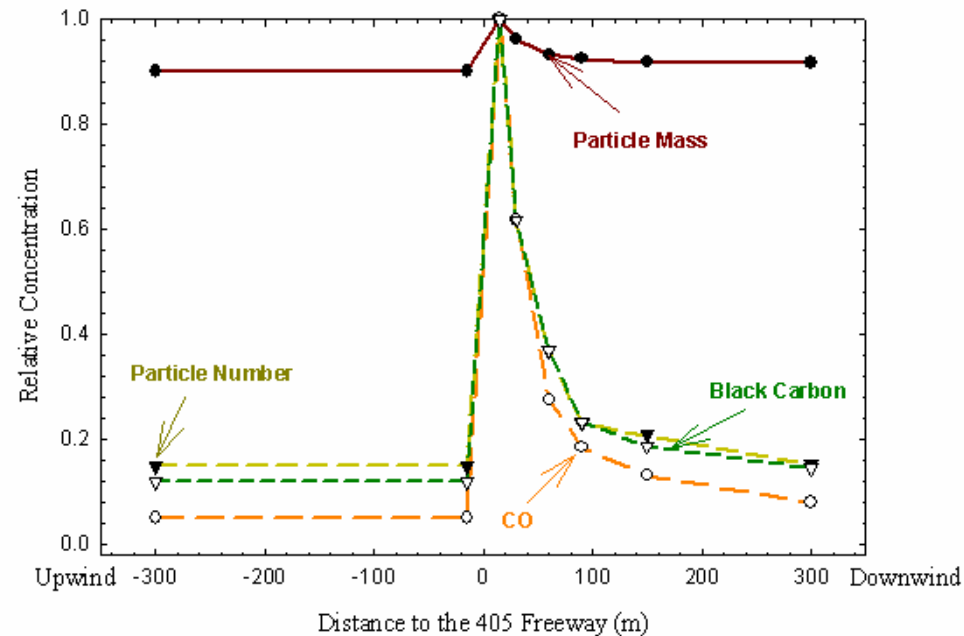
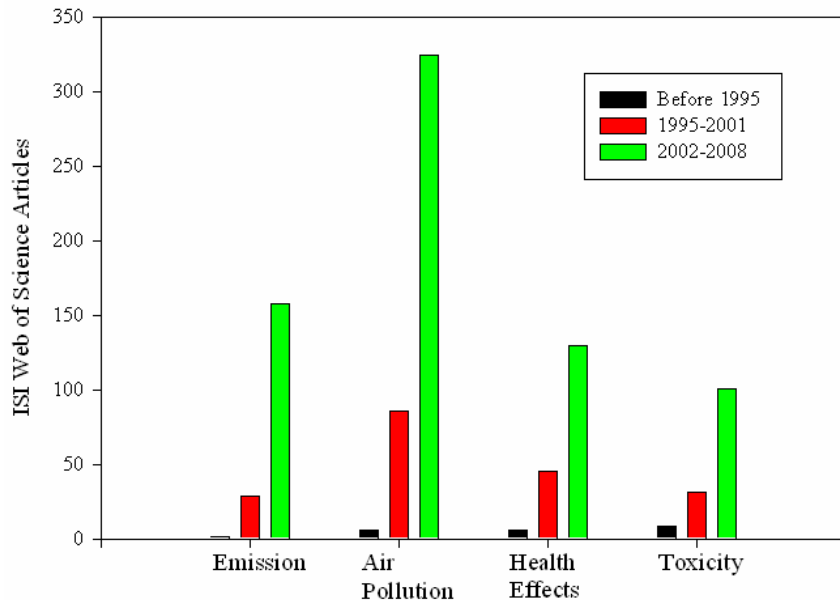


Assessing Children's Exposure to Ultrafine Particles from Vehicular Emissions

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- ◆ Significant adverse health effects were associated with ultrafine particle exposures. Children are a sensitive sub-population.
- ◆ The highest exposure to vehicular emitted ultrafine particles occurs on and near roadways.



Objectives

- ◆ **Long-Term Career Goal:** to develop reliable, predictive ultrafine particle exposure models to facilitate epidemiological studies on ultrafine particle health effects.
- ◆ **Objective of This Study:** to identify hot spots where school children are likely to be exposed to high levels of ultrafine particles and develop simple models to estimate children's exposure to ultrafine particles from vehicular emissions.
- ◆ **Specific Aims**
 - *Identify major factors that influence ultrafine particle concentrations inside school buses.*
 - *Identify major factors that influence ultrafine particle concentrations inside and outside the classroom.*

Method

◆ Six School Buses

- Before and after installing retrofitting devices
- On various roadways
- Under different ventilation settings
- Morning pickup vs. afternoon drop off

◆ Five School Sites

- At increasing distances from major roadways
- Different ventilation methods
- In different seasons

◆ Air Pollutants:

- Ultrafine Particle Size Distributions
- CO, CO₂, Temp, and RH
- PM_{2.5}
- Total Particle Number Concentrations
- BC
- NOx

