

# GEOGRAM



This week in the earth science class we learned about the atmosphere, including atmospheric pollution. Do these topics have any practical uses? Absolutely, Alexandra Ponette-González, an Associate Professor in UNT's Department of Geography and the Environment, specializes in human-atmosphere-biosphere interactions. Currently, her team is investigating the influence of drought-induced dust on nutrient and pollutant inputs to ecosystems in Texas, the role of urban trees as 'natural' air filters and the use of bird feathers to act as biomonitors of atmospheric soot deposition. Urban areas represent significant sources of atmospheric soot from burning of fossil fuels. Due to

soot's ability to absorb incoming solar radiation and adversely affect human health, its removal from the atmosphere can contribute to climate change mitigation and improving air quality for urban residents. By exploring how much soot bird feathers accumulate, an interdisciplinary team of faculty and students are working to determine if they can serve as biomonitors of atmospheric pollution. Biomonitoring of airborne soot is important because soot is a component of particulate matter with adverse effects on air quality and human health. The study compared soot



accumulation on chicken feathers at two urban sites – IH35 and a bus stop on the UNT campus - both in Denton, Texas. Feathers near the highway accumulated eight times more soot than feathers on campus. These findings indicate that soot accumulation on feathers varies over short distances within urban areas and that bird feathers potentially can be used for biomonitoring airborne soot.

What did you learn? a. soot is created by fossil fuel burning b. chicken feathers filter soot from the air c. soot adversely affects human health d. eight times more soot accumulated near a highway e. all of these are correct.