

Andrew Janiszski

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EDUCATION

University of Illinois at Urbana-Champaign 05/2018-08/2023

Doctorate of Philosophy Degree in Atmospheric Sciences

- Advisor: Prof. Robert M. Rauber
- Committee members; Profs. Robert M. Rauber, Sonia Lasher-Trapp, Greg. M. McFarquhar, and Stephen Nesbitt
- Research Topic: a kinematic modeling study of the re-organization of snowfall between cloud top generating cells and low-level snowbands in midlatitude winter storms

Masters of Science in Atmospheric Sciences 08/2015-05/2018

- Advisors: Prof. Robert M. Rauber, Prof. Greg M. McFarquhar, and Dr. Brian F. Jewett
- Thesis Title: “Structure of an east coast cyclone derived from airborne radar and model diagnostics”

State University of New York (SUNY) College at Oswego, Oswego, NY 08/2011-05/2015

Bachelors of Science Degree in Meteorology (Cum laude)

Advisor: Prof. Steven Skubis

EMPLOYMENT AND APPOINTMENTS

Postdoctoral Research Associate 09/2023–present

University of Notre Dame, Department of Civil and Environmental Engineering and Earth Sciences

- Research consists of conducting experiments generating an ensemble of multi-scale model simulations with the WRF model to investigate the impact of meso- and micro-scale processes on atmospheric flow in complex terrain.

Graduate Research Assistant, NASA-ESPO Investigation of Microphysics and Precipitation for Atlantic Coast-Threatening Snowstorms (IMPACTS) project 01/2019–08/2023

University of Illinois at Urbana-Champaign

- Using radar observations and winds from storms in project to test re-organization of snowfall beneath cloud-top generating cells from kinematics alone and compare snowfall distribution concentration at low-levels with observed snowbands.
- Collect and organize sounding data after sounding launches during field campaign deployments.

Graduate Research Assistant, Profiling of Winter Storms (PLOWS) Project 01/2017-08/2018

University of Illinois at Urbana-Champaign

- Analyzed airborne, W-band radar (HIAPER Cloud Radar) data from a February 2015 nor'easter case.
- Used thermodynamics from WRF (Weather Research and Forecasting) model to overlay with radar data and determine causality of observed features such as elevated convection, cloud-top generating cells, and turbulence along frontal boundary

Graduate Teaching Assistant

Introduction to Meteorology (ATMS-100) Lab 08/2018-12/2018, 08/2015-12/2015

University of Illinois at Urbana-Champaign

- Prepared and presented lectures for ~80 undergraduate students weekly.
- Graded homework and lab assignments and held review sessions before exams.

Graduate Teaching Assistant

Climate and Global Change (ATMS-140)
University of Illinois at Urbana-Champaign

08/2016-12/2016, 01/2016-05/2016

- Graded assignments and exams.
- Wrote exam questions.
- Held office hours.

Undergraduate Student Researcher, Ontario Winter Lake-effect Systems (OWLeS) Project,

SUNY Oswego
Directed by Drs Robert Ballentine and Scott Steiger

06/2015-08/2015, 06/2014-08/2014

- Used high-resolution WRF model to simulate lake-effect snow events observed during OWLeS project and test model performance and sensitivity to various parameterizations.

National Atmospheric Deposition Project (NADP)

04/2014-07/2015

- Collected precipitation samples to be tested for pollution.

Student Forecaster, Lake Effect Storm Prediction and Research Center (LESPaRC)

10/2014-04/2015

SUNY Oswego

Co-Director

- Recruited potential clients such as school districts, colleges, transportations offices, and the New York State Department of Transportation (NYS DOT).
- Hired and trained student forecasters.
- Held weekly forecast discussions with LESPaRC team.

Member

10/2011-04/2015

- Submitted forecasts to our website and consulted school districts, colleges, transportations offices, and the New York State Department of Transportation (NYS DOT).
- Duties included: on-call forecasting during lake-effect snow events, maintaining a client website with a snowfall forecast map, and generating weekly forecast outlook products for the clients.

SUNY Oswego Storm Forecasting and Observation Program

05/2014-06/2014

Participant

- Prepared daily convective outlooks.
- Launched rawinsondes in pre-convective environments.

Volunteer Intern, National Weather Service (NWS), Buffalo, NY

06/2013-08/2013

- Worked with Advanced Weather Interactive Processing System (AWIPS)
- Practiced forecast skills in severe weather simulation scenario
- Helped with rawinsonde launch
- Gained experience and advice from employees

FIELD CAMPAIGNS

Investigation of Microphysics and Precipitation for Atlantic Coast Threatening Storms (IMPACTS) Project

UIUC Mobile Sounding Member

01/2023-02/2023, 01/2022-02/2022, 01/2020-02/2020

- Launched rawinsondes in the field in Northeast U.S.
- Collected and organized sounding data to be used for analysis

Seeded Natural and Orographic Wintertime clouds: the Idaho Experiment (SNOWIE) Project

UIUC Mobile Sounding Member

01/2017-03/2017

- Launched rawinsondes in the field near Boise, ID.
- Assisted with snow removal and operation of mobile radar (Doppler on Wheels) during project.

- Collected and organized sounding data to be used for analysis

Ontario Winter Lake-effect Systems (OWLeS) Project

SUNY Oswego Mobile Sounding Team

12/2013-01/2014

- Launched soundings during field operations from various locations near Oswego, NY.
- Collected and organized sounding data to be used for analysis

PEER REVIEWED PUBLICATIONS

Janiszkeski, A., R. M. Rauber, B. F. Jewett, G. M. McFarquhar, T. J. Zaremba, and J. E. Yorks, 2023: A Kinematic Modeling Study of the Re-Organization of Snowfall between Cloud-top Generating Cells and low-level Snow Bands in Midlatitude Winter Storms, *J. Atmos. Sci.*, *in press*

Janiszkeski, A., R. M. Rauber, B. F. Jewett, and T. J. Zaremba, 2023: Kinematic Modeling Study of the Re-Organization of Snowfall Beneath Cloud-top within the Comma Head of two extreme U.S. East Coast winter cyclones, *in writing*

Varcie, M.M., T. J. Zaremba, R. M. Rauber, G. M. McFarquhar, J. A. Finlon, L. A. McMurdie, Ryzhkov, A., Schnaiter, M., Järvinen, E., Waitz, F. Delene, D.J., Poellot, M. R., McLinden, M., and **Andrew Janiszkeski**, 2022: Precipitation Growth Processes in the Comma Head Region of the 7 February 2020 Northeast Snowstorm: results from IMPACTS. *J. Atmos. Sci.*, *in press*

Rauber, R. M., S. M. Ellis, J. Vivekanandan, J. Stith, W-C Lee, G. M. McFarquhar, B. F. Jewett, and **A. Janiszkeski**, 2017: Fine scale structure of a snowstorm over the Northeastern United States: a first look at high resolution HIAPER Cloud Radar Observations. *Bull. Amer. Meteor. Soc.*, 98,253-269.

Tessendorf, S.A.; French, J.R.; Friedrich, K.; Geerts, B.; Rauber, R.M.; Rasmussen, R.M.; Xue, L.; Ikeda, K.; Blestrud, D.R.; Kunkel, M.L.; et al. A transformational approach to winter orographic weather modification research: The SNOWIE Project. *Bull. Am. Meteorol. Soc.* **2019**, *100*, 71–92

PROFESSIONAL CONFERENCE PRESENTATIONS, SEMINARS, AND POSTERS

Janiszkeski, A, R. M. Rauber, B. Jewett, T. J. Zaremba G. McFarquhar, and J. E. Yorks, 2023: Kinematic Modeling Study of the Re-Organization of Snowfall beneath Cloud-top Generating Cells in Midlatitude Winter Storms, *20th Conference on Mesoscale Processes*, Madison, WI, Amer. Meteor. Soc.

Janiszkeski, A, 2023: Kinematic Modeling Study of the Re-Organization of Snowfall beneath Cloud-top Generating Cells in Midlatitude Cyclones, Atmospheric, Earth, and Energy Division Seminar, Lawrence Livermore National Laboratory, 4/18/23.

Janiszkeski, A, 2023: Kinematic Modeling Study of the Re-Organization of Snowfall beneath Cloud-top Generating Cells in Midlatitude Cyclones, Department of Civil & Environmental Engineering & Earth Sciences Seminar, University of Notre Dame, 4/13/23.

Janiszkeski, A, 2023: Kinematic Modeling Study of the Re-Organization of Snowfall beneath Cloud-top Generating Cells in Midlatitude Cyclones, Dept. of Atms. Sci. Seminar, University of Illinois at Urbana-Champaign, 4/11/23.

Janiszkeski, A. R., R. M. Rauber, B. Jewett, and G. McFarquhar, 2022: Kinematic Modeling Study of the Re-Organization of Snowfall beneath Cloud-top Generating Cells in Midlatitude Winter Storms. *2022 Midwest Student Conference on Atmospheric Research*, Urbana, IL, University of Illinois Chapter of Amer. Meteor. Soc.

Janiszkeski, A. R., R. M. Rauber, B. Jewett, and G. McFarquhar, 2022: Kinematic Modeling Study of the Re-Organization of Snowfall beneath Cloud-top Generating Cells in Midlatitude Winter Storms. *2022 102nd AMS Annual Meeting*, virtual

Janiszkeski, A. R., R. M. Rauber, B. Jewett, and G. McFarquhar, 2021: Simple Modeling Study of the Vertical Organization of Falling Snow/Ice Particles with a 3-Dimensional Wind Field. *International Conference on Clouds and Precipitation 2021*, virtual

Janiszkeski, A. R., R. M. Rauber, B. Jewett, and G. McFarquhar, 2021: Kinematic Modeling Study of the Re-Organization of Snowfall beneath Cloud-top Generating Cells in Midlatitude Winter Storms. *2021 Midwest Student Conference on Atmospheric Research*, Urbana, IL, University of Illinois Chapter of Amer. Meteor. Soc.

Janiszkeski, A. R., R. M. Rauber, B. Jewett, and G. McFarquhar, 2020: Kinematic Modeling Study of the Vertical Organization of Falling Snow/Ice Particles within a 3-Dimensional Wind Field. *2020 Midwest Student Conference on Atmospheric Research*, Urbana, IL, University of Illinois Chapter of Amer. Meteor. Soc.

Janiszkeski, A. R., R. M. Rauber, G. McFarquhar, B. Jewett, and S. Ellis, 2018: An analysis of fine scale structure of the 2-3 February 2015 Nor'easter using observations from the HIAPER Cloud Radar, *2nd Midwest Student Conference on Atmospheric Research*, Urbana, IL, University of Illinois Chapter of Amer. Meteor. Soc.

Janiszkeski, A. R., R. M. Rauber, G. McFarquhar, B. Jewett, and S. Ellis, 2017: Fine-scale structure of the 2-3 February 2015 Nor'easter using high-resolution HIAPER Cloud Radar observations, *1st Midwest Student Conference on Atmospheric Research*, Urbana, IL, University of Illinois Chapter of Amer. Meteor. Soc.

Janiszkeski, A. R., R. M. Rauber, G. McFarquhar, B. Jewett, and S. Ellis 2017: Fine-scale structure of the 2-3 February 2015 Nor'easter using high-resolution HIAPER cloud radar observations, *38th Conference on Radar Meteorology*, Chicago, IL, Amer. Meteor. Soc.

Janiszkeski, A R., M. Mattot, and D. Ulrich, 2015: SUNY Oswego Storm Forecasting and Observation Program. *40th Annual Northeastern Storm Conference*, Saratoga Springs, NY, Lyndon State College Chapter of Amer. Meteor. Soc.

Janiszkeski, A R. and D. Ulrich, 2015: SUNY Oswego WRF modeling of lake-effect storms during the Ontario Winter Lake-effect Systems (OWLeS) Project. *16th Conference on Mesoscale Processes*, Boston, MA, Amer. Meteor. Soc.

Janiszkeski, A R. and D. Ulrich, 2015: Simulations of lake-effect storms during the Ontario Winter Lake-effect Systems (OWLeS) Project. *1st Annual SUNY Undergraduate Research Conference*, SUNY Brockport, Brockport, NY.

Janiszkeski, A R. and D. Ulrich, 2014: Simulations of lake-effect storms during the Ontario Winter Lake-effect Systems (OWLeS) Project. *5th Annual Great Lakes Atmospheric Science Symposium*, Oswego, NY, Oswego State College Chapter of Amer. Meteor. Soc.

Janiszkeski, A. and M. Vuotto 2014: Forecasts gone wrong: a look at two lake-effect snow cases off Lake Ontario during the 2013-2014 winter season. *39th Annual Northeastern Storm Conference*, Rutland, VT, Lyndon State College Chapter of Amer. Meteor. Soc.

AWARDS/AFFILIATIONS/PROFESSIONAL MEMBERSHIPS

➤ Graduate student mentor: UIUC Department of Atmospheric Sciences

08/2020-06/2021

- High school mentor: The Grade (<https://www.thegradenyc.org/>) *09/2021-Present*
- Undergraduate student mentor: UIUC Department of Atmospheric Sciences *08/2018-05/2021*
- University of Illinois MSCAR conference operation and execution committee *04/2019-10/2019*
- University of Illinois SESE Research Review Committee *01/2018-02/2018*
- President of Department of Atmospheric Sciences Student Organization (DASSO) *06/2016-06/2017*
- University of Illinois MSCAR conference keynote speaker committee *01/2017-10/2017*
- American Meteorological Society (AMS) Member *06/2014-Present*
- Member of Sigma Xi, The Scientific Research Society *04/2015-04/2016*
- Community Outreach Officer, SUNY Oswego Meteorology Club *04/2014-04/2015*

COMPUTATIONAL SKILLS

- Programming languages: Python (currently using), FORTRAN, JAVA, NCL, Linux/Unix
- Atmospheric modeling: WRF Model, Cloud Model-1 (CM1), kinematic model (scripted in Python)
- High Performance Computing: Stampede (TACC), Multi-processing computations on Keeling (UIUC)
- Other: Microsoft Word/PowerPoint/Excel, Windows operating machines, General Meteorological PAcKage (GEMPAK), Global Atmospheric Research Program (GARP), Integrated Data Viewer (IDV), BUFKIT, The Universal RAwinsonde OBServation (RAOB) Program, WRF's Read-Interpolate-Plot (RIP) software.