

Zachary M. Labe

CONTACT INFORMATION

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RESEARCH INTERESTS

applied climate dynamics • climate variability • atmospheric teleconnections • Arctic sea ice • stratospheric dynamics • science communication

EDUCATION

The University of California, Irvine (GPA: 3.98/4.00)

Ph.D. Student, Earth System Science (expected May 2020)
Advisor: Dr. Gudrun Magnusdottir

Cornell University, Ithaca, NY

B.Sc. in Atmospheric Science, May 2015, *Distinction in Research*
Thesis: Anomalous Early Onset of Spring in the CESM Large Ensemble Project
Minor: Dyson Business Minor for Life Sciences

SCIENTIFIC RESEARCH EXPERIENCE

- 2015–Present **Graduate Research Assistant**
Assessing influences of Arctic amplification and sea ice variability on the stratosphere and extreme weather in the mid-latitudes through global climate model experiments and historical observations
Advisor: Dr. Gudrun Magnusdottir, Earth System Science, University of California Irvine
- Su. 2015 **Research Assistant**
Evaluated the magnitude, frequency, and dynamics of spring onset in the CESM Large Ensemble Project (LENS) through the implementation of the Extended Spring Indices Model
Advisor: Dr. Toby Ault, Earth and Atmospheric Science, Cornell University
- 2014 – 2015 **Undergraduate Research Assistant**
Analyzed Extended Spring Indices model forced by Berkley Earth System Temperature (BEST) reanalysis to understand early spring onset
Advisor: Dr. Toby Ault, Earth and Atmospheric Science, Cornell University
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PUBLICATIONS

Refereed/Peer-Reviewed

- [1] **Labe, Z.M.**, T.R. Ault, and R. Zurita-Milla (2016), Identifying Anomalous Early Spring Onsets in the CESM Large Ensemble Project, *R. Clim Dyn*, DOI:10.1007/s00382-016-3313-2. [Article]

Publications Submitted/in Preparation

- [1] **Labe, Z.M.**, G. Magnusdottir, and H.S. Stern (2017), Variability of Arctic sea ice thickness using PIOMAS and the CESM Large Ensemble Project. (*submitted*)

Non-refereed/Other

- [1] **Labe, Z.M.**, April 2015: Anomalous Early Onset of Spring in the CESM Large Ensemble. Cornell University. Undergraduate Honors Thesis. [\[PDF\]](#)

ORAL
PRESENTATIONS

- [3] **Labe, Z.M.**, G. Magnusdottir, and H.S. Stern. Variability and future projections of Arctic sea ice thickness. *Understanding the Causes and Consequences of Polar Amplification Workshop*, Aspen Global Change Institute, Aspen, CO (Jun 2017). [\[Recording\]](#)
- [2] **Labe, Z.M.** Communicating the future of Arctic climate change. Natural Sciences Division, Fullerton College, CA (Nov 2016). **(Invited)**
- [1] **Labe, Z.M.** Anomalous early onset of spring in the CESM Large Ensemble Project. *Earth and Atmospheric Science Undergraduate Research Symposium*, Cornell University, NY (May 2015).

POSTER
PRESENTATIONS

- [3] **Labe, Z.M.**, G. Magnusdottir, and H.S. Stern. Arctic Sea Ice Thickness Variability and the Large-scale Atmospheric Circulation Using Satellite Observations, PIOMAS, and the CESM Large Ensemble, *14th Conference on Polar Meteorology and Oceanography*. Seattle, WA (Jan 2017). [\[Abstract\]](#) [\[Poster\]](#)
- [2] **Labe, Z.M.**, G. Magnusdottir, and H.S. Stern. Making the most of Arctic sea ice thickness observations, *Symposium on Recent Advances in Data Science*, University of California, Irvine (Oct 2016). [\[Poster\]](#)
- [1] **Labe, Z.M.** and T.R. Ault. Anomalous Early Onset of Spring in the CESM Large Ensemble Project, *14th Annual AMS Student Conference*, Phoenix, AZ (Jan 2015). [\[Poster\]](#)

FELLOWSHIPS AND
AWARDS

| | |
|-------------|--|
| 2016 – 2018 | NSF NRT-DESE in Data Science and Physical Science Fellowship |
| Su. 2016 | Data Science Initiative Fellowship, Department of Statistics, University of California, Irvine |
| Wi. 2016 | Jenkins Family Graduate Fellowship in Earth System Science, Department of Earth System Science, University of California, Irvine |
| 2014 – 2015 | Fuerst Outstanding Library Student Employee Award Finalist, Cornell University |

TEACHING AND
OUTREACH

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|---|--|
| <i>University of California, Irvine</i> | |
| Fa. 2016 | Teaching Assistant, Fundamental Processes in Earth and Environmental Studies |
| <i>Cornell University</i> | |
| Su. 2015 | Guest Lecturer, Severe Weather Phenomena |
| Sp. 2015 | Teaching Assistant, Programming and Meteorology Software (Python) |
| Fa. 2014 | Teaching Assistant, Basic Principles of Meteorology Lab |
| <i>Related Educational Activities</i> | |
| Aug. 2017 | <i>Unified Irvine School District</i> , “Ask-A-Scientist/Engineer Night” at Rancho San Joaquin Middle School, Orange County, CA (Volunteer) |
| Aug. 2017 | <i>NASA DIRECT-STEM Program</i> , Assessing a changing Arctic (Invited Presenter) . |
| Apr. 2017 | <i>Climate Data Hackathon</i> , Looking for clues to changes in Arctic sea ice (Invited Presenter) . [Syllabus/GitHub] |
| Feb. 2017 | <i>Irvine Unified School District’s 36th Annual Science Fair</i> , Physical science project judge, Irvine, CA (Volunteer) |

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| Feb. 2017 | <i>Orange County Regional Science Olympiad</i> , Severe Storms-Meteorology exam writer and proctor, Irvine, CA (Event Supervisor) |
| Wi. 2017 | Seminar Course – Teaching Topics in Earth System Science (Training) |
| Oct. 2016 | <i>Unified Irvine School District</i> , “Ask-A-Scientist/Engineer Night” at Rancho San Joaquin Middle School, Orange County, CA (Volunteer) |
| Aug. 2016 | <i>NASA DIRECT-STEM Workshop</i> , Data and Analysis of Arctic Climate Change in CMIP5 using Python (Instructor). [Syllabus/GitHub] University of California, Irvine |

PROFESSIONAL ACTIVITIES

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|--------------|---|
| Aug. 2017 | Expert Contributor to the UCAR Climate Data Guide: “Sea Ice Thickness Data Sets: Overview & Comparison Table” [Website] |
| 2017–Present | Web Chair, Student Chapter of the American Meteorological Society at the University of California, Irvine [Website] |
| 2017–Present | Member, Student Communications Working Group, University of California, Irvine |
| 2017–Present | Student Representative, American Meteorological Society’s Committee on Climate Variability and Change |
| 2014 – 2015 | President, American Meteorological Society Student Chapter, Cornell University |

Affiliations/Memberships

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|--------------|--|
| 2016–Present | Association of Polar Early Career Scientists, Member |
| 2015–Present | American Geophysical Union, Member |
| 2014–Present | National Weather Association, Member |
| 2009–Present | American Meteorological Society, Member |

PROFESSIONAL TRAVEL

Field Work

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| May 2017 | INTPART Arctic Field Summer Schools: Norway–Canada–USA collaboration, University of Tromsø, Norway (Workshops); Longyearbyen, Svalbard (Field Cruise - sea ice) |
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Workshops

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| Jun. 2017 | Understanding the Causes and Consequences of Polar Amplification, Aspen Global Change Institute, Aspen, CO |
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Conferences

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| Jan. 2017 | 97 th American Meteorological Society Annual Meeting, Seattle, WA |
| Jan. 2015 | 95 th American Meteorological Society Annual Meeting, Phoenix, AZ |
| Feb. 2014 | 94 th American Meteorological Society Annual Meeting, Atlanta, GA |
| Jan. 2013 | 93 rd American Meteorological Society Annual Meeting, Austin, TX |

TECHNICAL SKILLS

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|-----------------|---|
| Programming: | Python, MATLAB, Fortran, Unix, HTML, T _E X, L ^A T _E X, B ^B T _E X |
| Software/Tools: | NCL, PyNGL/PyNIO, NCO, CDO, GrADS, Git |

Visit my [GitHub](#) !

GRADUATE COURSEWORK

- ☐ Atmospheric Chemistry & Physics
- ☐ Geophysical Fluid Dynamics
- ☐ Global Biogeochemical Cycles
- ☐ Land Surface Processes
- ☐ Ocean Processes
- ☐ Geoscience Modeling and Data Analysis
- ☐ Global Physical Climatology
- ☐ Climate Dynamics
- ☐ Climate Change

UNDERGRADUATE COURSEWORK

- ☐ Atmospheric Dynamics
- ☐ Synoptic Meteorology II
- ☐ Physical Meteorology
- ☐ Climate Dynamics
- ☐ Thermodynamics and Hydrostatics
- ☐ Remote Sensing and GIS
- ☐ Statistics in Meteorology and Climatology
- ☐ Programming and Meteorology Software
- ☐ Ordinary and Partial Differential Equations

NEWS AND MEDIA

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| Aug. 2017 | <i>The Verge</i> , “This Artist’s New Landscape Studies are of Melting Glaciers” (Quoted). [Article] |
| Jul. 2017 | <i>Climate Central</i> , “Here’s How Much Arctic Sea Ice Has Melted Since the ’80s” (Quoted). [Article] |
| Jun. 2017 | <i>Climate Central</i> , “We Couldn’t Monitor Larsen C Without These Satellites” (Quoted). [Article] |
| Apr. 2017 | <i>Mashable</i> , “Arctic ice in retreat: NASA’s airborne survey shows how global warming is transforming the Arctic” (Quoted). [Article] |
| Apr. 2017 | <i>UCI News</i> , “UCI Doctoral student is helping people visualize climate change and its impact on the entire planet” (Interview). [Article] |
| Mar. 2017 | <i>Carbon Brief</i> , “Sea ice falls to record lows in both the Arctic and Antarctic” (Quoted). [Article] |
| Mar. 2017 | <i>Climate Central</i> , “Arctic Sea Ice Continues Its Astonishing Streak of Lows” (Quoted). [Article] |
| Feb. 2017 | <i>The Washington Post</i> , <i>Capital Weather Gang</i> , “‘Beyond the extreme’: Scientists marvel at ‘increasingly non-natural’ Arctic warmth” (Quoted). [Article] |
| Jan. 2017 | <i>UCI News</i> , “Climate change champions” (Interview). [Article] |
| Dec. 2016 | <i>NPR</i> , “North Pole Temperatures Expected To Rise 50 Degrees Above Normal” (Interview). [Recording] |
| Dec. 2016 | <i>Yahoo News</i> , “Bizarre North Pole temperatures cap off year of record-setting warmth” (Quoted). [Article] |
| Dec. 2016 | <i>The Washington Post</i> , <i>Capital Weather Gang</i> , “Forecast: North Pole to warm 50 degrees above normal Thursday, near melting point” (Quoted). [Article] |
| Nov. 2016 | <i>American Geophysical Union Blogs</i> , “A conversation with Zack Labe” (Interview). [Article] |
| Nov. 2016 | <i>The Washington Post</i> , “The North Pole is an insane 36 degrees warmer than normal as winter descends” (Quoted). [Article] |
| Oct. 2016 | <i>The Sydney Morning Herald</i> , “Polar heatwaves have ice in retreat at both ends of the planet” (Quoted). [Article] |
| Oct. 2016 | <i>The Washington Post</i> , <i>Capital Weather Gang</i> , “Arctic sea ice is at a record low and could, in spurts, disappear within our lifetimes” (Quoted). [Article] |
| Oct. 2016 | <i>Climate Central</i> , “This is What It’s Like To Be a Young Climate Scientist” (Interview). [Article] |
| Sep. 2016 | <i>New York Times</i> , <i>Dot Earth</i> , “Arctic Summer Sea Ice – Going Down, Down, Down” (Contributed). [Article] |
| Sep. 2016 | <i>Mashable</i> , “Sailboat nears goal of circumnavigating the Arctic as sea ice plummets” (Quoted). [Article] |

- Aug. 2016 *Cornell University*, “Early-onset spring models may indicate ‘nightmare’ for ag” (**Press Release**). [[Article](#)]
Jul. 2016 *The Weather Junkies Podcast*, “The Science of Modeling Climate & Weather” (**Interview**). [[Recording](#)]

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PERSONAL INTERESTS

Vegetable gardening, travel, cooking, hiking, fishing, winter synoptic storms, long-range and seasonal weather forecasting