

University: *University of Alaska Fairbanks*

Name of University Researcher Preparing Report: *Jessica Cherry*

NWS Office: *Western Region Fairbanks, Missoula*

Name of NWS Researcher Preparing Report: *Eric Stevens and Eugene Petrescu*

Partners or Cooperative Project:

Project Title: *A Study of WRF Capabilities in Resolving Temperature Inversions in Alaska and Montana*

UCAR Award No.:

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SECTION 1: PROJECT OBJECTIVES

The primary goal is to continue the ongoing assessment of WRF model runs in Missoula and Fairbanks by focusing on a critical issue – the handling of temperature inversions by the models as well as to observe the evolution of shallow inversions using an enhanced number of observations. Soundings from Fairbanks and other stations are being used for model evaluation. Testing of experimental, low-cost sondes has also been a goal of the project. These type of sondes have the potential to add valuable information in data sparse regions such as Alaska.

SECTION 2: PROJECT ACCOMPLISHMENTS AND FINDINGS

Dr. Cherry has been responsible for supervision of the student (Julie Malingowski), with whom she has written numerous codes to ingest and parse observational data from Alaska. She has also developed a calibration package for the experimental sondes using high-quality sensors.

Ms. Malingowski underwent training to release extra NWS sondes before and after the twice-daily scheduled soundings. The results from these releases are shown in the figures below.

Dr. Morton has been responsible for model runs and output visualization. He has also developed additional codes for observational comparison.

Observations vs. forecast comparisons of operational Alaska model runs are available at:

[<http://weather.arsc.edu/ForecastProducts/AKTrial1/post-analysis/>](http://weather.arsc.edu/ForecastProducts/AKTrial1/post-analysis/)

Missoula operational run output is available at: