

Weston Buckley Anderson

The International Research Institute for Climate and Society
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ACADEMIC APPOINTMENTS

Columbia University, New York, NY Sep 2018 – Sep 2021
Postdoctoral Research Fellow,
The International Research Institute for Climate and Society

EDUCATION

Columbia University, New York, NY Jul 2014 - Jul 2018
PhD, Earth and Environmental Science
• NSF Graduate Research Fellowship Program
• Columbia University Dean's Fellow

Johns Hopkins University, Baltimore, MD May 2012
B.S./M.S.E. Environmental Engineering, Systems Analysis
• General Honors, Departmental Honors, Wolman Award for Interdisciplinary Study
• Dean's Master's Fellowship

PROFESSIONAL EXPERIENCE

Sr. Research Assistant 2013 - 2014
International Food Policy Research Institute
Research: Water resource management and food security analyses
Advisors: Dr Liangzhi You and Dr. Ephraim Nkonya

Risk Analyst 2012 - 2013
Risk Management Solutions
Description: Model-based natural catastrophe risk assessment

Research Assistant 2011 - 2012
The Hydroclimate Research Group, Johns Hopkins University
Research: Characterized the 2010-11 East Africa drought using remote sensing products
Advisor: Dr Ben Zaitchik

PUBLICATIONS

* denotes joint first co-authorship

Journal publications submitted or in preparation

Anderson, W., Taylor, C., McDermid, S., Schlenker, W., Seager, R., Nébié, E., Cottier, F., de Sherbinin, A., Mendeloff D., Markey, K.: Characterizing the effect of drought, conflict, and locusts on food security in Africa. (in prep)

Singh, J., Ashfaq, M., Skinner, C., Anderson, W.B., Singh, D.: Amplified Risk of Concurrent Drought Events with Co-occurring Modes of Natural Variability (submitted)

Hernandez, J.N., Anderson, W., Bridges, A., Fernandez, M.P., Hansen, W., Nebie, E., and Stock, A.: Fostering interdisciplinary research careers to solve complex sustainability crises. (submitted)

Anderson, W.B.*, and Lesk, C*: Trends in concurrent heat and drought over global croplands (submitted)

Peer reviewed journal publications:

Anderson, W.B., Han, E., Baethgen, W., Goddard, L., Muñoz, Á.G., and Robertson, A. (2020): The Madden-Julian Oscillation affects maize yields throughout the tropics and subtropics, *Geophysical Research Letters*, e2020GL087004

Jong, B.T, Ting, M., Seager, R., and Anderson, W.B. (2020): ENSO teleconnections and impacts on US summertime temperature during multi-year La Niña life-cycle. *Journal of Climate*. 33 (14): 6009–6024

Bren d'Amour* and Anderson, W.B.* (2020): International trade and the stability of food supplies in the Global South, *Environmental Research Letters*, 15 (7).

Anderson, W.B., Muñoz, Á.G., Goddard, L., Baethgen, W., and Chourio, X. (2020): Madden-Julian Oscillation (MJO) teleconnections to crop growing seasons. *Climate Dynamics*. 1-17, <https://doi.org/10.1007/s00382-019-05109-0>

Cai, W, ...Anderson, W.B....et al. (2020): Impact of El Niño-Southern Oscillation on South America in a warming climate, *Nature Reviews Earth & Environment*, 1(4), 215-231.

Anderson, W.B., Seager, R., Baethgen, W., Cane, M, and You, L. (2019): Synchronous crop failures and climate-forced yield variability. *Science Advances*, 5 (7), eaaw1976.

Anderson, W.B., Seager, R., Baethgen, W., and Cane, M (2018) : Trans-Pacific ENSO teleconnections pose a correlated risk to agriculture. *Agriculture and Forest Meteorology*, 262: 298-309, doi:10.1016/j.agrformet.2018.07.023

Xie, H, Perez, N, Anderson W.B., Ringler, C. and You, L. (2018): Impact of irrigation development strategies in Sub-Saharan African dryland on food security and import dependency in the region. *Water International*

Anderson, W.B., Seager, R., Baethgen, W., and Cane, M, (2017): Crop production variability in North and South America forced by life-cycles of the El Niño Southern Oscillation. *Agriculture and Forest Meteorology*, 239, 151-165

Anderson, W.B., Seager, R., Baethgen, W., and Cane, M, (2016): Life-cycles of agriculturally relevant ENSO teleconnections in North and South America. *Int. J. Climatol*, doi:10.1002/joc.4916

Anderson, W.B., You, L., Wood, S., Wood-Sichra, U., Wu, W (2015): An analysis of methodological and spatial differences in global cropping systems models and maps. *Glob. Ecol. and Biogeog.* doi: 10.1111/geb.12243

Li, Z., Liu, X., Anderson, W.B., Yang, P., Wu, W., Tang, H. and You, L. (2015): Chinese Rice Production Area Adaptations to Climate Changes, 1949–2010. *Environmental Science & Technology*, doi: 10.1021/es505624x

Anderson, W.B., Guikema S., Zaitchik, B. and Pan, W. (2014): Methods for estimating population density in data-limited areas: evaluating regression and tree-based models in Peru. *PLoS ONE* 9(7): e100037. doi:10.1371/journal.pone.0100037

Nkonya, E. and Anderson, W.B. (2014): Exploiting provisions of land economic productivity without degrading its natural capital, *J. Arid Environ.*, doi:10.1016/j.jaridenv.2014.05.012.

Anderson, W.B., Zaitchik, B.F., Hain, C.R., Anderson, M.C., Yilmaz, M.T., Mecikalski, J., and Schultz, L. (2012) Towards an integrated soil moisture drought monitor for East Africa, *Hydrol. Earth Syst. Sci.*, 16, 2893-2913, doi:10.5194/hess-16-2893-2012.

Book Chapters:

Walker, T., Ward, C., Torquebiau, R., Xie, H., Anderson, W.B., Perez, N., Ringler, C., You, L., Cenacchi, N., Hash, T. and Rattunde, F., (2016) Agriculture: More Water and Better Farming for Improved Food Security. In "Confronting Drought in Africa's Drylands: Opportunities for Enhancing Resilience", pp.115-136. doi:10.1596/978-1-4648-0817-3_ch7

Nkonya, E., Anderson, W.B., Kato, E., Koo, J., Mirzabaev, A., von Braun, J., & Meyer, S. (2016). Global cost of land degradation. In *Economics of Land Degradation and Improvement—A Global Assessment for Sustainable Development* (pp. 117-165). Springer International Publishing.

Nkonya, E., Srinivasan, R., Anderson, W.B., and Kato, E. (2016). Economics of land degradation and improvement in Bhutan. In *Economics of Land Degradation and Improvement—A Global Assessment for Sustainable Development* (pp. 327-383). Springer International Publishing.

Anderson, W.B., and Johnson, T. (2016) Evaluating Global Land Degradation Using Ground-Based Measurements and Remote Sensing. In *Economics of Land Degradation and Improvement—A Global Assessment for Sustainable Development* (pp. 327-383). Springer International Publishing.

Other Publications:

Nielsen, T., Schünemann, F., McNulty, E., Zeller, M., Nkonya, E., Kato, E., Meyer, S., Anderson, W.B., Zhu, T., Queface, A., and Mapemba, L., (2015): The Food-Energy-Water Security Nexus: Definitions, Policies, and Methods in an Application to Malawi and Mozambique. IFPRI Discussion Paper 1480. doi: 10.2139/ssrn.2740663

Nkonya, E., Srinivasan, R., Anderson, W.B., and Kato, E. (2014). Assessing the economic benefits of sustainable land management practices in Bhutan. IFPRI Discussion Paper 01361. doi:10.2139/ssrn.2483995

Xie, H., You, L., Anderson, W.B., Ringler, C., Cenacchi, N., Perez, N. (2013) Agricultural water management for drylands in Africa south of the Sahara. International Food Policy Research Institute. Methodology report for the World Bank

Posters and Presentations:

Anderson, W.B., Seager, R., Baethgen, W., Cane, M, and You, L. Climate-forced crop yield variability and synchronous crop failures. AGU Fall Meeting. Washington DC, Dec 10-18, 2018 (oral pres.)

Anderson, W.B., Seager, R., Baethgen, W., and Cane, M,: How relevant is ENSO to global crop production? IV International Conference on El Niño Southern Oscillation: ENSO in a warmer Climate. October 18, Guayaquil, Ecuador (oral pres.)

Anderson, W.B., Seager, R., Baethgen, W., and Cane, M,: Trans-Pacific ENSO teleconnections pose a correlated risk to global agriculture. The American Meteorological Society annual meeting. Jan 7-11, 2018. Austin, TX (oral pres.)

Anderson, W.B., Seager, R., Baethgen, W., and Cane, M.,: The El Niño Southern Oscillation and sustainable intensification. *The Global Land Program Open Science Meeting*. Oct. 24-27, 2016. Beijing, CHN (oral pres.) **[Awarded outstanding presentation]*

Anderson, W.B., Seager, R., Baethgen, W., and Cane, M.,: Life cycles of agriculturally-relevant ENSO teleconnections in North and South America. *American Geophysical Union Fall Meeting*. Dec. 14-18, 2015. San Francisco, CA (oral pres.)

Anderson, W.B. "An analysis of methodological and spatial differences in global cropping systems models and maps". Chinese Academy of Agricultural Sciences, May 23rd, 2014. Beijing, China. (oral pres.)

Anderson, W.B. "Assessing the benefits of sustainable land management practices in Bhutan: Land cover changes and hydrological analyses". IFPRI / World Bank hosted Workshop, March 18, 2014. Thimphu, Bhutan. (oral pres.)

Anderson, W.B., You, L., Wood, S., Wood-Sichra, U., Wu, W. "A Comparative Analysis of Global Cropping Systems Models and Maps," *American Geophysical Union Fall Meeting*. Dec. 9-13, 2013. San Francisco, CA (poster pres.)

Anderson, W.B., C. Hain, B. Zaitchik, M. Anderson, C. Alo and M. Yilmaz. "Towards an Integrated Soil Moisture Drought Monitor for East Africa," *American Geophysical Union Fall Meeting*. Dec. 5-9, 2011. San Francisco, CA (poster pres.)

PROFESSIONAL SERVICE

Reviewer: Science, Nature Communications, Environmental Research Letters, Geophysical Research Letters, Agriculture and Forest Meteorology, Hydrology and Earth System Sciences, Earth System Dynamics, Journal of Applied Meteorology and Climatology, International Journal of Climatology

Diversity, Equity, & Inclusion Action Committee 2020 -
IRI, Columbia University

Seminar organizer 2018 -
IRI, Columbia University

Graduate Student Committee 2016 -2018
Department of Earth and Environmental Sciences

Graduate Student Advisory Council Representative, 2015 - 2016
Columbia Graduate School of Arts and Sciences

Workshop Organizer, Thimphu, Bhutan 2014
"Assessing the economic benefits of sustainable land management practices in Bhutan"
50+ participants, including the Honorable Minister of Agriculture and Forests

GRANTS AND AWARDS

Earth Frontiers, Earth Institute (PI; \$100,000) 2020-2022

Earth Institute Postdoctoral Research Fellowship (\$140,000) 2018 - 2020

NSF Graduate Research Fellowship (\$98,000) 2014 - 2018

Columbia Graduate School of Arts and Sciences Dean's Fellow (\$168,000) 2014

JHU Whiting School of Engineering Dean's Master's Fellowship (\$23,000) 2012

JHU Wolman Award for Interdisciplinary Study 2011

Outstanding Student Presentation, GLP Open Science Meeting 2016

TEACHING EXPERIENCE

Lecturer – Columbia University 2020
Dynamics of Climate Variability and Change: co-taught with Dr. Alessandra Giannini

Teaching Assistant - Columbia University
Regional Climate Dynamics: Dr. Andrew Robertson and Dr. Pietro Ceccato 2016, 2018
Dynamics of Climate: Dr. Ron Miller 2017
Dynamics of Climate Variability and Change: Dr. Alessandra Giannini and Dr. Lisa Goddard 2017

Guest Lecturer – Columbia University Irving Medical Center
Intro to Global and Population Health 2019, 2020

Teaching Assistant - The Johns Hopkins University 2011
Introduction to Environmental Engineering, Dr. Hedy Alavi.

PROGRAMMING AND MODELING LANGUAGES

• Python • MATLAB • R • ArcGIS • SQL

OUTREACH

Volunteer, 826 DC nonprofit writing workshop 2020
"Rewrite the stars" space writing camp

Co-organizer - Field trip to Lamont for Cayuga Center children 2019

Mentor - Secondary School Field Research Program, LDEO 2015, 2017
Internship program focused on diversity, equity, and inclusion

Citizen Teacher – Harlem Renaissance Leadership Academy
Semester-long Earth science course: A Tour of Earth's Natural Disasters 2015

Volunteer - BioBus. 2014-15
After school science programming for populations underrepresented in the sciences

Volunteer scientist - Big Green Theater Project, 2014
An annual eco-play writing program for elementary school children

Trip Leader - Engineers Without Borders, KZN South Africa 2010, 2011
Organized students and professional partners to work with rural community gardeners, local NGOs and the Department of Agriculture in KwaZulu-Natal

Project Coordinator and Classroom Lead - Art Brigade! 2009-2012
Tench Tilghman Elementary School and Carmelo Anthony Youth Development Center