



**Michigan Department of Environmental Quality
Toxics Steering Group
2012 Annual Report**

I. INTRODUCTION

The Toxics Steering Group (TSG) is the DEQ's forum for discussion of human health risk assessment issues related to the exposure to chemical contaminants in environmental media. Members of the TSG are risk assessors, toxicologists within the DEQ, and toxicologists from other state agencies—the Department of Community Health (DCH) and Department of Agriculture and Rural Development (DARD) specifically—and other related state experts. The TSG will meet approximately twice per year, or more if needed, with the goal of using the best-available science to address human health and risk assessment issues identified by the TSG or DEQ management. Discussions and decisions by the TSG will foster and facilitate consistency of risk assessment practices and minimize the duplication of effort within the DEQ and amongst the state agencies. Following discussions of, and research into, a particular issue, the TSG will formulate consensus recommendations which will be distributed as appropriate.

II. 2012 TSG MEMBERSHIP

DEQ: Air Quality Division (AQD), Office of Waste Management and Radiological Protection (OWMRP), Remediation and Redevelopment Division (RRD), and Water Resources Division (WRD)

Amy Babcock (WRD)
Shannon Briggs (WRD)
Dennis Bush (WRD)
Mike Depa (AQD)
Christine Flaga (RRD)
Kay Fritz (OWMRP), 2012 Chairperson
Doreen Lehner (AQD)

Deb MacKenzie-Taylor (OWMRP)
Divinia Ries (RRD)
Amy Salisbury (RRD)
Robert Sills (AQD)
Eric Wildfang (RRD)

DCH

Christina Bush
Linda Dykema
Jennifer Gray
Kory Groetsch
Lisa Quiggle

DARD

John Buchweitz (through August 2012)

III. SUMMARY OF THE TSG SUBCOMMITTEE ACTIVITIES IN 2012

Children's Environmental Health Subcommittee (CEHS):

CEHS Members: Amy Babcock
Christina Bush
Mike Depa
Deb MacKenzie-Taylor, chair
Divinia Ries

The CEHS is charged with tracking developments in the area of children's environmental health and making recommendations to the TSG for incorporation into human health risk assessment procedures, as appropriate.

The CEHS continued to provide recommendations for the Part 201, Part 7 administrative rules. This included participation by the CEHS chair in the Collaborative Stakeholder Initiative (CSI) cleanup criteria work group and subsequent meetings. The CEHS continues to recommend the use of a child receptor for residential cleanup levels. As a result of the CSI, the CEHS evaluated the use of subchronic reference values with a child receptor. The CEHS investigated the current guidance available from the United States Environmental Protection Agency (U.S. EPA) and other states; and polled other states on their use of a child receptor for final residential cleanup levels. The CEHS provided recommendations to use a developmental or chronic reference value with the residential child receptor, not a subchronic value since the receptor's exposure would be expected to continue for up to 30 years. The recommendations were presented to the cleanup criteria stakeholder group and DEQ management.

The CEHS is also tracking the evaluation of the U.S. EPA's Voluntary Children's Chemical Evaluation Program, news articles, and regulatory developments related to children's environmental health.

The CEHS and other TSG members have also participated in several children's environmental health webinars and webinar series during 2012. The EPA/NIEHS Children's Centers 2012 Webinar Series, "Protecting Children's Health for a Lifetime," was presented each month about ongoing research at these centers that are evaluating child exposures, health effects, and potential molecular/animal models for those effects.

Perfluorinated Compounds Subcommittee (PFCS):

PFCS Members: Amy Babcock, co-chair
John Buchweitz (through August, 2012)
Christina Bush
Robert Delaney (RRD)
Mark Henry (RRD) (through July, 2012)
Deb MacKenzie-Taylor
Joy Taylor Morgan (AQD), co-chair
Eric Wildfang

The PFCS was convened in response to a charge to the TSG from the DEQ's executive management to provide recommendations for establishing an environmental monitoring plan for perfluorinated compounds (PFCs) in the State. This charge was in response to the detection of PFCs in groundwater and surface water samples at the former Wurtsmith Air Force Base in

Oscoda, Michigan. Portions of the white paper written by the PFCS in 2011 were utilized by the Michigan Department of Community Health to apply for and receive a grant through the Great Lakes Restoration Initiative. The grant was awarded in October, 2012, and will allow for the collection and analysis of fish tissue and surface water samples throughout the state. There are 19 PFCs on the target analyte list. The final report is due to the USEPA in November, 2014. Two PFCS members are actively involved in the project and the PFCS as a whole will continue to monitor the status of this and many other research efforts currently underway in the Great Lakes and the nation.

IV. PUBLIC MEETINGS

Several TSG members participated in public meetings in 2012 relevant to sites of environmental concern in Michigan. The TSG's involvement included an opportunity to educate meeting attendees regarding risk assessment issues at these sites through formal presentations and question and answer sessions. These events included:

- AQD public meetings in Detroit and other locations regarding air emission permitting for sources raising public concern
- RMD (now OWMRP) public meetings in Midland, Michigan related to cleanup of soil dioxin contamination on residential properties.

V. OUTREACH AND EDUCATION

The TSG sponsored and staffed several popular displays at the April 19, 2012, DEQ Earth Day event at Constitution Hall. This year's featured displays sought to raise children's general awareness of the issues of mercury contamination in fish, lead poisoning in the home, and environmental stewardship

An AQD TSG member served on the University of Michigan's Stakeholder Advisory Board for their NIEHS grant's Community Outreach and Education Core.

VI. TRAINING

While not an exhaustive list, the following are highlights of the TSG members' professional development pursuits in 2012.

Local and regional meetings, symposia, and seminars allow the TSG members educational opportunities and an occasion to network with scientific peers in the area. In 2012, the TSG members attended:

- The Center for Integrative Toxicology in cooperation with the MSU Neuroscience Program: "Early Life Exposures to Lead and Prenatal Stress: Consequences for the Central Nervous System"
- Federal-State Toxicology Risk Analysis Committee Annual Meeting (remote attendance)

Internet webinars afford the TSG members an avenue by which to stay informed of some of the newest and most relevant issues in the fields of toxicology and risk assessment for minimal time commitment or cost. Webinar topics attended by the TSG members in 2012 included:

- In Utero and Early Life Exposure to Arsenic - Sources and Potential Health Impacts
- Toxicant Exposures and the Development of Obesity in Childhood
- Novel Approaches to Assessing Cognitive Function in Early Infancy
- Effects of Prenatal Exposure to Pesticides on Brain Development and Cognitive Function
- Improving Knowledge of the Environmental Causes of Leukemia in Children: the Center for Interdisciplinary Research on Childhood Leukemia and the Environment (CIRCLE)
- Global Perspectives on Childhood Leukemia Research - the Childhood Leukemia International Consortium (CLIC)
- DNA methylation in blood cell development and leukemia : building a framework to study environmental effects on methylation
- Estimating Exposures to Indoor Contaminants using Residential Dust
- Tipping the Balance of Neural networks with Persistent Organic Pollutants: Relevance to Autism Risk
- What Have We Learned about Autism and the Environment: An Epidemiologist's Perspective
- Effects of Prenatal Environmental Exposures on Child Health and Development
- Embracing Complexity: Animal Models of Environmental Exposure Health Effects
- History of CHAPS-SJV: How We Came to Asthma, Immunology, Birth Outcomes with a Focus on PAHs, A Bit of PAH Chemistry and How We Create Exposure Estimates
- PAHs and Asthma--Relation to Phenotype; Relevance to Birth Outcomes
- Biofuels: Release Prevention, Environmental Behavior, and Remediation
- Hallmarks of cancer: progress and perspectives
- Early-life Exposures - Long-term Health Consequences: Part 1 Brominated Flame Retardants
- Early-life Exposures - Long-term Health Consequences: Part 2 Metals and Metal Mixtures
- Early-life Exposures - Long-term Health Consequences: Part 3 PCE and Phthalates
- Institutional controls
- Human Milk Biomonitoring
- Metals, epigenetics and cancer
- Food for thought: gardening on superfund sites
- Cumulative risk: prediction, assessment, and prioritizing chemical mixtures
- Nonchemical stressors and cumulative risk assessment: an overview of current issues and initiatives
- Characterizing cumulative air pollution risks
- Developmental Origins of Male Reproductive Tract Disorders
- A Pediatric Specialist's Perspective on Early Origins of Disease
- EPA's Stormwater Pollution Prevention Series: Stormwater, Coal-Tar Sealcoat and Polycyclic Aromatic Hydrocarbons

The TSG Brown Bag sessions provides an informal, open forum for the TSG members (and others) to review and discuss new, innovative or controversial issues, and advances in the science of toxicology, risk assessment, and other relevant environmental themes. These presentations have allowed a more detailed level of discussion than time constraints permit during the formal TSG meetings. Topics discussed during the 2012 Brown Bag sessions included the following:

- Updates to the USEPA's Benchmark Dose software
- The Michigan Department of Community Health's Eat Safe Fish program
- The role of computational toxicology in human health risk assessment
- The development of mercury and selenium fish consumption levels

VII. FUTURE NEEDS AND RECOMMENDATIONS OF THE TSG

In response to national advancements in the field of risk assessment, the TSG recommends pursuing increased expertise in the following areas:

- Cumulative, multi-pathway, and probabilistic risk assessment
- Dose-response modeling using the U.S. EPA's benchmark dose software
- Physiologically-based pharmacokinetic modeling
- Interpretation of health statistics and health disparities relative to environmental contaminant exposures
- Characterization of risk at exposure levels exceeding health protective benchmarks

Webinars and other free Internet-based resources allow the TSG members limited opportunity for novel information exchange with the scientific community. The professional and technical development of the State's toxicologists are hindered by the limited ability of the TSG members to participate in external conferences, workshops, and seminars largely due to departmental budget constraints, reduced staffing levels, and competing assigned priorities. To achieve adequate protection of children's health, the TSG will continue to pursue all forms of professional development, information dissemination, and the application of the best available science and practices in toxicology, human health risk assessment, and risk communication.