Paul G. Fremeau, M.S.

StormVerdict Consulting

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EDUCATION

M.S.	**2021**	Atmospheric Science	University of Nevada, Reno
B.A.	**2012**	Psychology	University of California, Santa Barbara

PROFESSIONAL EXPERIENCE

2024-Present	**Meteorologist II**, Natural Disaster Protection, NV Energy, A Berkshire Hathaway Energy Company, Reno, NV
2021-2024	**Project Manager Atmospheric Scientist**, WeatherExtreme Ltd., A Research, Forecasting, and Consulting Company
2019-2021	**Atmospheric Scientist**, WeatherExtreme Ltd., A Research, Forecasting, and Consulting Company
2018-05/2020	**Guest Lecturer**, Climate Change & Impacts, Department of Geography, University of Nevada, Reno
2018-05/2020	**Graduate Teaching Assistant**, Climate Change & Impacts, Geography Department, University of Nevada, Reno
2019	**Pathways Intern**, National Weather Service, Reno, NV
2018-08/2019	**Graduate Student Researcher**, Nevada State Climate Office, Reno, NV
2017	**Student Researcher**, Western Regional Climate Center, Desert Research Institute, Reno, NV
2012-2017	**Hospitality Management & Training Professional**, Starwood Hotels & Resorts, Mammoth Lakes, CA; Aspen, CO; Philadelphia, PA

FORENSIC METEOROLOGY EXPERIENCE

* Qualified Expert, California Superior Court
* Deposition Testimony
* Trial Testimony
* Reports & Consulting
* Over 160 Meteorological Investigations for Legal Matters

SPECIALTIES

* Meteorological Consulting: Aviation Meteorology, Atmospheric Instrumentation, Snow Making, Applied Climate & Meteorology, Weather Forecasting
* Forensic Meteorology: Aviation Accidents (Airplane & Helicopter), Auto & Trucking Accidents, Bridge & Dam Failures, Wildfire Cases, Wind Damage & Incidents.
* Experience includes: Aircraft Icing, Turbulence, Microbursts, Thunderstorms, Winter Storms, Roof Avalanche, Atmospheric Rivers, Hail, Tornadoes, Dust Devils, High Wind Events, Radar Meteorology, Satellite Meteorology, Atmospheric Modeling (WRF Model), International Meteorological Data & Products

RECENT WEATHER CONSULTING EXPERIENCE

(Completion Dates in Parenthesis)

*Meteorology consultant for the award-winning creative nonfiction book *Miracle Country*, by Kendra Atleework (ISBN: 978-1643751412)
* South Dakota Severe Thunderstorm & Building Collapse – Wind & Tornado Potential Analysis **(8/2022)**
* California Hydroplaning Fatal Accidents – Weather & Climate Analysis **(multiple cases completed)**
* Oroville Dam Overtopping – Weather & Climate Analysis **(6/2021)**
* Blowing & Drifting Sand – Fatal Vehicle Accident **(3/2020)**
* Snow & Ice Loading: Fatal General Aviation Accident **(1/2020)**
* Constraining Wildfire Ignition Time Using NEXRAD Radar **(11/2019)**
* Weather Analysis re: Inflight Medical Emergency – Flight Crew Decision Making **(12/2019)**
* Thunderstorm Microburst & Blowing Dust – Vehicle Accident **(10/2019)**
* Slip & Fall Weather Analyses **(multiple cases completed)**
* General Aviation Encounter with Thunderstorm on Final Approach – Fatal Accident **(6/2020)**
* Sightseeing Helicopter Fatal Accident **(multiple cases ongoing as of 1/2023)**
* Sun, Moon, and Weather Impacts on Lighting Conditions re: Vehicle Accidents **(5/2021)**
* California San Joaquin Valley Fog Forecasting **(2020 – 2022)**
* Fog-related Vehicle Accidents **(multiple cases ongoing as of 8/2023)**
* Temperature Observation Certification Supporting Construction Litigation **(12/2020)**
* Commercial Aviation Turbulence & Thunderstorm Weather Analysis **(03/2021)**
* Road Weather Analysis (Snow, Ice, Temperature) for Fatal Vehicle Accident **(2023)**
* Thunderstorm Wind Gust & Treefall Injury Weather Analysis **(2023)**
* High Wind & Tractor Trailer Rollover Weather Analysis **(01/2023)**
* General Aviation Encounter with IMC & Subsequent Accident **(02/2022)**

PAST PROJECT DESCRIPTIONS

* Airbus/Perlan Project II: Specialty Forecasting & Research (www.perlanproject.org)
* Research & Reconstruction of Atmospheric Conditions Regarding Drone Accidents (Confidential Client)
* Life & Safety Forecasting: Fog, Severe Weather, Wind, Cloud, Precipitation (Confidential Clients)
* Multiple Aviation Research Contracts: Turbulence, Icing, Contrails, Cloud Physics (Confidential Clients)
* Modeling & Forecasting Stratospheric Mountain Waves & The Polar Vortex over Argentina & the USA (Contractor)
* Specialty Weather Station Consulting, Siting, and Installation (Multiple Clients)

ATMOSPHERIC SCIENCE RESEARCH EXPERIENCE

* **Wet Bulb Temperature Climatology & Hours of Snowmaking Potential at Sugar Bowl – Nevada State Climate Office (05/2018 – 05/2021)**

Performed research on the climatology of snowmaking potential for Sugar Bowl Mountain Resort. Calculated wet bulb temperatures using MATLAB with data from the Western Regional Climate Center. Calculated the number of hours of snowmaking potential per day, month, and year. This research assisted Sugar Bowl Resort in strategizing their investment in snowmaking equipment under a changing climate.

* **Snow Water Equivalent (SWE) Field Research – University of Nevada, Reno, NV (12/2017 - Present)** Partnered with Dr. Doug Boyle, Nevada State Climatologist, for a SWE study at Sugar Bowl Resort in Tahoe. Recorded manual SWE measurements at three sites at Sugar Bowl over varying altitudes. Studied the interaction of landfalling atmospheric rivers with the variable terrain of the Sierra Nevada Mountains.

* **Temperature Study – Western Regional Climate Center – Desert Research Institute – Reno, NV (08/2017– 12/2017)** Co-authored a temperature study comparing maximum and minimum hourly temperatures in the United States from a 1950-70 climatology to a more modern, 1996-2016 climatology. Aggregated and compared hourly temperature data from ~400 United States weather stations for historic and current era. Additionally, performed statistical analysis on station records, and created maps showing data completeness, density of measurements, and percent, magnitude, and direction of temperature change from the previous climatology to the present leveraging the Python programming language.

* **Volunteer Research Project – National Weather Service – Reno, NV (06/2017 – 08/2017)**
"An Analysis of the Winter of 2016/17 and Comparisons to the Wettest and Driest Years: Wet or Dry, and Why?" Partnered with Brian Brong, Science and Operations Officer at the NWS Reno Weather Forecasting Office (WFO), retrieved climate data (sea surface temperatures, precipitation data, 250mb vector wind data, 500mb GPH data using NCEP/NCAR Reanalysis datasets), and plotted, compared, and contrasted the wettest and driest years for the Tahoe City recording station, drawing conclusions to help answer the question "what makes for a wet vs. a dry winter for the Sierra Nevada in the Tahoe region?" Project concluded with a presentation of findings to the Reno NWS WFO.

AWARDS, SCHOLARSHIPS, & GRANTS

* **John W. James Scholarship (2018-2020)** "*awarded to a high-achieving student focusing on meteorology or climatology in either the Atmospheric Science or Geography program at the University of Nevada, Reno.*"
* **Nevada State Access Grant (2019-2020)**
* **AMS Student Travel Grant (2019)** for the American Meteorological Society Annual Meeting

CONTINUING EDUCATION

***National Disaster Preparedness Training Center / FEMA Training:**
- Winter Weather Hazards: Science & Preparedness (2021)

* **University Corporation for Atmospheric Research (UCAR) COMET MetEd Training:**
-Forecasting Mountain Wave Turbulence for Aviation
-Forecasting Clear Air Turbulence for Aviation
-Forecasting Aviation Convective Impacts with INSITE
-Aviation Focal Point: A Day in the Life

-Weather and Road Management

* **Integrating Weather and Climate with GIS Technology:**
Part 1: Desktop and Online Applications & **Part 2:** Analyze Data Using Python and Models – American Meteorological Society (AMS), 2020.

PRESENTATIONS

P.G. Fremeau 2023, *Working with Data from Multiple Domains: Applications in Forensic Meteorology*. Invited Presenter, 2023 Unidata Users Workshop. University Corporation for Atmospheric Research. Boulder, Colorado, June 6, 2023.

P.G. Fremeau 2022, *How to Avoid Becoming the Subject of a Forensic Meteorological Investigation*. Intermountain West Aviation Weather Safety Workshop. National Weather Service & National Oceanic & Atmospheric Administration, Reno, Nevada, June 11, 2022.

P.G. Fremeau 2022, *My Career Path in Meteorology*. Invited Presenter, American Meteorological Society, University of Nevada – Reno Student Chapter, May 2, 2022.

Licenses

General Class Amateur Radio License (Call Sign KB3HVZ) - Federal Communications Commission (FCC)

PUBLICATIONS

P.G. Fremeau 2021: Investigating Atmospheric River Precipitation and Associated Snowpack Characteristics Under a Future Warmer Climate Scenario: Case Studies from the Eastern Sierra Nevada near Donner Summit, California. M.S. Thesis, University of Nevada, Reno (Advisor: Dr. Douglas P. Boyle)

S.K. Hoekman, D. McEvoy, D. Simeral, P. Fremeau 2018*:* Comparison of Ambient Temperatures from 'Doner Report' to Modern Day Ambient Temperatures for the Same Geographic Areas*, CRC Report No. CM-138-16-2*

PROFESSIONAL ACTIVITIES

* American Meteorological Society (AMS), Member
* American Geophysical Union (AGU), Member
* National Weather Association (NWA), Member
* Reno-Tahoe American Meteorological Society Student Chapter, Past President (2018-2019)