Particulate matter, a subset of ambient air pollution, is increasingly the cause of negative health outcomes in both children and adults. In children, it affects brain and cognitive development, in adults, it affects cardiovascular and respiratory health. Diesel exhaust which contains carbon particles and other trace compounds is a major contributing factor to air pollution. Inhalation of the small particles in diesel exhaust harms children. They are exposed to diesel exhaust in the school building from buses idling outside as well as when playing outside or waiting for the buses. Bus drivers often let buses idle to be able to cool or heat the bus to maintain comfort. As children are still growing, their immune and respiratory systems are not fully developed, making them more prone to onsets of asthma attacks. For this research study, one air monitor was configured inside the Old Mainstream Academy school in Pembroke, NC. It will provide PM 2.5 levels when children are in school and buses are idling to when buses are not idling. As part of this study, health outcomes and mitigation strategies will be reviewed, recommendations made, and an efficient and low-cost mitigation system will be proposed.

References