen and oxygen isotopic constraints on the origin of atmospheric nitrate in coastal Antarctica, *Atmospheric Chemistry and Physics*, 7, 1925–1945, 2007.
11. Brunelle, B. G., D. M. **Sigman**, M. S. Cook, L. D. Keigwin, G. H. Haug, B. Mingram, G. Schettler, and S. L. Jaccard, Evidence from diatom-bound nitrogen isotopes for Subarctic Pacific stratification during the last ice age and a link to North Pacific denitrification changes, *Paleoceanography*, 22, PA1215, doi: 10.1029/2005PA001205, 2007.
12. Kaiser, J., M. G. Hastings, B. Z. Houlton, T. Röckmann, and D. M. **Sigman**, Triple oxygen isotope analysis of nitrate using the denitrifier method and thermal decomposition of N_2O , *Analytical Chemistry*, 79, 599-607, 10.1021/ac061022s, 2007.

13. Deutsch, C., J. L. Sarmiento, D. M. **Sigman**, N. Gruber, and J. P. Dunne, Spatial coupling of nitrogen inputs and losses in the ocean, *Nature*, 445, 163-167, 10.1038/nature05392, 2007.
14. Yancheva, G., N. R. Nowaczyk, J. Mingram, P. Dulski, G. Schettler, J. F. W. Negendank, J. Liu, D. M. **Sigman**, L. C. Peterson, and G. H. Haug, Influence of the Intertropical Convergence Zone on the East Asian Monsoon, *Nature*, 445, 74-77, 10.1038/nature05431, 2007.

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15. Granger, J., D. M. **Sigman**, M. Prokopenko, M. F. Lehmann, and P. D. Tortell, A method for nitrite removal in nitrate N and O isotope analysis, *Limnology and Oceanography: Methods*, 4, 205-212, 2006.
16. DiFiore, P. J., D. M. **Sigman**, T. W. Trull, A. J. Lourey, and K. L. Karsh, Nitrogen isotope constraints on Subantarctic biogeochemistry, *Journal of Geophysical Research – Oceans*, 111, C8, C08016, doi:10.1029/2005JC003216, 2006.
17. Houlton, B. Z., D. M. **Sigman**, and L. O. Hedin, Isotopic evidence for large gaseous nitrogen losses from tropical rainforests, *Proceedings of the National Academy of Sciences*, 103, 23, 8745-8750, 2006.

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18. Hastings, M. G., D. M. **Sigman**, and E. J. Steig, Glacial/interglacial changes in the isotopes of nitrate from the Greenland Ice Sheet Project 2 (GISP2) ice core, *Global Biogeochemical Cycles*, 19, GB4024, doi:10.1029/2005GB002502, 2005.
19. **Sigman**, D. M., J. Granger, P. DiFiore, M. F. Lehmann, A. v. Geen, R. Ho, and G. Cane, Coupled nitrogen and oxygen isotope measurements of nitrate along the eastern North Pacific margin, *Global Biogeochemical Cycles*, 19, GB4022, doi:10.1029/2005GB002458, 2005.
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21. Jaccard, S. L., Haug, G. H., **Sigman**, D. M., Pedersen, T. F., Thierstein, H. R., Röhl. U., Glacial/interglacial changes in Subarctic North Pacific stratification, *Science*, 308, 1003-1006, 2005.
22. Robinson, R. S., D. M. **Sigman**, P. J. DiFiore, M. M. Rohde, T. A. Mashiotta, and D. W. Lea, Diatom-bound ¹⁵N/¹⁴N: New support for enhanced nutrient consumption in the ice age Subantarctic, *Paleoceanography*, 20, PA3003, 10.1029/2004PA001114, 2005.
23. Haug, G. H., A. Ganopolski, D. M. **Sigman**, A. Rosell-Mele, G. E. A. Swann, R. Tiedemann, S. L. Jaccard, J. Bollmann, M. A. Maslin, M. J. Leng, and G. Eglinton, North Pacific seasonality and the glaciation of North America 2.7 million years ago, *Nature*, 433, 821-825, 2005.
24. Knapp, A. N., D. M. **Sigman**, and F. Lipschultz, N isotopic composition of dissolved organic nitrogen and nitrate at the Bermuda Atlantic time-series study site, *Global Biogeochemical Cycles*, 19, GB1018, 10.1029/2004GB002320, 2005.

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30. Lehmann, M. F., D. M. **Sigman**, and W. M. Berelson, Coupling the $^{15}\text{N}/^{14}\text{N}$ and $^{18}\text{O}/^{16}\text{O}$ of nitrate as a constraint on benthic nitrogen cycling, *Marine Chemistry*, 88, 1-20, 2004.
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35. Saito, M. A., D. M. **Sigman**, and F.M.M. Morel, The bioinorganic chemistry of the ancient ocean: the co-evolution of cyanobacterial metal requirements and biogeochemical cycles at the Archean/Proterozoic boundary? *Inorganica Chimica Acta*, 356C, 308-318, 2003.
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In review:

65. Granger, J., D. M. **Sigman**, M. F. Lehmann, and P. D. Tortell, Nitrogen and oxygen isotope fractionation of during dissimilatory nitrate reduction by denitrifying bacteria, *Limnology and Oceanography*, in review.
66. Knapp, A. N., P. J. DiFiore, C. Deutsch, D. M. **Sigman**, and F. Lipschultz, Nitrate isotopic composition between Bermuda and Puerto Rico: Implications for N₂ fixation in the Atlantic Ocean, *Global Biogeochemical Cycles*, in review.