Aerogel Refraction

- Overall Purpose: to identify the particle shot through the aerogel into detector
- Method:
 - Identify the refractive index (n) experimentally
 - Using the refractive index it can be calculated what momentums are best to test and therefore which particles to look for
 - Then, depending on the read of the photon-electrons found through the PMTs it can be determined what the particle is



Projects

- 1. Test aerogel to find refractive index
- 2. Build humidifier
- 3. Test how humidity affects aerogel

Finding refractive index Result: n

- 1. Set up laser and angles
- 2. Place aerogel in holder
- 3. Shoot laser at corner of aerogel
- 4. Measure the refraction
- 5. Repeat for each corner and each aerogel

Humidify

- 1. Research, plan, and build humidifier
- 2. Test humidifier to ensure accuracy
- 3. Using a control group, test the effects of humidity on aerogel's index of refraction

Test affect of humidity Result: modified n

Using a control group, test the effect of humidity on aerogel's index of refraction.