**Executive Summary**

I propose to utilize the publicly available data in eBird and NOAA to analyze the correlations between temperature and bird observations. Some research was found by Audubon documenting future impacts of climate change. More research was found studying links between breeding and climate change. I hope to find areas with more extreme changes in monthly surface temperature and look for changes in range of species observations over time.

**Motivation**

I think this project has the potential to show undocumented relationships between climate and bird observation. Birds are fascinating animals and many are very specialized to their habitats. There are publicly available observation data on birds and climate for the whole 20th century. These data will allow me the chance to learn more about birds, climate change, and analyzing data along a time axis and using location.

**Data Question(s)**

The primary question for this analysis is: How have the range of bird observations changed over the last 70 years in North America? I want to evaluate these changes in location along with documented changes in climate over the same time period.

**Schedule (through 6/25/2020)**

1. Get the Data (5/15/2020)
2. Clean & Explore the Data (5/29/2020)
3. Create Presentation and Shiny App (6/12/2020)
4. Internal Demos (6/19/2020)
5. Demo Day (6//2020)

**Data Sources**

NOAA - <https://www.ncdc.noaa.gov/cdo-web/datasets>  
eBird - <https://ebird.org/data/download>

**Known Issues and Challenges**

I know that eBird’s data requires permission to download and use. I know that making visualizations on maps with a time axis is currently outside of my experience and may require quite a bit of learning to create. I know that both the NOAA and eBird datasets will be large and it may be challenging to find interesting changes in observed bird sightings. Weather data is noisy and has seasonality, many birds are migratory and may forage in areas where they don’t fledge. I’m not an expert in birds nor climate so I expect to learn a lot during this project.

**Feedback**

Seibert, this sounds fascinating. I think this will be very interesting. What technologies do you foresee using to showcase your data? Also, do you think it would be easy to gain access to the bird lab data- UN

I think that I’ll likely use python to do a lot of the heavy lifting. For visualization I’ll probably use PowerBI. Having a work a

Ditto UrLeaka’s feedback! I am excited to see what you come up with. I think this will be a great couple of datasets to work with, and has the potential to stretch your abilities as far as you want to go. Also, I think this is a really strong timeline. One thing that I would maybe challenge you on is the overall question for this project. I think it’s very broad and open. In a recent message you had mentioned that your strengths are in the implementations, and not so much in the creativity. With a question so broad, I think that you may spend a bit of extra time going in different directions without a true destination in mind. I would personally like to see you come up with 5 or so sub-questions that help support your current data question. From there, UrLeaka and I can help you narrow it down (or decide down the road). -TP