



# RESEARCH CHALLENGES IN CNS Manifestations of Inborn Errors of Metabolism Workshop

December 7–8, 2009 • Bethesda North Marriott Hotel & Conference Center • Bethesda, Maryland

## AGENDA – DAY 1

Monday, December 7, 2009

**7:30 A.M. REGISTRATION & CONTINENTAL BREAKFAST**

**8:00 A.M. Introduction: Overview of the Challenges of Research into Central Nervous System (CNS) Manifestations of Metabolic Diseases**

*Marc Patterson, M.D.* — Mayo Clinic

**8:30 A.M. Patient Perspective**

*Cynthia Le Mons* — National Urea Cycle Disorders Foundation (NUCDF)

**8:45 A.M. Translational Medicine and Rare Disease Research**

**Effectiveness of interventions in inborn errors of metabolism diseases affecting the CNS**

*R. Rodney Howell, M.D.* — University of Miami, National Institute of Child Health and Human Development (NICHD), National Institutes of Health (NIH)

**Brain-directed treatment in Menkes disease**

*Steven Kaler, M.D.* — NICHD, NIH

**Is your treatment ready for clinical trials?**

*Anne Pariser, M.D.* — Center for Drug Evaluation and Research (CDER), Food and Drug Administration (FDA)

**Panel Discussion**

Moderator: *Christopher Austin, M.D.* — National Human Genome Research Institute (NHGRI), NIH

*Marc Walton, M.D., Ph.D.* — Office of Translational Science, FDA

*Amy Rosenberg, M.D.* — Division of Therapeutic Proteins, FDA

*Lois Freed, Ph.D.* — Division of Neurology Products, FDA

*Cynthia Le Mons* — NUCDF

*Steven Kaler, M.D.* — NICHD, NIH

**11:00 A.M. Abstract Presentations & WORKING LUNCH**

- Differences in Adaptive Language Functioning in Hurler Syndrome Before and After HCT: A Qualitative Comparison of Treatments and Risk Factors  
*Julie B. Eisengart, Ph.D.* — University of Minnesota
- Intrathecal Enzyme Replacement for Cognitive Decline in Mucopolysaccharidosis I  
*Agnes Chen, M.D.* — Los Angeles Biomedical Research Institute at Harbor-UCLA Medical Center



**Abstract Presentations (continued)**

- White Matter Abnormalities and Cognitive Deficits in Partial OTCD  
*Bennett Gertz, M.D.* — Department of Neurology, Children’s National Medical Center

**12:30 P.M. Assessing Outcomes in CNS Part 1– Clinical Assessments**

**Pediatric movement disorders: Outcome measures**

*Jonathan Mink, M.D., Ph.D.* — University of Rochester School of Medicine and Dentistry

**Urea cycle disorders: Short- and long-term neurocognitive development**

*Lauren Krivitzky, Ph.D.* — Children’s National Medical Center

**Cognitive and behavioral testing methods**

*Kendra Bjoraker, Ph.D., L.P.* — University of Minnesota

**Issues in longitudinal studies of brain structure and function in small samples**

*Elsa Shapiro, Ph.D.* — University of Minnesota Medical School

**Panel Discussion**

Moderator: *Marc Patterson, M.D.* — Mayo Clinic

*Phil Sheridan, M.D.* — Division of Neurology Products, FDA

*Lauren Krivitzky, Ph.D.* — Children’s National Medical Center

*Jonathan Mink, M.D., Ph.D.* — University of Rochester School of Medicine and Dentistry

*Kendra Bjoraker, Ph.D., L.P.* — University of Minnesota

*Elsa Shapiro, Ph.D.* — University of Minnesota Medical School

**2:20 P.M. Questions & BREAK**

**2:35 P.M. Assessing Outcomes in CNS Part 2 – Neuroimaging and Delivery**

**Neuroimaging in inborn errors of metabolism**

*James Provenzale, M.D.* — Duke University School of Medicine, Emory University School of Medicine

**Neuroimaging findings in inborn errors: Survey of findings on standard imaging with emphasis on change over time**

*Andrea Gropman, M.D.* — Children’s National Medical Center

**CNS magnetic resonance imaging (MRI) spectroscopy in inborn errors of metabolism**

*Peter Barker, D.Phil.* — Johns Hopkins University School of Medicine

**Tissue specificity/CNS delivery**

*Beverly Davidson, Ph.D.* — University of Iowa Carver College of Medicine

## Assessing Outcomes in CNS Part 2 – Neuroimaging and Delivery (continued)

### Panel Discussion

Moderator: *Alan P. Koretsky, Ph.D.* — National Institute of Neurological Disorders and Stroke (NINDS), NIH

*James Provenzale, M.D.* — Duke University School of Medicine, Emory University School of Medicine

*Andrea Gropman, M.D.* — Children’s National Medical Center

*Peter Barker, D. Phil.* — Johns Hopkins University School of Medicine

*Beverly Davidson, Ph.D.* — University of Iowa Carver College of Medicine

*Steven Kaler, M.D.* — NICHD, NIH

*Marc Walton, M.D., Ph.D.* — Office of Translational Science, FDA

4:30 P.M.

### Wrap-up

*Marc Patterson, M.D.* — Mayo Clinic

5:00 P.M.

### ADJOURN



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## AGENDA – DAY 2

Tuesday, December 8, 2009

- 7:30 A.M. REGISTRATION & CONTINENTAL BREAKFAST**
- 8:00 A.M. Introduction**  
*Marc Patterson, M.D.* — Mayo Clinic
- 8:15 A.M. Ethics – Case Presentations and Discussion**  
*Sara Goldkind, M.D., M.A.* — Office of the Commissioner, FDA  
*Robert Nelson, M.D., M.Div., Ph.D.* — Office of Pediatric Therapeutics, Office of the Commissioner, FDA
- 10:15 A.M. BREAK**
- 10:30 A.M. Executing Clinical Trials in Rare Diseases: Novel Approaches**
- Intrathecal and intravenous enzyme replacement therapy combined with hematopoietic stem cell transplantation for Hurler syndrome**  
*Paul J. Orchard, M.D.* — University of Minnesota
- The story of Lorenzo's oil for X-ALD: What is known now and any lessons we can take from the history of its study**  
*Gerald Raymond, M.D.* — Kennedy Krieger Institute, Johns Hopkins University
- Challenges of designing and executing clinical trials in mitochondrial diseases**  
*Bruce H. Cohen, M.D.* — Cleveland Clinic
- Brain-directed stem cell therapy for neuronal ceroid lipofuscinosis**  
*Robert Steiner, M.D.* — Oregon Health & Science University
- Panel Discussion**  
Moderator: *Patricia Dickson, M.D.* — Harbor-UCLA Medical Center  
*Paul Orchard, M.D.* — University of Minnesota  
*Robert Steiner, M.D.* — Oregon Health & Science University  
*Gerald Raymond, M.D.* — Kennedy Krieger Institute, Johns Hopkins University  
*Bruce Cohen, M.D.* — Cleveland Clinic
- 12:30 P.M. Challenges and Future Directions in Rare Disease Research (WORKING LUNCH)**  
*Emil Kakkis, M.D., Ph.D.* — Kakkis EveryLife Foundation
- The Need for Global Partnerships in Rare Diseases Research**  
*Stephen Groft, Pharm.D.* — Office of Rare Diseases Research (ORDR), NIH



## Challenges and Future Directions in Rare Disease Research (continued)

### Panel Discussion

Moderator: *Elizabeth McNeil, M.D.* — Office of Orphan Products Development,  
FDA

*Emil Kakkis, M.D., Ph.D.* — Kakkis EveryLife Foundation

*Stephen Groft, Pharm.D.* — ORDR, NIH

**3:00 P.M.**

### ADJOURN

*Marc Patterson, M.D.* — Mayo Clinic