

# KYLE J GILLETT

Master's Student, Severe Storm Scientist, Meteorologist

Department of Atmospheric Sciences, University of North Dakota, Grand Forks, ND

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## External Links

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## 1 EDUCATION

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<b>M.S.</b> , Atmospheric Science, University of North Dakota	In progress
<b>B.S.</b> , Meteorology, Minor Mathematics, Central Michigan University	May 2024

## 2 RESEARCH EXPERIENCE

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**Master's Thesis Research**, University of North Dakota In progress

- **Title:** "A Numerical Investigation into the Impacts of a Rear Flank Storm Interaction on Storm Behavior and Tornadogenesis"
- **Committee:** Dr. Catherine Finley (Advisor), Dr. Bruce Lee, Dr. Cameron Nixon

**Graduate Research Assistant**, University of North Dakota June-December 2025

- **Project:** "Using Aircraft Observations to Improve Tropical Cyclone Tornado Predictability Before Landfall"
- **Committee:** Dr. Jacob Carstens (Advisor)

**Undergraduate Research Assistant**, Central Michigan University April-August 2023

- **Project:** "Synoptic & Mesoscale Variability of US Large Hail Environments"
- **Committee:** Dr. John Allen (Advisor), Dr. Cameron Nixon

## 3 PUBLICATIONS

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### 3.1 PAPERS

- Gillett, K. J., 2025: SounderPy: An atmospheric sounding visualization and analysis tool for Python. J. Open-Source Software, 10 (112), 8087, <https://doi.org/10.21105/joss.08087>

## 4 PRESENTATIONS (\* DENOTES STUDENT CO-AUTHOR, \*\* DENOTES INVITED PRESENTATION)

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### 4.1 PRESENTATIONS

- **\*\*Gillett, K., J.**, May 2026: **SounderPy: A Sounding Analysis and Visualization Platform for Severe Weather Forecasting.**, Environment Canada Storm Prediction Centre Winnipeg Spring Change of Seasons Workshop, Dartmouth, Nova Scotia, Canada
- **\*\*Gillett, K., J.**, May 2026: **Storm Interactions: Their Relationship with Storm Behavior and Tornadogenesis.**, Environment Canada Storm Prediction Centre Winnipeg Spring Change of Seasons Workshop, Dartmouth, Nova Scotia, Canada
- **\*\*Gillett, K., J.**, May 2026: **SounderPy: A Sounding Analysis and Visualization Platform for Severe Weather Forecasting.**, Environment Canada Storm Prediction Centre Winnipeg Spring Change of Seasons Workshop, Winnipeg, Manitoba, Canada
- **\*\*Gillett, K., J.**, May 2026: **Storm Interactions: Their Relationship with Storm Behavior and Tornadogenesis.**, Environment Canada Storm Prediction Centre Winnipeg Spring Change of Seasons Workshop, Winnipeg, Manitoba, Canada
- **Gillett, K., J.**, April 2026: **A Theory on the Relationship Between Rear Flank Storm Interactions, Storm Behavior, and Tornadogenesis.**, Symposium on Local Atmospheric Research, University of North Dakota, Grand Forks, North Dakota
- **\*\*Gillett, K., J.**, April 2026: **Storm Interactions: Their Relationship with Storm Behavior and Tornadogenesis.**, Grand Forks National Weather Service Change of Seasons Workshop, Grand Forks, North Dakota
- **Gillett, K., J.**, March 2026: **A Theory on the Relationship Between Rear Flank Storm Interactions, Storm Behavior, and Tornadogenesis.**, 29<sup>th</sup> Annual Central Iowa National Weather Association Severe Storms and Doppler Radar Conference, Ames, Iowa
- Nixon, C., **Gillett, K.**, Tang, J., Fowkes, H., February 2025: **Chase Archive: Introducing the biggest collection of storm chases on the web. For chasers, by Chasers.**, National Storm Chaser Summit.

- **Gillett, K.**, May 2025: **A Simple Guide to Forecasting the Northern Lights: Auroral Substorms**, Seminar for Local Atmospheric Research, Grand Forks, ND.

#### 4.2 POSTERS

- **Gillett, K., J.**, March 2026: **A Numerical Investigation into the Impacts of a Rear Flank Storm Interaction on Storm Behavior and Tornadoogenesis**, 2026 Graduate Research Achievement Day (GRAD), University of North Dakota, Grand Forks, North Dakota
- Belzer, B. W\*, **Gillett, K. J.**, Carstens, J., D., January 2026: **Convective Environments Preceding Landfall in Tornadic Tropical Cyclones: An Analysis of Airborne Observations**, 106<sup>th</sup> AMS Annual Meeting, Houston, TX, <https://doi.org/10.13140/RG.2.2.29219.11047>
- **Gillett, K. J.**, March 2024: **SounderPy: A Sounding Visualization Tool for Severe-Weather Analysis and Forecasting**, 27<sup>th</sup> Annual Central Iowa National Weather Association Severe Storms and Doppler Radar Conference, Ames Iowa, <https://doi.org/10.13140/RG.2.2.15823.29600>

#### 4.3 OTHER INVITED TALKS

- **Space Weather Forecasting**, University of North Dakota, April 2025
- **Space Weather Forecasting**, University of North Dakota, May 2026

## 5 SOFTWARE DEVELOPMENT AND DATA

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**SounderPy**, Sole Developer

July 2023-present

- Open-Source Python software package for retrieving, analyzing, and visualizing observed, modeled, and reanalyzed atmospheric sounding data.

**MetPy**, Contributor

August 2023

## 6 TEACHING EXPERIENCE

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### 6.1 INSTRUCTOR OF RECORD

- **ATSC-270 Computer Concepts in Meteorology**, Spring 2026, UND

### 6.2 TEACHING ASSISTANT

- **ATSC-411 Advanced Synoptic Meteorology**, Fall 2025, UND
- **ATSC-405 Numerical Methods in Meteorology**, Fall 2025, UND

- ATSC-110 **Introduction to Meteorology Lab**, Fall 2025, UND
- ATSC-110 **Introduction to Meteorology Lab**, Spring 2025, UND
- ATSC-270 **Computer Concepts in Meteorology**, Spring 2025, UND
- ATSC-411 **Advanced Synoptic Meteorology**, Fall 2024, UND
- ATSC-405 **Numerical Methods in Meteorology**, Fall 2024, UND

## 7 LEADERSHIP EXPERIENCE

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**National Weather Service Liaison** – University of North Dakota Atmospheric Science Graduate Student Association, May 2025-present

**President** – Central Michigan University Student Chapter of the American Meteorological Society, April 2023-May 2024

**Webmaster** – Central Michigan University Student Chapter of the American Meteorological Society. April 2020-April 2023

## 8 AWARDS & HONORS

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**Outstanding Master's Student** – University of North Dakota, College of Aerospace, Department of Atmospheric Science (2026)

**Outstanding Graduate Teaching Assistant** – University of North Dakota, College of Aerospace, Department of Atmospheric Science (2025)

**Best Graduate Student Teaching Assistant** – University of North Dakota Student Chapter of the American Meteorological Society (2025)

**Department Service Award** – Central Michigan University Department of Earth & Atmospheric Science (2024)

## 9 SERVICE & MEMBERSHIPS

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**Student Member** – American Meteorological Society, January 2024-present

**Member & Officer** – UND Atmospheric Science Graduate Student Association, August 2024-present

**SCALAR Conference Organizer** – UND Atmospheric Science Graduate Student Association, May 2024-present

**Committee Head** – Map-wall Development, Osborne Weather Center Remodel, UND Department of Atmospheric Science, January 2025-present

**Member & Officer** – CMU Student Chapter of the American Meteorological Society, August 2018-May 2024

## 10 MENTORSHIP

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**Committee Member** – Payton Belzer, Senior Undergraduate Project: *Entraining CAPE in Tropical Cyclones from Aircraft Reconnaissance Dropsondes* (with Jacob Carstens and Catherine Finley), University of North Dakota, 2025-2026

## 11 RELATED EXPERIENCE

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**Full Time On-Air Broadcast Meteorologist** – WNEM TV5, GRAY-TV, Saginaw-MI, August 2022-August 2024

**Freelance On-Air Broadcast Meteorologist** – WLNS TV6, Nexstar Broadcasting, Lansing-MI, October 2020-August 2021

**Intern, Storm Chaser** – KSNB Local4, GRAY -TV, Hastings-NE, June 2022-August 2022

**Intern** – WLNS TV6, Nexstar Broadcasting, Lansing-MI, June 2019-August 2019

## 12 SKILLS

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### 12.1 PROGRAMMING & DATA ANALYSIS

- Python (advanced)
- Linux/Unix/WSL (proficient)
- HTML/CSS (proficient)
- Cloud Model 1 (CM1), Weather Research & Forecast Model (WRF), (proficient)
- LaTeX (proficient)
- Shell Scripting (intermediate)
- VBA, MatLab, & FORTRAN (beginner)
- JSON, CSV, netCDF, GRIB, TXT

### 12.2 OTHER COMPUTER

- Microsoft Office
- Google Sheets/Drive etc.
- Windows, Linux
- Gibson Ridge
- IDV

- Zoom & WebEx
- Adobe Lightroom, Photoshop, Premiere

## 13 FEATURED IN

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**Synoptic Analysis and Forecasting: An Introductory Toolkit**, 2nd Edition, Shawn Milrad, 2025.