# 7 Pollen Counter for Pediatric Patients with Allergic Rhinitis

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## Problem

- Allergic Rhinitis affects 40% of children in the US
- 23-40,000 pediatric E.D visits caused by allergic rhinitis annually
- Current pollen counts are inaccurate and can lead improper dosage of medication

## Design Inputs

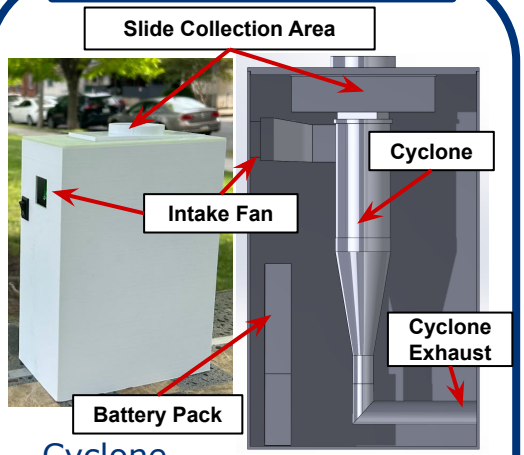
### Constraints

| < 11.3 lbs | < 46x25.5 x46 cm | Runtime < 1 hour |
|---|---|---|

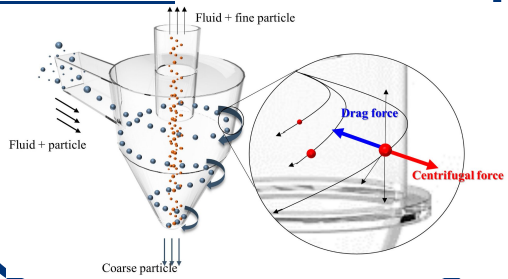
### Collection Requirements

| Diameter 10-50 µm | Density ~1.4 ± 0.3 g/mL | Collects onto slide |
|---|---|---|

## Solution & Build



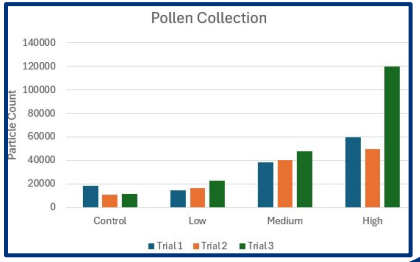

### Cyclone Mechanism




## Verification

### Collection Testing

- Assembled Solution sampled dispersed pollen-like Green Fluorescent UV powder within a 7 $m^3$ confined volume for 30 minutes
- **Results**: Tukey's HSD (Conditions vs. Control)
  - Post Hoc Significance: Low (X) Medium (X) High (✓) ∴ **FAIL**




## Future

### Revisions

- Cleaning mechanism or anti-stick materials
- Solution Stage 2:
  - Internal slide analysis

### Impact

- Accurate local pollen count grants ability for user to accurately dose
- Proper Dosing leading to Reduce E.R Visits