

Jason C. Furtado

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University of Oklahoma School of Meteorology
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EDUCATION

GEORGIA INSTITUTE OF TECHNOLOGY

Ph.D. - Earth and Atmospheric Sciences

Atlanta, GA
December 2010

- **Dissertation Title:** On the Uncertainties and Dynamics of Pacific Interannual and Decadal Climate Variability and Climate Change
- **Thesis Advisor:** Dr. Emanuele Di Lorenzo

Graduate Certificate in Public Policy – Concentration in Environmental Policy

September 2009

COLORADO STATE UNIVERSITY

M.S. - Atmospheric Science

Fort Collins, CO
August 2005

- **Thesis Title:** On the Balanced Response of the Troposphere to Variability in the Extratropical Stratosphere
- **Thesis Advisor:** Dr. David W. J. Thompson

LYNDON STATE COLLEGE

B.S. - Meteorology & B.S. – Mathematics

Lyndonville, VT
May 2002

PROFESSIONAL EXPERIENCE

UNIVERSITY OF OKLAHOMA

Assistant Professor, School of Meteorology

Norman, OK
2015 – Present

- **Courses Taught**
 - METR 1014 – Introduction to Weather and Climate (*Undergraduate*)
 - METR 4322 – Physical Meteorology III: Radiation and Climate (*Undergraduate*)
 - METR 5433 - Advanced Statistical Meteorology (*Graduate*)
- **Current Graduate Students**
 - Matthew Green (M.S., 2016 –)
 - Yujia You (M.S., 2016 –)
- **Supported Undergraduate Research Assistants**
 - Clarice Dyson (2016 – 2017)
- **Graduate Committees, Current Member**
 - Ryan Lagerquist (Ph.D.) (2017 –)
 - Paul Flanagan (Ph.D.) (2016 –)
 - Allison Brannon (M.S.) (2016 –)
 - Erik Loken (M.S.) (2016 –)
- **Graduate Committees, Past Member**
 - James Danco (M.S.) (2016 – 2017)

Affiliate Faculty, South Central Climate Science Center

2016 – Present

BOSTON UNIVERSITY

Lecturer, Department of Earth & Environment

Boston, MA

2014 – 2015

- **Courses Taught**

- GE310 – Climate and the Environment (*Undergraduate*)
- GE507 – Dynamical Oceanography (*Undergraduate/Graduate*)

ATMOSPHERIC AND ENVIRONMENTAL RESEARCH, INC.

Staff Scientist

Lexington, MA

2011 – 2015

- Researching large-scale climate dynamics.
- Conducting interdisciplinary, client-driven weather/climate research projects.
- Developing and managing weather forecast products for clients.
- Co-authoring blog series on the sub-seasonal NH climate variability.
- Presenting research results in peer-reviewed journals and at conferences.

PRIVATE ACADEMIC TUTORING

- Science, math and SAT prep for high school and college students

2005 – 2012

GEORGIA INSTITUTE OF TECHNOLOGY

Graduate Research Assistant

- Studied Pacific decadal variability and associated dynamics in observations, targeted modeling experiments, and existing coupled climate model output.

Atlanta, GA

2005 – 2010

Graduate Teaching Assistant

- Advanced Environmental Data Analysis (*Graduate*) (Fall 2008, 2010)
- Introduction to Environmental Science (*Undergraduate Honors*) (Fall 2007)

2007 – 2010

Guest Lecturer, Energy, Environment, and the Energy Cycle

Spring 2008

Georgia Tech Athletics Weather Forecaster

- Provided forecasts and live weather monitoring for NCAA games.

2008 – 2010

Georgia Tech Athletic Association Tutor

- Held one-on-one and group tutoring sessions with student athletes in mathematics.

2005 – 2006

COLORADO STATE UNIVERSITY

Graduate Research Assistant

- Investigated relationships between extratropical stratospheric variability and tropospheric weather and climate patterns using a simple 2-D model.

Fort Collins, CO

2002 – 2005

Graduate Teaching Assistant

- General Circulation of the Atmosphere (*Graduate*)

Spring 2004

LYNDON STATE COLLEGE

Math Lab Tutor

Lyndonville, VT

1999 – 2002

REFEREED PUBLICATIONS

IN PREP

Angst, M., B. Elmer, B. Newman, and **J. C. Furtado**, 2017: The association between El Niño event intensity and North American winter weather. *Geophys. Res. Lett.*, in prep.

Furtado, J. C., J. Cohen, E. Becker, and D. Collins, 2017: Evaluation of the forecast skill of sudden stratospheric warming events in the NMME Phase-2 Models. *Climate Dyn.*, in prep.

You, Y., and **J. C. Furtado**, 2017: The South Pacific Meridional Mode and its role in interannual and decadal Pacific decadal variability. *J. Climate*, in prep.

UNDER REVIEW

You, Y., and **J. C. Furtado**, 2017: The role of South Pacific atmospheric variability in the development of different types of ENSO. *Geophys. Res. Lett.*, in revision.

PUBLISHED

20. Anderson, B. T., **J. C. Furtado**, D. J. S. Gianotti, and E. Di Lorenzo, 2017: Tracking the Pacific Decadal Precession. *J. Geophys. Res.*, 122, 3214–3227, doi:10.1002/2016JD02596.
19. Anderson, B. T., D. J. S. Gianotti, G. Salvucci, and **J. C. Furtado**, 2016: Dominant timescales of potentially predictable precipitation variations across the continental United States. *J. Climate*, 29, 8881–8897, doi: 10.1175/JCLI-D-15-0635.1.
18. **Furtado, J. C.**, J. Cohen, and E. Tziperman, 2016: The combined influences of autumnal snow and sea ice on Northern Hemisphere winters. *Geophys. Res. Lett.*, 43, doi: 10.1002/2016GL068108.
17. Anderson, B. T., D. J. S. Gianotti, **J. C. Furtado**, and E. Di Lorenzo, 2016: A decadal precession of atmospheric pressures over the North Pacific. *Geophys. Res. Lett.*, 42, doi: 10.1002/2016GL068206.
16. Di Lorenzo, E., G. Liguori, N. Schneider, **J. C. Furtado**, B. T. Anderson, and M. A. Alexander, 2015: ENSO and meridional modes: A null hypothesis for Pacific climate variability, *Geophys. Res. Lett.*, **42**, 9440 – 9448.
15. **Furtado, J. C.**, J. L. Cohen, A. H. Butler, E. E. Riddle, and A. Kumar, 2015: Eurasian snow cover variability and links to winter climate in the CMIP5 models. *Climate Dyn.*, **45**, 2591 – 2605.
14. Cohen, J., J. A. Screen, **J. C. Furtado**, M. Barlow, D. Whittleston, D. Coumou, J. Francis, K. Dethloff, D. Entekhabi, J. Overland, and J. E. Jones, 2014: The relationship between recent Arctic Amplification and extreme mid-latitude weather. *Nature Geoscience*, **7**, 627 – 637.
13. Cohen, J., **J. C. Furtado**, J. Jones, M. Barlow, D. Whittleston, and D. Entekhabi, 2014: Linking Siberian snow cover to precursors of stratospheric variability. *J. Climate*, **27**, 5422 – 5432.
12. Di Lorenzo, E., V. Combes, J. E. Keister, T. P. Strub, A. C. Thomas, P. J. S. Franks, M. D. Ohman, **J. C. Furtado**, A. Bracco, S. J. Bograd, W. T. Peterson, F. B. Schwing, S. Chiba, B. Taguchi, S. Hormazabal, and C. Parada, 2013: Synthesis of Pacific Ocean climate & ecosystems dynamics. *Oceanography*, **26**, 68 – 81, <http://dx.doi.org/10.5670/oceanog.2013.76>.
11. Cohen, J. L., J. Jones, **J. C. Furtado**, and E. Tziperman, 2013: Warm Arctic, cold continents: A common pattern related to Arctic sea ice melt, snow advance, and extreme winter weather. *Oceanography*, **26**, <http://dx.doi.org/10.5670/oceanog.2013.70>.
10. Anderson, B. T., **J. C. Furtado**, K. M. Cobb and E. Di Lorenzo, 2013: Extratropical forcing of El Niño/Southern Oscillation asymmetry. *Geophys. Res. Lett.*, **40**, 4916 – 4921.
9. Riddle, E. E., A. H. Butler, **J. C. Furtado**, J. L. Cohen, and A. Kumar, 2013: CFSv2 ensemble prediction of the wintertime Arctic Oscillation. *Climate Dyn.*, **41**, 1099 – 1116.
8. **Furtado, J. C.**, E. Di Lorenzo, B. T. Anderson, and N. Schneider, 2012: Linkages between the North Pacific Oscillation and central tropical Pacific SSTs at low frequencies. *Climate Dyn.*, **39**, 2833 – 2846.
7. Cohen, J., **J. C. Furtado**, M. A. Barlow, V. A. Alexeev, and J. C. Cherry, 2012: Asymmetric seasonal temperature trends. *Geophys. Res. Lett.*, **39**, L04705, doi: 10.1029/2011GL050582.
6. Cohen, J., **J. C. Furtado**, M. A. Barlow, V. A. Alexeev, and J. C. Cherry, 2012: Arctic warming, increasing

snow cover, and widespread boreal winter cooling. *Env. Res. Lett.*, **7**, 014007, doi: 10.1088/1748-9326/7/1/014007.

5. **Furtado, J. C.**, and E. Di Lorenzo, 2011: Pacific climate variability in IPCC coupled climate models. In PICES Scientific Report No. 40: Report of Working Group 20 on Evaluations of Climate Change Projections, 165 pp.
4. **Furtado, J. C.**, E. Di Lorenzo, N. Schneider, and N. Bond 2011: North Pacific decadal variability and climate change in the IPCC AR4 models. *J. Climate*, **24**, 3049 – 3067.
3. Di Lorenzo, E., K. M. Cobb, **J. C. Furtado**, N. Schneider, B. Anderson, A. Bracco, M. A. Alexander, and D. Vimont, 2010: Central Pacific El Niño and decadal climate change in the North Pacific. *Nature Geoscience*, **3**, 762 – 765
2. **Furtado, J. C.**, E. Di Lorenzo, K. M. Cobb, and A. Bracco, 2009: Paleoclimate reconstructions of tropical sea surface temperatures from precipitation proxies: Methods, uncertainties and nonstationarity. *J. Climate*, **22**, 1104 – 1123.
1. Thompson, D. W. J., **J. C. Furtado**, and T. G. Shepherd, 2006: On the tropospheric response to anomalous stratospheric wave drag and radiative heating. *J. Atmos. Sci.*, **63**, 2616 – 2629.

OTHER CONTRIBUTIONS

Cohen, J. L., and **J. C. Furtado**, 2015: “How climate change may be producing more blockbuster snowstorms.” *Capital Weather Gang / The Washington Post*. 9 March 2015

CONFERENCE, WORKSHOP, & OTHER PRESENTATIONS

NOAA MAPP Seminar Series	February 2017
97 th Annual Meeting of the American Meteorological Society	January 2017
Department of Environmental Sciences Colloquium, University of Virginia (Invited)	November 2016
SCENARIO Workshop, University of Reading, Reading, UK	June 2016
4th Annual South Central Climate Science Center Workshop, Fort Worth, TX	November 2015
National Weather Center Colloquium, OU School of Meteorology (Invited)	March 2015
2013 Fall Meeting of the American Geophysical Union, San Francisco, CA	December 2013
2012 Fall Meeting of the American Geophysical Union, San Francisco, CA	December 2012
37 th NOAA Climate Diagnostics and Prediction Workshop, Fort Collins, CO	October 2012
NOAA Climate Prediction Center, Camp Springs, MD (Invited)	February 2012
WCRP Open Science Conference, Denver, CO	October 2011
2010 Fall Meeting of the American Geophysical Union, San Francisco, CA	December 2010
90 th Annual Meeting of the American Meteorological Society, Atlanta, GA	January 2010
Eastern Pacific Ocean Conference, Fallen Leaf Lake, CA	September 2008
IUGG XXIV 2007, Perugia, Italy	July 2007
Advanced Study Program “The Art of Climate Modeling”, Boulder, CO	June 2006
NASA/GISS, New York, NY (Invited)	March 2005

CURRENT RESEARCH GRANTS

- (1) **Co-PI** - PREEVENTS Track 2: Collaborative Research: Developing a Framework for Seamless Prediction of Sub-Seasonal to Seasonal Extreme Precipitation Events in the United States. NSF - 07/01/17 - 06/30/22. \$1,842,562.
- (2) **PI** - Investigating the Underlying Mechanisms and Predictability of the MJO - NAM Linkage in the NMME Phase-2 Models. NOAA - 07/01/16 - 06/30/19, \$185,543.

- (3) **PI** - Analysis of Oklahoma Transportation Infrastructure Investments for Climate Change Adaptation. Southern Plains Transportation Center - 07/01/16 – 06/30/17, \$12,60.0
- (4) **PI** - Evaluating Sudden Stratospheric Warmings and NAM Predictability in the NMME Phase-2 System. NOAA - 08/01/15 – 07/31/16, \$59,118.

PAST RESEARCH GRANTS

- (1) **Co-I** - Combined Influence of Snow Cover and North African/Mediterranean Temperature Precipitation. NSF - 06/1/13 - 05/31/16, \$234,449.
- (2) **Co-I** - Implementation and Validation of Solar Variability in Radiation Code RRTMG_SW. NASA - 08/01/13 – 07/31/16, \$215,926.00.
- (3) **Co-I** - Identifying Mechanisms of AMOC Variability in ECCO State Estimates and CMIP5 Models. NOAA – 08/01/13 – 07/31/16, \$310,659.00.

AWARDS & HONORS

2015 AGU Editor's Citation for Excellence for Refereeing - *Geophysical Research Letters* • AER 2014 Employee of the Year • Verisk Climate 2014 Team of the Year • Georgia Tech Presidential Fellowship • Georgia Tech EAS Chair Service Award • Top National Forecaster, National Collegiate Weather Forecasting Contest / WxChallenge - Salt Lake City, UT (2006), Pensacola, FL (2006), Tucson, AZ (2008) • Colorado State 3F Fellowship • AMS/NASA Earth Science Enterprise Fellowship • AMS Howard T. Orville Scholarship in Meteorology • Lyndon State College Presidential Scholar • Martin Luther King Jr. Foundation Scholar

SERVICE & LEADERSHIP

Member , NOAA MAPP Subseasonal-to-Seasonal (S2S) Task Force	2016 – Present
Faculty Panelist , OU School of Meteorology High School Visitation Days	2016 – Present
Member , OU School of Meteorology Undergraduate Curriculum Committee	2016 – Present
Member , NOAA NMME Task Force	2015 – Present
Local Manager , OU WxChallenge Team	2015 – Present
Member , weather.ou.edu Development Committee, OU School of Meteorology	2015 – Present
Graduate Admissions Committee , OU School of Meteorology	2015 – Present
Proposal Review Panelist , National Science Foundation	2014 – Present
Member , AMS Weather Analysis and Forecasting Committee	2014 – Present
Peer Reviewer , <i>J. Climate</i> , <i>J. Geophys. Res.</i> , <i>Deep Sea Res.</i> , <i>Climate Dyn.</i> , <i>Q. J. Roy. Meteor. Soc.</i> , <i>Atmos. Sci. Lett.</i> , <i>Intl. J. Climatology</i> , <i>Geophys. Res. Lett.</i> , <i>J. Meteor. Soc. Japan</i>	2003 – Present
Mentor , NSF Research Experience for Undergraduates, Norman, OK, USA	Summer 2017
Chairman , SoM Reanalysis Data Bank Committee	2015 – 2017
Participant , NSF Effectively Communicating Science Workshop – Expert Witness Training Program	August 2016
High School Debate Judge , Boston Debate League	2013 – 2015
Volunteer , Belmont High School Career Night	September 2014
Co-Convener , Natural and Societal Impacts of Decadal Climate Variability, AGU	December 2013
Speaker , First Lego League Competition	November 2013
Guest Lecturer , The Climate System, University of Massachusetts, Lowell	April 2012
Contributing Member , PICES Working Group 20	2011
Secretary , Metro Atlanta Chapter of the American Meteorological Society	2009 – 2010
Member , Prospective Graduate Student, Social, and Undergraduate Committees	2009 – 2010
Speaker , Public outreach program for elementary students about science/weather	2008 – 2010

Local Manager , National Collegiate Weather Forecasting Contest / WxChallenge	2002 – 2010
Radio DJ , KCSU 90.5 FM	2003 – 2005
Radio DJ , WWLR 91.5 FM	2002
President , Lyndon State College Chapter of the American Meteorological Society	2001 – 2002

MEDIA APPEARANCES / INTERVIEWS

"The numbers are in on this freakishly warm February" – <i>CBS News / AP</i>	17 March 2017
"Beyond the extreme': Scientists marvel at 'increasingly non-natural' Arctic warmth" - <i>Capital Weather Gang / The Washington Post</i>	1 February 2017
"Scientists react to Earth's warmest year: 'We are heading into a new unknown'" - <i>Capital Weather Gang / The Washington Post</i>	18 January 2017
"Earth sets hottest year record for third-straight time." - <i>AP</i>	18 January 2017
"Polar Vortex: The chilly science of an Arctic blast." - <i>Livescience</i>	15 January 2017
"The Polar Vortex is back - Ugh" - <i>NBC Connecticut</i>	13 December 2016
"Arctic air poised to invade the U.S. after record warm November" – <i>Mashable</i>	30 November 2016
"Earth's 16-month record heat streak ends but warming remains" - <i>AP</i>	18 October 2016
"July was 'absolutely' Earth's hottest month ever recorded" - <i>Capital Weather Gang / The Washington Post</i>	2 August 2016
"Scientists' annual physical of planet: 'Earth's fever rises'" - <i>AP</i>	2 August 2016
"Earth's relentless streak of record-warm months expands to seven" – – <i>Capital Weather Gang / The Washington Post</i>	16 May 2016
"Panasonic (Yes, Panasonic) May Have Created the World's Best Weather Model" - <i>Slate</i>	9 May 2016
"Earth's hot streak continues for a record 11 months" – <i>CBS News / AP</i>	19 April 2016
"Beyond record hot, February was 'astronomical' and 'strange'" - <i>AP</i>	17 March 2016
"Panel: Finding Climate Fingerprints in Wild Weather Is Valid" - <i>ABC News / AP</i>	11 March 2016
"El Niño Weakens a Tad, but We Won't Feel That for Months" - <i>ABC News / AP</i>	18 February 2016
"How melting Arctic ice may have set off era of vicious East Coast snow storms" - <i>Capital Weather Gang / The Washington Post</i>	5 February 2016
"All the winter's a weird weather stage; Here are the players" - <i>AP</i>	7 January 2016
"Arctic outbreak barreling toward U.S. may be Storm Frank's revenge" – <i>Mashable</i>	4 January 2016
"By one measure, this wicked El Niño is the strongest ever recorded: What it means" - <i>Capital Weather Gang / The Washington Post</i>	16 November 2015
Hurricane Patricia Coverage - <i>OU Nightly</i>	23 October 2015
"Heating Up: El Niño Could Increase Business for Climate Forecasters" - <i>The Journal Record</i>	20 August 2015

PROFESSIONAL MEMBERSHIPS

American Geophysical Union, American Meteorological Society, National Weather Association