TRI and Human Health Session
October 19, 10:45-11:45 a.m.
Grand Ballroom

What Can TRI Tell You About Human Health Risks?
Kara Koehrn, Presenter

TRI is a valuable source of information about toxic chemicals managed and released to the environment from industrial facilities. However, it is important to keep in mind that TRI cannot tell you whether people are exposed to these chemicals. Additionally, it does not including information on all toxic chemicals, or all sources of toxic chemicals in a community. So what can TRI tell you about the human health risks? And what is a good way to access TRI data to start answering risk questions? What other resources exist to supplement TRI data? This presentation will provide an introduction to what TRI can tell the public about risk and will walk through an example risk question that the TRI program recently heard from a group of health practitioners. The presentation will feature EPA's EJSCREEN mapping tool, which includes TRI data as well as other information from EPA and other sources.

Something is Wrong with My Child: Determining Exposures that May Affect Help in Children
Jennifer Lowry, Presenter

The Pediatric Environmental Health Specialty Units (PEHSUs) are funded by the Agency for Toxic Substances and Disease Registry and the Environmental Protection Agency and function to provide education, consultation and network availability in regard to environmental exposures to children. Health professionals, including pediatricians, medical toxicologists, occupational medicine physicians, pharmacists and nurses, provide advocacy, clinical advice and prevention strategies to the public and health care communities. However, questions often arise regarding health effects in individual children or clusters in communities where an exposure from an unknown source can occur. Using databases such as the Toxics Release Inventory and other EPA databases can aid the PEHSU in determining potential exposures in children. Additionally, this information can aid the clinician in risk communication to the communities to help determine the need for local, state or federal help. This presentation will describe cases in which PEHSUs have been called and utilized the TRI data to help determine if exposures have contributed to health effects.

Association between Breast Cancer and Environmental Carcinogen Emissions Reported to the Toxics Release Inventory in Puerto Rico
Edna Pacheco-Acosta, Presenter

To conduct this study we used secondary data from a case control study on the role of DNA and breast cancer in Puerto Rico and the TRI database was used to assess the environmental exposure to carcinogenic emissions of industries. A spatial analysis was performed to identify industries locations with reported carcinogenic emissions within less or equal one mile from participants residential address. Approximately 22% of the cases resided within one (1) mile of a TRI facility and around 20% of the controls. To evaluate the level of exposure of each study participant we estimated the historical environmental exposure to TRI emissions between 1998-2006 and the year of diagnosis or recruitment (2006-2013) in three categories: not exposed, exposed low risk and exposed high risk. An unconditional multiple logistic regression model was use to assess breast cancer and these exposures controlling for age, BMI, civil status, history of breast cancer and DNA repair capacity. The likelihood of breast cancer for participants with high-risk exposure was 50%

(OR: 1.5, 95% CI= 0.75, 2.95) higher than those with no-exposure, after adjusting for age, BMI, civil status, and family history of breast cancer; p-value > 0.05. Among those with a DRC value less than or equal to four percent, the risk of breast cancer for participants of high-risk exposure was 63% (OR: 1.63, 95% CI: .54 -4.95) higher than for those participants with no-exposure, after adjusting for same variables, p-value > 0.05. We link a historical database on toxic emissions and a clinical base case control study to determine the potential association between residential proximity to TRI facilities and breast cancer. This allowes us to design an exposure algorithm to identify potential historical exposure for study participants based on the presumption that residential location at enrollment was the same when toxic releases were performed.