Scientists target Utah's dirty air

By MIKE STARK - Associated Press writer | Posted: Wednesday, February 3, 2010 12:00 am |

SALT LAKE CITY -- More than 50 scientists and students will spend the next three years trying to figure out why Utah sometimes has the dirtiest air in the country.

Researchers said Tuesday the $1.3 million study will focus on the state's winter inversions -- weather systems that pin cold air and pollution from tail pipes and smoke stacks close to the ground. They can sometimes last for days and leave residents wheezing, coughing and cursing.

State environmental officials have issued more than 20 health warnings this year along the Wasatch Front and some schools have been forced to keep students inside for recess.

The worst stretch in mid-January lasted about 10 days as Salt Lake City and the Wasatch Front stayed trapped under a gray layer of eye-watering haze.

Scientists generally understand how inversions work, but there are less understood, subtle factors that influence how bad they get and how long they'll last. These naturally forming "cold pools," as they're sometimes called, can be fickle, growing and dispersing at the whims of wind, moisture and other weather conditions swirling around bowl-shaped valleys.

"We'll be using the Salt Lake Valley as a natural lab to study these things," said John Horel, an atmospheric sciences professor at the University of Utah and one of the leaders of the study.

The National Science Foundation is funding the project. The money will be split among the University of Utah, the National Center for Atmospheric Research and Michigan State University.

The effort will be the largest field study of atmospheric conditions in Utah in a decade, Horel said.

The work will include a network of instruments around the region and even equipment mounted on students' cars to measure wind, temperature and moisture. Similar equipment is used by atmospheric scientists chasing storms in the Midwest.

"We'll have our students chasing the structure of cold air pools," Horel said.

Ultimately, researchers hope to know more about how inversions are formed and how they're affected by cloud layers, mountain slopes and even moisture swept up from the Great Salt Lake.

Eventually, Horel said, that may make it easier to predict when the bad air is going to arrive and how long it's going to last.