Impact of Fan/Filter Usage on Particle Counts

ROCIS Low-Cost Monitoring Project, October 2015
• Shadyside (urban area)
• Built 1909
• Brick w/ vinyl windows

• House has radiator heat, ducted A/C
• Filter on fan unit – Aprilaire Air Cleaner 2200
• MERV 10 filter, $25 (upgrade to MERV 13 possible)
10/8/15: Dylos Small Particle (0.5 μ +) Counts

- **FAN ON**
- **FAN OFF**
- **Grilling outside**
- **Bad smell outdoors**

**Particles per cubic foot / 100**

- **0.5 Outdoors**
- **0.5 Indoors**
10/11/15: Dylos Small Particle (0.5 μ +) Counts

- Return from vacation @ 6pm
- Turn on heat (boiler) @ 7:30pm

Particles per cubic foot / 100

- 0.5 Outdoors
- 0.5 Indoors
Conclusions

• Continuous use of fan/filter lowers indoor small particle counts
• Particle counts return to “normal” more quickly after spikes from cooking, etc.
• A filter on the mechanical system is beneficial for air cleaning only when the system/fan is on.