# Wednesday Milestone

* Description of revised project statement [Yichun]
  + The goal and research question
  + The structure of the project
* SIR model and link to our project [Ziyi]
  + Model parameters and descriptions
  + Relationship between R0 and growth rate
* Three-part EDA [Yuchen will merge them together; put into Github before Monday] [Yuchen+ Moni + Yichun]
  + Data collection (source, brief description of the contents)
  + Data cleaning
  + Figures/Tables
* Baseline model [Yuchen]

# New Framework

1. Calibrate the transmission curve (polynomial regression/ random forest + SIR)  
   county socio-demographics + county political ideology + county COVID outbreak time + weather + state policy
   * Split the time into every 1-2 months
2. Mobility --> Case --> How to integrate with part 1?
3. What predicts second wave? (0-1 classification; LASSO) --> How to define second-wave?
   * Policy portfolio
   * Timing of re-opening
   * Face mask wearing proportion
   * Socio-demographic characteristics of the county
   * Mobility by places in the previous month (Need to fill in missing data using the methodologies told in class)
   * Average temperature in the previous month
   * (Potential: Protest scripted from NYT)
4. Counterfactual simulations
   * Climate: Extreme heat and precipitation facilitate COVID control?
   * Policy: For the counties with largest surge, what would happen if they implement policies earlier?
   * Other factors

# Next Week Working Plan

Task 1: Data collection [Yichun]

Task 2: Mobility --> case growth [Moni]

Task 3: Prediction for second wave [Yichun+Yuchen]

Task 4: SIR model

* calibrate parameters (R0) using observed data --> output: R0 for each week/ month [Yuchen]
* step-wise SIR model--> integrate the R0 for each time period and run the model [Ziyi]

Task 5: Interactive platform [TBD]

**Next Meeting**: Next Sunday 10 AM EST; 11 PM Beijing Time