

# ALEXANDRA L. CARUTHERS

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## EDUCATION

- Ph.D. in Agricultural Meteorology** **2017-present**  
Iowa State University  
Advisor: Dr. Raymond Arritt
- M.S in Earth and Atmospheric Sciences** **December 2017**  
University of Nebraska – Lincoln  
Specialization: Meteorology/Climatology  
*Thesis title:* Land Use Land Cover Change Effects on Southern Great Plains Precipitation Patterns  
*Committee:* Dr. Matthew Van Den Broeke (Advisor), Dr. Clinton Rowe and Dr. Robert Oglesby
- B.S. Meteorology and Mathematics, *cum laude*** **May 2015**  
Valparaiso University, Valparaiso, IN  
Minor: Geography

## RESEARCH EXPERIENCE

- Graduate Research Assistant** **2017 - present**  
*Department of Agronomy, Iowa State University*
  - Establish metrics to define and characterize low level jet in model simulations for climate downscaling model verification
- Graduate Research Assistant** **2015 - 2017**  
*Department of Earth and Atmospheric Sciences, University of Nebraska – Lincoln*
  - Used WRF to simulate four land use scenarios (presettlement, 1920's, Dust Bowl, present day)
  - Analyze precipitation feedback, changes in regional circulation associated with changing land uses
- Summer Research Intern** **June 2014 – August 2014**  
*Joint Institute for the Study of the Atmosphere and Ocean*
  - Project: *Washington Windstorms: Seasonality and Relationship to ENSO*
  - Advisors: Dr. Nick Bond and Karin Bumbaco
  - Created climatology of WA windstorms using hourly ASOS data
  - Investigated the seasonality of WA windstorms and their relationship to ENSO
- Research Course Participant** **August 2013 – May 2014**  
*Geography and Meteorology Department, Valparaiso University*
  - Project: *Synoptic and Lake-Effect Classification of Snowfall in the Lake Michigan Region: Deriving Clarity Using WRF Simulations*
  - Advisors: Dr. Craig Clark and Dr. Kevin Goebbert
  - Investigated the climatology of Lake Michigan lake-effect precipitation, using WRF simulations to derive clarity between ambiguous classifications

## **RESEARCH EXPERIENCE CONTINUED**

### **REU Participant**

**May 2013 – August 2013**

*Atmospheric Oceanic and Space Sciences, University of Michigan*

- Project: *The Impact of Precipitation Cell Morphology on Mercury Wet Deposition: Florida*
- Advisor: Dr. Frank Marsik
- Examine relationship between storm characteristics and mercury deposition and concentration values to determine a probable cause for the elevated mercury amount reported in the Florida Everglades

## **HONORS AND AWARDS**

National Science Foundation Graduate Research Fellowship Program Honorable Mention  
2017

Chi Epsilon Pi Meteorology Honors Society, Gamma Theta Upsilon Honors Society, Alpha Lambda Delta Honors Society

## **CONFERENCES ATTENDED**

American Meteorology Society 97<sup>th</sup> Annual Meeting, Seattle, WA January 2017

- Oral Presentation
- *Land Use Land Cover Change Effects on Southern Great Plains Precipitation*

National Weather Association 41<sup>st</sup> Annual Meeting, Norfolk, VA September 2016

- Poster Presentation -- Awarded 2<sup>nd</sup> place Graduate Poster
- *Sensitivity of Tropical Storm Erin to Land Use Land Cover Changes in the Southern Great Plains*

American Meteorology Society 95<sup>th</sup> Annual Meeting, Phoenix, AZ January 2015

- Poster Presentation at Student Conference
- *Washington Windstorms: Seasonality and Relationship to ENSO*

National Weather Association 39<sup>th</sup> Annual Meeting, Salt Lake City, UT October 2014

- Poster Presentation -- Awarded 3<sup>rd</sup> place Undergraduate Poster
- *Synoptic and Lake-Effect Classification of Snowfall in the Lake Michigan Region: Deriving Clarity Using WRF Simulations*

American Meteorology Society 94<sup>th</sup> Annual Meeting, Atlanta, GA February 2014

- Poster Presentation at Student Conference
- *The Impact of Precipitation Cell Morphology on Mercury Wet Deposition: Florida*
- Student Assistant

## **UNIVERSITY SERVICE**

### **Lab Assistant**

**August 2012 – May 2015**

*Meteorology and Geography Department, Valparaiso University*

- Lab Assistant Introduction to Meteorology, Introduction to Geomorphology, Introduction to Climatology, Grader for Weather Analysis and Observations
- Aided students during lab, clarified lab material

### **Weather Center Tutor**

**August 2014 – May 2015**

*Meteorology and Geography Department, Valparaiso University*

- Assisted with meteorology, physics and mathematics assignments
- Mentored underclass meteorology students

### **Student Athlete**

**2011 - 2013**

*Women's Swimming, Valparaiso University Athletics*

## **PROFESSIONAL SERVICE**

### National Weather Association (NWA)

- NWA Local Chapters Committee Spring 2017 – present
  - Encourage and guide the planning and hosting of local conferences
  - Serve as point of contact for local chapters
- NWA 2016 Annual Meeting Planning Committee 2015 – 2016
  - Collaborate with committee regarding meeting logistics
  - Organized oral and poster presentations for two sessions
  - Participated in WeatherFest outreach event

### American Meteorology Society (AMS)

#### University of Nebraska Student Chapter of AMS

**Fall 2015 – Fall 2017**

- Attend monthly meetings
- Participate in outreach events, such as school fairs and department-hosted Dinosaurs and Disasters

#### Northwest Indiana Chapter AMS/NWA

**2012 – 2015**

- Vice President – NWA Chapter of the Year, AMS Honor Roll 2014 – 2015
  - Organized and executed chapter's calendar fundraiser
  - Chair of local Great Lakes Meteorology Conference Planning Committee
    - Coordinated with dining services, planned program agenda, delegated responsibilities among committee
- Treasurer – AMS Honor Roll 2013 – 2014
  - Managed chapter finances, submitted encumbrance forms to student senate
  - Served on local Great Lakes Meteorology Conference Planning Committee