Personal and Ambient Exposures to Air Toxics in Camden, New Jersey
Summary of the Study

There are multiple sources of air pollution located in and near the Waterfront South area in Camden, New Jersey. Major contributors to existing air contamination include industrial and manufacturing sources, municipal waste and sewage treatment facilities, fossil fuel electric power generation, as well as numerous other high-polluting contributors. In addition, mobile sources such as automobile emissions from interstate highway 676, diesel emissions generated by the large number of trucks (estimated at over 300,000 per year) servicing the industry in the community, and urban sources of air toxics from Philadelphia comprise and compound the pollution within the Waterfront South region. There are potential health risks associated with extended exposure to high levels of air toxics in ambient air. Since January 2004, researchers from the University of Medicine and Dentistry of New Jersey (UMDNJ) and scientists from the New Jersey Department of Environmental Protection (NJDEP) have been conducting a study to characterize both ambient neighborhood and personal concentrations of air toxics in and near the neighborhood of Waterfront South (WFS). This project has been funded by the Health Effects Institute in Massachusetts. A total of 100 volunteers from the WFS and the Copewood/David Streets areas participated in this study. Each subject was monitored for 24 hours on four separate days: two in summer and two in winter; one on a weekday and one on a weekend during each season. After each measurement was taken, the subject was asked to complete a questionnaire about his/her activities and proximity to local sources of air toxics. Neighborhood ambient concentrations of air toxics were also collected simultaneously. The air sampling was completed in July 2006 and the data analysis is ongoing. The measurements obtained from this study will be compared between locations (with or without nearby outdoor sources), seasons (winter vs. summer), and time series (weekdays vs. weekends), to determine the potential impact of local sources of air toxics on personal exposure and ambient neighborhood air pollution. The results obtained from this study will provide quantitative data needed to more accurately assess potential health risks posed by exposure to air toxics, and will assist the NJDEP and other agencies in prioritizing the types and number of local sources which need to be mitigated in order to reduce the health risks from exposures to air toxics in the WFS area.

Further information about this study can be obtained by contacting Dr. Paul Lioy and Dr. Zhihua (Tina) Fan at (732) 445-0150, or at EOHSI, UMDNJ, 170 Frelinghuysen Road, Piscataway, NJ 08854.