ZACHARY B. MURPHY

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EMPLOYMENT EXPERIENCE:

University at Albany-SUNY, Albany, NY.   JANUARY 2016–MAY 2017.
Graduate Teaching Assistant (3 semesters)

- Assisted professors with two undergraduate and one graduate-level course.
- Wrote homework solutions and graded homework assignments.
- Held weekly office hours and answered students' questions regarding course material.

Space Science and Engineering Center, Madison, WI.   OCTOBER 2012–AUGUST 2015.
Meteorological Software Tester (part-time)

- Tested McIDAS-X, McIDAS-V, and IDV software to ensure they worked for a variety of computing environments.
- Worked with gridded, radar and satellite datasets to ensure output was physically appropriate.
- Assisted with teaching others McIDAS-V at biennial McIDAS User's Group Meetings.
- Used McIDAS-X to generate satellite imagery of pyrocumulonimbus clouds for an SSEC project.

RESEARCH EXPERIENCE:

University at Albany-SUNY, Albany, NY.   AUGUST 2015–present.
Graduate Research Assistant advised by Drs. Lance Bosart and Daniel Keyser

- Constructed a cold air outbreak database with Python for nine regions in the continental U.S. for a 68-year period using temperature data from a large network of stations.
- Used Microsoft Excel to compute statistics regarding cold air outbreak duration, yearly frequency, temperature, and evaluate statistical significance of data.
- Calculated diagnostics with the NCAR Command Language to illustrate the dynamic and thermodynamic environments of cold air outbreaks, lake-effect snow bands, and other weather phenomena.
- Evaluated the performance of several WRF microphysics schemes for convective activity and airmass formation.
- Presented research at regional and national conferences.

University of Wisconsin-Madison, Madison, WI.   SEPTEMBER 2013–DECEMBER 2014.
Undergraduate Research advised by Dr. Jonathan Martin

- Studied the formation of strong surface winds in North Atlantic cyclones using frontal and mesoscale dynamics.
- Used an algorithm that determined the frontal circulation using model data.
- Analyzed the evolution and intensity of blizzards in the central and eastern U.S. and western Europe.

OUTREACH EXPERIENCE:

UAlbany Family Earth Day, Albany, NY.   APRIL 2016, APRIL 2017.

- Assisted with an interactive, family-friendly event that educated guests about the atmosphere and environment.
- Performed hands-on demos for approximately 40 families to educate them about various atmospheric features.

Weather Camp, Albany, NY.   AUGUST 2016.

- Presented to a group of 15 high school students about winter storms, lake effect snow, and basic ways to forecast these weather events.
- Mentored a group of 3 students in a small independent research project about pollution.

EDUCATION:

University at Albany-State University of New York, Albany, NY.

- M.S. in Atmospheric and Environmental Sciences (GPA: 3.5/4.0)   MAY 2017.

University of Wisconsin-Madison, Madison, WI.

- B.S. in Atmospheric and Oceanic Sciences and Certificate in Mathematics (GPA: 3.5/4.0)   MAY 2015.

TECHNICAL SKILLS:

- **Programming Languages:** NCAR Command Language (NCL), Python, HTML/CSS, LaTeX.
- **Software:** WRF, GraDS, GEMPAK, McIDAS-X, McIDAS-V, IDV, Google Earth, Microsoft Excel.
- **Meteorological Datasets:** NCEP-CFS Reanalysis (CFSR), GFS analyses, NCEP–NCAR Reanalysis, GOES-East/West, MTSAT, GHCN-Daily, Level II and Level III Radar data.
- **Foreign Language:** German.