

## Curriculum Vitae - Jonathan D. Woodruff

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### Education

2004-present Ph.D. Candidate, Geology & Geophysics, MIT/WHOI Joint Program (expected graduation, 2008)  
1997-99 M.S., Applied Ocean Physics & Engineering, MIT/WHOI Joint Program  
1992-96 B.S.C.E., *magna cum laude*, Civil Engineering, Tufts University  
B.S. Environmental Studies, Tufts University

### Professional Experience

2004-present Graduate Student, Woods Hole Oceanographic Institution, Woods Hole, MA  
2004 summer Research Intern, Kyushu University, Fukuoka, Japan  
2002-2004 Physics and Oceanography Teacher, Newburyport High School, Newburyport, MA  
2000-2002 Coastal Engineer, Woods Hole Group Inc., Falmouth, MA  
1996-2000 Research Associate, Woods Hole Oceanographic Institution, MA  
1995 Field Technician, U.S. Geological Survey, Augusta, ME

### Teaching Experience

2008 Invited Lecturer, 12.001 Introduction to Geology, MIT, Cambridge, MA  
2008 Lecturer, GE380.01 Environmental Oceanography, Boston College, MA  
2002-2004 Newburyport High School Math and Science Faculty, Newburyport, MA  
1995-1996 Teaching Assistant, ES 0025 Environment and Technology, Tufts University, Medford, MA

### Grants, Fellowships and Awards

2007 Aegean Conferences Travel Award:  
*Estimating event intensity from storm deposits*  
2006-present Coastal Ocean Institute Research Fund:  
*Typhoon and Asian Monsoon Reconstructions from Southern Japan*  
2005-present Tropical Research Initiative Grant (with J. P. Donnelly):  
*Millennial-Scale Records of ENSO and Intense Caribbean Hurricanes*  
2005-present Coastal Ocean Institute Graduate Student Fellowship  
2004-2005 USGS Graduate Student Fellowship  
2004 summer Asia in Today's World Research Internship, Kyushu University, Japan  
2003 Pritchard Award, Best Physical Oceanography Paper in *Estuaries*  
2000 Elected to Sigma Xi Scientific Research Society  
1998-1999 NSF Coastal Trainee Graduate Fellowship  
1996 Elected to Tau Beta Pi Engineering Honor Society  
1996 Earle F. Littleton Scholarship in Engineering  
1995 Elected to Golden Key National Honor Society

### Brief Statement of Scientific Interest

I am interested in near-shore and estuarine processes, sediment transport and sequence stratigraphy. Specifically, I am interested in applying quantitative methods and theory to sedimentary records to improve our understanding of paleoclimate, coastal morphology, sea-level rise, as well as their interconnections.

### Peer Reviewed Publications

**Woodruff, J.D.**, Donnelly, J.P. and Emanuel, K. , *In review*, Assessing sedimentary records of paleo-hurricane activity using modeled hurricane climatology. *Geochemistry, Geophysics, Geosystems*

**Woodruff, J.D.**, Donnelly, J.P., Mohrig, D. and Geyer, W.R., 2008, Reconstructing relative flooding intensities responsible for hurricane-induced deposits from Laguna Playa Grande, Vieques, Puerto Rico. *Geology*, v. 36, p. 391-394

Donnelly, J.P. and **Woodruff, J.D.**, 2007, Intense hurricane activity over the past 5,000 years controlled by El Nino and the West African monsoon. *Nature*, v. 447, p. 465-468.

**Woodruff, J.D.**, Geyer, W.R., Sommerfield, C.K., and Driscoll, N.W., 2001, Seasonal variation of sediment deposition in the Hudson River estuary. *Marine Geology*, v. 179, p. 105-119.

Geyer, W.R., **Woodruff, J.D.**, and Traykovski, P., 2001, Sediment transport and trapping in the Hudson River estuary. *Estuaries*, v. 24, p. 670-679.

Barton, D.A., **Woodruff, J.D.**, Bousquet, T.M., Purrish, A.M., 1997. Treatment system response to transient AOX (Adsorbable Organic Halogen) loadings. *Water Science and Technology*, vol 35(2-3) 85-91 pp.

### Publications in Preparation

**Woodruff, J.D.** and Donnelly J.P., *In prep.*, Holocene reconstructions of coastal flooding from the Western North Pacific.

### Non-Refereed Publications

**Woodruff, J.D.**, and Kashima, K, 2004, Diatom (Bacillariophyceae) Taxonomic Assemblages for Akkeshi salt marsh, eastern Hokkaido, Japan, *ATW Program Internship Report, Kyushu University, Japan*

Fredericks, J. J., J. H. Trowbridge, W. R. Geyer, A. J. Williams 3rd, M. Bowen and **J. Woodruff**, 1998. Stress, salt flux and dynamics of a partially mixed estuary. WHOI Tech Rep., WHOI-98-17, 133 pp., *Woods Hole Oceanographic Institution, Woods Hole, MA.*

**Woodruff, J.D.**, and Geyer, W.R., 1997. Polychlorinated Biphenyl's Sorption Kinetics within the Hudson River Estuary System. *Hudson River Foundation Final Report, Grant Number 002/94P. 12 pp.*

### Talks and Abstracts

**Woodruff, J.D. (Invited)**, Donnelly, J.P., Emanuel, K., Mohrig, D. and Geyer, W.R., 2008. Late-Holocene Hurricane Climatology *American Quaternary Association Biennial Meeting*, Pennsylvania State University, PA

**Woodruff, J.D. (Invited)**, Donnelly, J.P., Mohrig, D. and Geyer, W.R., 2008. Reconstructing relative wave heights responsible for hurricane-induced deposits, *American Society of Limnology and Oceanography/American Geophysical Union (ASLO/AGU) Ocean Sciences Meeting*, Orlando, FL

**Woodruff, J.D. (Invited)**, Donnelly, J.P. and Emanuel, K. , 2007. Are Patterns in Paleo-Hurricane Landfalls Significant? Statistical Comparisons with Modeled Hurricane Climatology. *Eos, Transactions, American Geophysical Union*, 88(52) Fall Meet. Suppl. Abstract GC54B-09, San Francisco, CA

**Woodruff, J.D.**, Donnelly, J.P. and Emanuel, K. , 2007. Statistical assessments of paleo-storm records: A case study from the Northeastern Caribbean. *Northeast Tropical Workshop*, Dedham, NH

**Woodruff, J.D.**, Donnelly, J.P. and Mohrig, D., 2007. Estimating event intensity from storm deposits, *1<sup>st</sup> Annual Summit on Hurricanes and Climate Change*, Crete, Greece

**Woodruff, J.D.** and Donnelly, 2007. Holocene reconstructions of precipitation patterns and extreme coastal flooding from the Western Pacific, *Northeastern Section, GSA, 42<sup>nd</sup> Annual Meeting*, Durham, USA

**Woodruff, J.D.** and Donnelly, J.P., 2006. New overwash and sea-level reconstructions from Saint Kitts, West Indies. *Quaternary Land-Ocean Interactions: Driving Mechanisms & Coastal Responses*, IGCP Project 495, Santa Catarina, Brazil

**Woodruff, J.D.** and Donnelly, J.P., 2006. Late Holocene Overwash and Precipitation Records from Southwestern Japan: Lithological and Geochemical Data from Lake Kaiike. *Tsunamis, Storm Hazards and Related Sediments*, ISC2006, TS9-5O-038: Fukuoka, Japan

**Woodruff, J.D.**, Donnelly, J.P., Mohrig, D., 2006. Grain-size distributions and flow parameter estimates for a prehistoric overwash event within a backbarrier lagoon, Vieques, Puerto Rico. *Eos, Transactions, American Geophysical Union*, 87(36) Ocean Sci. Meet. Suppl., Abstract OS26M-08

**Woodruff, J.D.**, Donnelly, J.P., Tierney, J., Scileppi, E., Giosan, L. 2005. Geochemical and sedimentological evidence of varying intense hurricane activity and precipitation patterns from the Caribbean during the late Holocene. *Eos, Transactions, American Geophysical Union*, 86(52) Fall Meet. Suppl. Abstract PP14B-03

**Woodruff, J.D.**, Donnelly, J.P., Scileppi, E., 2004. Sedimentary archives of extreme flooding events in the Northeastern Caribbean. *Eos, Transactions, American Geophysical Union*, 85(47), Fall Meet. Suppl. Abstract H41C-0304

**Woodruff, J.D.**, Geyer, W.R., Traykovski, P.A., 2002 Sediment Transport and Trapping in the Hudson River Estuary: a tough test for a 3-dimensional model. *Ocean Sciences, American Geophysical Union*, Feb 2002

**Woodruff, J.D.**, Geyer, W.R., Driscoll, N., Sommerfield, C., 1998. Sediment Deposition within the Hudson River Estuary. *Eos, Transactions, American Geophysical Union*, vol. 79, no.45, Suppl., pp451, 10 Nov 1998

### **Selected Consulting Reports**

Woods Hole Group and the Watershed Institute at Boston College, 2003. Long Range Natural Resource Management Plan for Sandy Neck Barrier Beach, *Client: Town of Barnstable, MA*

Woods Hole Group, 2002. Scarborough Marsh Restoration Plan, *Client: Maine Department of Inland and Marine Fisheries*

Woods Hole Group, 2002. Hubline/Maritimes Phase III Gas Pipeline Project, Environmental Impact Report, *Client: United States Environmental Protection Agency*

Woods Hole Group, 2001. Meteorological and Ocean System Reports, Gulf of Mexico; Drill-ships Glomar Jack Ryan and Marine 700, *Client: ExxonMobil Corporation*

### Academic Services

**Invited Department Seminars:** University of Massachusetts Amherst May, 2008  
Boston College April, 2008  
University of Pennsylvania February, 2008  
Lafayette College October, 2007  
Bryn Mawr College October, 2007  
Boston University March, 2006

**Session Chair:** NE GSA, Durham, USA, 2007: Session 47, Advances in Paleoclimate  
International Sedimentological Conference, Fukuoka, Japan, 2006:  
Session TS9-5, Floods and Related Sediments

**Reviewer for:** *Estuaries*  
*Estuarine, Coastal and Shelf Science*  
*Geology*  
*Journal of Climate*  
*Marine Geophysical Researches*  
*Quaternary International*

**Proposal Reviewer:** *University of Puerto Rico Sea Grant*

**Professional Affiliations:** American Geophysical Union  
American Quaternary Association  
Association of American Geographers  
Estuarine Research Federation  
Geological Society of America  
Society for Sedimentary Geology  
Sigma Xi

**Research Featured In:** The New York Times, New Scientist, BBC, The Discovery Channel, and Oceanus

### Selected Field Work

|                                    |   |
|------------------------------------|---|
| Apalachee Bay, Florida, USA        | -sediment coring, GPR and sub-bottom sonar surveys, 2008  |
| Bahia Honda Bay, Panama            | -sediment coring and sub-bottom sonar surveys, 2007   |
| Florianopolis, Brazil              | -sediment coring and ground penetrating radar survey, 2006  |
| Saint Kitts, West Indies           | - sediment coring and sub-bottom sonar survey, 2006   |
| Koshiki Island, Kyushu, Japan (PI) | -sediment coring and sub-bottom sonar surveys, 2005, 2006   |
| Grenada, West Indies (PI)          | -sediment coring and ground penetrating radar survey, 2005  |
| Saint Croix, U.S. Virgin Islands   | - sediment coring program, 2005   |
| Vieques, Puerto Rico               | - sediment coring and sub-bottom sonar survey, 2005   |
| Scarborough Tidal Marsh, USA (PI)  | -mooring deployment, hydrographic and elevation surveys, 2001   |
| Hudson River Estuary (PI), USA     | -CTD and ADCP water column surveys, mooring deployment, coring, sidescan sonar and sub-bottom surveys, 1998 (PI),1999 |
| Gulf of Maine, USA                 | - net tows, water column sampling, mooring maintenance, 1998  |
| Ross Sea, Antarctica               | - water column sampling, multi-beam bathymetric survey, 1996  |
| Maine River Network, USA           | - hydrographic surveys, stream gauge maintenance, 1995  |

## **References**

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