

**Alex M. Haberlie, M.S.**  
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## Education:

Northern Illinois University	DeKalb, IL	Ph.D. (Geography)	Expected July 2018
Dissertation working title: "Observed and Future Dynamically Downscaled Estimates of Precipitation Associated with Mesoscale Convective Systems" Advisor: Dr. Walker Ashley			
Northern Illinois University	DeKalb, IL	M.S. (Geography)	2014
Thesis title: "Convective initiation climatology for the Atlanta, Georgia region" Advisors: Dr. Walker Ashley, Dr. Thomas Pingel			
University of Wisconsin – Platteville	Platteville, WI	B.S. (Computer Science)	2010

## Research interests:

Climate change, land use/land cover effect on thunderstorm occurrence, organized thunderstorm clusters, hydrometeorological and hydroclimatological extremes (flood and drought), image processing, machine learning, severe and hazardous weather

## Research appointments:

### Dissertation Completion Fellowship

*Department of Geographic and Atmospheric Sciences, Northern Illinois University, 2017-2018*

- Conduct and publish research associated with proposed dissertation work
- Complete dissertation by summer of 2018

### Great Journeys Research Assistant

*Department of Geography, Northern Illinois University, 2015-2016*

- Developed a research proposal to submit to NSF
- Submitted to Physical and Dynamical Meteorology and Climate and Large Scale Dynamics Programs
- Proposal was funded and is currently an ongoing grant

## Peer-reviewed publications:

Haberlie, A., W. S. Ashley, A. Fultz, and S. Eagan, 2016: The effect of reservoirs on the climatology of warm-season thunderstorms in Southeast Texas, USA. *International Journal of Climatology*, **36**, 1808-1820.

Haberlie, A., W. S. Ashley, and T. Pingel, 2015: The effect of urbanization on the climatology of thunderstorm initiation. *Quarterly Journal of the Royal Meteorological Society*, **141**, 663-675.

Ashley, W. S., S. Strader, D. Dziubla, and A. Haberlie, 2015: Driving blind: Weather-related vision hazards and fatal motor vehicle crashes. *Bulletin of the American Meteorological Society*, **96**, 755-778.

Haberlie, A. M., K. Gale, D. Changnon, and M. Tannura, 2014: Climatology of tropical system rainfall on the eastern Corn Belt. *Journal of Applied Meteorology and Climatology*, **53**, 395-405.

## Manuscripts submitted for peer-review:

Haberlie A. M., and W. S. Ashley, 2017: Identifying Mesoscale Convective Systems in Radar Mosaics. Part I: Segmentation and Classification. Submitted to *Journal of Applied Meteorology and Climatology*.

Haberlie A. M., and W. S. Ashley, 2017: Identifying Mesoscale Convective Systems in Radar Mosaics. Part II: Tracking and Application. Submitted to *Journal of Applied Meteorology and Climatology*.

## Conference proceedings:

- Haberlie, A., and R. May, 2017: Implementation and Comparison of Interpolation Techniques for the Meteorological Python (MetPy) Package, 7<sup>th</sup> Symposium on Advances in Modeling and Analysis Using Python, American Meteorological Society, Seattle, WA.
- Haberlie, A., and W. S. Ashley, 2017: A Comparison of Machine Learning Approaches for Classification of Radar-derived Convective Clusters, 7<sup>th</sup> Symposium on Advances in Modeling and Analysis Using Python, American Meteorological Society, Seattle, WA.
- Haberlie, A., and W. S. Ashley, 2016: A U.S. climatology of mesoscale convective systems: 1997-2013. 15<sup>th</sup> Annual Student Conference, American Meteorological Society, New Orleans, LA.
- Haberlie, A., and W. S. Ashley, 2014: A U.S. climatology of mesoscale convective systems: 1997-2013. 27<sup>th</sup> Conference on Severe Local Storms, American Meteorological Society, Madison, WI.
- Haberlie, A., W. S. Ashley, and T. J. Pingel, 2014: Comparison of Methodologies for Detecting Convective Initiation Due to Differences in Land Use. 11<sup>th</sup> Symposium on the Urban Environment, American Meteorological Society, Atlanta, Georgia.
- Changnon, D., Haberlie A., and Strader, S., 2014: Climatology of Tropical System Rainfall on the Eastern Corn Belt. 26<sup>th</sup> Conference on Climate Variability and Change, American Meteorological Society, Atlanta, Georgia.

## Invited Presentations:

- Haberlie, A., D. Changnon, 2013: Climatology of tropical system rainfall on the eastern Corn Belt. American Meteorological Society, Chicago Chapter, DeKalb, IL.

## Grants:

- United States Geological Survey, "Hydro-meteorological responses to tropical system precipitation in Illinois", \$8,663

## Teaching appointments:

### Instructor

2014-2015, 2016-2017

*Department of Geography, Northern Illinois University, DeKalb, IL*

- Prepared lectures and in-class and online activities for 10-50 undergraduates
- Created and graded in-class and online homework assignments, papers, and exams
- Guided and mentored students preparing and leading forecast discussions
- *GEOG 105, MET 475*

### Graduate Teaching Assistant

2012-2014

*Department of Geography, Northern Illinois University, DeKalb, IL*

- Prepared lectures and in-class and online activities for 10-50 undergraduates
- Created and graded in-class and online homework assignments, papers, and exams
- Guided and mentored students preparing and leading forecast discussions
- *GEOG 102, MET 300, MET 320, MET 421, MET 444*

## Honors and Awards:

- Dissertation Completion Fellowship (2017-2018)
- Great Journeys Graduate Assistantship (2015-2016)
- Outstanding Thesis Award (2013-2014)
- Outstanding Graduate Student Award (2013-2014)
- 3<sup>rd</sup> Place, Sigma Xi Graduate Student Research Association Poster Contest

### **Association or Society Membership:**

- American Meteorological Society (AMS)
- American Association of Geographers (AAG)
- Gamma Theta Upsilon (GTU)

### **Professional Experience:**

#### **Python Developer Internship**

2016 (Summer)

*Unidata, University Corporation for Atmospheric Research, Boulder, CO*

- Developed an interpolation and gridding module for the Meteorological Python Package (MetPy)
- Implemented testing functions to verify code accuracy and function (pytest)
- Used source control to maintain code integrity (Github)

#### **Contract Python Developer**

2014-2017

*T-Storm Weather, Chicago, IL*

- Collect and interpret project requirements from client
- Download applicable modeled and observed meteorological data
- Process data and display on maps
- Generate iterative prototypes
- Deploy production code
- Maintain and document projects

### **Service:**

- Department of Geography Website Committee (2016-Present)
- NIU WxChallenge Manager (2016-2017)
- Graduate Colloquium Committee Vice-President (2013-2014)
- STEMfest Volunteer (2012, 2013)
- American Meteorological Society Severe Local Storms Conference Volunteer (2012)

### **Synergistic activities:**

- Employing geospatial programming techniques as well as contributing to course development and collaborating with colleagues using these techniques, e.g.: a) taught a laboratory section on synoptic data visualization and analysis; b) contributed to the planning and development of a related course; c) discussed best practices and new techniques with colleagues; d) contributed code and data to ongoing research projects; e) developed and distributed tutorials on visualization and data analysis; f) wrote rainfall forecast mapping program for a local agribusiness firm; e) worked with software engineers at a national research corporation to develop interpolation and gridding algorithms with meteorological applications.
- Contributing code to online projects, e.g.: a) added video download and variable interval functionality to the NIU Department of Geography web cam page; b) implemented user-requested features on a private sector, climate-related, website; c) added mapping functionality to materials ordering web application for an Illinois government agency; d) tested, provided feedback for, and contributed to a number of open source projects; e) maintain and update personal open source projects.
- Publically promoted research activities by authoring a press release and being interviewed by a magazine with millions of social media followers (WIRED).