

**Implications (word limit: 100)**

Monitoring of PM<sub>10</sub> at satellite sites around long-term monitors meant to quantify human exposure in Mexico City showed that monitors in the city center represent large neighborhoods, but that monitors in the northeastern portion of the city are biased by local emitters. Differences in silicon (a marker for fugitive dust) and black carbon (a marker for vehicle exhaust) indicate that primary emissions are the major causes of this bias.