

Jessica W. Moerman

NSF Atmospheric and Geospace Sciences Postdoctoral Fellow
University of Michigan, Department of Earth and
Environmental Sciences
Smithsonian National Museum of Natural History

10th St. and Constitution Ave. NW
Washington, DC 20560
moermanj@umich.edu
www.jessicamoerman.com

Education

Georgia Institute of Technology, Atlanta, GA 2015
PhD in Earth and Atmospheric Sciences
Minor in Public Policy
Dissertation: Regional hydrology captured in northern Borneo rainfall and
dripwater isotope variability

University of Tennessee at Chattanooga, Chattanooga, TN 2009
BS in Chemistry with highest honors
BS in Geology
summa cum laude

Research Positions

NSF Atmospheric and Geospace Sciences Postdoctoral Fellow, *joint appointment at* 2015-present
University of Michigan and Smithsonian National Museum of Natural History
Supervisors: Naomi Levin (U. Michigan), Richard Potts (Smithsonian)

NSF Graduate Research Fellow/Graduate Research and Teaching Assistant 2009-2015
Georgia Institute of Technology
Advisor: Kim Cobb

Undergraduate Research Assistant 2007-2009
University of Tennessee-Chattanooga
Advisor: Gretchen Potts

Honors and Awards

NSF Atmospheric and Geospace Sciences Postdoctoral Fellowship 2015-present
Georgia Institute of Technology EAS Best Paper Award 2013
P.E.O. Scholar Award, Annabelle B. Bush Memorial Endowed Scholar 2013
NSF Urbino Summer School in Paleoclimatology Scholarship 2013
NSF Graduate Research Fellowship 2010-2013
Georgia Institute of Technology President's Fellowship 2009-2012
University of Tennessee-Chattanooga McNeely Outstanding Senior in Chemistry 2009
University of Tennessee-Chattanooga Undergraduate Award in Analytical Chemistry 2009
University of Tennessee-Chattanooga Outstanding Senior in Geology 2009
Barry M. Goldwater Scholarship 2008

Refereed Publications (* indicates undergraduate student advisee)

[10] **J.W. Moerman**, Levin, N., Kutzbach, J., Potts, R. Precession-related variability in the East African monsoon over the last interglacial period in NCAR CCSM3. *in prep.*

[9] **J.W. Moerman**, Levin, N., Passey, B., Potts, R. Triple oxygen isotopes and clumped isotope thermometry applied to East African water balance over the last 500ky. *in prep.*

- [8] **J.W. Moerman**, Cobb, K.M., Konecky, B.L., Noone, D. The role of remote versus local climatic influences in shaping seasonal rainfall $\delta^{18}\text{O}$ variations in northern Borneo. *in prep. for Journal of Geophysical Research-Atmospheres*.
- [7] Bosma, C.* **J.W. Moerman**, Cobb, K.M. High-resolution tropical rainfall isotope variability across individual precipitation events. *in prep.*
- [6] J.L. Conroy, Noone, D., Cobb, K.M., **Moerman, J.W.**, Konecky, B.L. Paired precipitation-vapor isotopes define the amount effect in western tropical Pacific storms. (2016) *J. Geophysical Research – Atmospheres*. **121**, 3290-3303.
- [5] S.A., Carolin, Cobb, K.M., Lynch-Stieglitz, J., **Moerman, J.W.**, Lejau, S., Malang, J., Clark, B., Tuen, A.A., Adkins, J.F. (2016) Rainfall variability across MIS 5 and 6 revealed in northern Borneo stalagmite records. *Earth and Planetary Science Letters*. **439**. 182-193.
- [4] A.N. Meckler, Affolter, S., Dublyansky, Y., Krüger, Y., Vogel, N., Adkins, J., Bernasconi, S., Carolin, S., Cobb, K., Frenz, M., Kipfer, R., Leuenberger, M., **Moerman, J.W.**, Spötl, C., Fleitmann, D. (2015) Glacial-interglacial temperature change in the tropical West Pacific: A comparison of stalagmite-based paleothermometers. *Quaternary Science Reviews*. **127**. 90-116.
- [3] **J.W. Moerman**, Cobb, K.M., Partin, J.W., Meckler, A.N., Carolin, S.A., Adkins, J.F., Malang, J., Lejau, S., Clark, B., Tuen, A.A. (2014) Transformation of ENSO-related rainwater to dripwater $\delta^{18}\text{O}$ variability by vadose water mixing. *Geophysical Research Letters*. **41**. 7907–7915.
- [2] **J.W. Moerman**, Cobb, K.M., Adkins, J.F., Sodemann, H., Clark, B., Tuen, A.A. (2013) Diurnal to interannual rainfall $\delta^{18}\text{O}$ variations in northern Borneo driven by regional hydrology. *Earth and Planetary Science Letters*. **369-370**, 108-119.
- [1] **J.W. Moerman** & G.E. Potts (2011) Analysis of metals leached from smoked cigarette litter. *Tobacco Control*. **20**, Supp. 1, i30-i35.

Teaching Experience

Georgia Institute of Technology	
Graduate Teaching Assistant: EAS 2600 Earth Processes	Fall 2013, Spring 2014
Arabia Mountain High School, Lithonia, GA	
Guest instructor (2 class sections): Oceanography	2012-2013
University of Tennessee at Chattanooga	
Undergraduate Teaching Assistant: CHEM 102 General Chemistry II	Spring 2006

Public Engagement

Participant, “Scientist Is In”, Smithsonian National Museum of Natural History	July 2016
Featured Speaker, Grace Midtown Church, Atlanta, GA	November 2014
Mentor, NeXXt Scholars Program, New York Academy of Science	2013-2014
and International Women's Undergraduate STEM Education Initiative	
Participant, AGU Congressional Visit Day, Washington, DC	September 2013
Co-organizer, Georgia Tech Veritas Forum	2012-2014

Professional Activities

Participant, Continental Scientific Drilling Coordination Office Long Range Science Plan	2016
Workshop: Scientific Drilling/Coring and Earth-Life System Evolution	
Session convener, “Water Isotope Systematics: Improving Paleoclimate Interpretations”	2014
2014 AGU Fall Meeting, San Francisco, CA	

IAEA Coordinated Research Project: Isotopes in Precipitation and Paleoclimatic Archives in Tropical Areas	2013-present
Co-organizer for Southeastern Biogeochemistry Symposium, Atlanta, GA	2013-2014
Co-organizer for Georgia Tech Careers Seminar	2013-2014
Reviewer for <i>Nature Geoscience</i> (1), <i>Geophysical Research Letters</i> (2), <i>Journal of Geophysical Research-Atmospheres</i> (2), <i>Climate Dynamics</i> (1), <i>Global and Planetary Change</i> (1), <i>Journal of Hydrology</i> (2), <i>Journal of Water and Climate</i> (1), <i>Meteorology and Atmospheric Physics</i> (1), <i>Journal of the Meteorological Society of Japan</i> (1)	

Professional Training

NMNH-LacCore Ologresailie Drilling Project Workshop, Minneapolis, MN	2015
AAAS Communicating Climate Science Workshop, Atlanta, GA	2015
Training Introducing Scholastic and Pedagogical Insight Resulting in Engaged Education (INSPIRE2) Workshop, Atlanta, GA	2014
PAGES Workshop – Cast, Cut, Sample and Analyze: Speleothem Workshop, Miami, FL	2014
Urbino Summer School for Paleoclimatology, Urbino, Italy	2013
Georgia Tech ASEE Interactive Teaching Workshop, Atlanta, GA	2013

Invited Talks

United States Geological Survey, Reston, VA	November 2014
Lamont-Doherty Earth Observatory, Columbia University, New York, NY	September 2014
PAGES Workshop – Cast, Cut, Sample and Analyze: A practical approach to processing speleothems for paleoclimate reconstruction, University of Miami, Miami, FL	May 2014
Dept. of Earth and Planetary Sciences, Johns Hopkins University, Baltimore, MD	May 2014
Universiti Malaysia Sarawak, Miri, Malaysia	October 2012

Selected Conference Proceedings (* indicates undergraduate student advisee)

J.W. Moerman, Levin, N.E., Behrensmeier, A.K., Deino, A.L., DeLuca, N., Lehmann, S.B., Passey, B.H., Potts, R., ODP Research Group. Triple oxygen isotopes and clumped isotope thermometry applied to East African water balance over the last 500ky. 2016 American Geophysical Union Fall Meeting (*submitted*).

J.W. Moerman, Levin, N.E., Passey, B.H., Potts, R. (2016) Triple oxygen isotopes as tracers of evaporation and paleo-aridity proxies. Continental Scientific Drilling Coordination Office Workshop on Scientific Drilling/Coring and Earth-Life System Evolution.

Bosma, C.,* **Moerman, J.W.**, Cobb, K.M. (2015) Water isotope variability across individual precipitation events in Borneo. 2015 American Geophysical Union Fall Meeting, Abstract PP11B-2238.

J.W. Moerman, Cobb, K.M., Konecky, B.L., Noone, D. (2014) The role of remote versus local climatic influences in shaping seasonal and interannual rainfall $\delta^{18}\text{O}$ variations in northern Borneo. 2014 American Geophysical Union Fall Meeting, Abstract PP31D-1171.

J.W. Moerman, Adkins, J.F., Partin, J.W., Clark, B., Malang, J., Lejau, S., Tuen, A.A., Cobb, K.M, (2014) Oxygen isotopes in Borneo cave dripwater resolve the 2009-2012 ENSO cycle. 2014 Annual Southeastern Biogeochemistry Symposium, Atlanta, GA.

J.W. Moerman, Cobb, K.M., Partin, J.W., Clark, B., Malang, J., Lejau, S., Tuen, A.A. (2013) Borneo cave dripwater isotope timeseries resolve the 2009-2012 ENSO cycle. 2013 American Geophysical Union Fall Meeting, Abstract PP42C-02.

J.W. Moerman, Cobb, K.M., Partin, J.W., Clark, B., Tuen, A.A. (2013) Borneo cave dripwater isotope timeseries resolve the 2009-2012 ENSO cycle. 2013 Georgia Tech EAS Graduate Student Symposium.

J.W. Moerman, Cobb, K.M., Adkins, J.F., Sodemann, H., Clark, B., Tuen, A.A. (2013) Local and regional climatic controls on high-resolution rainfall and cave dripwater oxygen isotopes in northern Borneo. 2013 Urbino Summer School for Paleoclimatology.

J.W. Moerman, Cobb, K.M., Adkins, J.F., Sodemann, H., Clark, B., Tuen, A.A. (2012) Local and regional climatic controls on high-resolution rainfall and cave dripwater oxygen isotopes in northern Borneo. 2012 American Geophysical Union Fall Meeting, Abstract PP33A-2094.

J.W. Moerman, K.M. Cobb, B. Clark, A.A. Tuen (2012) The spatial and temporal signature of the tropical 'amount effect' at intra-storm to interannual timescales. 2012 Georgia Tech EAS Graduate Student Symposium.

A.N. Meckler, J.M. Eiler, **J.W. Moerman**, K.M. Cobb, J.F. Adkins (2011) Clumped isotope survey in Borneo caves. 2nd International Workshop on Clumped Isotopes. Abstract 22.

J.W. Moerman, K.M. Cobb, B. Clark, A.A. Tuen (2011) The amount effect at various timescales in rainwater and dripwater $\delta^{18}\text{O}$ timeseries from northern Borneo. 6th International Conference: Climate Change - The Karst Record. Abstract 96.

J.W. Moerman, K.M. Cobb, B. Clark, A.A. Tuen (2011) The 'amount effect' at various timescales in northern Borneo rainwater $\delta^{18}\text{O}$. 2011 Georgia Tech EAS Graduate Student Symposium.

J. Moerman, K.M. Cobb, R. Kollmeyer, B. Clark, A.A. Tuen (2010) Climatic influences on daily rainwater $\delta^{18}\text{O}$ and δD timeseries in Northern Borneo. 2010 Goldschmidt Conference. *Geochemica et Cosmochemica Acta*. **74**, 11, Supp 1, A716.

J.W. Moerman & G.E. Potts (2008) Analysis of pollutants leached from used cigarette litter. 60th Southeastern Regional Meeting of the American Chemical Society, Abstract 63473.