

CAROLINA A. BIERI
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EDUCATION

University of Illinois at Urbana-Champaign, Urbana, IL *Aug 2017 - Present*

Ph.D. Atmospheric Science (in progress) *Jan 2020 - Present*
Research focus: Understanding connection between deep memory in the land and persistence of atmospheric variables

M.S. Atmospheric Science *Aug 2017 - Dec 2019*
Thesis: Impacts of large-scale soil moisture anomalies on regional hydroclimate in southeastern South America

Cornell University, Ithaca, NY *Aug 2012 - Aug 2016*

B.S. Atmospheric Science, with honors

Minor: Climate Change

Thesis: Estimating effects of forest revitalization on the seasonal albedo cycle in Ithaca, NY

RESEARCH EXPERIENCE

Graduate Researcher, Hydrometeorology Group *Aug 2017 - Present*

Department of Atmospheric Sciences, University of Illinois at Urbana-Champaign *Urbana, IL*

Advisor: Dr. Francina Dominguez

Currently investigating the response of the atmosphere to large-scale soil moisture anomalies in the vicinity of southeastern South America. Two main approaches are being employed to carry out research: analysis of observational data and earth system model output.

Graduate Visitor, Advanced Study Program (ASP) *Jun 2019 - August 2019*

Climate and Global Dynamics Laboratory, National Center for Atmospheric Research *Boulder, CO*

Completed work related to master's research during visit to the National Center for Atmospheric Research (NCAR). Evaluated effect of soil moisture anomalies on precipitation in southeastern South America by examining output from the Community Earth System Model (CESM). Hosted by scientist David Lawrence in the Terrestrial Sciences Section.

Undergraduate Research Assistant *Jun 2016 - Jul 2016*

Department of Earth and Atmospheric Sciences, Cornell University *Ithaca, NY*

Advisor: Dr. Natalie Mahowald

Used Interactive Data Language (IDL) to analyze MODIS and CERES satellite data, with the ultimate goal of quantifying possible changes in surface albedo due to reforestation and resulting effects on the atmospheric radiative energy budget.

Research Experiences for Undergraduates (REU) Participant *Jun 2015 - Jul 2015*

Department of Atmospheric Sciences, Texas A&M University *College Station, TX*

Advisor: Dr. Kenneth Bowman

Carried out a research project which compared two methods for detecting convective intrusions from the upper troposphere to the lower stratosphere.

TEACHING EXPERIENCE**Graduate Teaching Assistant, Introduction to Meteorology** *Jan 2018 - May 2018**Department of Atmospheric Sciences, University of Illinois at Urbana-Champaign*

Served as one of three teaching assistants for an introductory meteorology course intended for non-majors. Designed 15 minute weekly lectures with the objective of presenting basic meteorology concepts in a lucid manner.

Graduate Teaching Assistant, Atmospheric Dynamics I *Aug 2017 - Dec 2017**Department of Atmospheric Sciences, University of Illinois at Urbana-Champaign*

Provided help to students during weekly office hours, graded assignments and exams, and periodically lectured to about 35 students. Gained experience in adapting course content to students' abilities and effectively communicating difficult mathematical and physical concepts.

Undergraduate Teaching Assistant, Introductory Weather Analysis and Forecasting*Department of Earth and Atmospheric Sciences, Cornell University**Jan 2016 - May 2016*

Delivered three lectures, with each providing an overview of various topics in meteorology. Topics included extratropical weather systems, tropical cyclones, and lake-effect snow. Facilitated weekly lab sessions in which students created weather forecasts for cities in the United States.

FIELD EXPERIENCE**RELÁMPAGO Field Campaign***May 2018; November-December 2018**Córdoba, Argentina*

Participated in the Remote sensing of Electrification, Lightning, And Mesoscale/microscale Processes with Adaptive Ground Observations (RELÁMPAGO) field campaign during two trips to Córdoba Province, Argentina. Assisted in installing flux towers and gathering stream-flow data after convective events.

WORK EXPERIENCE**Mentor***Aug 2016 - Jun 2017**City Year Chicago*

Tutored twelve middle school students in English/Language Arts, bolstering them with individualized academic support. Coached six students in social-emotional skill development, with the goal of equipping them with necessary professional skills for high school and college.

SCHOLARLY SERVICE AND COMMUNITY INVOLVEMENT

Mentor, CU One-to-One Program

Spring 2019-Present

Member, Society of Women and Allies in the Geosciences

Fall 2018-Present

Volunteer, Expanding Your Horizons Chicago

Mar 2017

Co-President, Cornell Chapter of the American Meteorological Society

Aug 2015 - May 2016

Volunteer, Expanding Your Horizons at Cornell University

Apr 2015, Apr 2016

Member, Alpha Phi Omega National Service Fraternity

*Jan 2013 - May 2015***TECHNICAL SKILLS***Computer programming languages/software:*

Python (Actively using; experience with Pandas and xarray)

NCAR Command Language (NCL)

IDL

FORTRAN

LaTeX

ArcGIS

Inkscape

Other computing experience:

Linux shell scripting

Research tools & specializations:

Empirical orthogonal function (EOF) analysis
 Time series analysis
 Numerical earth system model analysis (mainly CESM)
 Numerical land model analysis (mainly Noah-MP)

HONORS AND AWARDS

2019 AGU Fall Meeting Outstanding Student Presentation Award (OSPA)	<i>Feb 2020</i>
Excellence in service and academics, Graduate College Office of Diversity & Inclusion	<i>Spring 2019</i>
Outstanding Instructor, Introduction to Meteorology	<i>Spring 2018</i>
Sloan Scholar, Alfred P. Sloan Foundation's Minority Ph.D. (MPHD) Program	<i>Aug 2017</i>
Cornell University College of Agriculture and Life Sciences Dean's List	<i>Dec 2013 - May 2016</i>
Texas A&M University REU Scholar	<i>Jun 2015</i>
American Meteorological Society Minority Scholarship	<i>May 2012</i>

PROFESSIONAL MEMBERSHIPS

Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS)
 American Meteorological Society (AMS)
 American Geophysical Union (AGU)

PUBLICATIONS

Bieri, C. A. and F. Dominguez, 2019: Impacts of large-scale soil moisture anomalies on regional hydroclimate in southeastern South America. M.S. thesis, Department of Atmospheric Sciences, University of Illinois at Urbana-Champaign, <http://hdl.handle.net/2142/106383>.

ORAL/POSTER PRESENTATIONS

Bieri, C. A., Dominguez, F., and D. M. Lawrence, 2019: Impacts of large-scale soil moisture anomalies on regional hydroclimate in southeastern South America. 2019 AGU Fall Meeting, San Francisco, CA. H54G-03. <https://agu.confex.com/agu/fm19/meetingapp.cgi/Paper/497615>.

Bieri, C. A., Chug, D., and F. Dominguez, 2019: Exploring relationships between the land surface and large-scale atmospheric circulation patterns over southeastern South America. 99th Annual Meeting of the American Meteorological Society, Phoenix, AZ.
<https://ams.confex.com/ams/2019Annual/meetingapp.cgi/Paper/353116>

Bieri, C. A., and N. Mahowald, 2017: Estimating Effects of Forest Revitalization on the Seasonal Albedo Cycle in Ithaca, NY. 2017. Oral presentation delivered at the Midwest Student Conference on Atmospheric Research in Urbana, IL.

Bieri, C. A., Cooney, J., Bedka, K., and Homeyer, C. R., and K. P. Bowman, 2016: Comparison of NEXRAD and GOES Identification of Overshooting Convection. 96th Annual Meeting of the American Meteorological Society in New Orleans, LA.
<https://ams.confex.com/ams/96Annual/webprogram/Paper292143.html>