Sunday, 11 November 2007

9:00 AM  REGISTRATION OPENS

- All Conference functions will be held in the Holiday Inn Riverwalk Hotel Tango Ballroom
- Posters on display starting Sunday (Tango 3)
- NEUROTOXICOLOGY 24 Registrants are invited to attend the LDDI Pre-Conference Workshop

1:00 PM  CONFERENCE OPENS

Sunday Early Afternoon  11 November 2007  1:00 – 2:30 PM

Tango 4

Opening
SESSION I:  OPENING OF THE 24TH CONFERENCE
Conference Chair: Joan Cranmer

1:00 – 1:30 PM
Welcome, Acknowledgements and Overview
Joan Cranmer ~ University of Arkansas for Medical Sciences

1:30 – 2:15 PM
Keynote Address

“Science and the Public Interest”
KENNETH OLDEN, PH.D.

Dr. Kenneth Olden is the former Director of the NIEHS and the National Toxicology Program. At present, he is a Yerby Professor, Harvard University, School of Public Health, and Chief of the Metastasis Section, NIEHS.

2:15 – 2:30 PM
Rationale for The Theme
Deborah Cory-Slechta ~ University of Rochester School of Medicine

Sunday Late Afternoon  11 November 2007  3:45– 5:15 PM

3:45 – 4:15 PM
Developmental Lead and Late Onset Alzheimer’s Disease Pathology
Nasser Zawia ~ University of Rhode Island

4:15 – 4:45 PM
Low-Level Human Equivalent Gestational Lead Exposure Produces Gender-Specific Motor and Coordination Abnormalities and Late-Onset Obesity in Year-Old Mice
Donald A. Fox ~ University of Houston

4:45 – 5:15 PM
Panel Discussion and Q&A:
- Can gender differences in the behavioral consequences of Pb exposure be used to assist in diagnosis of specific behavioral disorders and in the development of appropriate behavioral therapeutic strategies?
- Do permanent Pb-induced changes in HPA axis function from even maternal only Pb exposure mean that screening for Pb exposure should include pregnant women?
- How should future cohort studies and experimental animal models be refined in future studies to more precisely estimate risks arising from even current levels of Pb exposure?

Sunday, November 11th
5:15 PM  – 7:00 PM
“MEET & GREET”
No Host Bar
Dinner on your own

Sunday Evening  11 November 2007  7:00PM – 9:30PM

Tango Ballroom 4

Thought Provokers
SESSION III: CROSS-CUTTING ISSUES: HOT NEW TOPICS

Session Chair: Richard LoPachin
Co-Chair: William Atchison

7:00 – 7:30 PM
Summarizing a Vast Literature to Identify Research Gaps – Autism as a Case Study
Martha Herbert ~ Harvard Medical School

7:30 – 7:40 PM  Q&A

7:40 – 8:10 PM
Amino Acid Neurotransmission: It’s Role in Neurodegenerative Diseases and Neurotoxicity
William Atchison ~ Michigan State University
8:10 – 8:40 PM
Type-2 Alkene-Induced Nerve Terminal Damage Represents a Unified Mechanism for Neurodegenerative Diseases (Alzheimer’s Disease, Parkinson’s Disease, ALS)
Richard LoPachin ~ Albert Einstein College of Medicine

8:40 – 9:10 PM
Ketamine-Induced Neuronal Cell Death in Perinatal Rhesus Monkeys
William Slikker ~ National Center for Toxicological Research /FDA

9:10 – 9:30 PM
Panel Discussion and Q&A:
- How can primary nerve terminal damage lead to generalized neurodegeneration?
- How does the relative electrophilicity of the type-2 alkenes determine nervous tissue vs. systemic toxicity?
- What pharmacotherapeutic approaches can be developed based on the role of protein adduction in type-2 alkene neurotoxicity?
- Are type-2 alkene adducts other than cysteine relevant to nerve terminal toxicity?

Monday Late Morning 12 November 2007 10:30 – NOON
Tango 1 & 2
Roundtable Discussion
SESSION V. TRANSLATING RISK ASSESSMENT INTO THE REAL WORLD
Session Chair: Bernard Weiss
Co-Chair: Kevin Crofton

Questions for the Roundtable Discussants:
- We are supposed to be part of a science whose framework was constructed by the mantra that The Dose Makes the Poison. Is it now time to bid farewell to the NOAEL as it is currently applied? (Schettler, Rice, Mergler)

- We agree that exposures take place in a complex societal setting whose features help determine how the consequences of those exposures will be expressed. So what does all this mean for what is labeled as translational research? Does it mean viewing disease as an astute clinician might see it? Such a clinician would not undertake to diagnose and treat a patient without knowing the patient’s home environment, his or her workplace, dietary practices, family situation, economic status, and other components of the individual’s life. Is our situation parallel? (Cory-Slechta, C. Miller)

- Conversely, despite the immense volume of literature demonstrating connections between environmental exposures and clinical diseases and disorders, they still are accorded a relatively minor role in diagnosis, treatment, and, especially, prevention. How do we promote awareness of these connections among health professionals and health agencies? (E. Miller, Gilbert)

- Finally, how do we embed these new perspectives into our research, especially for those of us whose primary efforts lie in the laboratory? Who can we convince to pay for them? (Crofton, Newland)

Speakers and Roundtable Discussants:
Deborah Cory-Slechta ~ University of Rochester
Kevin Crofton ~ US Environmental Protection Agency
Steven Gilbert ~ Inst. for Neurotoxicology and Neurological Disorders
Donna Mergler ~ University of Quebec at Montreal
Elise Miller ~ Learning and Developmental Disabilities Initiative
Claudia Miller ~ Univ. of Texas Health Science Center at San Antonio
M. Christopher Newland ~ Auburn University
Deborah Rice ~ Maine Center for Disease Control
Ted Schettler ~ Science and Environmental Health Network
Bernard Weiss ~ University of Rochester
**SESSION VI-A. FETAL BASIS OF ADOLESCENT AND ADULT DISEASES**

**Session Chair:** Evelyn Tiffany-Castiglioni  
**Co-Chair:** Pamela J. Lein

1:00 – 1:05 PM  
**Introduction**  
Evelyn Tiffany-Castiglioni ~ Texas A&M University

1:05 – 1:25 PM  
**CNS Mechanisms of Manganese in the Stimulation of Precocious Puberty**  
W. Les Dees ~ Texas A&M University

1:25 – 1:45 PM  
**Developmental Exposure to PCBs Alters the Response of the Adult Brain to Stress**  
Pamela Lein ~ Oregon Health & Science University

1:45 – 2:05 PM  
**Developmental Basis for Parkinson’s Disease**  
Mona Thiruchelvam ~ Environmental and Occupational Health Sciences Institutes, Rutgers and UMDNJ

2:05 – 2:25 PM  
**Lead Effects on Molecular Chaperones: A Link to Neurodegenerative Diseases?**  
Evelyn Tiffany-Castiglioni ~ Texas A&M University

2:25 – 2:45 PM  
**Developmental Pesticide Exposure: A New Risk Factor for ADHD?**  
Jason R. Richardson ~ Robert Wood Johnson Medical School

2:45 – 3:00 PM  
**Panel Discussion**

3:00 – 3:15 PM  
**Break**

**SESSION VI-B. CELL DEATH IN THE NERVOUS SYSTEM: FACTS AND ARTIFACTS**

**Session Chair:** David Dorman  
**Co-Chair:** Jack Harkema

It is hoped that attendees of this session with experience in these issues will also participate in an open discussion of these important topics.

Topics include:

- What types of stains / staining techniques are most appropriate and reliable for directly or indirectly (e.g., glial responses) recognizing neuronal cell death in *in vivo* studies?
- What are known morphological artifacts that may interfere with evaluating tissues for neuronal cell death?
- How do these artifacts occur, and how can they be minimized or avoided by tissue processing or staining techniques?

**Roundtable / Open Forum Discussants:**  
David Dorman ~ North Carolina State University  
Hassan El Fawal ~ Mercy College  
Jack Harkema ~ Michigan State University  
Kenneth Reuhl ~ Rutgers University and UMDNJ

Conference Participants

3:00 – 3:15 PM  
**Break**

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**SESSION VII-A. DEVELOPMENTAL NEUROTOXICITY; NEUROPROTECTION**

**Session Chair:** DMG DeGroot  
**Co-Chair:** Nikolay Filipov

3:15 – 3:40 PM  
**Important Role for the Early Growth Response Factor 1 (EGR1) in the Potentiation of Microglial Proinflammatory Cytokine Production by Manganese Exposure**  
Nikolay M. Filipov ~ Mississippi State University

3:40 – 4:05 PM  
**Functional Imaging of Developmental Neurotoxicity**  
DMG de Groot ~ TNO Quality of Life, Zeist, the Netherlands.

4:05 – 4:20 PM  
**Paraquat Induces Oxidative Stress, Neuronal Loss and Parkinsonism in Rats: Neuroprotection by Water-Soluble COQ10**  
Mallika Somayajulu-Nitu ~ University of Windsor, Windsor, ON, Canada.

4:20 – 4:35 PM  
**Prenatal LPS Exposure Alters the Fate of Developing Dopamine Projections**  
Angela J. Monahan ~ Rush University

4:35 – 4:50 PM  
**Discussion**
Monday Late Afternoon  12 November 2007   3:15– 5:15 PM

**Tango 4 ~ Parallel Session**

**Symposium**

SESSION VII-B: THE OLFATORY SYSTEM: AN OFTEN FORGOTTEN TARGET

Session Chair: David Dorman

3:15 – 3:40 PM

The Olfactory System: Anatomy and Overview
David Dorman ~ North Carolina State University – College of Veterinary Medicine

3:40 – 4:05 PM

Olfactory Transport of Xenobiotics
Melanie Struve ~ CIIT

4:05 – 4:30 PM

Toxicologic Pathology of Olfactory Sensory Neurons
Jack Harkema ~ Michigan State University

4:30 – 4:55 PM

Odor Perception
Pamela Dalton ~ Monell Chemical Senses Center

4:55 – 5:15 PM

Discussion

5:15 – 7:00 PM   Break for dinner on your own

Monday Evening   12 November 2007   7:00PM – 9:30PM

**Tango 3**

SESSION VIII.  POSTER SESSION

No-Host Bar & Refreshments

Session Chair: Darryl Hood
Co-Chair: Joseph Jacobson

Poster abstracts are numbered from P-58 to P-104. They are listed on pages 8-10 of the program.

The Poster Session is a highlight of this conference series. It has proven to be an effective venue for informal, in-depth discussion and collaboration building -- as well as an important networking opportunity for all participants. Papers on any aspect of neuroscience, toxicology, children’s environmental health, public health & policy are welcome!

Posters may be put up as early as 9:00 AM on Sunday and should remain up for the duration of the conference for maximum exposure. Posters should be taken down by 1:00 PM on Wednesday.

**STUDENT AWARD COMPETITION**

Chair: Jason Richardson

The Student Award Competition is divided into two groups: one for post-doctoral and one for pre-doctoral competition. Awards will consist of a cash prize, plaque or certificate, plus a one year subscription to the international journal *NeuroToxicology*. A winner(s) will be chosen from each group. Competing students are asked to give an overview of their work in 2-3 minutes to the judges followed by a brief set of questions and answers. Originality, significance, hypothesis, presentation material and style, as well as knowledge of the subject, will be considered in selecting the winners. All papers in competition for the Student Awards must be presented from poster.

Judging will be done between 7:15 PM and 8:30 PM. Students please stand by your poster during this time.

**GROUP 1: POST-DOCTORAL COMPETITION**

Chair: Kenneth Reuhl

Post-Doctoral Student Award Committee

1. Kenneth Reuhl, Chair
2. Richard LoPachin
3. Kevin Crofton

Post-Doctoral Students (5)

Joan Garey, Ph.D.   Mentor: Merle Paule, Ph.D.
Olga Pakhomova, Ph.D.   Mentor: P.J. Hart, Ph.D.
Jesse Rodriguez, Ph.D.   Mentor: Merle Paule, Ph.D.
Fuyong Song, Ph.D.   Mentor: Xie Keqin, Ph.D.
TramAnh Ta, Ph.D.   Mentor: Robert Berman, Ph.D.

**GROUP 2: PRE-DOCTORAL COMPETITION**

Chair: Jason Richardson

Pre-Doctoral Student Award Committee

Sub-Group A
1. Merle Paule, Co-Chair (Group A)
2. Pam Lein
3. Darryl Hood

Sub-Group B
4. Anumantha Kanthasamy, Co-Chair (Group B)
5. Mona Thiruchelvam
6. Richard Nass

Sub-Group C
7. Gary Miller, Co-Chair (Group C)
8. Syed Imam
9. Nikolay Filipov

Pre-Doctoral Students (12)

Rebecca Alyea   Mentor: Cheryl Watson, Ph.D.
Sherin Doctor   Mentor: Sherry Ferguson, Ph.D.
Daniel Braunschweig   Mentor: Judy Van de Water, PhD
Josh Harrill   Mentor: Kevin Crofton, Ph.D.
Ravikumar Hosamani   Mentor: M. Muralidhara, PhD
Chia-Jung Hsieh   Mentor: Pau-Chung Chen, PhD
Ahmed Ismail   Mentor: Diane Rohlman, Ph.D.
Ebany Martinez   Mentor: Andrea Allan, Ph.D.
Angela Monahan   Mentor: Paul Carvey, Ph.D.
Wang QingShan   Mentor: Xie Keqin, Ph.D.
Pallavi Sethi   Mentor: Deepak Sharma, Ph.D.
Malika Somayajulu-Nitu   Mentor: Siyaram Pandey, PhD
Tuesday Morning  13 November 2007  8:30AM - Noon

Tango 1 & 2

Plenary Session

SESSION IX. MODIFIERS OF DISEASE DEVELOPMENT IN PARKINSON’S DISEASE: ROLE OF ENVIRONMENTAL TOXICANTS

Session Chair:  Donato Di Monte
Co-Chair:  Gary Miller

8:30 – 9:00 AM

Interactions Between Alpha-Synuclein and Environmental Toxicants in the Pathogenesis of Parkinson’s Disease
Donato A. Di Monte ~ The Parkinson's Institute

9:00 – 9:30 AM

Environmental Risk Factors for PD Identified Through Epidemiological Studies
Caroline Tanner ~ The Parkinson’s Institute

9:30 – 10:00 AM

The Influence of Gender and Aging on the Effects of Environmental Toxicants in Parkinson’s Disease
Richard Seegal ~ Wadsworth Center

10:00 – 10:30 AM  Break

10:30 – 11:00 AM

Cyclodiene Insecticides and Parkinson’s Disease: Evidence from Mice and Men
Gary Miller ~ Emory University

11:00 – 11:30 AM

The Role of Inflammation in Toxicant-Induced Injury in Parkinson’s Disease
Jau-Shyong Hong ~ NIEHS

11:30 – 12:00 NOON

Panel Discussion and Q&A:

- How strong is the association between toxicant exposure and PD risk?
- Is there a concordance between epidemiological and experimental findings related to environmental toxicants and other modifiers of PD development?
- How well do animal models reproduce the “multiple hits” hypothesis of PD pathogenesis involving environmental toxicants?
- What are the most relevant modifiers of the effects of neurotoxicants in PD?
- How does knowledge of PD modifiers influence our view of disease prevention and treatment?

Tuesday Early Afternoon  13 November 2007  1:00 – 3:30 PM

Tango 1 & 2

Platform

SESSION X: ENVIRONMENTAL LINKS TO NEUROLOGICAL DISEASES (PARKINSON’S, ALZHEIMER’S)

Session Chair:  Anumanta Kanthasamy
Co-Chair:  Syed Imam

1:00 – 1:20 PM

Humoral Neuroimmunity in Neurological Disorders and Neurotoxicity: Parallels, Mechanisms and Biomarkers. A Review of the Literature
Hassan El-Fawal ~ Mercy College

1:20 – 1:40 PM

JNK Mediates Lactacystin-Induced Dopamine Neuron Degeneration
Weidong Le ~ Baylor College of Medicine

1:40 – 2:00 PM

Neurotoxic Insults Modulate Oxidative Stress-sensitive PKCδ Gene Promoter Activity in Neuronal Cells: Implications for Gene-Environment Interactions in Neurodegeneration
Anumanta Kanthasamy ~ Iowa State University

2:00 – 2:20 PM

Human Range Dietary Aluminum Equivalents Cause Cognitive Deterioration in Aged Rats
Judie Walton ~ Australian Institute for Biomedical Research, Australia

2:20 – 2:40 PM

Neuroprotective Effects of Cannabinoids in MPTP-Treated Mice: Role of CB1 and CB2 Receptors
Andrea Giuffrida ~ University of Texas Health Science Center at San Antonio

2:40 – 3:00 PM

Chemo Brain: A Translational Challenge for Neurotoxicology
Bernard Weiss ~ University of Rochester School of Medicine and Dentistry

3:00 – 3:20 PM

Vascular and membrane pathology in neurodegenerative disorders: red cells as target and biomarker
Donald E. Schmechel ~ Falls Neurology and Memory Center, Granite falls, NC

3:20 – 3:40 PM  Break

Tuesday Late Afternoon  13 November 2007  3:40 – 5:45 PM

Tango 1 & 2

Symposium

SESSION XI: AN ECOSYSTEM APPROACH TO EXPOSURE TO NEUROTOXIC SUBSTANCES IN LATIN AMERICA

Session Chair:  Donna Mergler
Co-Chair:  Maryse Bouchard ~ Harvard University
3:40 – 4:00 PM
Neurotoxic Effects of Mercury in the Brazilian Amazon: An Ecosystem Approach to Exposure Reduction and Effects
Donna Mergler ~ University of Quebec at Montreal

4:00 – 4:20 PM
An Ecosystem Approach to Neuropsychological Effects of Manganese Exposure on Children Living in Communities Near to Processing Plants in Mexico.
Rodolfo Solís ~ National Institute of Public Health, Mexico

4:40 PM
An Ecosystem Approach to Environmental Pesticide Exposure and Neurological Effects in Children
Berna van Wendel de Joode ~ Central American Institute for Studies on Toxic Substances, Universidad Nacional, Costa Rica

4:40 – 5:00 PM
Pesticide Exposure and Neurobehavioral Development in Ecuadorian Infants and Children: An Ecohealth Approach
Alexis Handal ~ National Institute for Child Health and Human Development, NIH

5:00 – 5:20 PM
Feasibility for Studying Parkinson’s Disease in Relation to Pesticide Exposure in Costa Rica
Ana Mora ~ Central American Institute for Studies on Toxic Substances, Universidad Nacional, Costa Rica

5:20 – 5:45 PM
Discussion

Tuesday Evening 13 November 2007 6:15 – 10:30 PM
Skyline Atrium
Hosted Social Evening Dinner & Award Ceremonies
Entertainment by the Jalapeño Honey Band!
“SIX FLAGS OVER TEXAS - NEUROTOX STYLE!”

Texas was governed at various times under six different flags: France, Spain, Mexico, The Republic of Texas, The Confederate States of America, and the United States of America. Many other countries and cultures are also represented in Texas, so the playlist will be wide, varied & fun!

Evelyn Tiffany-Castiglioni
Chair of Music & Entertainment for “Six Flags Over Texas - Neurotox Style!”

Members of the Jalapeño Honey Band:
John Ivy – fiddle, mandolin
Renata Meyers – guitar
Eden Schmeichel – flute
Evelyn Tiffany-Castiglioni – accordion, celtic harp, mandolin

Wednesday Morning 14 November 2007 8:30AM - Noon

Tango 1 & 2
Plenary Session
SESSION XII: OXIDATIVE STRESS IN AUTISM - CAUSE OR CONSEQUENCE?

Session Chair: Isaac Pessah
Co-Chair: Jill James

8:30 – 8:40 AM
Introduction
Isaac Pessah ~ University of California, Davis

8:40 – 9:10 AM
Lipid Biomarkers of Enhanced Oxidative Stress: Relationship to Platelet and Vascular Endothelium Activation
Domenico Pratico ~ Temple University

9:10 – 9:40 AM
Redox Imbalance and the Metabolic Pathology of Autism
S. Jill James ~ University of Arkansas for Medical Sciences

9:40 – 10:10 AM
Regulation of CNS Progenitors by Redox State: Implications for Autism and Understanding the Interplay Between Genes and Environment
Mark Noble ~ University of Rochester

10:10 – 10:20 AM Break

10:20 – 10:50 AM
The Relationship Between Oxidative Stress, Immune Cells and Inflammation in Autism.
Paul Ashwood ~ The UC Davis M.I.N.D. Institute

10:50 – 11:20 AM
Redox Sensing of Calcium Channels – A Convergence of Genes and Environment
Isaac Pessah ~ University of California, Davis

11:20 – NOON
Panel Discussion and Q&A:

- How do nutritional factors influence autism? Does diet (supplements) mitigate autistic phenotypes and/or co-morbidities?

- What are the sources of heavy metal exposure (mercury, lead, cadmium, arsenic)?

- What are the sources of organic quinones and epoxides

- Household chemicals as pro-oxidants; what are they?

- What are the new pesticides of particular concern to autistic children?
SESSION XIII: AUTISM SPECTRUM DISORDERS

Session Chair: Cindy Lawler
Co-Chair: Martha Herbert

1:00 – 1:20 PM
An Emerging Gene-Environment Interaction Model: Autism Spectrum Disorder Resulting From Exposure to Environmental Contaminants During Gestation
Darryl B. Hood ~ Meharry Medical College

1:20 – 1:40 PM
Divergent Effects of PBDE-47 on T Cell Immune Responses in Autistic and Typically Developing Children
Judy Van de Water ~ University of California, Davis

1:40 – 2:00 PM
Brain Levels of Oxidative Stress Markers, Mercury and Selenium in Autism
Elizabeth M. Sajdel-Sulkowska ~ Harvard Medical School and BWH

2:00 – 2:20 PM
The Autistic Phenotype Exhibits a Remarkable Localized Modification of Brain Proteins by Products of Free Radical-Induced Lipid Oxidation
George Perry ~ University of Texas at San Antonio OR
Xiongwei Zhu ~ Case Western Reserve University

2:20 – 2:35 PM
Autism: Maternally Derived Antibodies Specific for Fetal Brain Proteins
Daniel Braunschweig ~ The M.I.N.D. Institute, University of California at Davis. NIEHS Center for Children’s Environmental Health

IOM Criteria. USING THE CRITERIA DEVELOPED BY THE IOM, WHAT DEGREE OF CERTAINTY/ASSOCIATION CAN BE ASSIGNED TO THE ROLE OF ENVIRONMENTAL CONTAMINANTS IN THE ETIOLOGY OF AUTISM, ALZHEIMER’S AND PARKINSON’S?

Sufficient Evidence of a Causal Relationship
Evidence from available studies is sufficient to conclude that a causal relationship exists between exposure to a specific agent and a specific health outcome in humans, and the evidence is supported by experimental data. The evidence fulfills the guidelines for sufficient evidence of an association (below) and satisfies several of the guidelines used to assess causality: strength of association, dose-response relationship, consistency of association, and a temporal relationship.

Sufficient Evidence of an Association
Evidence from available studies is sufficient to conclude that there is a positive association. A consistent positive association has been observed between exposure to a specific agent and a specific health outcome in human studies in which chance and bias, including confounding, could be ruled out with reasonable confidence. For example, several high-quality studies report consistent positive associations, and the studies are sufficiently free of bias, including adequate control for confounding.

Limited/Suggestive Evidence of an Association
Evidence from available studies is consistent with positive association but the body of evidence is limited by the inability to rule out chance and bias, including confounding, with confidence. For example, at least one high-quality study reports a positive association that is sufficiently free of bias, including adequate control for confounding. Other corroborating studies provide support for the association, but they were not sufficiently free of bias, including confounding. Alternatively, several studies of less quality show consistent positive associations, and the results are probably not due to bias, including confounding.

Inadequate/Insufficient Evidence to Determine Whether an Association Exists
Evidence from available studies is of insufficient quantity, quality, or consistency to permit a conclusion regarding the existence of an association between exposure to a specific agent and a specific health outcome in humans.

Limited/Suggestive Evidence of No Association
Evidence from available studies is consistent with not showing a positive association between exposure to a specific agent and a specific health outcome after exposure of any magnitude. A conclusion of no association is inevitably limited to the conditions, magnitudes of exposure, and length of observation in the available studies. The possibility of a very small increase in risk after exposure studied cannot be excluded.

Consensus Not Reached on Category of Association
If the entire committee did not agree on a conclusion, then the association was not assigned a category.
TWO-YEARS-OF POLYMORPHISMS, AND NEURODEVELOPMENT AT THE AGE OF 2 YEARS.

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LEAD IN UMBILICAL CORD BLOOD, VDR-FokI POLYMORPHISM AND CHILDREN'S NEURODEVELOPMENT AT THE AGE OF TWO YEARS. Li-Ching Chu, Chung-Chung Ko, Yaw-Huei Hwang, Hua-Fang Liao, Wu-Shiun Hsieh, Yi-Ning Su, Pau-Chung Chen. Institute of Occupational Medicine and Industrial Hygiene, National Taiwan University College of Public Health, Taipei, Taiwan

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Pre-Doc Award Competition
COTININE IN UMBILICAL CORD BLOOD, GENETIC POLYMORPHISMS, AND NEURODEVELOPMENT AT THE AGE OF TWO YEARS. Chia-Jung Hsieh, Hua-Fang Liao, Kuen-Yuh Wu, Wu-Shiun Hsieh, Yi-Ning Su, Suh-Fang Jeng, Shih-Ni Yu, Pau-Chung Chen. Institute of Occupational Medicine and Industrial Hygiene, National Taiwan University College of Public Health, Taipei, Taiwan

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PRENATAL AND POSTNATAL EXPOSURE TO ENVIRONMENTAL TOBACCO SMOKE AND CHILDREN'S NEUROBEHAVIORAL DEVELOPMENT AT 6 TO 18 MONTHS OF AGE. Shan-An Chou, Pau-Chung Chen. Institute of Occupational Medicine and Industrial Hygiene, National Taiwan University College of Public Health, Taipei, Taiwan

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PRENATAL EXPOSURE TO MANGANESE AND PSYCHOMOTOR DEVELOPMENT AT 6 AND 24 MONTHS OF AGE. Feng-Chiao Su, Hua-Fang Liao, Yaw-Huei Hwang, Wu-Shiun Hsieh, Hui-Chen Wu, Suh-Fang Jeng, Yi-Ning Su, Pau-Chung Chen. Institute of Occupational Medicine and Industrial Hygiene, National Taiwan University College of Public Health, Taipei, Taiwan

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Pre-Doc Award Competition
AUTISM: MATERNALLY DERIVED ANTIBODIES SPECIFIC FOR FETAL BRAIN PROTEINS. D. Braunsweg, P. Ashwood, P. Krickowiak, I. Hertz-Picciotto, R. Hansen, L. Croen, I. N. Pessah, and J. Van de Water. Division of Rheumatology, Allergy and Clinical Immunology, University of California at Davis. Department of Medical Microbiology and Immunology, University of California at Davis. Department of Medical Health Sciences, Division of Epidemiology, University of California at Davis. Department of Pediatrics, University of California at Davis. Division of Research, Kaiser Permanente Northern California, Oakland, CA. Department of Veterinary Molecular Biosciences, University of California at Davis. The M.I.N.D. Institute, University of California at Davis. NIEHS Center for Children's Environmental Health, University of California, Davis, CA 95616 USA

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ADDRESSING NEUROINFLAMMATION IN AUTISM AND PDD WITH IV LIPID THERAPY. Kane PC, Braccia D, Cartaxo, A, Kane J. Haverford Wellness Center Havertown, PA and Kinnelon, NJ USA

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Pre-Doc Student Award
NEUROBEHAVIORAL EFFECTS AMONG ADOLESCENT PESTICIDES APPLICATORS IN EGYPT. AA Ismail, DS Rohman, ME Abou Salem, AA Michael, OM Hendy, GM Abdel Rasoul. Community, Environmental and Occupational Medicine Department, Faculty of Medicine, Menoufiya University, Shebin Elkom, Egypt. Center for Research on Occupational and Environmental Toxicology, Oregon Health & Science University, Portland, OR, USA. Clinical Pathology Department, National Liver Institute, Menoufiya University, Shebin Elkom, Egypt.

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Pre-Doc Award Competition
MODERATE PERINATAL ARSENIC PERTURBS THE HPA AXIS AND HAS LONG-TERM EFFECTS ON LEARNING AND MEMORY BEHAVIOR. Ehamy M Martinez. University of New Mexico Health Sciences Center Department of Neurosciences and College of Pharmacy Department of Toxicology and Andrea Allan, PhD. University of New Mexico Health Sciences Center Department of Neurosciences, Albuquerque, New Mexico, USA

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Pre-Doc Award Competition
PRENATAL LPS EXPOSURE ALTERS THE FATE OF DEVELOPING DOPAMINE PROJECTIONS. Angela J Monahan, Zaodung Ling, and Paul M. Carvey. Rush University Chicago, IL 60605
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PERINATAL EXPOSURE TO 2,2',3,5'-PENTACHLOROBIPHENYL (PCB95) ALTERS SEIZURE SENSITIVITY AND PERSISTENTLY CHANGES HIPPOCAMPAL CA1 EXCITABILITY. Kyung Ho Kim, Salim Yalcin Inan*, Robert F. Berman*, and Isaac N. Pessah†. Departments of Molecular Biosciences, School of Veterinary Medicine and Department of Neurological Surgery, School of Medicine, University of California, Davis, California, USA.

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Post-Doc Award Competition
PERINATAL EXPOSURE TO 2,2',4,4'-TETRABROMODIPHENYL ETHER (PBDE-47) RETARDS GROWTH AND DELAYS NEORENEDEVELOPMENT OF C57BL/6 MICE. TramAnh N. Ta, Pavel Aronov, Mari S. Golub, Jozsef Lango, Isaac N. Pessah, Robert F. Berman. Center for Children’s Environmental Health, University of California Davis, Davis, California 95618, USA.

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Pre-Doc Award Competition
ALUMINUM INDUCED ELECTROPHYSIOLOGICAL, BIOCHEMICAL AND COGNITIVE MODIFICATIONS IN THE HIPPOCAMPUS OF AGING RATS. Pallavi Sethi1,2, Amar Jyoti1, Rameshwar Singh1, Ejaz Hussain1 and Deepak Sharma1. 1Neurobiology Laboratory, School of Life Sciences, Jawaharlal Nehru University, New Delhi, 1110067. 2Department of Biosciences, Jamia Millia Islamia, New Delhi, India.

P-73
MOLECULAR AND GENETIC ANALYSIS IN NOVEL MODELS OF METHYLMERCURY NEUROTOXICITY Grimes, KA1, Henry, TB2, Braun, K3, Nass, R1, Depts. of Pediatrics and Pharmacology1, Vanderbilt University Medical Center, Nashville, TN, USA; Center for Environmental Biotechnology2, The University of Tennessee, Knoxville, TN, USA; Dept. of Zoology/Developmental Neurobiology2, Otto von Guericke University Magdeburg, Germany.

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METHYLMERCURY EXPOSURE INDUCES HYPERACTIVITY AND NEURONAL LOSS IN THE CAUDATE PUTAMEN IN MICE. Masumi Sawada, Masatake Fujimura and Akira Yasutake. National Institute for Minamata Disease, 4058-18 Hama, Minamata, Kumamoto 867-0008, JAPAN.

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SELENIUM PREVENTION & TREATMENT OF MERCURY TOXICITY NVC Ralston and LJ Raymond. Energy & Environmental Research Center, University of North Dakota, Grand Forks, ND, U.S.A.

P-76
METHYLMERCURY, DIETARY FISH OILS, AND BRAIN FATTY ACIDS MC Craig-Schmidt1, CA Teodorescu1, EE Eckley1, A Inness1, and MC Newland2 Departments of Nutrition and Food Science1 and Psychology2, Auburn University, Auburn, AL USA.

P-77
AIR POLLUTION, OXIDATIVE STRESS AND NEUROTOXICITY, Arezoo Campbell1, Sheba M. J. MohanKumar2 and Bellina Veronesi3 1Department of Pharmaceutical Sciences, Western University of Health Sciences, Pomona, CA, 2Department of Pharmacology and Toxicology, Michigan State University, E. Lansing, MI and 3Neurotoxicology Division, NHEERL, US. EPA, RTP, NC.

P-78
Pre-Doc Award Competition
PARAQUAT INDUCES OXIDATIVE STRESS, NEURONAL LOSS AND PARKINSONISM IN RATS: NEUROPROTECTION BY WATER-SOLUBLE COQ40- Mallika Somayajulu-Nitu1, T. S. Sridhar1, Anca Matei2, Vera Parmaswaran1, Jerome Cohen2, Jagdeep Sandhu3, Henryk Borowy-Borowski2, Marianna Sikorska and Siyaram Pandey3. 1. Chemistry & Biochemistry, University of Windsor, Windsor, ON, Canada. 2. Psychology, University of Windsor, Windsor, ON, Canada. 3. Institute for Biological Sciences, National Research Council of Canada, Ottawa, ON, Canada. "Current address: St John’s Medical College, Bangaluru, India.

P-79
EXACERBATION OF PARKINSON’S DISEASE WITH EXPOSURE TO NEUROTOXINS MAY BE RESPONSIVE TO LIPID THERAPY. Kane PC, Braccia D, Kane E. Haverford Wellness Center, Havertown, PA USA

P-80
Pre-Doc Award Competition
PROTECTIVE EFFICACY OF BACOPA MONNIERI EXTRACT AGAINST ROTENONE INDUCED NEUROTOXIC EFFECTS IN DROSOPHLA. Ravikumar Hosamani, K.N Chandrashrakekar and Muralidhara. Biochemistry & Nutrition, Central Food Technological Research Institute, Mysore, India.

P-81
Post-Doc Award Competition
STRUCTURAL STUDIES OF WORM CU/ZN SUPEROXIDE DISMUTASE. O. N. Pakhomova1, J. P. Schuermann1, L. T. Jensen2, V. Cizewski Culotta2, P. J. Hart1. 1Department of Biochemistry, University of Texas Health Science Center, San Antonio, USA, 2Department of Environmental Health Sciences, John Hopkins University Bloomberg School of Public Health, Baltimore, USA.

P-82
UTILIZATION OF DROSOPHILA SYSTEM TO UNDERSTAND THE EMERGING ROLE OF PHYTOCHEMICALS AS NEURO-MODULATORS. Dr. Muralidhara. Biochemistry & Nutrition, Central Food Technological Research Institute, Mysore, Karnataka, India

P-83
Pre-Doc Award Competition
SPLICE VARIANT SPECIFIC UPREGULATION OF CA+2/CALMODULIN DEPENDENT PROTEIN KINASE 1G BY PYRETHROID INSECTICIDES IN VIVO. J A Harrill1, K M Crofton1. 1Curriculum in Toxicology, UNC-CH, Chapel Hill, NC, 2Neurotoxicology Division, NHEERL, ORD, USEPA, RTP, NC.

P-84
EFFECT OF 1-BROMOPROPANE EXPOSURE ON GENE EXPRESSION OF NEUROTRANSMITTER RECEPTORS AND EXPLORATION OF BIOMARKERS FOR THE CENTRAL NERVOUS SYSTEM TOXICITY. S Sahabudeen and G Ichihara. Department of Occupational & Environmental Health, Nagoya University Graduate School of Medicine, Nagoya, Japan.

P-85
Pre-Doc Award Competition
EXPRESSIONS CHANGES OF CYTOSKELETAL PROTEIN AND RELATED PROTEIN KINASES IN CEREBRUM CORTEX OF 2,5-HEXANEDIONE SUBCHRONIC TREATED RATS. Wang QingShan, HE6XIAN, Liang, Vera Parameswaran1, Jerome Cohen2, Jagdeep Sandhu3, Henryk Borowy-Borowski2, Marianna Sikorska and Siyaram Pandey3. 1. Chemistry & Biochemistry, University of Windsor, Windsor, ON, Canada. 2. Psychology, University of Windsor, Windsor, ON, Canada. 3. Institute for Biological Sciences, National Research Council of Canada, Ottawa, ON, Canada. "Current address: St John’s Medical College, Bangaluru, India.

P-86
INVOLVEMENT OF CALPAINS IN THE PERIPHERAL AXONOPATHY INDUCED BY 2,5-HEXANEDIONE IN RAT SCIATIC NERVES. Song Fuyong and Xie KeQin. Institute of Toxicology, Shandong University, Jinan, ShanDong, China.

P-87
Post-Doc Award Competition
THE REVERSIBILITY OF NEUROFILAMENTS DECLINE INDUCED BY 2,5-HEXANEDIONE IN RAT SCIATIC NERVES. Song Fuyong and Xie KeQin. Institute of Toxicology, Shandong University, Jinan, ShanDong, China.
P-88 Post-Doc Award Competition
CHRONIC LOW-DOSE ACRYLAMIDE EXPOSURE REDUCES APPETITIVE MOTIVATION IN FISHER 344 RATS BETWEEN 8 TO 12 MONTHS OF AGE. J. Garey and M.G. Paule. Division of Neurotoxicology, National Center for Toxicological Research/FDA, Jefferson, AR, USA.

P-89
EFFECTS OF CHRONIC ORAL ACRYLAMIDE EXPOSURE ON INCREMENTAL REPEATED ACQUISITION (LEARNING) PERFORMANCE IN ADULT FISHER 344 RATS. M.G. Paule and J. Garey. Division of Neurotoxicology, National Center for Toxicological Research/FDA, Jefferson, AR, USA.

P-90
THE ROLE OF NMDA RECEPTOR REGULATION IN PCP-INDUCED CORTICAL APOPTOSIS. Cheng Wang1, Natalya Sadovova2, Xiaoju Zou1, Sherry Ferguson1, Merle Paule1 and William Slikker1. Division of Neurotoxicology, NCTR, FDA and 1Toxicologic Pathology Associates, Jefferson, Arkansas

P-91
PROTECTIVE EFFECTS OF 7-NITROINDAZOLE ON KETAMINE-INDUCED NEUROTOXICITY IN RAT FOREBRAIN CULTURE. N. Sadovova1, C. Wang1, T.A. Patterson1, X. Zou1, X. Fu1, J.P. Hang1, M.G. Paule1, S.F. Ali1 and W. Slikker1, â–¸ Toxicologic Pathology Associates, Jefferson, AR, 1Division of Neurotoxicology and 2Division of Biochemical Toxicology, National Center for Toxicological Research/U.S. Food & Drug Administration, Jefferson, AR, and 3Center for Drug Evaluation and Research/U.S. Food & Drug Administration, Silver Spring, MD

P-92
Pre-Doc Award Competition
DEVELOPMENTAL PHENOCYCLIDINE (PCP) OR KETAMINE TREATMENT INCREASES THE FREQUENCY OF ABNORMAL ACTIVITY IN SPRAUGE-DAWLEY RAT PUPS. SY Boctor1,2, N. Sadovova1, X. Zou1, C. Wang2, SA Ferguson2, 1Dept. of Interdisciplinary Biomedical Science, UAMS, Little Rock, AR, USA; 2Division of Neurotoxicology, National Center for Toxicological Research/FDA, Jefferson, AR, USA; 3Toxicologic Pathology Associates, Jefferson, AR, USA

P-93
CO-EXPOSURE OF HEAVY METALS AND PSYCHOSTIMULANTS ALTER Dopamine transporter (DAT) DENSITY WITHOUT CHANGES IN DAT FUNCTION. AN Hood and DR Wallace. Department of Forensic Science, Oklahoma State University Center for Health Sciences, Tulsa, Oklahoma, USA

P-94
Pre-Doc Award Competition
EFFECTS OF ESTRA Diol AND XENOESTROGENS ON Dopamine Transporter. Rebecca A. Alyea1, Kathryn A. Cunningham2, and Cheryl S. Watson. 1Department of Biochemistry & Molecular Biology, Univ. of Texas Medical Branch, Galveston TX 77555-0645; 2Department of Pharmacology & Toxicology, Univ. of Texas Medical Branch, Galveston TX 77555-1031

P-95
Post-Doc Award Competition
THE EFFECTS OF METHYLPHENIDATE ON RHEUS MONKEY PERFORMANCE IN AN OPERANT TEST BATTERY. JS Rodriguez1, SM Morris1, CE Hotchkiss1, DR Mattison1 and MG Paule2. 1Division of Neurotoxicology, 2Division of Genetic and Reproductive Toxicology, and 3The Bionetics Corporation; National Center for Toxicological Research, FDA, Jefferson, AR, and 4Obstetric and Pediatric Pharmacology Branch, National Institute of Child Health and Human Development, NIH, Bethesda, MD

P-96
USING OPERANT RESPONSE ACQUISITION TO ASSESS MOUSE MODELS OF ALZHEIMER'S PATHOLOGY. TJ Zarcone1, A Sagare2, R Deane1, RD Bell1, N Paquette1, D Carbonari2, R Pendu2, PJ Lenting2, Z Wu1, & BV Zlokovic1, 1Frank P. Smith Laboratory for Neuroscience and Neurosurgical Research, Department of Neurosurgery, University of Rochester Medical School, Rochester, New York 14642, USA. 2Laboratory for Thrombosis and Haemostasis, Department of Hematology, University Medical Center Utrecht, 3584 CX Utrecht, The Netherlands. 3Neurobehavioral Facility Laboratory, Department of Environmental Medicine, University of Rochester Medical School, Rochester, New York, USA.

P-97
ASSESSING THE EFFECTS OF CHRONIC DOPAMINERGIC (D3) AGONIST ADMINISTRATION ON COMPLEX BRAIN FUNCTIONS IN JUVENILE RHEUS MONKEYS USING THE NCTR OPERANT TEST BATTERY. T.A. Patterson1, M. Li1, C.E. Hotchkiss2, A. Mauz3, M. Eddie4 and M.G. Paule1. Division of Neurotoxicology, National Center for Toxicological Research/U.S. FDA, Jefferson, AR, 2The Bionetics Corporation, Jefferson, AR and 3Boehringer Ingelheim Pharma GmbH & Co. KG, Biberach/Riss, Germany

P-98
RACE-GENE-ENVIRONMENT INTERACTIONS AND NEUROTOXICOLOGY: MULTIPLE ENVIRONMENTAL AND GENETIC VULNERABILITIES TO TOXINS. Roger D. Masters, Department of Government, Dartmouth College, Hanover, NH 03755, USA

P-99
TOXICOLOGY IN THE KITCHEN: POLYHEDRAL GRAPHIC MODELING IN FOOD TOXICOLOGY. ENVIRONMENTAL NEUROSCIENCE AND NUTRITION. BW Whitman, Mental Health and Behavioral Sciences Services, Carl T. Hayden VA Medical Center, Phoenix, Arizona

P-100
FROM SCIENCE TO POLICY: THE LEARNING AND DEVELOPMENTAL DISABILITIES INITIATIVE. Elise Miller, Med, Executive Director, Institute for Children’s Environmental Health, Freeland, Washington, USA.

P-101
TOXIPEDIA: CONNECTING SCIENCE AND PEOPLE. SG Gilbert. Institute of Neurotoxicology and Neurological Disorders, Seattle, Washington, USA

P-102
ALTERNATIVE COMMUNITY BASED APPROACH – PRECAUTIONARY ASSESSMENT. SG Gilbert. Institute of Neurotoxicology & Neurological Disorders, Seattle, WA, USA

P-103
NEUROTOXICITY OF ARSENIC ON EXPOSED WORKERS. L. Fat1 and M. Ghita2. 1Occupational Health Department, Institute of Public Health, Cluj-Napoca, Romania, 2Neurological Department, County Hospital, Baia Mare, Romania

P-104
SERUM FLUORIDE LEVEL AND CHILDREN’S INTELLIGENCE QUOTIENT IN TWO VILLAGES IN CHINA. Xiang Quanyong1, Liang Youxin2, Chen Bingheng3, Chen Liansheng4, Wang Caisheng5, Chen Xiaodong6, Zhou Mingsheng6, 1 For correspondence: Xiang Quanyong, Department of Environmental Health, Jiangsu Province Centers for Diseases Control and Prevention. 172 Jiangsu Road, Nanjing, Jiangsu Province, 210009, P.R. China. 2 Department of Occupational Health, School of Public Health, Fudan University, P.R. China. 3 Center for Disease Control and Prevention, Shihong County, Jiangsu Province, Nanjing, P.R. China. 4 Department of Environmental Medicine, University of Rochester Medical School, Rochester, New York, USA. 5 Laboratoire de Toxicologie des Fibres, Faculté des Sciences, Université Libre de Bruxelles, Brussels, Belgium.