# University of Leicester Partner with Bluesky to Map Air Pollution

Arguments about which UK city has the most polluted air could be put to rest once and for all thanks to a landmark new project that uses state of the art techniques to measure air pollution in city environments. A partnership between the University of Leicester and aerial mapping company Bluesky is aiming to improve the monitoring of dangerous gases in urban environments. Using a state of the art airborne mapping system, developed by scientists at the University of Leicester, integrated with ground-based sensors, a Bluesky sponsored PhD student is aiming to provide a quantitative understanding of the levels of nitrogen dioxide around a given city.

Jordan White, currently studying for his PhD in atmospheric physics within the University of Leicester's Department of Physics and Astronomy, is sponsored by Bluesky and will be using the state of the art system to record the effect pollution is having in cities during people's day-to-day lives. He said: "By exploring the complex concepts of gas-phase tomography we can retrieve 3D structures of pollution. This combined with improvements in the performance and integration of the monitoring systems gives us a much better understanding of the levels and movement of air pollution in our cities."

Dr Roland Leigh, academic supervisor at the University of Leicester added, "Air Quality continues to be a critical issue in our society, requiring innovative solutions to both measure and reduce pollutant concentrations. This project builds on key academic expertise in instrument design and data manipulation, and once again benefits from a strong industrial partnership with Bluesky".

"The latest stage in the research into air pollution modelling is designed to improve the way the monitoring systems work together in order to measure pollution levels as well as looking at vertical mixing ratios of air in cities and the potential impact of buildings and trees," commented James Eddy Bluesky's Technical Director and Industrial Associate at the University of Leicester.

The PhD project will build on results from previous trials of the University of Leicester's world-leading Compact Air Quality Spectrometer. Mounted on a dedicated aerial survey aircraft the device monitors visible light and measures how much light is lost at specific wavelengths absorbed by NO2. The technology has previously been used as part the CityScan project with devices mounted on tall buildings in Leicester, Bologna and London during the Olympics to build 3D maps of pollution across the cities. The project will also use data from a network of low-cost ground-based air quality sensors, sponsored by Bluesky, and additional geospatial information including Bluesky's 3D building models and National Tree Map data.

The research project, part of a regional doctoral training partnership, is funded by the Natural Environment Research Council (NERC) through the Industrial CASE Studentship programme. CASE (Collaborative awards in science and engineering) Studentships provide doctoral students with a first-rate, challenging research training experience, within the context of a mutually beneficial research collaboration between academic and partner organisations in the private, public and civil sectors.