

## Ventilate to Open America Presentation Cover Letter for Educational Institutions, PTO's/PTA's, and Parents

**Masking and Indoor Ventilation** - Indoor ventilation systems in the USA are primarily of Mixed Ventilation (MV) type, including all the rooms in the schools. These systems are designed to mix the air and provide comfortable levels of temperature and humidity across the space. The danger posed by MV systems is that they perform their function so well. They distribute air and suspended pollutants uniformly across the space quickly. My purpose for this post is to raise your awareness about indoor ventilation practices and how they can be changed to improve your well-being, you, and your children's.

Exhaled aerosol particles become and remain suspended at a level that is based on the number of occupants in the space and their activity level. During normal times, i.e., pre-pandemic, sharing these suspended particles, i.e., inhaling them, could transmit infectious diseases like colds and flu. Now the particles are more dangerous. With or without masks, distancing, barriers, and sanitation efforts, we live and work in an aerosol cloud of exhaled particles that are spread across the space by the ventilation system. While you are discussing masking options, please consider this computer simulation of an occupied classroom for insight into the ventilation issue. <https://drennenengineering.com/airborne-particles/>

In 2021, the CDC published several Scientific Briefs that discussed mitigation strategies to reduce the spread of disease and lower risk of exposure to COVID-19 variants. One of the strategies was to move to directional ventilation (DV), like natural ventilation (NV)(windows open) in moderate weather. While not reliable, NV improves purging of the space while reducing mixing. DV is not a new type of mechanical ventilation system; it is an option that's appropriate for these pandemic times and less moderate weather. Please contact me to discuss how ventilation can be adjusted to make the spaces safer and masking moot. Until then, make no assumptions about level of effort to make classrooms, and other indoor spaces safer via a conversion to DV. [See computer simulation in link above for a demonstration of Directional Ventilation, specifically the CoVentilation™ method by Drennen Engineering, Inc.]

**John Drennen, PE**

*Principal*



**Drennen Engineering, Inc.**

Windsor, CT 06095 USA

Office | 860-219-2502

Email | [jdrennen@DrennenEngineering.com](mailto:jdrennen@DrennenEngineering.com)

Web | <http://DrennenEngineering.com>