

### 5/12/20

1. Room baselines
2. SMPS atomizer comparison using same aerosol source
3. APS and OPC comparison using the same nebulizer source (atomizer)

### 5/13/20

1. Room baselines (all 3-minute averaging)
2. Room baselines for APS and OPC using shorter averaging)
3. Box only, no curtain, no nebulizer baseline measurement
4. Box, no curtains, micro nebulizer, out of box instruments (OBI) 2 feet from opening, in box centered
5. Box, no curtains, micro nebulizer, OBI 1 foot from opening, in box centered
6. Box, no curtains, micro nebulizer, 1 ft for OBI, in box near edge.

### 5/14/20

1. Room baseline
2. Completely covered, 3M drape on front, micro neb
3. Same as above, only the 2 SMPSs though turned off neb on old SMPS 3<sup>rd</sup> sample
4. Same as 2, hands in box, all instruments on
5. AOT neb, same as 2 otherwise – turn off at SMPS sample 3
6. Same as 5, all instruments out of box
7. All instruments out of box, hands in box
8. Press + seal cover (cross slits for hands, taped on top and bottom edge, sides fold around box corner) Turned off neb in 4<sup>th</sup> cycle, all instruments out of box
9. Same as 8, except hands in, all instruments out of box.

### 5/15/20

1. room baseline, SMPS and Dustracker in box
2. Medical nebulizer, press-n-seal covering, SMPS and Dustracker in box **Nebulizer stopped after 3 minutes**
3. Repeat of experiment 2
4. Added 3M screen over the press-n-seal. Aerosol on for ~7.5 minutes remaining scans had no aerosol flow
5. 2 screens with hands in the box. Aerosol flow for ~5mins, removed hands, and then scanned for an additional 5 mins
6. 2 screens, omni-air nebulizer. Aerosol flow ~5.5 mins flow off to see decay
7. 2 screens, omni-air nebulizer. SMPS only in box. Aerosol ~6.5 mins, flow off to see decay.

### 5/18/20

1. Room baseline for SMPS's only

2. New SMPS inside, old SMPS outside, cling wrap and curtain, micro nebulizer
3. same as 2, but both SMPSs outside

#### 5/19/20

1. OPC and CPC3 in box, APS and CPC1 out of the box, cling wrap screen. Scanned 1 min before nebulizer, 3 mins with nebulizer, then remaining scan nebulizer was off
2. Same setup as 1, but 3M screen was added.
3. 3M screen w/ press-n-seal. Looks like the press-n-seal is attracted and sticks to 2M screen. Same aerosol on/off procedure as exp 1
4. Tested the circular hole ~6in on the outside. Same aerosol on/off procedure as exp 1
5. Tested "patient side" of box. Switched inside and outside CPCs. No nebulizer for first 2 minutes. Nebulizer on for 3 minutes
6. Back to "original" setup with scanning on the doctor side. 3M covering only

#### 5/20/20

1. 3M screen only, hands in box. Baseline for 1 minute, turned on nebulizer for 1 minute, put hands in for 3 minutes, turned off nebulizer after it had been on for 3 total minutes. Remainder of scan was with nebulizer off
2. 3M screen. Instruments 3 inches from front screen. Baseline 1 min, nebulizer 3 min, no nebulizer 3 min. CPC was pointed at bottom of screen, APS was pointed at the side
3. Same as 2, but 6in from screen
4. Same as 2, but 9in from screen
5. No screen, back to 1 foot from opening.
6. Same as 5, but 3in in front of box
7. 3M & Press-N-Seal 3 in from box. **Left Nebulizer on for 4 minutes instead of 3 because cover was misaligned**

#### 5/21/20

1. Hands-in, same procedure as previous hands-in experiment Press-N-Seal w/ 3m Drape (outside instruments 3in away)
2. Switched to sucrose aerosol, with Press-n-seal and 3m drape
3. Press-n-seal with 3M drape using ATOM nebulizer
4. Press-n-seal & 3M drape with hands in box
5. Cling wrap & 3M drape 3in from box

#### 5/26/20

1. Airbrush size distribution, CPC & OPC outside box, SMPS and APS inside the box. First 2 scans are baseline
2. Airbrush size dist. Part II
3. Airbrush 30 seconds, press-n-seal w/ 3M drape
4. Airbrush 30 seconds, press-n-seal no drape
5. Trial 2 of exp 4 **LOST APS DATA FOR THIS TRIAL**
6. Trial 3 of exp 4

7. Trial 2 of exp 3
8. Trial 3 of exp 3

#### **5/27/20**

##### **\*switched to nitrogen tank due to house air being turned off**

1. Press-n-seal w/ drape, 30 second baseline, 30 second airbrush, 30 second wait, 1 minute hands
2. Trial 2, 1 minute wait after hands out
3. Trial 3, large spike at end due to lifting cover
4. Azelaic acid, 30 sec baseline, 30 second airbrush
5. Trial 2
6. Trial 3
7. No drape, ammonium sulfate, outside instruments pointed directly at hand hole openings
8. Trial 2
9. Trial 3

#### **5/28/20**

1. Industrial cling-wrap w/ 3M drape, ammonium sulfate. 30s baseline, 30s airbrush, remainder off
2. Same as 1, but with one minute hands-in after 30 seconds of turning off airbrush
3. Trial #2 of exp #1
4. Trial #3 of exp #1
5. Trial #2 of exp #2
6. Trial #3 of exp #2
7. Indust. Cling wrap w/ 3M drape & Azelaic acid
8. Trial #2 of exp #7
9. Trial #3 of exp#7

#### **5/29/20**

1. Industrial cling wrap w/ 3M screen 5 bursts, ~1 second long
2. Trial 2 of exp1
3. Trial 3 of exp1
4. OPC in box to test wall losses
5. APS in box to test size distributions with minimal wall losses

#### **6/02/20**

1. No Coverings, Airbrush 30 seconds
2. Trial #2 of exp1
3. Trial #2 of exp2

#### **6/03/20**

1. No Coverings, New airbrush for 3 pulses, each approximately 1 second long
2. Trial #2 of exp 1
3. Trial #3 of exp 1
4. Industrial Cling-Wrap w/ 3M drape 3 pulses, each approximately 1 second long

5. Trial #2 of exp #2
6. Trial #3 of exp #3
7. Industrial Cling-Wrap & 3M drape 3 simulated pulses, hands-in during cough
8. Trial #2 of exp #2

**6/04/20**

1. Trial 3 of hands in during cough
2. Trial 1 hands in after cough
3. Trial 2 hands in after cough
4. Trial 3 hands in after cough
5. Opc in box comparison
6. Trial 2 of exp 5
7. Trial 3 of exp 5

**6/05/20**

1. 3M & Industrial Cling Wrap, 3 simulated cough pulses. Hands-in during cough
2. 3M & Industrial Cling Wrap, 3 simulated cough pulses.
3. Both CPC's in box, 3M & industrial cling wrap 3 simulated pulses
4. Lifting box test, 3M & cling wrap
5. Lifting box test, moved CPC to more realistic head position
6. Lifting box trial 2
7. Nebulizer constant source for 2 mins, 3 inches away
8. Trial 2 of exp 7
9. Trial 3 of exp 7
10. 6 in nebulizer
11. Trial 2 of exp10 --- weird spike
12. Trial 3 of exp10
13. Trial 4 of exp 10
14. 12 in nebulizer
15. Trial 2
16. Trial 3
17. Side hole 3 in
18. Trial 2
19. Trial 3
20. Side hole 6in
21. Trial 2
22. Trial 3
23. Trial 4
24. Side hole 12 in
25. Trial failed

26. Trial 2 of exp 24

27. Trial 3 of exp 24

**6/08/20**

1. Nebulizer 12 in side hole
2. Trial 2, nebulizer started closer to 50 seconds
3. Trial 3
4. Nebulizer 3 in from side hole. Bad trial too high initially
5. Nebulizer 3 in from side hole
6. Trial 2, nebulizer on at 46 seconds
7. Trial 3
8. Nebulizer 3 in from doctor opening
9. Trial 2
10. Trial 3, OPC ran for too long
11. Trial 4
12. No drappings 3 in from doctor opening
13. Trial 2
14. Trial 3
15. No drape, 6 in
16. Trial 2
17. Trial 3
18. Trial 4
19. No drape 12 in
20. Trial 2
21. Trial 3

**6/09/20**

1. No covering, 3in side hole (manual\_022 on OPC)
2. Trial 2 of exp1
3. Trial 3 of exp1
4. No covering, 6in side hole
5. Trial 2 of exp4
6. Trial3 of exp4
7. No covering, 12 in side hole
8. Trial 2
9. Trial 3
10. "field experiments" – hands in during cough, shaking box during cough. Leaving hands in for 30 seconds, shaking box for 1 minute
11. Trial 2 of exp 10
12. Trial 3 of exp 10 OPC ran for too long
13. Size distribution 15-20 psi
14. Size distribution (n2 ran out)

15. Size distribution/cpc1 box agitation, going to retry with new valve
16. Skipping on CPC1 to make other instruments
17. Box agitation for 1 minute
18. Box agitation trial 2
19. Box agitation trial 3

**6/11/20**

1. Manual 037 in opc trial was bust
2. Nebulizer turned off, bust
3. Trial 1 3in sidehole, no draping on side hole, OPC going in through doctor side
4. Trial 2 of exp3
5. Trial 3 of exp3, failed, nebulizer stopped working
6. Trial 3 of exp 3
7. 6 in trial 1
8. Trial 2
9. Trial 3
10. Trial 4
11. 12 in trial 1
12. Trial 2
13. Trial 3

**08/27/20**

Additionally distance trails were need to get meaningful stats, so there we done with just CPC data (omron neb, furniture wrap + drape)

1. fail
2. 3 in distance, covers,
3. same
4. 6 in distance, covers
5. 3 in distance, no covers
6. same
7. same
8. 6 in distance no covers
9. same
10. same

**09/14/2020**

Repeat figure 2 (composition of cover experiments, CPCs only, 3in from opening, new airbrush)

1. No covers
2. no covers repeat
3. no covers repeat (AB stopped after 20 seconds)
4. no cover repeat
5. no cover repeat
6. industrial wrap no drape
7. repeat 6
8. repeat 6
9. repeat 6
10. Industrial wrap + drape
11. repeat 10
12. repeat 10
13. repeat 10
14. repeat 10
15. Press 'n seal + drape
16. repeat 15
17. repeat 15
18. repeat 15
19. repeat 15

**09/29/20** tests with suction

Initial tests were conducted sucking at 2 lpm, box had furniture wrap + drape. Suction line had droplet catch container and Hepa filter. Inserted through side hole. AB used, 3 short burst at 30 sec into run time

1. test 1 : failed

2. test 2: repeat, super long run time though
3. test 3: bumped up to 30 lpm
4. test 4: repeat
5. test 5: repeat
6. test 6: repeat
7. test 7: repeat, AB run at 1 min
8. test 8: dropped to 15 lpm
9. test 9: repeat
10. test10: repeat
11. test 11: repeat
12. test 12: repeat
13. test 13: 30 second steady AB flow to test particle escape

1. CPC clogged about 10 mins in. Let run with HEPA overnight.

**10/01/20**

1. Error (cleaned CPC orifice)
2. test 2: 30 sec on AB, 15 lpm, took inside line out 10 seconds after cessation of AB
3. same
4. same
5. same
6. same
7. Hands in after burst, 30 sec baseline, bursts, hands in at 1 min, out at 2 min.



8. same

9. same

10. same

11. same

10/05/20

1. decay test, AB, CPCs only, no suction test 1

2. repeat

3. repeat

4. repeat

5. fail

6. repeat

spring 2022: RH tests using RH probe and CPC (the new one). Enclosure is full wrapped under recommendations