# AQRP PRIORITY RESEARCH AREAS
## 2012-2013

A primary goal of the State of Texas Air Quality Research Program (AQRP) is to support scientific research related to Texas air quality, in the areas of emissions inventory development, atmospheric chemistry, meteorology and air quality modeling. The research needs in these areas are significant and continuing.  Because AQRP resources are limited, proposed research projects should focus on high priority, targeted areas.

For the 2012-2013 biennium, the targeted areas for AQRP research are:

- Analysis of flare operating regimes that provide both high combustion efficiency and minimal smoke formation;

- Analysis of the impact of global and regional transport of air pollutants on Texas;

- Analysis of data collected in the Dallas-Fort Worth (Barnett Shale) field campaign;

- Analysis of prior Texas field study data and modeling tools (e.g., AERMOD, CAMx) to investigate transformation of gas-phase pollutants to aerosol phase. The rate of SO2 loss from gas phase to aerosol/aqueous phase is of particular interest;

- Improving the understanding of ozone and PM formation, and emissions characteristics in the Houston area through deployment of supplementary measurements in a large field measurement campaign planned by NASA (DISCOVER-AQ) for the summer of 2013;

- Investigation of how the temporal resolution of mesoscale meteorology and photochemical grid models must be altered in order to properly perform high spatial resolution (less than 2km) modeling in Houston;  investigation of the mesoscale modeling of cloud formation during air pollution episodes in Texas, and the effects of clouds upon ozone and PM chemistry;

- Analysis of radical chemistry in Texas cities, especially HONO formation, ozone removal and production by halogen chemistry, and atmospheric chemistry within industrial plumes.