



# Lightning Talk 4: Testing

Connor Davison, Elba Estarellas, Jack Waskow



# Unit Testing

- PV panel
  - Testing to ensure charges in 6 hours
- Final Assembly
  - IP58 certification
  - Resistant to vibration
  - Operable Temperature Range from -10 C — +45 C
- Battery
  - Testing to make sure the battery is able to hold a charge for 10 hours
  - Testing to make sure the battery is able to charge and discharge



# Interface/Integration Testing

- Testing the charging circuit between the PV array and battery.
  - Circuit must hold current and voltage constant until battery is fully charged, then cut off power.
  - Set up a test bench using a voltage supply and monitor voltage to battery.
- Testing interface between battery and derailleur
  - Battery must mount to derailleur using the existing battery's mechanical port.
  - Ensure the electronics connect properly and the physical connection is robust.



# Acceptance Testing

- Our client will be kept in the loop on the results of our tests during our weekly meetings
- He will have input on any compromises we feel are necessary to pass or change tests
- Will be able to offer his insight on what factors are most important to him