

## Abstracts in this session

### **Where is there a Link between Small Babies and the Outdoor Environment?**

*Charlene Nielsen, University of Alberta, Edmonton, Alberta Canada*

**Abstract text:** One of the fundamentals in environmental health and epidemiology is place – where one lives and even where one starts out in life, such as during fetal development, contributes to lifelong health. Environmental exposures on the mother during pregnancy may lead to an adverse birth outcome, such as babies born too small, potentially leading to death, physical and mental disabilities, and chronic health problems later in life. We are examining the coincidence of maternal ambient health hazards with births that are small for gestational age (SGA: below tenth percentile weight for pregnancy duration) and low birth weight at term (LBW: less than 2500 grams at 37 or more weeks gestation). The province of Alberta has higher rates than the Canadian averages, contributing to economic and emotional stress. We use a landscape approach in a Geographic Information System (GIS) to map densities, proximities, and proportions of outdoor pollutant/hazard estimates from publicly available data sources, overlaid with distributions of SGA and LBW from Alberta registered births during 2006-2012. Spatial-temporal patterns of small babies and environmental health hazards (as individual variables and combined in a multivariate hazard index) vary across the province of Alberta, with some associations. Our research is part of the Data Mining and Neonatal Outcomes (DoMiNO) project, moving us toward a better understanding of the collocation of environment and adverse birth outcomes, which may provide insight for recommending preventative or remedial actions *where* they may be needed.

### **Non-Traditional Data Sources Useful in Recovery Planning**

*Lynn Dupont, GISP, ASLA, GIS Coordinator/Principal Planner, Regional Planning Commission for Greater New Orleans, New Orleans, Louisiana, United States*

**Abstract text:** When unanticipated events take place that turn regular data needs into urgent imperatives, GIS professionals are forced to innovate in utilizing multiple, often non-traditional data sources for short and long term planning necessities. Such events unfolded in the New Orleans region in 2005, when the landfall, devastation, and dramatic demographic shifts caused by hurricanes Katrina and Rita coincided with the midpoint between decennial Census efforts. As a consequence, during the immediate recovery efforts following the storms, there was a lack of reliable and up to date demographic at a time when it was needed most for transportation, utility, land-use, and other recovery planning efforts.

As the Metropolitan Planning Organization (MPO) for the damaged region, entrusted to aid the local transit authority in providing transit service, the Regional Planning Commission (RPC) sought data to ensure that transit was accessible to relocated residents that needed it most. The previously invaluable U S Census data from 2000 were no longer relevant. Vast numbers of people were temporarily housed away from their former homes, while awaiting loans, grants, supplies and basic information needed to rebuild their permanent residences. An influx of recovery workers now inhabited all portions of the region. In short, Census 2000 data no longer reflected the reality of the remaining half of the decade. RPC became creative in developing geospatial data sets in partnership with and used by many agencies to meet the demand.

## **Zika: Location Technology to Reduce Your Risk**

*Wendy Peloquin, GISP, Account Manager, Geographic Information Services, Inc. (GISinc), Jacksonville, Florida, United States*

**Abstract text:** Disease outbreaks and epidemics are nothing new, but in today's modern world, we can take advantage of location technology tools to help us monitor, respond, and control outbreaks and epidemics. Recently, more and more local governments are looking to implement location technology to support their fight against Zika.

Today, organizations are using location technology to identify high risk areas of mosquito presence and visualize field results in real-time, through executive dashboards. Both of these allow organizations to make evidence and location-based decisions in an effort to reduce the risk of disease transmission and outbreak. The City of New Orleans partnered with GISinc to conduct a Zika business process review and solution implementation to prevent an outbreak.

This presentation will outline how other local governments can follow the city of New Orleans lead by implementing location technology to reduce their risk of local Zika (and other vector-borne diseases) transmission.