

Christopher Bryan Skinner

Environmental, Earth and Atmospheric Sciences
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EDUCATION

Ph.D., Environmental Earth System Science, Stanford University, 2014.

Dissertation Title: *The Response of Regional Climate to Global Forcing: The Dynamics of Climate Change in West Africa.*

B.S., Atmospheric Science, Cornell University, 2008.

APPOINTMENTS

Assistant Professor, University of Massachusetts Lowell, 2019 -

Assistant Research Scientist, University of Michigan, 2017 - 2018

Turner Postdoc Fellow, University of Michigan, 2014 - 2017

PUBLICATIONS

Skinner CB, Poulsen CJ, Mankin JS (2018) Amplification of heat extremes by plant CO₂ physiological forcing. *Nature Communications*, doi:10.1038/s41467-018-03472-w.

Chadwick R, Douville H, **Skinner CB** (2017) Timeslice experiments for understanding regional climate projections: applications to the tropical hydrological cycle and European winter circulation. *Climate Dynamics*, doi:10.1007/s00382-016-3488-6.

Webb MJ, Andrews T, Bodas-Salcedo A, Bony S, Bretherton CS, Chadwick R, Chepfer H, Douville H, Good P, Kay JE, Klein SA, Marchand R, Medeiros B, Siebesma AP, **Skinner CB**, Stevens B, Tselioudis G, Tsushima Y, Watanabe M (2017) The Cloud Feedback Model Intercomparison Project (CFMIP) contribution to CMIP6. *Geoscientific Model Development Discussion*, 10(1), 359-384, doi:10.5194/gmd-10-359-2017.

Skinner CB, Poulsen CJ, Chadwick R, Diffenbaugh NS, Fiorella RP (2017) The role of plant CO₂ physiological forcing in shaping future daily-scale precipitation. *Journal of Climate*, 30, 2319-2340, doi:10.1175/JCLI-D-16-0603.1.

Skinner CB, Poulsen CJ (2016) The role of fall season tropical plumes in enhancing Saharan rainfall during the African Humid Period. *Geophysical Research Letters*, 43, 349-358, doi:10.1002/2015GL066318.

Horton DE, **Skinner CB**, Singh D, Diffenbaugh NS (2014) Occurrence and persistence of future atmospheric stagnation events. *Nature Climate Change* 4(8), 698-703.

Skinner CB, Diffenbaugh NS (2014) Projected changes in African easterly wave intensity and track in response to greenhouse forcing. *Proceedings of the National Academy of Sciences* 111, 6882-6887.

-- Highlighted article, Nowcast News and Notes, BAMS.

Skinner CB, Diffenbaugh NS (2013) The contribution of African easterly waves to monsoon precipitation in the CMIP3 ensemble. *Journal of Geophysical Research – Atmospheres* 118(9), 3590–3609.

Skinner CB, Ashfaq M, Diffenbaugh NS (2012) Influence of 21st century atmospheric and sea surface temperature forcing on West African climate. *Journal of Climate* 25(2), 527-542.

Ashfaq M, **Skinner CB**, Diffenbaugh NS (2010) Influence of SST biases on future climate change projections. *Climate Dynamics* 36(7-8), 1303-1319.

Skinner CB, DeGaetano A, Chabot B (2010) Implications of 21st century climate change on northeastern United States maple syrup production: impacts and adaptations. *Climatic Change* 100(3-4), 685-702.

AWARDS

Turner Postdoctoral Fellowship
Department of Earth and Environmental Sciences, University of Michigan

Graduate Student Award for Scholarly and Research Achievement
Department of Environmental Earth System Science, Stanford University

First Prize, Conference Poster Presentation
School of Earth Sciences Research Review, Stanford University

Centennial Teaching Assistant Award
School of Earth Sciences, Stanford University

Ross Fellowship
Purdue University

RESEARCH GRANTS

P2C2: Investigation of extratropical mechanisms, land-surface properties, and seasonal precipitation processes on Saharan rainfall and simulation of the African Humid Period, NSF Paleoclimate Program, \$330,950, 2016 - 2019.*

PRESENTATIONS

Oral Presentations

Skinner CB, The impact of CO₂-driven vegetation changes on wildfire risk, 2017 American Geophysical Union Fall Meeting, Dec 14, 2017, San Francisco, California.

Skinner CB, Does global warming cause hurricanes?, Lions Club International, Nov 30, 2017, Royal Oak, Michigan.

Skinner CB, The role of plants in shaping climate, Northwestern University, Oct 13, 2017, Evanston, Illinois.

Skinner CB, How plants shape weather in a high CO₂ world, 350 Southeast Michigan Meeting, May 2, 2017, Ann Arbor, Michigan.

Skinner CB, Exploring climate change projections from the ground up: how plants shape weather in a high CO₂ world, Smith Lecture Series, Earth and Environmental Sciences, University of Michigan, April 14, 2017, Ann Arbor, Michigan.

Skinner CB, Poulsen CJ, Amplification of heat extremes by CO₂ physiological forcing, 2017 American Meteorological Society Annual Meeting, Jan 22-26, 2017, Seattle, Washington.

Skinner CB, Chadwick R, Douville H, Diffenbaugh NS, A process-based understanding of regional climate responses to CO₂ forcing, CFMIP Meeting on Cloud Processes and Climate Feedbacks, Jun 8-11, 2015, Monterey, California.

Skinner CB, Response of regional climate to global forcing: The role of synoptic-scale weather systems in shaping climate change over West Africa, Turner Lecture Series, Earth and Environmental Sciences, University of Michigan, Feb 19, 2014, Ann Arbor, Michigan.

Skinner CB, Simulating African easterly waves in general circulation models, Atmosphere/Energy Program Seminar, Department of Civil and Environmental Engineering, Stanford University, Oct 15, 2013, Stanford, California.

Skinner CB, Diffenbaugh NS, African easterly waves in CMIP5: Response to enhanced radiative forcing and implications for Atlantic tropical cyclone activity, 4th International Summit on Hurricanes and Climate Change, June 13-18, 2013, Kos, Greece.

Skinner CB, Ashfaq M, Diffenbaugh NS, The influence of convective and land surface processes on the variability of the West African Monsoon, 2010 American Geophysical Union Fall Meeting, Dec 13-17, 2010, San Francisco, California.

Poster Presentations

Skinner CB, Touma D, Singh D, Poulsen CJ, The impact of rising CO₂ on the spatial footprint of extreme heat events, 2018 AGU Fall Meeting, Dec 10-14, 2018, Washington DC.

Skinner CB, Poulsen CJ, The role of CO₂ physiological forcing in driving future precipitation variability and precipitation extremes, 2015 AGU Fall Meeting, Dec 14-18, 2015, San Francisco, California.

Skinner CB, Poulsen CJ, The role of regional atmospheric circulation changes in shaping climate reorganization in Africa, 2014 AGU Fall Meeting, Dec 15-19, 2014, San Francisco, California.

Skinner CB, Diffenbaugh NS, The impact of projected changes in monsoon season circulation and African easterly waves on Saharan dust transport, 2013 AGU Fall Meeting, Dec 9-13, 2013, San Francisco, California.

Skinner CB, Diffenbaugh NS, African easterly waves in CMIP5: future changes for West African precipitation and Atlantic tropical cyclone activity, 2012 AGU Fall Meeting, Dec 3-7 2012, San Francisco, California.

Skinner CB, Diffenbaugh NS, The response of African easterly waves and associated precipitation to enhanced radiative forcing, 2011 AGU Fall Meeting, Dec 5-9, 2011, San Francisco, California.

Skinner CB, Ashfaq M, Diffenbaugh NS, High resolution climate modeling: a case study of West African summer climate, Department of Energy Office of Biological and Environmental Research Climate and Earth System Modeling PI Meeting, Sept 19-22, 2011, Washington, D.C.

Skinner CB, Ashfaq M, Diffenbaugh NS, The response of African easterly waves and associated precipitation to enhanced radiative forcing, African Weather and Climate Colloquium, July 25 - Aug 5, Boulder, Colorado.

Skinner CB, Ashfaq M, Diffenbaugh NS, The influence of convective and land surface processes on the West African Monsoon, 2011 Berkeley Atmospheric Sciences Center Symposium, Feb 11, 2011, Berkeley, California.

Skinner CB, Ashfaq M, Diffenbaugh NS, A quantification of GHG and SST forcing in West African climate change, 2009 AGU Fall Meeting, Dec 14-18, 2009, San Francisco, California.

Skinner CB, Ashfaq M, Diffenbaugh NS, A quantification of GHG and SST forcing in African climate change, 14th Annual CCSM Workshop, Jun 15-18, 2009, Breckenridge, Colorado.

TEACHING AND MENTORING EXPERIENCE

Co-Advisor, Senior Honors Thesis, Alexander Thompson, Department of Earth and Environmental Sciences, University of Michigan, 2014 - 2015.

Guest Lecturer, *Global Warming*, Department of Earth and Environmental Sciences, University of Michigan, 2017.

Guest Lecturer, *Climate and Climate Change*, Department of Earth and Environmental Sciences, University of Michigan, 2016.

Guest Lecturer, *Atmosphere, Ocean, and Climate Dynamics: The Atmospheric Circulation*, Department of Environmental Earth System Science, Stanford University, 2013 - 2014.

Guest Lecturer, *Earth System Dynamics*, Department of Environmental Earth System Science, Stanford University, 2010 - 2014.

Teaching Assistant, *Earth System Dynamics*, Department of Environmental Earth System Science, Stanford University, 2013.

Teaching Assistant, *Atmosphere, Ocean, and Climate Dynamics: The Atmospheric Circulation*, Department of Environmental Earth System Science, Stanford University, 2011, 2013.

Teaching Assistant, *Climate and Global Warming*, Department of Atmospheric Sciences, Cornell University, 2008.

WORK EXPERIENCE

Northeast Regional Climate Center, Research Assistant

Utilized climate model output to investigate the impact of projected temperature changes on the Northeast United States maple syrup industry, 2007.

Northeast Regional Climate Center, Official Weather Observer

Analyzed weather instrumentation and provided daily weather observations at the Game Farm Road Weather Station, Ithaca, NY, 2006 - 2007.

PROGRAMMING EXPERIENCE

Matlab, Python, Fortran, NCL, R

CLIMATE MODELING EXPERIENCE

NCAR Community Earth System Model (CESM)
ICTP Regional Climate Model (RegCM)

PUBLIC AND ACADEMIC SERVICE

Lions Club International

Presented a general-public talk on hurricanes and climate change at the Royal Oak, MI chapter, 2017.

350 South East Michigan

Presented a general-public talk on anthropogenic climate change at the local 350.org chapter, 2017.

University of Michigan Wolverine Pathways

Developed and taught a 3-day summer course on atmospheric science and launched a high-altitude weather balloon with high school students from Ypsilanti, MI, 2017.

Museum Science Communication Fellow

Developed inquiry-based hands-on exhibits at the University of Michigan Museum of Natural History to engage the public on climate change, 2016 - 2017.

University of Michigan Earth Camp

Developed atmospheric science curriculum and launched high-altitude weather balloons with underrepresented minority students from Detroit area high schools, 2016 - 2017.

Michigan Geophysical Union

Judged and provided feedback on undergraduate and graduate student presentations, 2015.

Cornell University Teach to Reach Program

Developed and taught meteorology and climate change curriculum, grades K-12, 2005 - 2008.

MEMBERSHIPS

American Geophysical Union, 2008 -

American Meteorological Society, 2008 -

* University of Michigan does not allow research fellows to be officially designated as PI/co-PIs.