

Kevan B. Moffett

Ms. Kevan B. Moffett, PhD

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The University of Texas at Austin

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EDUCATION

- 2004-2010 Ph.D., Environmental Earth System Science, *Stanford University*, Stanford, CA
Dissertation: Groundwater-vegetation-atmosphere interactions in an intertidal salt marsh
- 1998-2002 B.S., Environmental Engineering, *Yale University*, New Haven, CT
Thesis: Comprehensive watershed assessment using GIS: Application of a new methodology to the Croton Watershed, a portion of the New York City drinking water supply system

EXPERIENCE AND EMPLOYMENT

- 2012- *The University of Texas at Austin*, Austin, TX
Assistant Professor, Department of Geological Sciences
- 2010-2012 *Stanford University*, Stanford, CA
Postdoctoral Scholar, Department of Environmental Earth System Science
- 2004-2010 *Stanford University*, Stanford, CA
Stanford Graduate Fellow, Teaching Assistant, and Research Assistant
- 2001-2004 *Malcolm Pirnie, Inc.*, White Plains, NY
Engineer and GIS Specialist (primarily working on New York City's drinking water supply)
- 2000 *Fundación Jatun Sacha*, Ecuador
Forestry preservation and research, summer volunteer

TEACHING

Courses Taught

The University of Texas at Austin

- Fall 2013 Ecohydrology (GEO 371C/391)
Graduate and upper-level undergraduate course. Content: Vegetation's role in the Earth System, especially in the hydrologic cycle. Plant water use anatomy and physiology. Coupling of land surface energy, water, and carbon balances and the role of soil-plant-atmosphere interactions. Evapotranspiration measurement and modeling, assumptions, applications. Relations of soil-plant-water interactions with landscape patterning, ecology/carbon storage, geomorphology, climate.

- Sum. 2013 Field Methods in Hydrogeology (GEO 376L)
Graduate and upper-level undergraduate 3-wk field course. Content included: stream gauging, water chemistry, geophysical methods, well pump and slug tests, and vadose zone measurements; final student projects were on integrated hydrogeological assessment of the Gorman Spring area of Colorado Bend State Park.
- Spring 2013 Introduction to Physical and Chemical Hydrogeology (GEO 346C)
Undergraduate course. Content: 1. Components of the hydrological cycle and water balance (evaporation, precipitation, transpiration, infiltration, runoff, streamflow). 2. Principles of physical hydrogeology (porous media, hydraulic potential and conductivity, flow nets, yield, storage, wells, well capture). 3. Basics of chemical hydrogeology (aquatic chemistry, rock-water interactions, redox zonation, groundwater contamination and transport).
- Stanford University*
- Winter 2011 Introduction to Earth and Environmental Science Research Design
Undergraduate seminar. Content: designing and writing a (~5-8 page) scientific research proposal from start to finish. Students successfully submitted their final proposals to competitions for summer, major, or honors research funding from Stanford University.
- Spring 2009 Death Valley Geology Field Trip, Teaching Assistant
- Fall 2005 Physical Hydrogeology, Teaching Assistant

PUBLICATIONS

*denotes my advisee, # denotes invited

Submitted Manuscripts

J Law*, **KB Moffett**, SM Gorelick, N Nur, and JK Wood (In review) Using shape-based analysis of salt marsh vegetation patterns to predict Alameda Song Sparrow density, *San Francisco Estuary and Watershed Science*.

Peer-reviewed Publications

KB Moffett and SM Gorelick (2012) Distinguishing wetland vegetation and channel features with object-based image segmentation, *International Journal of Remote Sensing*.
 doi:10.1080/01431161.2012.718463.

KB Moffett, SM Gorelick, RG McLaren, and EA Sudicky (2012) Salt marsh ecohydrological zonation due to heterogeneous vegetation – groundwater – surface water interactions, *Water Resources Research*, 48, W02516. doi:10.1029/2011WR010874.

KB Moffett and SM Gorelick (2012) A method to calculate heterogeneous evapotranspiration using sub-meter thermal infrared imagery coupled to a stomatal resistance submodel, *Water Resources Research*, 48, W01545.

KB Moffett, DA Robinson, and SM Gorelick (2010) Relationship of salt marsh vegetation zonation to spatial patterns in soil moisture, salinity and topography, *Ecosystems*, 13: 1287-1302.
 doi:10.1007/s10021-010-9385-7.

KB Moffett, A Wolf, JA Berry, and SM Gorelick (2010) Salt marsh - atmosphere exchange of energy, water vapor, and carbon dioxide: effects of tidal flooding and biophysical controls, *Water Resources Research*, 46, W10525. doi:10.1029/2009WR009041.

Y-M Cho, D Werner, **KB Moffett**, and RG Luthy (2010) Assessment of advective porewater movement affecting mass transfer of hydrophobic organic contaminants in marine sediment, *Environmental Science & Technology*, 44(15): 5842-5848. doi:10.1021/es903583y.

KB Moffett, SW Tyler, T Torgersen, M Menon, and SM Gorelick (2008) Processes controlling the thermal regime of saltmarsh channel beds, *Environmental Science & Technology*, 42(3): 671-676. doi:10.1021/es071309m.

Other Contributions

KB Moffett (2010) *Groundwater-vegetation-atmosphere interactions in an intertidal salt marsh*, Ph.D. dissertation, Department of Environmental Earth System Science, Stanford University, Stanford, California.

K Moffett, contributor (2009) *Geologic Field Guide to Iceland*, Stanford Alpine Project.

K Moffett, J Fosdick, G Hughes, B Mirus, and S Carter (Eds.) (2005) *Field Guide to Guatemalan Geology*, Stanford Alpine Project.

K Moffett, A Atamian, C How, L Wordsman, and K Kane (2003) Evaluating management scenarios in the Croton Watershed, *23rd Annual ESRI International User Conference*, San Diego, CA. Oral presentation and paper.