

34. Indoor Air Quality Assessment of Lecture Halls in the UCLA Fielding School of Public Health, Center for Health Sciences

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Objectives: Lecture halls in the Center for Health Sciences are the most heavily used, as they are utilized by all five departments within the Fielding School of Public Health. Several students have voiced their concerns regarding the air quality in these lecture halls, and room occupants often experience drowsiness and concentration issues within 30 – 45 minutes of entering the room. Published research shows elevated CO₂ levels above 600 ppm decrease cognitive function and performance. We suspected that the ventilation system is not properly balanced or not functioning to the required specifications for adequate air exchanges, especially given the volume of students in the classroom.

Methods: 1.) develop sampling methods and a plan to accurately assess each lecture hall individually, but representatively, 2.) conduct the sampling with appropriate indoor air quality sampling devices and recording the number of occupants., 3.) compare the findings to the appropriate indoor air quality standards, 4.) develop recommendations to remediate any indoor air quality or associated ventilation system issues.

Results: Upon the completion of the initial testing, elevated CO₂ levels were found in both lecture halls; both had CO₂ levels >1000 ppm on separate days. These findings were documented as occurring while the room was occupied between the hours of noon and 3 p.m.

Conclusions: At CO₂ levels of about 600 ppm, cognitive effects begin to manifest including yawning, tiredness, lack of ability to focus, and decreased mental performance. OSHA and EPA consider 1000 ppm as an upper limit for indoor levels and that this indicates inadequate ventilation. Based on the findings, the scientific data and the OSHA indoor air quality standards, these rooms have elevated CO₂ levels and need to have the ventilation systems balanced to the appropriate occupancy counts. Once this is completed, these lecture halls shall be re-tested to confirm that adequate ventilation has been restored.



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