CALIFORNIA
AIR RESOURCES BOARD

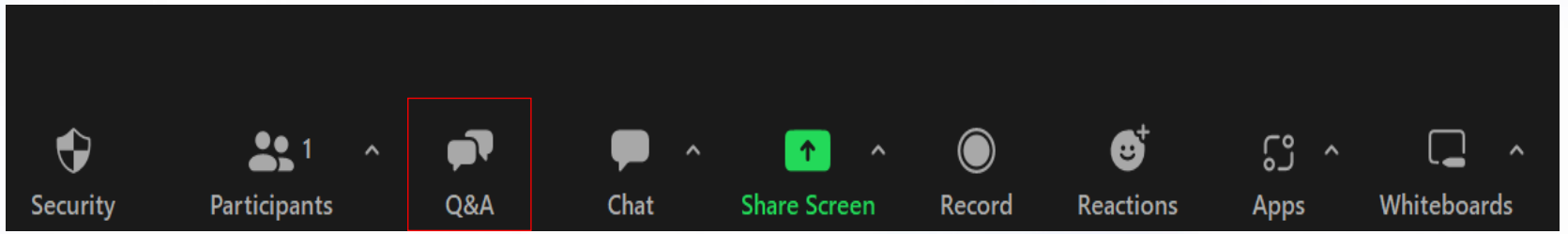
Research Seminar

Low-Cost Sensors for Healthier Indoor Air Quality in Impacted Communities

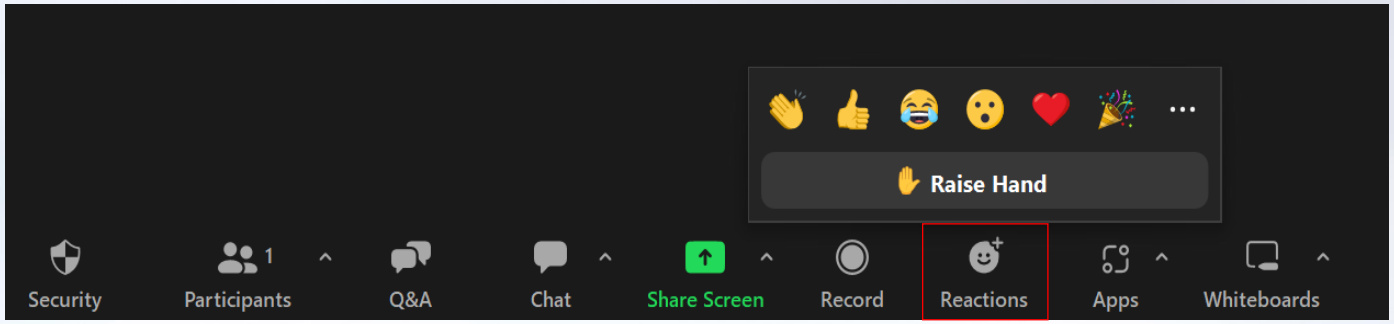
3/27/2025

Housekeeping Items

- If you have a written question, please enter it into the Q&A using the icon at the bottom of the screen.



- If you wish to ask a question verbally, raise your hand using the reactions icon. We will unmute you during the Q&A sessions at the end of the presentation.
- When called on, please identify yourself and your affiliation, and whether you have a question or comment.



CARB

Background

- Indoor air quality (IAQ) is impacted by particulate and gaseous air pollutants from both outdoor and indoor sources.
- Residents in impacted communities may face more challenges to achieve healthy IAQ.
- Recent studies indicated that information provided from low-cost sensors (LCS) motivated people to take action to improve their IAQ.
- LCS offer an accessible, user-friendly, and cost-effective tool for monitoring IAQ and could be a part of the solution to lower indoor air pollution.
- However, efforts to monitor indoor air using LCS are sparse in impacted communities, and the use of LCS for gaseous air pollutants needs to be explored further.

Study objectives

Provide a one-stop-shop of information on LCS for IAQ monitoring

Information

- Commercially available LCS for IAQ
- Performance evaluations
- IAQ studies with LCS in overburdened communities
- Stakeholders' opinions, experiences and suggestions

Guidance

- IAQ basics
- Sensor selection and use
- LCS specifications
- Resources

Recommendations

- Community Groups
- Researchers
- Manufacturers
- Policymakers
- Users

How CARB plans to use this study

- CARB staff is exploring the plan for outreach, such as
  - A searchable dashboard for LCS
  - Guidance on selecting, deploying, and maintaining LCS for IAQ
  - Additional resources on LCS
  - A short webinar to recap the information from this study to community residents if needed
- Suggestions on how to disseminate the information of this study are welcome

Additional Information

- Project webpage: https://ww2.arb.ca.gov/events/research-seminar-low-cost-sensors-healthier-indoor-air
  - White paper, guidance, and presentation slides are posted
  - Meeting recording will be posted in a few weeks
  - Additional updates on this project will be added when available

- Contact: qunfangzoe.zhang@arb.ca.gov

Today's Speakers

PI: Cesunica (Sunni) Ivey, Ph.D.

- Assistant Professor of Civil and Environmental Engineering and the PI of the Air Quality Modeling and Exposure Lab at UC Berkeley.
- Her research focuses on the nexus of air pollution science and engineering and environmental justice.
- She is an emerging leader in the areas of regional air quality modeling and its applications and community-scale air pollution exposure assessment.
- She works in partnership with community organizations across California to prevent the over-industrialization of already overburdened neighborhoods.

Jennifer Ofodile, Ph.D.

- Principal Air Quality Specialist at the Bay Area Air District.
- Recently completed her PhD in Environmental Science, Policy, and Management at UC Berkeley, where she was co-advised by Dr. Ivey. Her doctoral research investigates air pollution and environmental equity across indoor and outdoor environments using advanced analytical techniques and low-cost sensors.