

## Karen Aline McKinnon

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CONTACT INFORMATION	Mathematical Sciences Building 8967 520 Portola Plaza Los Angeles, CA 90095	karen@stat.ucla.edu +1 310 794 5452 <a href="https://karenamckinnon.github.io/">https://karenamckinnon.github.io/</a>
RESEARCH INTERESTS	My research focuses on quantifying, modeling, and understanding climate variability, with a focus on (1) the development and application of appropriate and novel statistical methods, (2) extreme events, and (3) connections to human and biological impacts. My most recent work is on understanding the origin and implications of internal variability within the climate system, as well as modeling and predicting heat events.	
EDUCATION	<b>Harvard University</b> , Cambridge, MA Ph.D. in Earth and Planetary Science (2015) <i>Understanding and predicting temperature variability in the observational record</i> Secondary field in Computational Science and Engineering (2015)  <b>Harvard University</b> , Cambridge, MA M.A. in Earth and Planetary Science (2014)  <b>Victoria University</b> , Wellington, New Zealand M.Sc in Geophysics, with Distinction (2011) <i>The Role of Climate and Bed Topography on the Evolution of the Tasman Glacier Since the Last Glacial Maximum</i>  <b>Harvard University</b> , Cambridge, MA B.A. in Earth and Planetary Science, minor in Mathematical Sciences, summa cum laude (2010)	
APPOINTMENTS	<b>University of California, Los Angeles</b> , Los Angeles, CA Department of Statistics and Institute of the Environment and Sustainability <i>Assistant Professor</i>	<b>2018 –</b>
	<b>Descartes Labs</b> , Santa Fe, NM <i>Applied Scientist</i>	<b>2017 – 2018</b>
	<b>National Center for Atmospheric Research</b> , Boulder, CO Division of Climate and Global Dynamics <i>Advanced Study Program post-doctoral fellow</i>	<b>2015 – 2017</b>
	<b>Harvard University</b> , Cambridge, MA Department of Earth and Planetary Science <i>Post-doctoral fellow</i>	<b>2015</b>
GRANTS AND FELLOWSHIPS	NCAR Advanced Study Program Postdoctoral Fellowship <i>Bridging the weather-climate gap for extremes</i>	<b>2015</b>
	NSF Atmospheric and Geospace Sciences Postdoctoral Fellowship (declined)	<b>2015</b>
	NASA Earth and Space Science Fellowship <i>An examination of Earth's seasonal heat budget</i>	<b>2014</b>
	NSF Graduate Research Fellowship <i>The climate sensitivity continuum</i>	<b>2011</b>

	Harvard Smith Family Graduate Fellowship	2011
AWARDS	Editors' Citation for Excellence in Refereeing for Geophysical Research Letters	2016
	Derek Bok Center Certificate of Distinction in Teaching	2011
PUBLICATIONS	Simpson, I.R., C. Deser, <b>K.A. McKinnon</b> , and E.A. Barnes. Modelled and observed multi-decadal variability in the North Atlantic jet stream and its connection to Sea Surface Temperatures. <i>Journal of Climate</i> , 31 (20), 8313-8338.	
	<b>McKinnon, K.A.</b> and C. Deser. Internal variability and regional climate trends in an Observational Large Ensemble. <i>Journal of Climate</i> , 31 (17), 6783-6802.	
	Deser, C., I.R. Simpson, A.S. Phillips, and <b>K.A. McKinnon</b> . How well do we know ENSO's climate impacts over North America, and how do we evaluate models accordingly? <i>Journal of Climate</i> , doi:10.1175/JCLI-D-17-0783.1.	
	<b>McKinnon, K.A.</b> , A. Poppick, E. Dunn-Sigouin, and C. Deser. An 'Observational Large Ensemble' to compare observed and modeled temperature trend uncertainty due to internal variability. <i>Journal of Climate</i> , 30 (19), 7585-7598.	
	Deser, C., I. Simpson, <b>K.A. McKinnon</b> , and A.S. Phillips. The Northern Hemisphere extratropical atmospheric circulation response to ENSO: How well do we know it and how do we evaluate models accordingly? <i>Journal of Climate</i> , 30 (13), 5059-5082.	
	Rhines, A., <b>K.A. McKinnon</b> , M.P. Tingley, and P. Huybers, 2016. Seasonally Resolved Distributional Trends of North American Temperatures Show Contraction of Winter Variability. <i>Journal of Climate</i> , 30 (3), 1139-1157.	
	<b>McKinnon, K.A.</b> and P. Huybers, 2016. Seasonal constraints on inferred planetary heat content. <i>Geophysical Research Letters</i> 43 (20), 10955-10964.	
	<b>McKinnon, K.A.</b> , A. Rhines, M.P. Tingley and P. Huybers, 2016. The changing shape of Northern Hemisphere summer temperature distributions. <i>Journal of Geophysical Research: Atmospheres</i> , 121 (15), 8849-8868.	
	<b>McKinnon, K.A.</b> , A. Rhines, M.P. Tingley and P. Huybers, 2016. Long-lead predictions of Eastern US hot days from Pacific sea surface temperatures. <i>Nature Geoscience</i> , 9, 389-394.	
	<ul style="list-style-type: none"> <li>• Media coverage including the New York Times, Associated Press, BBC, PBS, Climate Central, Christian Science Monitor, Weather Channel, Fox News</li> </ul>	
	Mueller, N.D., E.E. Butler, <b>K.A. McKinnon</b> , A. Rhines, M. Tingley, N.M. Holbrook and P. Huybers, 2015. Cooling of US Midwest summer temperature extremes from cropland intensification. <i>Nature Climate Change</i> , 6, 317-322.	
	Rhines, A., M.P. Tingley, <b>K.A. McKinnon</b> and P. Huybers, 2015. Decoding the precision of historical temperature observations. <i>Quarterly Journal of the Royal Meteorological Society</i> , 141 (693), 2923-2933.	
	<ul style="list-style-type: none"> <li>• Featured research article</li> </ul>	
	<b>McKinnon, K.A.</b> and P. Huybers, 2014. On using the seasonal cycle to interpret extratropical temperature changes since 1950. <i>Geophysical Research Letters</i> , 41 (13), 4676-4684.	
	Huybers, P., <b>K.A. McKinnon</b> , A. Rhines and M. Tingley, 2014. U.S. daily temperatures: the meaning of extremes in the context of non-normality. <i>Journal of Climate</i> , 27 (19) 7368-7384.	

**McKinnon, K.A.**, A.R. Stine and P. Huybers, 2013. The spatial structure of the seasonal cycle in surface temperature: amplitude, phase, and Lagrangian history. *Journal of Climate*, 26 (20), 7852-7862.

**McKinnon, K.A.**, A.N. Mackintosh, B.M. Anderson and D.J.A. Barrell, 2012. The influence of sub-glacial bed evolution on ice extent: a model-based evaluation of the Last Glacial Maximum Pukaki glacier, New Zealand. *Quaternary Science Reviews*, 57, 46-57.

#### TEACHING

- Modern Environmental Statistics (Winter quarter 2019)
- IoES Senior Practicum (Winter-Spring 2019)
- Teaching assistant: Global warming debates; The fluid earth: Oceans, Atmosphere, Climate, and Environment; Ordinary and partial differential equations; Introduction to Functions and Calculus (all courses at Harvard University)

#### INVITED TALKS

“Climate science in a changing climate”, Distinguished Women in Statistics lecture hosted by the UCLA Society for Women in Statistics, Los Angeles, CA, January 2019.

“Temperature variability in a changing climate: non-normality, uncertainty, and predictability”, Caltech ESE seminar, Pasadena, CA, January 2019.

“Internal variability, uncertainty, and the Observational Large Ensemble”, Harvard Earth and Planetary Sciences ClimaTea, Cambridge, MA, April 2018.

“Observational constraints on the contribution of internal variability to climate trends”, NCAR CESM tutorial, Boulder, CO, August 2017.

“The signal and the noise: forced and unforced changes in temperature distributions and the probability of extremes”, American Physical Society Annual Meeting, New Orleans, LA, March 2017.

“Sources of subseasonal predictability of Eastern US summer temperatures”, COLA lecture series, George Mason University, July 2016.

“Forced and unforced changes in the shape of summer temperature distributions”, Uncertainty and Causality Assessment in Modeling Extreme and Rare Events workshop, NCAR, April 2016.

“Predicting summer extremes”, Data analysis and extremes workshop, Harvard University, April 2016.

“Daily temperature distributions and the probability of extremes”, International Detection and Attribution Group meeting, NCAR, February 2016.

“Subseasonal predictions of Eastern US hot days from the mid-latitude Pacific”, Institute for Mathematics Applied to Geosciences (IMAGe) Seminar, NCAR, January 2016.

“Foretelling Eastern US heat events from the mid-latitude Pacific”, MIT Sack Lunch Seminar, December 2014.

#### ACADEMIC PRESENTATIONS

“Regional climate variability and the Observational Large Ensemble”, Talk, AGU Fall Meeting, December 2018.

“Observational constraints on the contribution of internal variability to recent climate trends”, Talk, Climate Variability and Change Working Group meeting, March 2017.

“Subseasonal predictions of Eastern US hot weather: the roles of the ocean and land”, Poster, AGU Fall Meeting, December 2016.

“The changing shape of summer temperature distributions”, Talk, NCAR CESM workshop, June 2016.

“Changes in the shape of summer temperature distributions and the probability of extremes”, Talk, Climate Variability and Change Working Group meeting, February 2016.

“Changes in the Full Distribution of Daily Temperatures with Implications for Extreme Events”, Poster, AGU Fall Meeting, December 2015.

“Understanding and predicting temperature variability in the observational record”, PhD defense, Harvard University, May 2015.

“Quantifying and predicting extremes in Eastern US temperature”, Poster, AGU Fall Meeting, December 2014.

“The relationship between Pacific SSTs and Northeastern US heat waves”, Talk, 4th International Workshop on Climate Informatics, September 2014.

“Feedback strengths estimated from observations at seasonal and decadal timescales”, Talk, AGU Fall Meeting, December 2013.

“On oceanic influence and surface temperature variability and change: from the seasonal cycle to transient warming”, Talk, Graduate Climate Conference, November 2013.

“The spatial pattern of temperature change”, Talk, AGU Fall Meeting, December 2012.

“The fingerprint of ocean influence on seasonal and interannual temperature change”, Poster, Third Santa Fe Conference on Global and Regional Climate Change, October 2011.

“Tasman Glacier, New Zealand: LGM climate reconstructions and bed overdeepenings”, Talk, INQUA Conference, July 2011.

“Climatic and non-climatic influences on the Tasman Glacier extent”, Talk, Snow and Ice Research Group Annual Meeting, February 2011.

“Are we loading the dice? Climate change and the 2001 Pacific Northwest Drought”, Talk, AGU Fall Meeting, December 2009.

#### OTHER PRESENTATIONS

New Mexico Women in Technology keynote address, March 2018.

“Extreme weather: causes, effects, and connections with climate”, Science in the News public lecture series, November 2013.

#### WORKSHOP ATTENDANCE

Statistical Methods for Atmospheric and Oceanic Sciences (STATMOS)/Statistical and Applied Mathematical Sciences Institute (SAMSI) Workshop on Climate Statistics, NCAR, August 2017.

Rosbypalooza (Climate meets statistics), University of Chicago, July 2016.

#### LEADERSHIP AND AND SERVICE

Member of the US CLIVAR Large Ensemble working group

Member of the Scientific Organizing Committee for the Large Ensemble Workshop (July 2019)

Center for Diverse Leadership in Science (UCLA) faculty fellow

Reviewer for the National Science Foundation, *Nature Geoscience*, *Nature Communications*, *GRL*, *Journal of Climate*, *Climate Dynamics*, *BAMS*, *Weather and Climate Extremes*, *JAMES*, *Atmospheric Research*, *Atmospheric Science Letters*, *Nonlinear Processes in Geophysics*

**Updated February 6, 2019**