

Researchers use TRAX to uncover new information about air pollution in Utah

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A group of University of Utah researchers is working with public transportation to gain new understanding about air quality in Utah. Credit: Courtesy, University of Utah

A team of University of Utah researchers has launched an air pollution monitoring project that will result in a better understanding of air quality across the Wasatch Front.

Utah researchers Logan Mitchell, Erik Crosman, John Horel, and John Lin of the University of Utah's Department of Atmospheric Sciences are a few months in to the ongoing project, in which data are being gathered from sensors mounted on TRAX trains, in coordination with several partners in the community.

The project seeks to measure pollutants, including [fine particulate matter](#) (PM2.5) ozone and greenhouse gases, as well as meteorology using instruments installed on the Utah Transit Authority's light rail train (TRAX) that travels through the Salt Lake Valley. The [measurements](#) take place continuously, yielding a detailed look at how pollutants vary around the clock as well as fine spatial detail when the train is operating from the early morning to late in the evening.

"As far as I am aware of, these measurements are quite unique—the Salt Lake area is one of only a few urban regions in the entire world that have environmental sensors on board a light rail car," said Lin.

He said Utah provides a unique laboratory for [air quality](#) research.

"The combination of the fact that (a) the TRAX system crisscrosses the Salt Lake Valley regularly, from North to South, East to West and (b) the measurements are continuous, automated, and require only occasional human maintenance means that the TRAX-based measurements provide a level of detail about pollutant distributions that is difficult to obtain by other means," said Lin.

"Through these unique observations, we hope to characterize how pollutants are distributed in different parts of Salt Lake Valley, at various times of the day, with fine granularity," said Lin. "Then we seek to understand the emission patterns, meteorological processes and chemical phenomena that explain the observed pollutant distributions."

Lin said the TRAX-based measurements—in combination with other environmental data—could be used by health researchers in the future to help understand the variability of exposure to pollutants for people in Utah.

The researchers are just in the beginning stages of understanding how to

interpret the information they are collecting, he noted.

More information: More information about the project is available here: meso1.chpc.utah.edu/mesotrax/

Provided by University of Utah

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