is an important determinant of their health and well-being. The inadequate control of indoor air quality therefore creates a considerable health burden. After an initial establishment of exposure data was observed that is necessary to implement a systematic process to mitigate contamination by dust as much as mould. Considering the environment evaluated, the cleaning process must be based on simple actions by using vacuum cleaner and enhancing the local exhaust ventilation. Also all the personnel should be instructed and trained in the new cleaning process.

SR-402-06
An Evaluation of Airborne Particulate Matter, Ambient Temperature, and Relative Humidity at a Northwest Ohio High School

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Objective: The air quality of a local high school in Northwest Ohio was evaluated by measuring airborne particulate matter (PM) concentrations, ultrafine particle counts (UFPs), and levels of ambient temperature and relative humidity at four indoor locations (classroom, cafeteria, gym, and front hall) and outdoors throughout a 15-week period. The objectives were to determine the levels of the air quality parameters and to evaluate the relationships of measured air quality parameters between sampling locations and class periods.

Methods: Integrated sampling was performed from January through June of 2013, typically on Mondays and Thursdays, to obtain 5-minute averages of each air quality parameter. Each indoor location was sampled during three of the 15 weeks for a total of six days while school was in session and one day while school was not in session. Outdoor sampling was done during four days while school was in session and one day while school was not in session.

Results: The indoor mean(standard deviation) of air quality parameters during the school day over the entire study were 8.2(5.9) µg/m3 for PM1, 8.3(6.0) µg/m3 for PM2.5, 8.6(6.1) µg/m3 for PM4, 11(8.5) µg/m3 for PM10, 170(17) µg/m3 for PM-Total, 3940(5697) count/cc for UFPs, 72.8(2.1)F for ambient temperature, and 26.2(12.6) percent for relative humidity. The classroom had the highest mean particle concentration (µg/m3) (11 PM1, 11 PM2.5, 12 PM4, 15 PM10, 22 PM-Total), while the gym had the lowest (µg/m3) (6.0 PM1, 5.7 PM2.5, 5.8 PM4, 6.4 PM10, 9.5 PM-Total). The cafeteria had the highest mean UFPs (5469 count/cc) while the gym had the lowest (1749 count/cc). Ambient temperature was highest in the front hall (74.3F) and lowest in the gym (71.2F), while relative humidity was highest in the gym (32.4 percent) and lowest in the front hall (18.9 percent).

Conclusions: The particulate concentrations and the UFP counts were low compared to recommended criteria. However, the levels of relative humidity were, on average, below the recommended minimum level of 30 percent.

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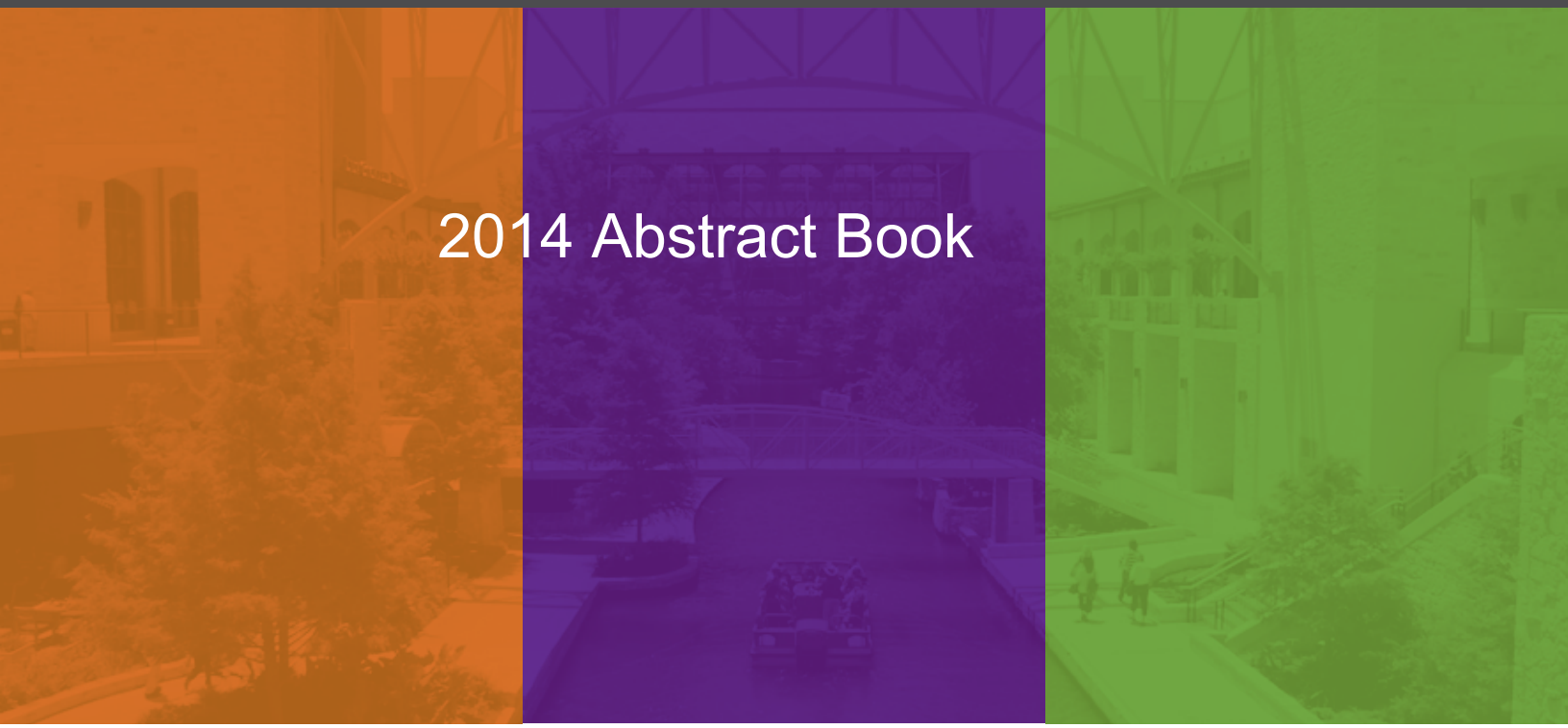

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