Meeting Notes:

- Power Supply Question on Initial Board Design- would like Professor to Review
- Initial LoRa Message Send
- Use of I2C with the magnetometer to send messages
- Platformio.org could be a useful IDE if we have trouble with Arduino
  - Currently Feeling fine about Arduino but so far so good
  - Espressif IDE is another option
- Sensor Choices: I2C or Analog
- Sparkfun and Adafruit have built-in connections (like Qwic) that are essentially
- Use Op-Amp with Unity Gain as a Buffer- Output tied to negative input from the analog device going to the device
  - Looks like infinite impedance from the input (analog)
  - Looks like no infinite impedance from the output (to the Op-Amp)
- Op amps: just want something that doesn't change the sensor when hooked up
  - Don't want current going down the lead to the sensor
- We think it's better to swap batteries than to recharge them
- **Send board and schematic with spec files to Schafer if we want him to check IC**
- We plan to use USB to serial to program our device
  - Need more:
    - Some sequence of pins in order to put in program mode
    - Look into similar schematics to see how they program
    - "Holding IO9 low seems too simple"
      - His chip works for A266 (or 8266 lol)
        - Should set up our board to easily plug in a module like that
- Eagle
  - Several vias under ground pad on devices
  - Look at spec sheets for heat dissipation
    - Copper pours, thermals
- Regulator
  - Issue: battery will be 3.7 to 4.2
    - Need a pretty low dropout regulator
      - Stops working if you don't have headroom
      - Our drop off is 0.4 nominal
  - People in the past have used DC-DC converters and they're usually more efficient
  - He has TPS 61201 chip
    - Takes battery voltage
    - Would also need inductor
  - If current output is too low for transmission?
    - Lora is low power and should be fine
    - Would a capacitor bank solve that problem if we run into it?
      - If we're drawing that much current we won't last very long on a battery

- He guesses our peak power should be pretty low, lower than Wi-Fi
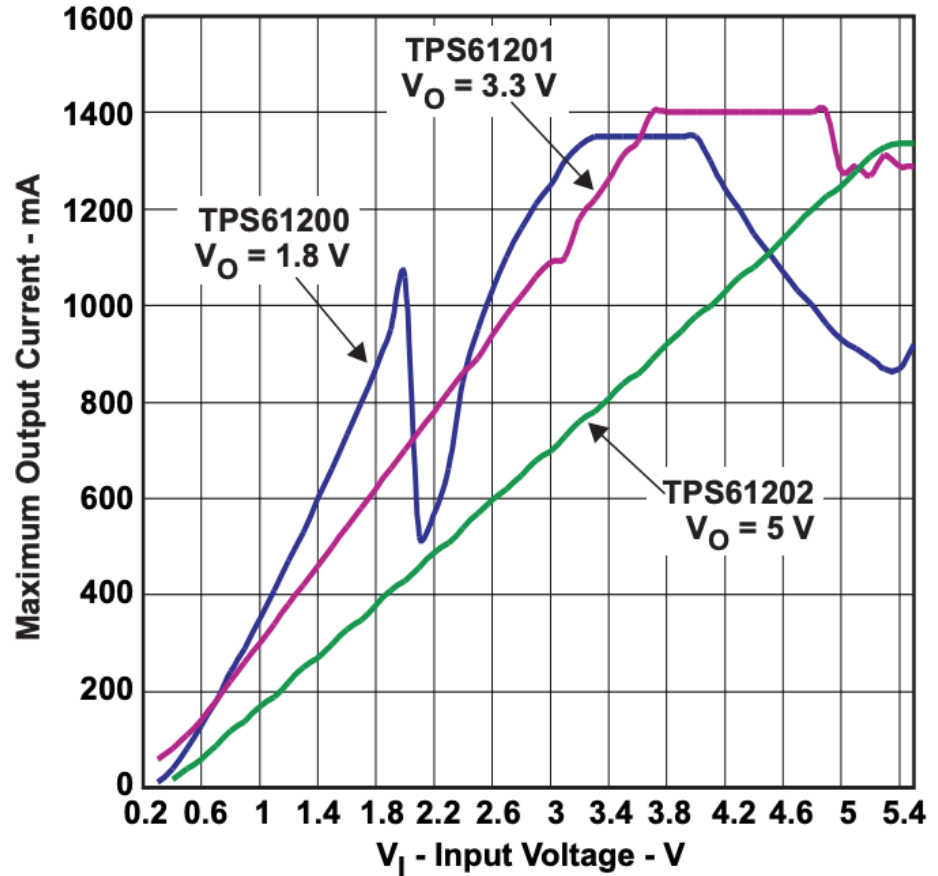 - Spec sheet has a typical layout

Figure 1. Maximum Output Current vs Input Voltage

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  - https://www.ti.com/lit/ds/symlink/tps61201.pdf?ts=1643823582810&ref_url=https%253A%252F%252Fwww.ti.com%252Fproduct%252FTPS61201%253FkeyMatch%253DTPS61201%2526tisearch%253Dsearch-everything%2526usecase%253DGPN

Action items
- Get board ordered to start testing stuff
- Test some of the code we have already written
  - If we can find our module