

Elizabeth Maroon

Curriculum Vitae

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EDUCATION

Ph.D. Atmospheric Sciences 2013-2016

University of Washington, Advisors: Dargan Frierson and David Battisti

Dissertation: The Roles of Land and Orography on Precipitation and Ocean Circulation in Global Climate Models.

M.S. Atmospheric Sciences 2010-2013

University of Washington, Advisors: Dargan Frierson and David Battisti

Thesis: The location of tropical precipitation in idealized atmospheric general circulation models forced with Andes topography and surface heat fluxes

S.B. Physics 2006-2010

S.B. Earth, Atmospheric, and Planetary Sciences

Massachusetts Institute of Technology, Advisor: Raffaele Ferretti

Senior Thesis: Impact of Arctic cloud water and ice on cloud radiative forcing during the Arctic summer cloud-ocean study in August 2008.

Minor in Music.

RESEARCH EXPERIENCE

Project Scientist 2018-present

Oceanography Section, National Center for Atmospheric Research

Postdoctoral Fellow 2016-2018

Cooperative Institute for Research in Environmental Sciences, University of Colorado Boulder

Research Assistant 2010-2016

Department of Atmospheric Sciences, University of Washington

NOAA Hollings Scholar Intern Summer 2009

Earth Systems Research Labs, Boulder, CO

PUBLICATIONS

Maroon, E.A., J.E. Kay, and K. Karnauskas, 2018: Influence of the Atlantic meridional overturning circulation on the Northern Hemisphere surface temperature response to

radiative forcing. *J. Climate*. 31, 9207-9224, doi:10.1175/JCLI-D-17-0900.1

Hayes, A., E. Heery, E.A. Maroon, A. McLaskey and C. Stawitz, 2018: The role of scientific expertise in local adaptation to projected sea level rise. *Environ. Sci. Policy*, 87, 55-63, doi:10.1016/j.envsci.2018.05.012

Frey, W.R., Maroon, E.A., Pendergrass, A.G., and J.E. Kay, 2017: Do Southern Ocean Cloud Feedbacks Matter for 21st Century Warming? *Geophys. Res. Lett.* 44, 12,447-12,456, doi:10.1002/2017GL076339

Voigt, A., M. Biasutti, J. Scheff, J. Bader, S. Bordoni, F. Codron, R.D. Dixon, J. Jonas, S.M. Kang, N.P. Klingaman, R. Leung, J. Lu, B. Mapes, E.A. Maroon, S. McDermid, J.-y. Park, R. Roehrig, B.E.J. Rose, G.L. Russell, J. Seo, T. Toniazzo, H.-H. Wei, M. Yoshimori, L.R. Vargas Zeppetello, 2016: The tropical rain belts with an annual cycle and a continent model intercomparison project: TRACMIP. *J. Adv. Model. Earth Syst.*, 08, doi:10.1002/2016MS000748.

Maroon, E.A. and D.M.W. Frierson, 2016: The impact of a continent's longitudinal extent on tropical precipitation. *Geophys. Res. Lett.*, 43, 11,921-11,929.

Maroon, E.A., D.M.W. Frierson, S.M. Kang, and J. Scheff, 2016: The precipitation response to an idealized subtropical continent. *Journal of Climate*, 29, 4543-4564.

Maroon, E.A., D.M.W. Frierson and D.S. Battisti, 2015: The tropical precipitation response to Andes topography and ocean heat fluxes in an aquaplanet model. *Journal of Climate*, 28, 381-398.

Frierson, D.M.W., Y.-T. Hwang, N.S. Fučkar, R. Seager, S.M. Kang, A. Donohoe, E.A. Maroon, X. Liu and D.S. Battisti (2013), Contribution of ocean overturning circulation to tropical rainfall peak in the Northern Hemisphere. *Nature Geoscience*, 6, 940-944.

Fučkar, N.S., S.-P. Xie, R. Farneti, E.A. Maroon, and D.M.W. Frierson, (2013), Influence of the extratropical ocean circulation on the intertropical convergence zone in an idealized coupled general circulation model. *Journal of Climate*, 28, 381-398.

Submitted/In Preparation:

Karnauskas, K.B., E.A. Maroon, L. Zhang, R. Murtugudde, J. Vialard, T. Izumo, P. Molnar, and E. Mittelstaedt: Atmospheric response to Galápagos upwelling: Implications for climate modeling. *In preparation*.

Maroon, E.A., D.S. Battisti, and D.M.W. Frierson: The influence of the Rocky Mountains on the ocean's meridional overturning circulation. *In preparation*.

Fučkar, N.S., E.A. Maroon, D.M.W. Frierson and R. Farneti, in preparation: On the competing effects of tropical and extratropical sources of the ITCZ asymmetry.

TEACHING EXPERIENCE

Jupyter Notebook Development on Data Analysis
University of Colorado Boulder

Summer 2017

Assisted Professor Kay with course development for her Objective Data Analysis class by developing python labs for in-class use. Developed Jupyter notebooks on spectral analysis,

empirical orthogonal functions, auto-regression/red noise, and filtering.

- Guest Lecturing** 2016-present
University of Colorado Boulder
Guest lectured for *Our Changing Environment* (CU-ATOC 1060), *Introduction to Oceanography* (CU-ATOC 3070), *Physical Oceanography and Climate* (CU-ATOC 4730).
- Climate Communication Certificate** 2015-2016
Program on Climate Change, University of Washington
Developed a climate science and policy public lecture with Alison Saperstein (UW Evans School) and presented it to King County libraries and King County Natural Resources Dept.
- Instructor, ATM S 290: The Weather Challenge** Fall 2014, Fall 2015
Department of Atmospheric Sciences
- Grader, ATM S 321: The Science of Climate** Spring 2013
Department of Atmospheric Sciences
- Teaching Assistant, ATM S 101: Weather** Winter 2012
Department of Atmospheric Sciences, University of Washington
- Grader, 8.044: Statistical Physics I** Spring 2010
Physics Department, MIT
- Undergraduate Teaching Assistant, 12.310: Introduction to Weather Forecasting** January 2008
Department of Earth, Atmospheric, and Planetary Sciences, MIT

AWARDS AND FELLOWSHIPS

- CIRES Visiting Postdoctoral Fellowship** Fall 2016-present
- AGU Outstanding Student Paper Award** December 2014
- Integrative Graduate Education and Research Traineeship (IGERT) Program on Ocean Change Traineeship** 2013-2015
- UW Atmospheric Sciences Forecast Contest Winner** 2013
- NDSEG Fellowship** 2010-2013
- UW Atmospheric Sciences Caldwell Scholarship** Fall 2010
- Christopher Goetze Prize for undergraduate research from MIT Earth, Atmospheric, and Planetary Sciences** May 2010
- NOAA Hollings Scholarship** 2008-2010
- Charles C. Byrd Scholarship** 2006-2010
- National Merit Scholarship** 2006-2010

SERVICE AND OUTREACH

Reviewer for Journal of Climate, Geophysical Research Letters, Climate Dynamics, Journal of Atmospheric Sciences, Earth System Dynamics, Scientific Reports

Organized “The Future of Skiing: the Science behind the Snow” science panel with Protect our Winters and Arapahoe Basin Ski Resort April 2017, 2018

Graduate Climate Conference 2014 Planning Committee 2013-2014
Advertising Manager, Climate Dynamics Session Chair, Abstract Committee, Photographer

Atmospheric Sciences Grad Student Rep. to the Faculty 2012-2014
Attended department faculty meetings and organized graduate student meetings and committees

UW WxChallenge Team Manager & Forecaster 2011-2016
Organized team meetings, coordinated with WxChallenge (2011-14), calculated climatologies, mentored undergraduate forecasters, Category 2 winner for Laramie, WY (2015)

UW Program on Climate Change Outreach Volunteer Spring 2014-2016
Climate science talks for libraries, government agencies, religious groups, and political organizations

UW AMS Student Chapter Member Fall 2011-2016
Mentored undergraduates, organized forecasting group for OAR Northwest long-distance rowing expeditions

UW Atmospheric Sciences Outreach Club Volunteer Fall 2010-2016
Climate and weather demonstrations for field trips, science nights, and other public outreach events; YouTube videos on weather and climate concepts, <https://www.youtube.com/channel/UCbEmigxpSICZIsdctX46KMw>

MIT Weather and Climate Club Fall 2007–Spring 2010
Attended events/lectures, wrote forecasts for the MIT newspaper *The Tech*, forecasted for the 2009 Head of the Charles Regatta

SCIENTIFIC PRESENTATIONS

Maroon, E.A., S.G. Yeager and G. Danabasoglu, Sources of skill in decadal predictions of Sahel precipitation (July 2018). *WCRP Grand Challenge on Clouds, Circulation and Climate Sensitivity: 2nd Meeting on Monsoons and Tropical Rain Belts, ICTP, Trieste, Italy*, oral presentation.

Maroon, E.A., J.E. Kay and K.B. Karnauskas, The influence of variability in AMOC strength on Northern Hemisphere surface temperature (February 2018). *Ocean Sciences Meeting*, poster.

Maroon, E.A., J.E. Kay and K.B. Karnauskas, How does the Atlantic Meridional Overturning Circulation affect global surface temperature (July 2017). *NOAA, Physical*

Sciences Division seminar.

Maroon, E.A., J.E. Kay and K.B. Karnauskas, The influence of the Atlantic Meridional Overturning Circulation on global surface temperature (May 2017). *US CLIVAR AMOC Science team meeting*, oral presentation.

Maroon, E.A., D.S. Battisti, and D.M.W. Frierson, The influence of the Rocky Mountains on the ocean's Meridional Overturning Circulation (May 2017). *University of Colorado - Boulder*, Cryospheric and Polar Processes seminar.

Maroon, E.A., D.S. Battisti, and D.M.W. Frierson, The influence of the Rocky Mountains on the ocean's Meridional Overturning Circulation (April 2017). *NCAR*, Climate and Global Dynamics seminar.

Maroon, E.A. and D.S. Battisti, The role of Rocky Mountain orography on the oceanic meridional overturning circulation (December 2016). *AGU Annual Meeting*, poster.

Maroon, E.A., The role of Rocky Mountain orography on the oceanic meridional overturning circulation (June 2016). *University of Washington*, Doctoral defense, Atmospheric Sciences Colloquium.

Maroon, E.A., D.M.W. Frierson, S. Kang, J. Scheff, and D.S. Battisti, What Affects the Location of Tropical Precipitation? An Idealized Modeling Perspective (December 2015). *AGU Annual Meeting, San Francisco, CA*, Invited talk.

Maroon, E.A., D.M.W. Frierson, S. Kang, and J. Scheff, The precipitation response to idealized subtropical continents (December 2015). *University of Washington*, Atmosphere and climate dynamics seminar.

Maroon, E.A., D.M.W. Frierson, S. Kang, and J. Scheff, Tropical precipitation in GCM simulations with an idealized subtropical continent (September 2015). *Monsoon and ITCZ workshop, Columbia University, New York, NY*, oral presentation.

Maroon, E.A., D.M.W. Frierson, S. Kang, and J. Scheff, The influence of a single northern hemisphere continent on tropical precipitation and climate in idealized GCM experiments (December 2014). *AGU Annual Meeting, San Francisco, CA*, poster, Outstanding Student Paper Award.

Maroon, E.A., D.M.W. Frierson, S. Kang, and J. Scheff, The tropical precipitation response to a one-hemisphere continent (October 2014). *Graduate Climate Conference, Seattle, WA*, poster.

Maroon, E.A., Introduction to the Climate Dynamics Session (October 2014). *Graduate Climate Conference, Seattle, WA*, oral presentation.

Maroon, E.A., D.M.W. Frierson, D.S. Battisti, and N.S. Fučkar, The impact of the AMOC and Andes topography on the location of tropical precipitation (September 2014). *2014 US AMOC Science Team Meeting, Seattle, WA*, poster.

Maroon, E.A., D.M.W. Frierson, D.S. Battisti, and N.S. Fučkar, The influence of Andes topography and ocean circulation on the location of tropical precipitation (June 2014). *The Latsis Symposium 2014: Atmospheres and Climate Dynamics: From Clouds to Global*

Circulations, Zurich, Switzerland, poster.

Maroon, E.A., D. M. W. Frierson, and D.S. Battisti, Why is the ITCZ in the Northern Hemisphere? The role of the Andes and Surface Heat Fluxes in GCMs (November 2013). *SUNY Albany, seminar.*

Maroon, E.A., D.M.W. Frierson, and D.S. Battisti, Why is the ITCZ in the Northern Hemisphere? The role of topography and ocean heat fluxes (October 2013). *Graduate Climate Conference, Woods Hole, MA, poster.*

Maroon, E.A., D.M.W. Frierson, and D.S. Battisti, Why is the ITCZ in the Northern Hemisphere? The role of the Andes and Surface Heat Fluxes in a hierarchy of models (October 2013). *University of Washington, Masters defense, Atmosphere and climate dynamics seminar.*

Maroon, E.A., D.M.W. Frierson, D.S. Battisti, and N.S. Fučkar, What influences the location of the ITCZ? A collection of idealized modeling studies (October 2012). *Graduate Climate Conference, Seattle, WA, poster.*

Maroon, E.A., M. Shupe, A. Solomon, and O. Persson, The Impact of Liquid Water and Ice in Arctic Clouds on Cloud Radiative Forcing and the Surface Energy Budget (January 2010). *American Meteorological Society Student Conference, Atlanta, GA, poster.*

MEMBERSHIPS

American Meteorological Society, 2009-present
American Geophysical Union, 2013-present

SKILLS

Computing Python, MATLAB, Fortran, HTML, CSS, L^AT_EX, Java
Hobbies Hiking, running, skiing, jam-making, classical piano