

# Sarah Y. Murphy

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## EDUCATION

- *Ph.D. Engineering Science* August 2015 – Present  
Voiland College of Engineering and Architecture  
Washington State University, Pullman, WA
- *Bachelor of Science, Atmospheric Science* August 2010 – May 2015  
Minors: Mathematics and Physics  
Lyndon State College (Northern Vermont University at Lyndon), Lyndonville, VT

## EXPERIENCE

- Research Assistant September 2015 – Present  
*Washington State University*
  - Modeling with the Polar Weather Research and Forecasting model to assess microphysics and boundary layer schemes and validate with measurements
  - Working with data collected during the Norwegian Young Sea Ice (N-ICE) experiment to examine the surface energy balance over newly formed sea ice
  - Traveled to Summit Station, Greenland to complete instrument testing and calibrations
- Teaching Assistant September 2017 – May 2018, January 2020 - May 2020  
*Washington State University*
  - Helped to lead students working with atmospheric and water chemistry instruments in lab work in the Environmental Measurements course
  - Co-taught Engineering Ethics course
  - Provided both teaching and student support for Environmental Measurements, Engineering Ethics, Climate Change Science and Engineering, and Intro to Environmental Engineering
- Plains Elevated Convection at Night (PECAN) Project Participant Summer 2015  
*The Center for Severe Weather Research*
  - Worked on a mobile mesonet team in placing pods, launching radiosondes, and driving mesonet truck
  - Operated and drove the Doppler On Wheels radar
- Research Assistant 2014 – 2015  
*Vermont Low Income Trust for Electricity at Lyndon State College*
  - Examined the impact of climate change on solar energy production in the Caledonia County, Vermont
- Research Experience for Undergraduate Summer Intern Summer 2014  
*Colorado State University CHILL Radar Research Group*
  - Conducted a case study on a supercell in Denver, Colorado on May 21, 2014 to display the capabilities of the FRONT network in northern Colorado

## PUBLICATIONS

- **Murphy, S. Y.**, V. P. Walden, S. R. Hudson, L. Cohen, R. Stillwell, 2019: Radiative Forcing by Arctic Clouds during the Norwegian Young Sea Ice (N-ICE2015) campaign. In preparation.
- Walden, V. P., S. R. Hudson, L. Cohen, **S. Y. Murphy**, and M. A. Granskog (2017), Atmospheric components of the surface energy budget over young sea ice: Results from the N-ICE2015 campaign, *J. Geophys. Res. Atmos.*, 122, 8427–8446, doi:10.1002/2016JD026091.
- Hanrahan, Janel, Maynard, Alex, **Murphy, Sarah Y.**, Zercher, Colton, Fitzpatrick, Allison (2017). Examining the Climatology of Shortwave Radiation in the Northeastern United States. *Journal of Applied Meteorology and Climatology*. 56. 10.1175/JAMC-D-16-0420.1.

## AWARDS AND DISTINCTIONS

- Department of Energy Office of Science Graduate Student Research Program July 2020 - November 2020  
2019 Solicitation 2 Fellow  
Conducted research modeling clouds over the Arctic at the Pacific Northwest National Lab with Dr. Hailong Wang for a 5-month period.
- Paul A. Weir Scholarship Fund May 2017
- Washington State University David E. Harsch Memorial Award May 2016
- First Place Poster Presenter in Joint EIPT&R2O Conference Student Competition at the 95th AMS 2015 Annual Meeting January 2015  
Award received for poster on *The Observational Capabilities of the FRONT Network: 21 May 2014 Case*

## CONFERENCE PRESENTATIONS

### *An Assessment of Polar WRF Microphysics and Boundary Layer Schemes using Data from the Norwegian Young Sea Ice Experiment*

*Sarah Y. Murphy, Von P. Walden, Stephen Hudson, Lana Cohen, Keith Hines*

- Oral Presentation at American Geophysical Union 2018 Fall Meeting December 2018
- Poster Presentation at American Meteorological Society 15th Conference on Cloud Physics/ 15th Conference on Atmospheric Radiation July 2018

### *Cloud Radiative Forcing During the N-ICE2015 Experiment*

*Sarah Murphy, Von P. Walden, Lana Cohen, Stephen Hudson*

- Oral Presentation at American Geophysical Union 2017 Fall Meeting December 2017
- Poster presentation at Gordon Research Conference on Radiation and Climate July 2017
- Oral presentation at 98th American Meteorological Society Annual Meeting January 2017
- Poster presentation at American Geophysical Union 2016 Fall Meeting December 2016
- Poster presentation at the Connaught Summer Institute in Arctic Science: Atmosphere, Cryosphere, and Climate July 2016

### *Examining the Climatology of Solar Energy Potential in Vermont*

*Sarah Murphy, Janel Hanrahan*

- Oral presentation at the Vermont Weather & Energy Analytics Project Weather Team Meeting at IBM TJ Watson Research Center May 2015

### *Observational Capabilities of the FRONT Network: 21 May 2014 Case*

*Sarah Murphy, Julie Barnum, Pat Kennedy, Dr. V. Chandrasekhar*

- Oral presentation at the Lyndon State College Experiential Learning and Internship Exhibition April 2015
- Poster presentation at the Lyndon State College Experiential Learning and Internship Exhibition April 2015
- Poster presentation at 50th Northeastern Storm Conference March 2015
- Poster presentation at 95th American Meteorological Society Annual Meeting January 2015
- Poster presentation at 14th Annual American Meteorological Society Student Conference January 2015

## SKILLS

- Python
- MATLAB
- Unix systems
- Differential Equations
- ArcGIS Spatial Analysis
- Linear Algebra
- High-Performance and Cloud Computing
- Amazon Web Services and Microsoft Azure

## MEMBERSHIPS

American Meteorological Society	2013 – Present
American Geophysical Union	2014 – Present
Association of Polar Early Career Scientists	2016 – Present

## COLLEGE AND COMMUNITY INVOLVEMENT

- Data and Software Carpentry Certified Instructor 2018 – Present  
Instructed and assisted in organization and student engagement during several Data and Software carpentry workshops at Washington State University. Primary instructor focus in Python programming but also involved with unix and other episodes.
- Whitman County Humane Society Volunteer 2018 – 2019  
Cleaned, provided care for, and socialized cats, dogs, and exotic animals. Fostered and socialized stray cats as they were prepared for adoption.
- Co-Coordinator of the Lyndon State College Weather Balloon Launch Team 2013 – 2015  
Collected data from balloon launches using Vaisala DigiCORA sounding system and lead a group of students in launching weather balloons
- Historian - Lyndon State College Student Chapter of the American Meteorological Society and National Weather Association 2012 – 2015  
Kept track of the history of the chapter and assisted in planning the 38th, 39th, and 40th annual Northeastern Storm Conference
- Panelist at Women in Science and Technology Conference April 2014  
Spoke to young women at White Mountain Community College about pursuing a career in the sciences
- Lyndon State College Student Government Association Elected Class Representative 2013 – 2015  
Represented the class of 2015 in the Lyndon State College student government by voting on issues concerning the student body