# Weather Prediction Evaluation and Reporting (WPEAR)

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**Problem Statement**
Forecast accuracy is an important topic in both operational forecasting and atmospheric research. In order to facilitate accuracy in forecasts we must measure the difference in what was forecasted and what happened. To meet this need we will be designing and implementing a pipeline which will take publicly available forecasts and data from weather instruments and create derivative products with statistical information about the accuracy of the forecasts. The products will consist of visualizations on a website as well as grib files that can be used to do further analysis of the data.

**Project Objectives**
- Create a pipeline that can compare forecast and observation data and generate visualizations and other products.
- Create a website that can be automatically updated regularly to create new visualizations and products based on the forecasts and observations of the day.
- Work with Dr Baldwin to come up with some interesting visualizations.

**Stakeholders**
Users: Atmospheric Researchers and Operational Weather Forecasters
Developers: Stephen Harrell, Lala Vaishno De, Mengxue Luo, Dhairya Doshi
Project Manager: Stephen Harrell
Project Owner: Dr. Michael Baldwin, Professor in Earth, Atmospheric and Planetary Sciences at Purdue

**Deliverables**
- Create a downloader and converter to convert public weather data and forecasts to a similar format in order to store and compare.
- Create a program that compares weather data and forecasts and creates visualizations and grib file products.
- Create time sequence products (moving weather maps) as well as maps and plots of averages.

- Create an autogenerated website that will contain ongoing products for publishing on http://squall.rcac.purdue.edu/