



## Developmental Neural Mechanisms of Cognitive Control: Implications for Drug Abuse Interventions

*Neuroscience Center  
Conference Rooms C and D  
Rockville, Maryland*

### AGENDA

---

#### Day 1, Monday, May 3, 2010

**8:15-9:00 a.m.**

**Registration**

**9:00-9:15 a.m.**

**Welcome and Introductions**

*Nora D. Volkow, M.D.*

*Director*

*National Institute on Drug Abuse*

*Karen Sirocco, Ph.D.*

*Division of Clinical Neuroscience and Behavioral Research*

*National Institute on Drug Abuse*

#### **I. Overview and Background**

**9:15-10:00 a.m.**

**The Development and Measurement of Cognitive Control Across  
the Lifespan: What Exactly Is Cognitive Control?**

*Philip David Zelazo, Ph.D.*

*University of Minnesota*

**10:00-10:45 a.m.**

**Brain Plasticity and Therapeutic Interventions**

*Philip Fisher, Ph.D.*

*University of Oregon*

**10:45-11:00 a.m.**

**Break**

#### **II. Cognitive Control and Drug Abuse**

**11:00-11:30 a.m.**

**DTI and Executive Functioning in Children Prenatally Exposed to  
Cocaine**

*Tamara Warner, Ph.D.*

*East Carolina University*

**11:30 a.m. - 12:00 p.m.**

**Adolescent Brain Development and Mechanisms of Drug Abuse  
Vulnerability**

*Monica Luciana, Ph.D.*

*University of Minnesota*

- 12:00-12:30 p.m.**      **Emotion Regulation and Drug Abuse: A Social Cognitive Neuroscience Approach**  
*Matthew Lieberman, Ph.D.*  
*University of California, Los Angeles*
- 12:30-1:30 p.m.**      *Lunch (on your own)*
- 1:30-2:00 p.m.**      **My Frontal Lobes and I: Novel Ways of Assessing Executive Functioning**  
*Elkhonon Goldberg, Ph.D.*  
*New York University School of Medicine*
- 2:00-2:30 p.m.**      **Discussion**  
Moderator:  
*James Bjork, Ph.D.*  
*Division of Clinical Neuroscience and Behavioral Research*  
*National Institute on Drug Abuse*

### **III. Innovative Interventions Targeted at Improving Cognitive Control**

- 2:30-3:00 p.m.**      **School-Based Mindfulness Intervention to Prevent Substance Use Among Urban Youth**  
*Tamar Mendelson, Ph.D.*  
*Johns Hopkins University, Bloomberg School of Public Health*
- 3:00-3:15 p.m.**      *Break*
- 3:15-3:45 p.m.**      **Aerobic Exercise and Cognitive Control in School Age Children**  
*Charles Hillman, Ph.D.*  
*University of Illinois*
- 3:45-4:15 p.m.**      **“5, 6, 7, 8,” Initiate, Sustain, Inhibit, Shift: How Dance Steps Up Executive Functioning**  
*Jenny Seham, Ph.D.*  
*Columbia University*
- 4:15-4:45 p.m.**      **“Tools of the Mind” Improves Cognitive Control**  
*Adele Diamond, Ph.D.*  
*University of British Columbia*
- 4:45-5:00 p.m.**      **Discussion**  
Moderator:  
*Elizabeth Ginexi, Ph.D.*  
*Division of Epidemiology, Services and Prevention*  
*National Institute on Drug Abuse*
- 5:00 p.m.**      *Adjournment*

**Day 2, Tuesday, May 4, 2010**

- 8:00-9:00 a.m.**      **Registration**

## **IV. Epigenetics and Neuroplasticity of Prefrontal Cortical Functions**

- 9:00-9:30 p.m.**                    **COMT, Dopamine, and Attention in Infancy**  
*Brad E. Sheese, Ph.D.*  
*Illinois Wesleyan University*
- 9:30-10:00 a.m.**                    **Changes in Cortical Dopamine D1 Receptor Binding Associated with Cognitive Training**  
*Fiona McNab, Ph.D.*  
*Wellcome Trust Centre for Neuroimaging*
- 10:00-10:30 a.m.**                    **Sharpening of Goal-Directed Neural Processing for Individuals with Brain Injury**  
*Anthony J.-W. Chen, M.D.*  
*University of California, San Francisco and Berkeley*
- 10:30-11:00 a.m.**                    **The Neuroscience of Mindfulness Training**  
*Yi-Yuan Tang, Ph.D.*  
*University of Oregon*
- 11:00-11:15 p.m.**                    **Discussion**  
Moderators:  
*Steven Grant, Ph.D.*  
*Division of Clinical Neuroscience and Behavioral Research*  
*National Institute on Drug Abuse*
- Joni Rutter, Ph.D.*  
*Division of Basic Neuroscience and Behavioral Research*  
*National Institute on Drug Abuse*

## **V. Discussion: Scientific Opportunities and Critical Methodological Considerations**

- 11:15 a.m.-12:00 p.m.**                    Karen Sirocco, Ph.D.  
*Division of Clinical Neuroscience and Behavioral Research*  
*National Institute on Drug Abuse*
- Cheryl Anne Boyce, Ph.D.*  
*Division of Clinical Neuroscience and Behavioral Research*  
*National Institute on Drug Abuse*
- 12:00 p.m.**                                **Adjournment**