

Pre-Symptomatic Diagnosis of Infections*

Preliminary experimental results with rats suggest that expired breath may contain early chemical signatures of pulmonary inflammation.

- Samples of expired breath are collected from rats before exposure to aerosolized endotoxin, and then again at 1, 5, and 24 hours post-exposure, using apparatus at right. Gas samples are transported to ORNL for analysis of volatile constituents by GC-MS. Unexposed control animals are being used to generate a baseline.
- Visual examination of the GC-MS spectra from the first few animals suggests that differences can be seen between exposed and unexposed animals. Statistical and pattern analyses will be done as more results become available over the next month.



Long-term Goal: Development of diagnostic methods for use in public health for early detection and treatment of victims of biowarfare agents, natural epidemics, etc., and for management of the “worried well” syndrome.