Agenda

Oct 20, 2021
1:00 - 4:30 p.m. (ET)

Webinar registration: **https://register.gotowebinar.com/register/5607599879330505486**

Audio/Phone (toll free): Note: Audio for this webinar is through the phone only (No VOIP).
For audio, participants call toll-free (833) 804-3387 and provide the operator with the conference ID: 6458688 when prompted.

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**This meeting will be held virtual only.

Laureen Burton EPA/IED – meeting moderator

I. Welcome, Introductions and Announcements

II. Updates on IAQ & IEQ activities from Federal CIAQ Member Agencies

1. EPA-Environmental Protection Agency – *David Rowson*
2. DOE-Department of Energy - *Chris Early*

Q&A (EPA, and DOE updates)

3. CDC – Center for Disease Control - *Ju-Hyeong Park* (NIOSH)
4. HUD- Department of Housing and Urban Development – *Peter Ashley*
5. NIST – National Institute of Science and Technology – Lisa Ng

Q&A (CDC, HUD and NIST updates)

III. Federal Member Agency Project Spotlight

Topic:

Indoor Air Quality (IAQ) Tools for Schools Program

Presenter:

Mary Jo Errico, Ph.D., Indoor Environments Division, U.S. Environmental Protection Agency

Dr. Errico works as a Biologist for the Indoor Environments Division of the U.S. Environmental Protection Agency. She is focused on translating scientific research surrounding indoor air quality in schools into actionable steps and guidance for school districts across the country. Prior to the EPA, she worked as a civilian Industrial Hygienist for the Department of the Navy, conducting occupational exposure assessments and indoor air quality sampling. She received a B.S. in Honors Chemistry from Georgetown University and a M.S. in Chemistry and Ph.D. in Environmental Chemistry from Florida International University.

IV. IAQ Area of Interest Presentation(s)

Topic:

How buildings can help stop the spread of SARS-CoV-2: Evidence and research priorities

Inhalable aerosols play an important role in the spread of SARS-CoV-2, influenza, and other respiratory infections. The risks associated with aerosol transmission form the underpinnings of critical public health mitigation strategies, from mask wearing to ventilation in buildings. The quantification of viruses in microscopic aerosols from those studies is being used in ongoing efforts to understand the fate and transport of airborne viruses within indoor environments where most transmission occurs. Here we provide a model of inhalation exposure to potentially infectious thoracic and respirable aerosols at close-interactive, room, and building scales. We summarize the evidence regarding indoor transmission risk for SARS-CoV-2 and other respiratory infections, as well as the effect of building-level controls including ventilation, filtration, and germicidal UV on mitigating risk. Knowledge gaps related to risk assessment and the evaluation of control measure effectiveness are identified and a research agenda to address these gaps is proposed. The goal is to better quantify the effectiveness of airborne infection control measures to support their effective implementation while decarbonizing the building sector.

Presenter:

P. Jacob Bueno de Mesquita, PhD, Indoor Environment Group, Lawrence Berkeley National Laboratory

Dr. Jacob Bueno de Mesquita is an environmental health epidemiologist. He dedicated much of his doctoral and postdoctoral study to quantifying modes of influenza transmission, characterizing viral shedding (including SARS-CoV-2 virus) in exhaled breath aerosols, and identifying contagious biomarkers. He has worked on an influenza human challenge-transmission trial and observational studies of acute respiratory infection in a campus community. Earlier he trained in basic biomedical science and global health at Georgetown and joined CDC as a Public Health Associate where he contributed to emergency preparedness, immunization programs, and clinical public health service delivery. He joined Lawrence Berkeley National Laboratory as a postdoc to study ventilation and other engineering controls with the goals of mitigating pandemics, promoting well-being, and achieving greater harmony with the natural environment.

Topic:

Measured influence of overhead HVAC on exposure to airborne contaminants from simulated speaking in a meeting and a classroom

Tracer gas experiments were conducted in a 158 m3 room with overhead supply diffusers to study dispersion of contaminants from simulated speaking in physically distanced meeting and classroom configurations. The room was contained within a 237 m3 cell with open plenum return to the HVAC system. Heated manikins at desks and a researcher operating the tracer release apparatus presented 8–9 thermal plumes. Experiments were conducted under conditions of no forced air and neutral, cooled, or heated air supplied at 980–1100 cmh, and with/out 20% outdoor air. CO2 was released at the head of one manikin in each experiment to simulate small (<5 µm diameter) respiratory aerosols. The metric of exposure relative to perfectly mixed (ERM) is introduced to quantify impacts, based on measurements at manikin heads and at three heights in the center and corners of the room. Chilled or neutral supply air provided good mixing with ERMs close to one. Thermal stratification during heating produced higher ERMs at most manikins: 25% were ≥2.5 and the highest were >5× perfectly mixed conditions. Operation of two within-zone air cleaners together moving ≥400 cmh vertically in the room provided enough mixing to mitigate elevated exposure variations.

Presenter:

Haoran Zhao, PhD, Indoor Environment Group, Lawrence Berkeley National Laboratory

Dr. Zhao is a Postdoctoral Researcher in Residential Building System group and Indoor Environment Group under Energy Technology Area at Lawrence Berkeley National Laboratory. His work focuses on the fate, transport and dynamics of novel indoor air pollutants and their association with building characters. His current work includes the laboratory and field experiments on evaluating mechanical ventilation effects on indoor air quality in buildings. He earned his master environmental engineering in 2014 and Ph.D. in 2019, both from Illinois Institute of Technology.

V. Announcements and Adjournment

[Note: the meeting may end earlier than 4:30p.m.]

Next meeting scheduled for February 2022