**Agenda**

1. Takeaways from partner call
   1. Decide on project output (i.e. dashboard vs. paper) asap to start building towards a common goal
   2. Narrow down the problem statement with specifics including time steps, area, inputs, etc
   3. Consideration of “actionable variables” - things like agricultural usage, urbanization, etc. that are human actions casually linked to drought
2. Dataset walkthrough
   1. Michael
      1. Sentinel L2 radiometer, NCEI Climate data
         1. Soil properties though satellite imagery
         2. Python script provided (Sentinel) to download or HTML API (NCEI)
         3. Measure whether drought is occuring
         4. Time spans at least 20 years (~2000)
   2. Thee
      1. FAOSTAT, Sentinel, USDA Agricultural Statistics
         1. Sentinel: 60 by 60 meters resolution, in good quality
         2. Sentinel: Code exists
         3. FAOSTAT: not quite useful, because of low space resolution
         4. USDA: can be grouped by different commodity, in terms of production level/price, for each state **(MF: potentially a causal variable or a variable to measure drought effect)**
   3. Yujie
      1. USDM
         1. Output variables - 2 types of data, CSV file
         2. Area of interest would have to be matched to satellite images, larger regions
         3. County level data available (**MF: can do center of country and radius thing**, output things by county)
   4. Jim
      1. SPI, SMAP, Evaporation
         1. SPI data has access problem, prefer NASA SMAP data
         2. Need to grid dataset, need to reduce the time range
3. Discussion
   1. What problem statements fit the data we have accessed?
   2. What should the output of our project look like? How can we best show / explain the results of our work?
      1. Need to have
      2. Nice to haves
      3. Stretch Goals
   3. Should we consider “actionable variables”?
4. Next steps
   1. Decide on project goals conditioned on available data
   2. Delegate next steps for the coming week

**Notes**

1. **Questions for partner:**
   1. **A lot of different data sets - where are we going? What should we focus on - time series modeling, forecasting? Can we combine datasets intelligently?**
      1. **Currently, we are more inclined to do a paper**
      2. **We have information for forecasting using satellite images and using data from soil moisture, agriculture, etc.**
   2. **We intend to focus on a few regions within the CONUS - do you have any thoughts on which regions would be best? We thought potentially...**
   3. **What features in satellite imagery might be best for us to control for across regions? Masking? Cloud coverage?**
2. For images processing: focus on a potential mask for colors, extracting images feature.
3. The relative difference determines droughts (color over time) → what is the most important feature for a geographical location
4. Can choose 2-3 regions, to prepare to explore different kinds of data. Very very different regions→ can we model it using a universal algorithm?
5. MF: northern TX and OK, Northern CA and western Nevada, Western Montana, N Penn
6. Zona: some seasonal pattern in a climate that helps in prediction. MF: we have a narrow time range