1) What is your updated W'21 goal? (it's okay if it hasn't changed, but I will need a refresher in any case)
2) What is your updated F'20 goal? both as a group & individually
3) What were you able to accomplish during Summer in preparation for this? (it's okay if not much as accomplished)
4) What is your goal for the end of Week 1 & 2?

Jeffrey:

1) A rover that can travel a set distance (50ft?) and follow a set path AND recognize humans, be able to stop, and interface with a human with a UI that asks a set of questions regarding the need for immediate medical assistance or ranger help, and ping necessary information to a phone (or other device) (email?)
2) A rover that can travel a set distance (50ft?) and follow a set path
3) We came up with a feasible problem+solution with our project
4) Research and make the first necessary purchases to start testing/building our rover.

AC vs. DC motor?
Brushless vs. Brushed DC Motor?
Motor controller vs. motor driver?
Battery voltage size? Does an RC car battery suffice?
What types of Arduino shields are compatible with each other? (Arduino brand vs. non-Arduino)

How do we go about getting funding? Buying things first or submitting a form first?
What does official documentation look like? Is there a template we can use?

- Developer manual
- User manual

Tobe:

1. Winter 2021 Finished Product:
    a. Complete obstacle detection and human detection features
    b. Be able to send GPS data over wifi to base station computer for proof of concept

2. Fall 2020 Goal: Built a rover that can travel on predetermined path
    a. Week3: Order parts
    b. Week6: Finish Assembling chassis?
    c. Week8: Wire motor and electronics? Rover should be moving
    d. Week10: Complete pathing programming/ design

3. Summer work
    Brainstorm for project idea, preliminary research for parts

4. First 2 weeks
    Complete first poster draft
    applying for funding

selecting appropriate tech for each feature

- Concerns to discuss:
    - logistics of building socially distanced, any alternative ways?
    - the new beacons QV brought up?

Bk:

1. Individually my goal for the Fall 2020 quarter is to make sure the thermal and ultrasound sensors work as intended, alongside with the microcontroller that will be used to make the motor run.
2. At the end of week 1 and 2, Since I have an ultrasonic sensor right now I will experiment with it and see how accurate I can be with the sensor. I will do this by creating a basic python code to determine the accuracy of the sensor.

Everyone:

Questions:

- Will tools be provided?
- Pros/cons of working with Thales? Stories about groups in previous years working with companies?

What we did over summer

- Looked at parts
- Revised ideas
- What issue did we want to address?

First two weeks

- Poster?
    - Should have what we are doing and where our inspiration came from
    - Outline the idea
- Apply for funding
    - Look at components

What to finish by fall

- At least build the rover by the end of the quarter
    - Want our project to be able to travel and move before we begin to implement the other systems (sensors, sounds, etc.)
    - By Week 3:
        - Order parts
    - By Week 7:
        - Johnny and James finished physical chassis
        - BK and Jeff wired microcontroller to chassis
        - Tobe how to control the rover through software
    - By Week 10:

        - Implement pathing and have rover travel a predetermined route

10/9/20 QV Notes

What minimum components do you need to test something?

- Acquire the most important components first
    - wifi/bluetooth (easy to test anywhere)
- What duplicates do we need?
- https://www.urop.uci.edu/
- Who is the ultimate end user for our product?
    - Average ranger is not cs literate: how would they be able to easily use/interface with the rover
        - Can implement the user manual in an app, same for the hikers who encounter the robot. There will be an interface on the robot through visual text.
    - What if a person is passed out?
        - Robot takes a picture and sends it to the ranger station?
    - Possibility: rover detects human, and only starts video if a certain level of communication is not reached in a given time frame

Example intermediate goal: rover on arc fields, send a message back to arc facility, record, etc.

- Important parts we need
- Break down components into different modules

Look up ieee articles on image recognition, sensing, all-terrain, off road chassis

- Are there existing databases?

Companies that can help and/or sponsor

- Beacon
    1. AeXonis
    2. LoRaWAN

Grants

- UROP

What's next:

- Poster
- Subdivide modules
- Most important components that we can test
    - Send material list that QV might have for us