

Measurement of Ventilation and Mixing Rates in Performance Halls to Characterize Risk of COVID-19 Transmission

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Airborne infectious diseases such as COVID-19 spread through indoor air. The rates of filtration and exchange with outdoor air in a building are key parameters in describing the probability of an infected individual transmitting an airborne disease to others. This poster describes measurements made in large performance venues at Weber State University in 2021. These large spaces are served by multiple air handlers, leading to ventilation and mixing dynamics that are significantly more complex than those in smaller rooms. We find that in these spaces, recirculation through filters is the dominant source of mitigation for spread of airborne diseases. Additionally, modeling of potential COVID-19 spread in these spaces shows that performers are the dominant source of risk, despite the fact that they are outnumbered by audience members.