
ROCIS Low-Cost Monitoring Project

WELCOME to the LCMP VIRTUAL COHORT (#44!)

Thank you for your decision to build the base of knowledge for improving the quality of air in our homes and workplaces, and reducing the effects of poor ambient air quality. Your participation helps us to understand how to best use low-cost particle and indoor air quality monitors. The low-cost particle monitors are a relatively new technology; we are exploring how they can be used most effectively in homes to empower occupants to reduce particles, through both behavioral changes and technical interventions. We are exploring which monitors are appropriate in what applications, how to interpret the data they provide, and what important decisions you can make as a householder, based on the information collected by the monitor. Most importantly, you are helping to build the base of knowledge to improve the quality of air in our homes and workplaces, and reduce the effects of poor ambient air quality.

We hope you find this as interesting as we do. With the information collected we are able to offer better guidance on the use of low cost monitors and the resolution of air quality problems.

If you have questions, or for more information, contact: Emily Dale (*cohort management & logistics*) (ke_dale@hotmail.com); Linda Wigington (*interventions, troubleshooting equipment*) (lwigington1@outlook.com), Don Fugler (*data interpretation, interventions*) (donfugler@gmail.com), Rob Busher (*troubleshooting equipment*) & Samantha Tottoni (*equipment support, health research*) (skc35@pitt.edu).

Thank you again for the investment you are making!
The ROCIS LCMP team; Emily, Linda, Don, Rob, & Sam

PROJECT OBJECTIVES

1) Understand How to Use Monitors to Empower Occupants

- ✓ What monitors/visualizations create the most appropriate call to action in reducing inside exposure to outdoor particles?
- ✓ What process is effective for supporting and maintaining occupant engagement?

2) Collect Baseline Data

- ✓ How do outdoor particles affect indoor particle counts?
- ✓ How do house/building and mechanical system characteristics influence the indoor/outdoor particle count relationships?

3) Explore the Impact of Behavioral and Technical Interventions

- ✓ Can a portable air cleaner be effective in an entire home/zone, or for only a confined space?
- ✓ Can low-cost monitors increase the effectiveness of an occupant's control of a home's filtration systems?
- ✓ When is it appropriate to use a central air handler and high MERV filter to reduce particles in a home, and what determines/predicts the range of effectiveness?

VIRTUAL COHORT ASSUMPTIONS

- All online meetings are 75 minutes or less
- All meeting times are the same – 7 PM & repeated at 10:30 AM the next day
- 7 PM meetings: Monday & Thursday; 10:30 AM meetings: Tuesday & Friday
- All meetings are recorded, & best of each is shared
- Participation is either “required” (**black font**) or “recommended” (**red font**) for each meeting
- Each meeting will provide time for questions/discussion

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Participant Expectations

Prior to Kick-off Meeting Thursday, September 3, 7 PM/Friday, September 4, 2020 10:30 AM

- 1) Complete 3 surveys: Cohort 43 Registration, House Characterization Survey & LCMP Pre-Survey
- 2) Coordinate with ROCIS team to confirm Monitoring Kit delivery

And optionally:

1. Join the Building Performance Community “Low-cost Residential Particle Monitoring” online group (2-step process)
2. Join closed group on Facebook & follow ROCIS on Facebook, LinkedIn, & Twitter
3. Download Smell Pittsburgh App

By Saturday, September 5, 2020

- 1) Complete & sign User Agreement (on clipboard)
- 2) Place & plug in monitors (One Dylos needs to be in a protected outdoor location w/ power)
- 3) Take & upload photos of equipment as set up in monitoring locations
- 4) Send us a photo of your signed User Agreement, & your head shot for our virtual group photo
- 5) Confirm with us (by text or email) that everything is set up & working

Ongoing Monitoring

- 1) Regularly check on each monitor (Daily, 5-7 minutes)
 - Week 1: Check all monitors twice a day, 5 out of 7 days
 - Weeks 2 & 3: Check monitors a minimum of once a day (5 out of 7 days)
- 2) Keep a diary/log of activity in your home/workplace (Daily, 5-7 minutes)
- 3) Collect data and upload to ROCIS (Weekly, 15-30 minutes)
 - Download Dylos data
 - Send Log/Incident report with manually collected readings of radon, CO₂, and CO₂
- 4) Continue to monitor and experiment! (Weeks 2, 3, & 4)
 - Change household behavior or equipment operation to explore the impact. Examples include increasing runtime of air handler, portable air cleaner, or kitchen range hood, cooking on back burners & covering pans when cooking.

Wrap-up Meeting Thursday October 1, 7 PM /Friday, October 2, 2020, 10:30 AM

- 1) Repack equipment and kit & make arrangements for pick-up
- 2) Complete close-out survey

PROPOSED SCHEDULE & TOPICS (Bold & black font indicate required session)

All Monday/Thursday evening sessions are 7-8:15 PM; Tuesday/Friday sessions are 10:30-11:45

8/24-8/25: **Intro to the Virtual Low Cost Monitoring Project**

9/3-9/4: **Virtual Cohort Kick-off** (Setting up Your Equipment; Info on logging/reporting)

9/7-9/8: **Check-in (What are you seeing? Questions/Discussion re IAQ & Equipment Operation)**

9/10-9/11: **Dylos downloading** (separate meeting for Windows vs Mac users)

9/14-9/15: **Access to Resources** (Smell PGH, PurpleAir Map, IAQ Now, & CREATE Lab VOCs)

9/17-9/18: **ROCIS Behavioral Interventions** (cooking, cleaning, & more)

9/21-9/22: **ROCIS Interventions** (portable air cleaners/central air filtration)

9/24-9/25: **ROCIS Visualization Tools** (Averager, LCMP Data Explorer, Weebly Site)

9/28-9/29: **Health Impacts of Particles** (Insights from Selected Research)

10/1-10/2: **Wrap-up Meeting & Close**