1. **Team Members:** Kirsten Fuller
2. **Introduction:**
   1. **Research Question:** 
      1. How do individual brown pelicans vary in their over-sea foraging time?
         1. Are there sex differences here?
      2. Do environmental conditions impact over-sea foraging time of males and female pelicans differently?
   2. **Ecological Theory:** 
      1. Optimal foraging theory
   3. **Scale:** 
      1. Spatial: Gulf of Mexico
      2. Temporal: May – July; 2014 – 2017. Time frame falls just after peak breeding season (which is March-April).
   4. **Movement Phase:**
      1. Discrete time
   5. **Available Data:**
      1. This data package includes the following data files:

Brown pelicans in the Gulf of Mexico (data from Geary et al. 2018).csv

Brown pelicans in the Gulf of Mexico (data from Geary et al. 2018)-reference-data.csv

* + 1. These data are described in the following written publication:

Geary B, Walter ST, Leberg PL, Karubian J (2018) Condition-dependent foraging strategies in a coastal seabird: evidence for the rich get richer hypothesis. Behavioral Ecology. doi:10.1093/beheco/ary173

* + 1. Data package citation:

Geary B, Walter ST, Leberg PL, Karubian J (2018) Data from: Condition-dependent foraging strategies in a coastal seabird: evidence for the rich get richer hypothesis. Movebank Data Repository. doi:10.5441/001/1.212g53s7

* + 1. Will also need to look into environmental annotation from MoveBank to get environmental condition data.
    2. Data on available resources at different distances from the shoreline in the Gulf of Mexico? Is this possible?

1. **Analysis Plan:**
   1. **Cleaning**
      1. Import and explore all data including reference data.
      2. Remove all unnecessary columns.
      3. Spatially define data.
      4. Join reference data to spatial data? Is this necessary?
   2. **Exploratory summary of the data**
      1. In my brief exploration of the data it appears that data from brown pelicans in the Gulf of Mexico was collected between May 2014 and June 2017, but not continuously. Data for each season exists between May and July. The duty cycle was 1 fix every 15 minutes.
      2. Individuals were sexed when morphometrics were taken, so I will have to deal with sex in my analysis. It looks like there 30 total pelicans included in this study. 14 are females, and 16 are males.
   3. **Analysis approach**
      1. Create a database of spatial data by joining my point data with the reference data. Also, I will need landcover data to know where the land is and where the gulf is. This will allow me to measure how far each location is from the shore to help me answer the question if there are individual differences in foraging distance.
      2. Model thoughts:
         1. foraging distance ~ sex + environmental conditions + time of day