

28th

International Neurotoxicology Conference

MANGANESE2016 CONFERENCE

Manganese Health Effects on Neurodevelopment & Neurodegenerative Diseases

DAY 1 - Sunday, September 25, 2016



2:00 PM

Registration Opens

Annenberg North Lobby

4:00 PM - 7:20 PM

Opening Session

Stern Auditorium

4:00 PM

Welcome

Joan M. Cranmer, PhD, ATS, University of Arkansas for Medical Sciences
Conference Co-Chair

Roberto Lucchini, MD, Icahn School of Medicine at Mount Sinai
Conference Chair

4:15 PM

The early history of manganese and the recognition of its neurotoxicity

Paul Blanc, PhD, MSPH, University of California, San Francisco

4:40 PM

Fifty years of preventive research for manganese, an essential metal

Harry A. Roels, PhD, MSc, Université catholique de Louvain

5:05 PM

Manganese neurotoxicity from a sex and gender perspective

Donna Mergler, PhD, Université du Québec à Montréal

5:30 PM

Introduction of documentary film *Le manganisme*

Chafiq Hicham, MD, Moroccan Society of Neurology

Introductory paper prepared by:

Chafiq Hicham, MD, Moroccan Society of Neurology

Jacques Reis, AEA Physiology, MD, HUS Strasbourg, Environmental Neurology Applied Research Group, WFN

Peter S. Spencer, PhD, FANA, FRCPath, Oregon Health & Science University

Paul Chambon, PhD, University of Lyon

5:45 PM - 7:00 PM

Networking Reception

Annenberg West Lobby

7:00 PM

Documentary Film: *Le manganisme* (circa 1953)

Film by Jean Rodier, J. Boyer and Richard Chenay. In French with English subtitles (20 minutes)

Made possible by Centre National du Cinema, Paris

28th

International Neurotoxicology Conference

MANGANESE2016 CONFERENCE

Manganese Health Effects on Neurodevelopment & Neurodegenerative Diseases

DAY 2 - Monday, September 26, 2016

7:45 AM Breakfast and Poster Set Up
Annenberg West Lobby

8:30 AM - 12:00 PM

Plenary Session A: Health Risk Assessment and Protective Standards
Stern Auditorium

Session Chairs

Christoph van Thriel, PhD, Leibniz Research Centre for Working Environment
William Boyes, PhD, U.S. Environmental Protection Agency

8:30 AM Introduction of Keynote

Roberto Lucchini, MD, Icahn School of Medicine at Mount Sinai

Keynote Address: Manganese exposure in the workplace – OSHA's perspective

William Perry, CIH, Occupational Safety and Health Administration

9:05 AM A global portrait of the manganese industry — Facts about Mn production and a socio-economic perspective on the industry

Anne Tremblay, ABD, International Manganese Institute

9:30 AM A historical overview of the development of manganese (Mn) pharmacokinetic data under Section 211(b) of the Clean Air Act (CAA)

William Boyes, PhD, U.S. Environmental Protection Agency

9:55 AM A tissue dose-based comparative exposure assessment for manganese: The importance of homeostatic control for an essential metal

Robinan Gentry, PhD, DABT, Ramboll Environ

10:20 AM Break

10:45 AM Drinking water and manganese neurotoxicity: What is the data telling us?

Donna Mergler, PhD, Université du Québec à Montréal

11:10 AM Evolution of exposure criteria and limits for manganese

Franklin E. Mirer, PhD, CIH, CUNY Graduate School of Public Health

11:35 AM Health-based occupational exposure limits for manganese

Len Levy, PhD, Cranfield University

DAY 2 - Monday, September 26, 2016

12:00 PM - 1:45 PM

Networking Poster Session (Lunch provided) Student posters will be judged during this time.

Guggenheim Atrium — Posters

Annenberg West Lobby — Lunch

2:00 PM - 6:10 PM

Plenary Session B: Health Effects of Community and Workplace Exposures

Stern Auditorium

Session Chairs

Erin N. Haynes, DrPH, MS, University of Cincinnati

Brad Racette, MD, Washington University in St. Louis

2:00 PM

Introduction of Keynote

Roberto Lucchini, MD, Icahn School of Medicine at Mount Sinai

2:05 PM

Keynote Address: NIOSH manganese research and policy

John Howard, MD, MPH, JD, LLM, National Institute for Occupational Safety and Health

2:35 PM

Assessing low-level manganese exposures and effects in occupational settings

Shannon Berg, MS, National Institute for Occupational Safety and Health

Robert Park, MS, National Institute for Occupational Safety and Health

3:00 PM

Measuring the health effects of manganese smelter emissions: A pilot

Gill Nelson, PhD, University of the Witwatersrand

3:25 PM

Overview of metal work and welding practices and health of UAW worker populations

Andrew Comai, United Auto Workers

3:50 PM

Task performance of welders in neurobehavioral tests assessing basal ganglia functions

Christoph van Thriel, PhD, Leibniz Research Centre for Working Environment

4:15 PM

Break

4:30 PM

Health impacts from early life to old age: Linking neurodevelopment to neurodegeneration

Roberto Lucchini, MD, Icahn School of Medicine at Mount Sinai

4:55 PM

Dose-dependent progression of parkinsonism in manganese-exposed welders

Brad Racette, MD, Washington University in St. Louis

5:20 PM

Validation of self-reported concentration and memory problems with objective neuropsychological performance in manganese-exposed residents

Rosemarie Bowler, PhD, MPH, San Francisco State University

5:45 PM

Impact evaluation of an environmental program on manganese exposure in a mining zone in Mexico

Marlene Cortez Lugo, MSc, National Institute of Public Health, Mexico

6:10 PM

Dinner on your own

28th

International Neurotoxicology Conference

MANGANESE2016 CONFERENCE

Manganese Health Effects on Neurodevelopment & Neurodegenerative Diseases

DAY 3 - Tuesday, September 27, 2016**7:45 AM****Breakfast***Annenberg West Lobby***8:30 AM - 12:10 PM****Plenary Session C: Children's Health and Development***Stern Auditorium***Session Chairs**

Robert O. Wright, MD, MPH, Icahn School of Medicine at Mount Sinai

Ana Maria Mora, MD, PhD, National University of Costa Rica

8:30 AM**Manganese exposure, neurodevelopment and planned neuroimaging in school-aged children**

Erin N. Haynes, DrPH, MS, University of Cincinnati

Kim M. Cecil, PhD, Cincinnati Children's Hospital Medical Center

8:55 AM**Manganese exposure and neurological function among Italian children**

Birgit Claus Henn, SD, MPH, Boston University School of Public Health

9:20 AM**Tooth matrix biomarkers of pre- and postnatal manganese exposure and motor function in adolescents**

Yueh-Hsiu Mathilda Chiu, ScD, Icahn School of Medicine at Mount Sinai

9:45 AM**Multiple heavy metal exposure and effects on intellectual function in Ecuadorian children**

José Antonio Menezes-Filho, PhD, Federal University of Bahia

10:10 AM**Break****10:30 AM****Elevated airborne manganese and the promotion of Executive Functioning in school-aged children in Brazil**

Chrissie Carvalho, MS, Federal University of Bahia

10:55 AM**Associations of childhood manganese, lead, chromium, and copper with neurodevelopment in 10.5-year-old children**

Ana Maria Mora, MD, PhD, National University of Costa Rica

11:20 AM**Cord blood manganese and ADHD-related behaviors among 8-year-old children**

Susan Korrick, MD, MPH, Brigham and Women's Hospital and Harvard Medical School

11:45 AM**Prenatal co-exposure to manganese and maternal depression and neurodevelopment in 24-month-old Mexican children**

Marcela Tamayo y Ortiz, PhD, National Institute of Public Health, Mexico

12:10 PM - 2:00 PM**Lunch on your own**

DAY 3 - Tuesday, September 27, 2016

2:00 PM - 5:15 PM

Plenary Session D: New Aspects of Toxicity in Animal Models and Cellular Functions

Stern Auditorium

Session Chairs

Donald Smith, PhD, University of California, Santa Cruz

Anumantha Kanthasamy, PhD, Iowa State University

- 2:00 PM** **Selective and focused attention, and fine motor function deficits caused by developmental manganese exposure, and the efficacy of oral methylphenidate for the treatment of those deficits**
Donald Smith, PhD, University of California, Santa Cruz
- 2:25 PM** **A developmental neurotoxicity investigation: inhalation exposure to manganese dichloride in Han Wistar rats**
Doreen McGough, PhD, International Manganese Institute
- 2:50 PM** **A mechanistic understanding of manganese effects on motor and cognitive function: A central role of the dopaminergic system**
Tomás R. Guilarte, PhD, Florida International University
- 3:15 PM** **Break**
- 3:35 PM** **Pathogenic alterations of manganese neurobiology and neurotoxicity in Huntington's disease**
Aaron B. Bowman, PhD, Vanderbilt University Medical Center
- 4:00 PM** **Role of manganese in protein misfolding and aggregation: Relevance to pathogenesis and mechanisms of chronic neurodegenerative diseases**
Anumantha Kanthasamy, PhD, Iowa State University
- 4:25 PM** **Mechanisms of alpha-synuclein protein aggregate-induced neuroinflammation in neurotoxicity models**
Arthi Kanthasamy, PhD, Iowa State University
- 4:50 PM** **The effect of high dose oral manganese exposure on manganese, copper, iron & zinc levels in rats**
David Dorman, DVM, PhD, North Carolina State University

5:15 PM **Break**

6:30 PM - 9:00 PM

Awards Banquet

New York Academy of Medicine – 1216 Fifth Avenue

Introduction of Keynote

Robert O. Wright, MD, MPH, Icahn School of Medicine at Mount Sinai

Keynote Address: Lead and Public Health: A Cautionary Tale

Annette Kirshner, PhD, Program Administrator, NIEHS-DERT (Retired)

Presentation of Pre-Doctoral and Post-Doctoral Student Awards

Post-Doctoral Awards: Joan M. Cranmer, Morris Cranmer, Anumantha Kanthasamy

Pre-Doctoral Awards: Joan M. Cranmer, Morris Cranmer, Rosemarie Bowler

9:10 PM **Bus pick up to return to Hotel Wales and Courtyard Marriott UES**

28th

International Neurotoxicology Conference

MANGANESE2016 CONFERENCE

Manganese Health Effects on Neurodevelopment & Neurodegenerative Diseases

DAY 4 - Wednesday, September 28, 2016**7:45 AM****Breakfast***Annenberg West Lobby***8:30 AM - 10:10 AM****Plenary Session E: Genetic and Mechanistic Influences***Stern Auditorium***Session Chairs**

Tomas R. Guilarte, PhD, Florida International University

Somshuvra Mukhopadhyay, MBBS, PhD, University of Texas at Austin

8:30 AM**Untangling the manganese alpha-synuclein relationship**

Michael Aschner, PhD, Albert Einstein College of Medicine

8:55 AM**Mechanism of manganese-induced repression of astrocytic glutamate transporters at the transcriptional level**

Eunsook Lee, PhD, Florida A&M University

9:20 AM**Role of the efflux transporter SLC30A10 in regulating manganese homeostasis**

Somshuvra Mukhopadhyay, MBBS, PhD, University of Texas at Austin

9:45 AM**Common SNPs in the transporter SLC38A9 and SLC30A10 genes are strongly associated with blood manganese in children and influence their IQ, motor function and behavior**

Karin Broberg, PhD, Karolinska Institute

10:10 AM**Break****10:25 AM - 12:35 PM****Plenary Session F: Imaging and Biomarkers***Stern Auditorium***Session Chairs**

Gill Nelson, PhD, University of the Witwatersrand

José Antonio Menezes-Filho, PhD, Federal University of Bahia

10:25 AM**Exposure to manganese in career welders: A longitudinal neuroimaging study**

Ulrike Dydak, PhD, Purdue University

10:50 AM**6-[18F]fluoro-L-DOPA positron emission tomography and T1-weighted magnetic resonance imaging in manganese-exposed workers**

Susan R. Criswell, MD, MSCI, Washington University School of Medicine in St. Louis

DAY 4 - Wednesday, September 28, 2016

- 11:15 AM** [18F] FP-CIT dopamine transporter PET findings in liver cirrhosis patients with parkinsonism
Yangho Kim, MD, MPH, PhD, Ulsan University Hospital
- 11:40 AM** Tooth matrix biomarkers for reconstructing early life manganese exposure
Manish Arora, MPH, PhD, Icahn School of Medicine at Mount Sinai
- 12:10 PM** Determinants of hair manganese concentrations in children from the CHAMACOS study
Ana Maria Mora, MD, PhD, National University of Costa Rica

12:35 PM - 2:00 PM Lunch on your own

2:00 PM - 3:00 PM

Synthesis of Meeting Outcomes, Next Steps, and Research Needs

Stern Auditorium

Chairs

Roberto Lucchini, MD, Icahn School of Medicine at Mount Sinai

Philip J. Landrigan, MD, MSc, FAAP, Icahn School of Medicine at Mount Sinai

Plenary Session A: Health Risk Assessment and Protective Standards

Christoph van Thriel, PhD, Leibniz Research Centre for Working Environment

William Boyes, PhD, U.S. Environmental Protection Agency

Plenary Session B: Health Effects of Community and Workplace Exposures

Erin N. Haynes, DrPH, MS, University of Cincinnati

Brad Racette, MD, Washington University in St. Louis

Plenary Session C: Children's Health and Development

Robert O. Wright, MD, MPH, Icahn School of Medicine at Mount Sinai

Ana Maria Mora, MD, PhD, National University of Costa Rica

Plenary Session D: New Aspects of Toxicity in Animal Models and Cellular Functions

Donald Smith, PhD, University of California Santa Cruz

Anumantha Kanthasamy, PhD, Iowa State University

Plenary Session E: Genetic and Mechanistic Influences

Tomas R. Guilarte, PhD, Florida International University

Somshuvra Mukhopadhyay, MBBS, PhD, University of Texas at Austin

Plenary Session F: Biomarkers, Models, and Imaging

Gill Nelson, PhD, University of the Witwatersrand, South Africa

José Antonio Menezes-Filho, PhD, Federal University of Bahia

3:00 PM

Adjournment of Conference

Roberto Lucchini, MD, Icahn School of Medicine at Mount Sinai