Assessment of Neurobehavioral Effects of Environmental Exposures on Children

Workshop co-chairs: Lynn Goldman and Mark Miller

Purpose: Overview of neurodevelopment with focus on evolution of normal child behaviour and major neurodevelopmental issues and their assessment.

Audience: Environmental epidemiologists with an interest or experience in conduct of studies of child neurodevelopment. The material covered will span from foundational to more advanced topics. In keeping with a small interactive workshop format attendees will be limited to 50 or less.

Topics:

Introduction: Environmental factors and neurodevelopment; Policy perspective: Importance of childhood neurodevelopment in terms of costs of developmental disabilities as well as costs of population impacts on continuous measures of development. **Lynn Goldman**

Developmental milestones: understand the course of normal child development and expected variability of achievement of various developmental milestones and capabilities. Understand the relevant exposure windows for humans and comparative windows of exposure for animals. For the latter, possible case example, Hg. **Mark Miller**

Domains of neurobehavioral function: understand the array of domains of neurobehavioral function. Learn about how these domains are assessed in humans, continuous measures of performance and their interpretation, and the relationship between such domains in humans and in animals. Learn about resources for further information about developmental testing. For the latter, possible case example, BPA and novel gender-behavioral endpoints. **David Bellinger**

Clinical diagnoses*:* Understand case definitions for various developmental disabilities in children and how these relate to domains of neurobehavioral function. Learn about resources for further information about developmental disabilities. For the latter, possible case examples include, pesticides and ADHD. **David Bellinger**

Factors known to enhance and impair child neurodevelopment*:* Understand the array of factors that are known to impact neurobehavioral function and/or clinical diagnoses and their relevance to environmental epi studies, e.g., PT birth, nutrition, smoking EtOH, stress, hormones, toxics. **Robert Wright**

Case examples include, lead.

Statistical issues*:* Challenges in interpretation of data with exposures measured in multiple potential exposure windows, for multiple neurobehavioral evaluations with multiple subtest results. **Jonathan Chevrier**

"Clinic" session*:* Participants will be asked to submit interesting issues or problems that they are facing in the design, analysis or interpretation of studies for open discussion at the meeting. **Discussants as noted above plus Bruce Lamphear (moderator) and Brenda Eskenazi.**