Clinton Alden

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Github
LinkedIn

Education

Doctor of Philosophy, Civil Engineering **March 2025 - 2028 (expected)**
University of Washington, Mountain Hydrology Research Group

Courses: Physical Hydrology, Geospatial Data Analysis, Snow Modeling

Master of Science, Civil Engineering **September 2023 - March 2025**
University of Washington, Mountain Hydrology Research Group

3.87 GPA
Thesis titled "The impact of warming temperatures on snowpack structure"

Bachelor of Science, Atmospheric Sciences **Aug 2019 - May 2023**
University of Utah

3.8 GPA
Main Courses: Snow and Avalanche Dynamics, Atmospheric Dynamics, Physical Meteorology, Numerical Weather Prediction

Work Experience

Graduate Research/Teaching Assistant **Sep 2023 - Present**
University of Washington, Department of Civil and Environmental Engineering, Mountain Hydrology Research Group *Seattle, Washington*

- Teaching Assistant for Data Analysis in Water Sciences, Fall 2025

Avalanche Awareness Instructor **Sep 2024 - Present**
Northwest Avalanche Center *North Bend, Washington*

- Taught avalanche awareness classes to the general public, discussing snow and weather

Lab Assistant - Atmospheric Sciences **Sep 2022 - August 2023**
UC San Diego, Center for Western Weather and Water Extremes (CW3E) *Remote*

- Continuation of CW3E internship with Dr. Minghua Zheng researching atmospheric rivers and their associated cloud properties using the MODIS-Terra Satellite.
- Assisted in the writing of a paper detailing the October 2021 Northern California atmospheric rivers with Dr. Zhenhai Zhang.
- Assisting with ensemble sensitivity guidance for US Air Force C-130 and NOAA G-IV dropsonde flights based on empirical orthogonal function analysis of precipitation for the Atmospheric River Reconnaissance field campaign.

Summer Internship **May 2022 - Sep 2022**
UC San Diego, Center for Western Weather and Water Extremes (CW3E) *La Jolla, California*

- Worked on an internship project with Dr. Minghua Zheng researching the potential for atmospheric river and cloud property characterization using remote sensing tools.
- Studied the Category 5 atmospheric river that occured in October 2021 over Northern California using ERA5 Reanalysis data and the MODIS-Terra satellite.

Teaching Assistant **December 2021 - May 2023**
University of Utah, Department of Atmospheric Sciences *Salt Lake City, Utah*

- Assisted in online asynchronous instruction of Atmos 1000 (Secrets of the Greatest Snow on Earth) for Professor Jim Steenburgh in Spring 2022 and Spring 2023 semesters.
- Graded 250 students weekly working with another TA
- Held office hours weekly to answer student questions.
- Assisted with Atmos 5260 (Snow and Avalanche Dynamics) advising students during field sessions making snow dynamics and hydrology observations in the Central Wasatch Mountains.

Forecaster **December 2021 - May 2023**
Utah Ski Weather - University of Utah, Department of Atmospheric Sciences

- Volunter forecaster for a blog, writing weather forecasts for ski areas in Northern Utah.
- Disseminated complex atmospheric science topics and related weather phenomena to concepts understandable for a general audience.
- Analyzed different weather models and parameters to forecast at both synoptic scale and mesoscale for mountain snow, temperature, and wind.

Presentations

Northwest Snow and Avalanche Workshop **25 October 2025**
Northwest Avalanche Center

- Talk titled "Turning Your World Upside Down: Atmospheric temperature inversions and their impacts on snow conditions"

Northwest Snow and Avalanche Workshop **26 October 2024**
Northwest Avalanche Center

- Talk titled "Reading Between the Layers: What will our snowpack look like with climate change?"

32nd Conference on Weather Analysis and Forecasting **19 July 2023**
American Meteorological Society

- Presented research to a general audience including researchers, water managers, ranchers, and other interested residents of the Yampa and Upper Colorado River Basins.
- Summarized impacts of 24 October 2021 atmospheric river (AR).
- Compared ERA5 reanalysis to MODIS-Terra satellite observational data, with specific concern to cyclogenesis and AR interactions.

Yampa Basin Rendezvous **23 September 2022**
Student Session

- Presented research to a general audience including researchers, water managers, ranchers, and other interested residents of the Yampa and Upper Colorado River Basins.
- Summarized impacts of October 2021 atmospheric rivers (ARs).
- Compared ERA5 reanalysis to MODIS-Terra satellite observational data, with specific concern to cyclogenesis and AR interactions.

Center for Western Weather and Water Extremes **16 September 2022**
Summer Internship Presentation

- Presented research to a academic audience consisting of engineers, hydrologists, and atmospheric scientists.
- Summarized impacts of October 2021 atmospheric rivers (ARs) in Northern California.
- Compared ERA5 reanalysis to MODIS-Terra satellite observational data.
- Regridded and averaged raw MODIS data to create a new data set in NetCDF format using Python, Matlab, and NCL.

Awards

Better to Buoy Foundation Scholar	2019 - 2023
Dean's List Academic Standing	6 semesters
Hazen H. Bedke Scholarship	2020
Earl S. Johnson Scholarship	2020, 2021
Shih-Kung Kao Scholarship	2021
Wilkerson Scholarship	2022
College of Mines and Earth Sciences Giving Day Scholarship	2022
Rocky Mountain Power Scholarship	2022
Dave C. Whiteman Mountain Meteorology Award	April 2023
Virginia Bigler-Engler Memorial Award - AMS San Diego	May 2023

Membership

American Meteorological Society Member	2022 - present
American Avalanche Association Affiliate Member	2024 - present

Skills and Other Experiences

Programming	Python, Linux, LaTeX, Matlab
Eagle Scout	December 2016
AIARE Avalanche Rescue Training	March 2024
American Avalanche Association Professional Level I	January 2025
Wilderness First Responder	October 2025

Media Outreach

5 January 2026 - Seattle Weekly - "Flood science: How December's atmospheric river soaked Washington"

18 January 2024 - The Mercury News - "Dangerous avalanches linked to one weird night - and what you need to know to stay safe"