

Maternal-infant Child Health and Environment Research Symposium:  
“How Local Research can Influence Policy and Practice”

Thursday, February 26<sup>th</sup>, 2009, 08:00-17:00 hrs  
Maple Leaf Room, Lister Conference Centre, University of Alberta

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Presenter: *Joseph D. Brain, PhD (Candidate)*

Presentation Summary: *Framework for a Canadian Cohort – Lessons from a Mining Community in Oklahoma*

A national focus on children and the environment makes sense. The pure gospel of public health focuses on primary prevention. Diagnosing and treating environmental disease are expensive and frustrating tasks since many conditions, such as mental retardation resulting from lead poisoning, iodine deficiency, or poor iron status are poorly reversible. The perinatal period and early childhood are periods of profound importance because of their greater metabolism, and critical neurologic development. Generating data to create evidence-based strategies to protect children requires a complex interdisciplinary approach combining basic science, animal models, exposure biology, and epidemiology. Our goal is to produce research results characterized by excellence and relevance. The latter frequently demands sustained interactions with affected communities.

This talk will discuss our experience with a community in Tar Creek, Oklahoma. For more than a century, there were active zinc and lead mines. More than half of the lead in bullets and shells in the Second World War came from these underground mines. This era has ended, and a consequence is an abundance of mining wastes and abandoned mines. The result is that children and adults ingest and breathe toxic metals and exhibit elevated biomarkers for lead and zinc. Challenges, successes, and failures will be presented, and lessons learned will be applied to opportunities in Canada. We will also present an evolving effort related to the prevention and mitigation of the environmental and health consequences of metal mining and smelting. We are eager for Canadian participation.