Members in Attendance

- Josh Mendez (Sponsor/Advisor)
- Felix Moss
- Annika Boyd
- Eisa Alsharifi
- Nathan Truong

Questions

- Do we need to measure the size of the particle, or just detect them
- How big

Notes

HOW TO DETECT

- Laser with reflector in a tub to detect when a particle passes by
    - Problem is dependent on particle size
    - Clouds are electrically charged, can be detected
- Particles moving through tube creates inductance (metal inductor tube)
    - Measure voltage at ring as particles move through
    - As particle gets closer to ring, voltage decreases below 0 across ring, when it recedes, voltage increases above 0
    - Particle properties secondary
- Resistor needs to be 1Gohm+
- Currents will most likely register at 1nA
- Censor with display to show that particles are going through
    - Use peak and hold circuit after amplification, finds max of signal and holds it for sampling
        - This circuit is diode in going into + side of op amp with grounding cap in between
- First, make op amp circuit to measure very small currents
- Peak and hold gives time for microcontroller to sample this voltage level
- Data log the data into csv by plugging it into the computer
- Tube needs shielding from stray currents present in environment
    - Embed tube into Teflon, one of the best insulators
    - Put grounded metal box around this
    - Tube is about 1cm in diameter

- Josh is usually in EPL or FAB 60-22