Andrea Burke

PhD Candidate

MIT/WHOI Joint Program in Oceanography
Woods Hole Oceanographic Institution
Department of Marine Geology and Geophysics
Woods Hole, MA 02543
Office Telephone: 508-289-3692
Cell: 860-424-1636
Email: aburke@whoi.edu

Education

Massachusetts Institute of Technology- Woods Hole Oceanographic Institution
Joint Program in Oceanography, Cambridge/Woods Hole, MA, 2006- present

- Thesis advisors: Drs. Laura Robinson and Olivier Marchal
- "*Constraining Circulation Changes Through the Last Deglaciation with Dynamic Tracers: Insights from Sedimentary ^{231}Pa/^{230}Th and Deep Sea Coral ^{14}C*"
- Anticipated graduation, Fall 2011

Williams College, Williamstown, MA, 2002-2006

- Bachelor of Arts in Geology and Mathematics; *Magna Cum Laude*
- Highest Honors in Geology – Thesis: "*The Effect of the Monsoon on Coccolithophorid Productivity in the Bay of Bengal*"; Advisors: Drs. Heather Stoll and David Dethier
- GPA: 3.92/4

Awards and Honors

Best Student Paper at 10th International Conference on Paleoceanography, 2010
NSF Graduate Fellow, 2007-2010
Phi Beta Kappa, 2006
Sigma Xi, 2006

Peer-reviewed Publications

Burke, A., Marchal, O., Bradtmiller, L., Francois, R., and McManus, J. (submitted). Application of an inverse method to interpret ^{231}Pa/^{230}Th observations from marine sediments.

Burke, A., Robinson, L.F., McNichol, A.P., Jenkins, W. J., Scanlon, K. M., and Gerlach, D.S. (2010) Reconnaissance dating: a new radiocarbon method applied to assessing the temporal distribution of Southern Ocean deep-sea corals. Deep-Sea Research I, doi: 10.1016/j.dsr.2010.07.010.

Bockheim, J. G., Kurz, M.D., Soule, S. A., and **Burke, A.** (2009) Genesis of active sand-filled polygons in lower and central Beacon Valley, Antarctica. Permafrost and Periglacial Processes, 20(3): 295-308.

Gilbert, L. A., and **Burke, A.** (2008), Depth-shifting cores incompletely recovered from the upper oceanic crust, IODP Hole 1256D, Geochem. Geophys. Geosyst., 9, Q08O11, doi:10.1029/2008GC002010.

Stoll, H.M., Arevalos, A., **Burke, A**., Ziveri, P., Mortyn, P.G., Shimizu, N. and Unger, D. (2007) Seasonal cycles in biogenic production and export in Northern Bay of Bengal sediment traps. Deep Sea Research II, 54, 558-580.

Peer-reviewed Publications *in preparation*

Burke, A., and L.F. Robinson. Deep-sea coral reconstructions of Southern Ocean radiocarbon through the last deglaciation. *In prep*.

Presentations

Burke, A., and Robinson L. F., Deep-sea coral reconstructions of Southern Ocean radiocarbon through the last deglaciation. International Conference on Paleoceanography, San Diego, CA, August 2010.

Burke, A., and Robinson, L.F. Southern Ocean radiocarbon through the last deglaciation as reconstructed from deep-sea corals. Goldshmidt Conference, Knoxville, TN, June 2010. Oral presentation.

Burke, A., Robinson, L.F., McNichol, A.P., Jenkins, W. J., and Gerlach, D.S. Radiocarbon age-surveys of Southern Ocean deep-sea corals. 20th International Radiocarbon Conference, Kona, HI, May 2009.

Burke, A., Robinson, L.F., McNichol, A.P., Jenkins, W. J., and Gerlach, D.S. A rapid radiocarbon method for age-surveys of Southern Ocean deep-sea corals. AGU Fall Meeting, San Francisco, CA, Dec. 2008.

Burke, A., Marchal, O., and Francois, R. Application of an inverse method to interpret $^{231}Pa/^{230}Th$ observations from marine sediments. Goldschmidt Conference, Vancouver, CA, June 2008. Oral presentation.

Burke, A., Marchal, O., and Francois, R. North Atlantic abyssal circulation during Heinrich Event 1. AGU Fall Meeting, San Francisco, CA Dec. 2007. Oral presentation

Burke, A., Stoll, H., Vance, D., Arevalos, A., and Shimizu, N. Glacial/Interglacial variations in the range of the Inter-Tropical Convergence Zone and the resulting changes in paleoproductivity in the Bay of Bengal and Andaman Sea. European Geophysical Union Meeting, Vienna, Austria, April 2007.

Burke, A., Arevalos, A., Zeren, S., Ziveri, P., Shimizu, N., and Stoll, H.M. Coccolith chemistry as a proxy of coccolithophorid productivity response to monsoon cycles. AGU Fall Meeting, San Francisco, CA, Dec. 2005.

Burke, A. , Arevalos, A., Zeren, S., Stoll, H.M. and Ziveri, P. Monsoon-induced changes in coccolithophorid primary productivity in the Bay of Bengal. Northeastern Section Meeting of Geological Society of America, Saratoga Springs NY, March 2005.

Professional Experience

Teaching Assistant, Numerical Methods and Modeling in Geochemistry, MIT/WHOI, 2008
- Lectured tutorial sessions, graded homework

Research Assistant, Williams-Mystic Maritime Studies Program, 2006
- Measured physical properties of oceanic crust and developed MATLAB code to integrate core and log data.

Research Assistant, Geology Department, Williams College, 2003-2006

• Developed methodology, analyzed samples on atomic absorption spectrometer, imaged samples on scanning electron microscope, analyzed samples on secondary ion microprobe, analyzed/interpreted data

Teaching Assistant, Introductory Geology, Williams College, 2005-2006

• Graded labs and homework, assisted leading labs, assisted leading field trips

Teaching Assistant, Climate Changes, Williams College, 2004

• Graded homework, tutored students, and led review sessions

Teaching Assistant, Astrophysics, Williams College, 2003-2004

• Graded labs, instructed labs, set up weekly observation nights with telescopes

Field Work

Dry Valleys, Antarctica, Dec 2007 – Jan 2008

• Collected rock samples for cosmogenic isotope dating, dug soil and permafrost pits and made stratigraphic cross-sections, assisted with collection of LIDAR data

St. John's, US Virgin Islands, Jan 2004

• Mapped a fringing coral reef, identified coral and algal species, created bathymetric and substrate maps

Professional Affiliations

Geochemical Society
American Geophysical Union

References available upon request