**Introduction (statement of problem)**

As you all know, COVID-19 is an illness that caused by a coronavirus started in late 2019. Many doctors and scientists want to find the variables that effect the infection of this virus. Knowing the variables, everyone in the world can be more aware and avoid getting infected. One of the most obvious factors is climate change over time. An analysis led by Hongchao Qi was analyzing a time series relationship between COVID-19 and two climate factors like average temperature and relative humidity percentage in Mainland China.

**Background (sources of data) / Approaches to problem**

The data were collected from the National Health Commission of People’s Republic of China from December 2019 to February 2020 for 31 Chinese provinces. The climate change data were from the Weather Underground. Using the two data sets given above, a generalized additive model or the GAM was used for the model development process. The daily count of confirmed COVID-19 cases was also transformed using log-transformation to have a more stationary time series process and smaller values to work with. To validate the model, the authors forecast daily cases with

**Results (key points you want audience to remember) / Conclusion/summary, further work**

Some significant finding that the authors mentioned were a negative correlation between the number of daily confirmed cases and climate factors of each province, especially Hubei. We should expect fewer daily cases in winter and more cases in summer. On the other hand, the interaction between average temperature and average relative humidity percentage was found to be positive. This means that the effect of relative humidity on expected cases would decreases as the temperature increases. In addition, time also had a positive effect in this model. We would expect the daily confirmed cases to increase as time passes by.

There are limitations to this analysis. The authors discussed how the analysis was conducted in a short period of time and the weather data was only collected from the capital city of each province. This led to an inaccuracy for other cities in the province since each province have a large area in China. In addition, this study was only been done on the months of December 2019 to February 2020 and specifically in Hubei province. If we want to project the model to predict daily confirmed cases from different time or different province, the information might be unstable.