Progress Report - Week 6 | Feb. 15 - 22, 2025

Group 6:
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Notes:

- We will use a thermistor for thermal regulation, ADC has extra pins so maybe multiple thermistors?
- Transfer switches; need to figure out if we want to use pmos or nmos. Leaning towards Pmos, explored BJT options
- Breakthrough made with passive cell balancing circuit, will need to integrate with transfer switch design
- Physical testing of transfer design needed, will be started within this week - in progress
- Transfer switch difficulties 2/18, MOSFETS burned, will need replacements on 2/19
- Test program will need to be made this week that allows transfer switch toggling using rp2350
- We managed to explode an INA219 module. Device fried (no seriously, RIP shunt resistor)
- Issues being faced with sensors INA219 - Mainly with getting it to handshake consistently
- Team managed to connect to the ADC and the Current meter, still working on dialing in calculations for the voltage and figuring out reference voltage best practices
- Battery housing being reprinted and will be picked up on Wednesday
- Wednesday Feb. 19 @4pm in person meeting w/ Andrew Greenburg at EPL
- Looking for 19V adc due to our current one not being able to handle the voltage
- Consider the use of the ina226 due to a higher power rating
- Use shunt resistors to mitigate power
- Consider the use of Ideal diodes for the transfer switch

Tasks at hand:

- Project Proposal - Still need legal part for IP As of Feb 15 - Will need to start giving pushback to speedup process
- Sensor Validation
- RP2350 Peripheral mode prototyping
- Passive battery balancing design
- Test and integrate transfer switch w/ balancing circuit
- Battery housing (3D printed) - DELAYED DUE TO SNOW - need to pickup