



## Environmental Institutions Seminar Series

*Presents*

**Marie Lynn Miranda, Ph.D.**

# Mapping Mercury Policies in North Carolina

**Wednesday, February 23, 2005  
12:30 pm – 2:00 pm**

**Room A158 Levine Science Research Center, Research Drive, Duke University**

### **Abstract**

In August 2004, USEPA Chief Administrator Mike Leavitt announced mercury fish consumption advisories for nearly one-third of U.S. lakes and one-quarter of U.S. rivers. Concern about mercury exposure through consumption of contaminated fish results from the substantial and growing literature on the significant associated health effects. Thus several major federal and state policy initiatives to address mercury exposures are presently under consideration.

In this work, we combine dispersion modeling of mercury emissions with a Geographic Information System (GIS) in order to directly compare and contrast the Maximum Achievable Control Technology (MACT)-based 90% reduction (as mandated by the Environmental Protection Agency's Clean Air Act) and the national cap-and-trade 26/15 with both a 2002 base case (no new initiatives) and with each other. We focus on the State of North Carolina and estimate ambient air concentrations and deposition rates for each of North Carolina's 5,261 block groups. This scale represents a much more highly resolved geographic analysis than is typically done and thus provides particular insights into the comparative impacts of the proposed policies across demographic and physiographic variables.

### **Biography**

Dr. Miranda serves as the Director of the [Children's Environmental Health Initiative](#) (CEHI) within the Nicholas School of the Environment and Earth Sciences, and is a faculty member in Duke's Integrated Toxicology Program. CEHI is a research, education, and outreach program committed to creating environments where all children can prosper. With an educational background rooted in economic and mathematical modeling, Dr. Miranda's professional experiences integrate environmental health sciences with sound social policies. Dr. Miranda's research focuses on spatial analyses of children's environmental health issues, with an emphasis on reproductive and developmental toxicants.

Dr. Miranda serves on numerous local, state and national boards and commissions concerning child and family health and has published numerous articles on the topic.



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