

# CURRICULUM VITAE

## WILLIAM J. D'ANDREA

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- 2008 BROWN UNIVERSITY (PROVIDENCE, RI)  
**Ph.D., Geological Sciences**, Yongsong Huang, advisor  
Thesis: Development and application of lacustrine alkenone paleothermometry in southwestern Greenland
- 2005 BROWN UNIVERSITY (PROVIDENCE, RI)  
**Sc.M., Geological Sciences**, Yongsong Huang, advisor
- 2001 BINGHAMTON UNIVERSITY (BINGHAMTON, NY)  
**B.S., Geology**  
**B.A., Environmental Studies**

### ***RESEARCH EXPERIENCE***

2009-2010, NSF OFFICE OF POLAR PROGRAMS POSTDOCTORAL FELLOW, UMASS AMHERST

2008-2009, NOAA CLIMATE AND GLOBAL CHANGE POSTDOCTORAL FELLOW, UMASS AMHERST

- Conducted lake coring, modern sedimentological monitoring and other field work in Lofoten, northwestern Norway and eastern Greenland
- Developed biomarker-based paleoclimate reconstructions from lake sediments in the Canadian High Arctic and Norway
- Performed compound-specific stable isotope analysis on surface sediments of lakes from Baffin Island to investigate modern relationships with climate and surface earth processes

2003-2008, BROWN UNIVERSITY

- Generated Holocene paleoclimate reconstructions from lake sediments in SW Greenland using organic geochemical and compound-specific stable isotope methods and x-ray fluorescence
- Organized and led eight field research trips in Kangerlussuaq, southwestern Greenland
- Investigated sedimentary biomarkers using GC-FID, GC-MS, GC-IRMS
- Developed new techniques for hydrogen isotope measurement of sedimentary organic compounds
- Performed PCR and developed clone libraries from fossil DNA in lake sediment
- Conducted vegetation sampling to assess climatic controls on leaf wax hydrogen isotopes
- Collected sediments and analyzed compound-specific hydrogen isotopes from 30 lakes in the southwestern US
- Assisted field work and lake coring on Kenai Peninsula, Alaska and eastern Massachusetts

2001-2003, UNIVERSITY OF NEBRASKA-LINCOLN

- Performed grain-size analysis and elemental analysis (total organic carbon, total inorganic carbon, total nitrogen) on lake sediment cores
- Conducted field work in Kangerlussuaq, southwestern Greenland

### **FELLOWSHIPS AND AWARDS**

2009 NSF Postdoctoral Fellowship in Polar Regions Research (ARC-0851642; \$166,489)  
2009 Early Career Scientist Travel Grant, Arctic Science Summit Week (Bergen, NO), IASC  
2008 Climate and Global Change Postdoctoral Fellowship, NOAA (\$108,000)  
2008 IPY Next Generation of Polar Researchers Symposium, NSF  
2007 Dissertation Fellowship, Brown University, Department of Geological Sciences  
2007 Student Travel Award, Northeastern GSA, Geological Society of America  
2006 Rose Provasoli Scholarship, Bigelow Laboratory for Ocean Sciences  
2006 Croasdale Fellowship, Phycological Society of America  
2003 Best Student Paper, Nebraska Academy of Sciences, Nebraska Geological Society  
2000 NSF-REU Fellowship, Limnological Research Center, University of Minnesota

### **PUBLICATIONS**

**D'Andrea, W.J.**, Huang, Y., Anderson, N.J., Fritz, S.C., Impact of the North Atlantic Oscillation and Holocene temperature on human civilization in southwestern Greenland. In review, *PNAS*.

Theroux, S. **D'Andrea, W.J.**, Toney, J., Amaral-Zettler, L. Huang, Y. (2010) Phylogenetic diversity and evolutionary relatedness of alkenone-producing haptophyte algae in lakes: Implications for continental paleotemperature reconstruction. *Earth and Planetary Science Letters*, doi:10.1016/j.epsl.2010.10.009

Anderson, N.J., **D'Andrea, W.J.**, Fritz, S.C. (2009) Holocene carbon burial by lakes in SW Greenland. *Global Change Biology*, doi: 10.1111/j.1365-2486.2009.01942.x.

Hou, J., **D'Andrea, W.J.**, Huang, Y. (2008) Can sedimentary leaf waxes record D/H ratios of continental precipitation? Field, model and experimental assessments. *Geochimica et Cosmochimica Acta*, 72, 3503-3517.

**D'Andrea, W.J.**, Liu, Z.H., Alexandre, M.D., Wattlely, S., Herbert, T.D., Huang, Y. (2007) An efficient method for isolating individual long-chain alkenones for compound-specific hydrogen isotope analysis, *Analytical Chemistry*, 79, 3430-3435.

Hou, J., **D'Andrea, W.J.**, MacDonald, D., Huang, Y. (2007) Evidence for water use efficiency as an important factor in determining the  $\delta D$  values of tree leaf waxes, *Organic Geochemistry*, 38, 1251-1255.

Hou, J., **D'Andrea, W.J.**, MacDonald, D., Huang, Y., (2007) Hydrogen isotopic variability in leaf waxes among terrestrial and aquatic plants around Blood Pond, Massachusetts (USA), *Organic Geochemistry*, 38, 977-984.

**D'Andrea, W.J.**, Lage, M., Hughes-Martiny, J.B., Laatsch, A.D., Amaral-Zettler, L.A., Sogin, M.L., Huang, Y. (2006) Alkenone producers inferred from well-preserved 18S rDNA in Greenland lake sediments, *Journal of Geophysical Research – Biogeoscience*, doi:10.1029/2005JG000121.

**D'Andrea, W.J.**, Huang, Y. (2005) Long-chain alkenones in Greenland lake sediments: low  $\delta^{13}\text{C}$  values and exceptional abundance, *Organic Geochemistry*, 36, 1234-1241.

### ***INVITED TALKS***

- 2011 Amherst College, Amherst, MA
- 2008 Lamont-Doherty Earth Observatory of Columbia University, Palisades, NY
- 2008 Lafayette College, Department of Geology and Environmental Geosciences, Easton, PA
- 2008 IPY Next Generation of Polar Researchers Symposium, National Science Foundation
- 2008 University of Minnesota, Department of Geology and Geophysics, Minneapolis, MN
- 2007 American Geophysical Union, Fall Meeting, San Francisco, CA
- 2007 SUNY New Paltz, Geology Department, New Paltz, NY
- 2006 Boston University, Department of Earth Sciences, Boston, MA

### ***TEACHING EXPERIENCE***

- 2011 Lecturer, Amherst College, The Resilient (?) Earth
- 2010 Lecturer, UMass Amherst, Scientists and Skeptics: The Global Warming Controversy
- 2009 Lecturer, UMass Amherst, Paleoclimatology
- 2007 Teaching Assistant, Brown University, SPARK Program, Meteorology
- 2006 Teaching Assistant, Brown University, Physical Geology
- 2004 Teaching Assistant, Brown University, Environmental Geochemistry
- 2001-2002 Teaching Assistant, University of Nebraska, Physical Geology

### ***INFORMAL TEACHING AND SERVICE***

- 2009 Supervisor of NSF-funded undergraduates conducting field research, Lofoten, Norway
- 2008-present Undergraduate Research Supervisor, UMass Amherst
  - SAM DAVIN (UMASS '11), Thesis: Examining the Holocene biomarker record from lake Myklevatnet, southern Norway
  - DAVID VAILLENCOURT (UMASS '10), Thesis: An alkenone-based temperature reconstruction from Svalbard, Norway and comparison with the instrumental temperature record
  - SUZANNA SULLIVAN (UMASS '10), Thesis: Investigating the climatic controls on stable isotopes in precipitation, Lofoten, Norway
  - CHRISTINA THAM (MT. HOLYOKE '10), Thesis: Characterization of biomarkers in modern lake sediments, Lofoten, Norway

BRETT FRAZER (UAA '10, UMASS VISITING STUDENT), Independent Study Project:  
Holocene climate reconstruction from Nunavut, Canada based on lacustrine  
sedimentary alkenones and compound-specific hydrogen isotopes

- 2008-present *Ice Stories Correspondent* – NSF, Exploratorium, San Francisco, CA;  
<http://icestories.exploratorium.edu/dispatches/?author=5>
- 2008-present *Reviewer*, NSF Office of Polar Programs, NSF Earth Sciences, Journal of Quaternary  
Science, Natural Environment Research Council (NERC)
- 2007-2008 *Reviewer*, The Holocene, Journal of Paleolimnology
- 2007 *Field Trip Co-Leader*, Brown University undergraduate field trip, Colorado Plateau
- 2006-2007 *Guest Lecturer (four classes)*, Brown University, GE137 Environmental Geochemistry
- 2005-2007 *Science Outreach Teacher*, Vartan Gregorian Elementary School, Providence, RI
- 2004-2007 *Senior Thesis Advisor*, Brown University, ANDREW MICHELSON, MENA RAMOS, FATMA  
KHATIB, SARAH WATTLE, SARAH LADD, DEVINA SWARUP, MARK MCGUIRE