



**Joint Meeting  
Neurotoxicity Society and  
International Neurotoxicology Association  
May 20-24, 2017, Florianopolis, Brasil  
(Draft Program Oct 20, 2016)**

**Highlights**

- 1 Keynote Talk
- 1 Mini-keynote talk
- 10 Open Platform Talks
- 6 Student talks
- 16 Symposia with 87 speakers
  - Inflammation 8
  - Viruses 4
  - Antibiotics 3
  - Drugs of Abuse 7
  - Psychoactive Drugs 4
  - Neurodegeneration 3
  - Parkinson's Disease 12
  - Cell Death 4
  - Neurotoxicity Testing Approaches and Translation 11
  - Sensory Toxicity 4
  - Mitochondria 4
  - SUMO 3
  - Metabolic Disorders 5
  - Autism 5
  - Neurodevelopmental Disorders of Early Stress 5
  - Neurodevelopmental Disorders of Chemical Exposure 5
- Open Poster Session
- Breakfasts
- Lunches
- Dinners
- Coffee Breaks
- Awards
- Florianopolis Tour
- Society Business Meetings
- Soccer Game
- Dancing

## **May 20**

16:00-18:00 Registration Opens

17:00-18:00: Illumina Workshop / Seahorse Workshop

18:30-19:00: Cash bar and refreshments

19:00-19:15: Opening remarks and welcome from the Presidents

19:15-20:15: Jacob Hooisma Keynote Speaker: Dr. Tim Greenamyre, University of Pittsburgh, PA, USA

20:15-22:00: Welcome Dinner

## **May 21**

### **8:30-9:00: Joint Mini-keynote:**

Potential Roles for the Acquired Immune System in Dopamine Neuron Death

David Sulzer, Ph.D., Columbia University. New York, NY, USA

### **Room A**

### **9:10-12:00 Neuroinflammation and microglia: from neurotoxicity to therapeutics**

Chair: Patricia F. Schunck, Ph.D.

9:10-9:30: Microglia pathogenic phenotypes in neurodegenerative diseases

Luís Barbeito, Ph.D., Instituto Pasteur, Montevideo, Uruguay

9:30-9:50: Neuroinflammation: how can we visualize inflammation in the brain and identify contributions to injury or protection

Jean Harry, Ph.D., National Institute of Environmental Sciences, Research Triangle Park, NC, USA

9:50-10:10: The role of glutamate in neuroinflammation-induced neurodegeneration

Gary L. Wenk, Ph.D., The Ohio State University, Columbus, OH, USA

10:10-10:30: Role of neuroinflammation in the pathophysiology of phenylketonuria

Patrícia F. Schuck, Ph.D., Universidade do Extremo Sul Catarinense. Criciúma, Brasil

### **10:30-10:50 Break**

10:50-11:10: Maternal obesity affects cholinergic anti-inflammatory pathway.

Marcio A. Torsoni, Ph.D., University of Campinas, Campinas, Brasil

11:10-11:30: Proinflammatory gene mediates methamphetamine-induced neurotoxicity

Kim Hyoung-Chun, Ph.D., Kangwon National University, Kangwon, South Korea

11:30-11:50: A study on the inflammatory reaction in the L-DOPA-induced dyskinesia in a PD rat model.

Mariza Bortolanza, Ph.D., USP-Ribeirao Preto, Sao Paulo, Brasil

11:50-12:10: Tryptophan metabolism & neuroinflammation

Gilles J. Guillemin, Ph.D., Macquarie University NSW, Sydney, Australia

### **12:10-13:10: Lunch**

### **13:10-14:10: Viruses, Inflammation and Neurotoxicity**

Chair: Italo Mocchetti, Ph.D.

13:10-13:30: Chemokines and neurodegeneration

Marcus Kaul, Ph.D., University of California, San Diego, CA, USA

13:30-13:50: Neurotoxicity of viral proteins  
Italo Mocchetti, Ph.D., Georgetown University, Washington, DC, USA

13:50-14:10: Retroviruses and neurodegeneration  
Joseph Steiner Ph.D., National Institute of Neurological Disorders and Stroke, Bethesda, MD, USA

14:10-14:30: Mechanisms of Dengue and Zika neuro-compromise  
Eliseo Eugenin, Ph.D., Department of Microbiology and Molecular Genetics, Public Health Research Institute, Rutgers, The State University of New Jersey, Newark, NJ, USA

**14:30-14:50: Break**

**14:50-15:50: Antibiotics action in neurological diseases: *in vivo* and *in vitro* advancing mechanistic**  
Chairs: Elaine Del-Bel, Ph.D. and Rita Raisman-Vozari, Ph.D.

14:50-15:10: Role of doxycycline in neuroinflammation and protein aggregation  
Rita Raisman-Vozari, Ph.D., INSERM Paris, Paris, France

15:10-15:30: A study on the protective role of doxycycline upon dopaminergic neuron of PD rat model  
Elaine Del- Bel-USP-Ribeirao Preto-Brasil, Sao Paulo, Brasil

15:30-14:50: Effect of Rifampicine on alpha-synuclein induced neuroinflammation  
Leonardo Cortez, Ph.D., University of Tucuman, Tucuman, Argentina

**16:00-17:00: Platform Session in Room A**

16:00-16:20: Talk from the abstracts

16:20-16:40: Talk from the abstracts

16:40-17:00: Talk from the abstracts

**Room B**

**9:10-12:10: Advances in the Neurotoxicology of Abused Drugs**  
Chairs: Yousef Tizabi, Ph.D, Syed Ali, Ph.D and Emmanuel Onaivi, Ph.D

9:10-9:30: Behavioral and Neurobiological Effects of Low and High Alcohol Dose  
Yousef Tizabi, Ph.D., Howard University. Washington, DC, USA

9:30-9:50: Role of nucleus accumbens dopamine system in cocaine addiction.  
Katia Gysling, Ph.D., Pontificia Universidad Católica de Chile, Santiago, Chile

9:50-10:10: 3,4-methylenedioxyamphetamine abuse potential and neurodegenerative effects  
Nicola Simola, Ph.D., University of Cagliari, Cagliari, Italy

10:10-10:30: Dopamine Degeneration and Functional Consequences of Methamphetamine Abuse: Acute and Chronic Effects  
Rosario Moratalla, Ph.D., Instituto Cajal, Madrid, Spain

**10:30-10:50: Break**

10:50-11:10: New designer drugs, bath salts, ecstasy, and monoaminergic neurotoxicity  
Syed Ali, Ph.D., National Center for Toxicological Research/Food and Drug Administration, Jefferson, AR, USA

11:10-11:30: Neurobiology of Compulsive Behaviors: Translational tools in addiction

Emmanuel Onaivi, Ph.D., William Paterson University, Wayne, NJ, USA

11:30-11:50: Epigenetic landscape and Neurobiological Bases of Addiction: Novel Therapeutic Approaches  
Jean Lud Cadet, M.D., NIDA. Baltimore MD, USA

11:50-12:10: Drug Abuse Talk from the Abstracts

**12:10-13:10: Lunch**

**13:10-14:30 Neurotoxicity of New Psychoactive Substances: From molecular target to clinical toxicology**

Chairs: Laura Hondebrink, Ph.D. and Remco H.S. Westerink, Ph.D.

13:10-13:30: Introduction NPS: prevalence and effects on (human) neurotransmitter transporters (DAT, NET and SERT) as primary mode of action

Laura Hondebrink Ph.D., Utrecht University Medical Center, Utrecht, The Netherlands

13:30-13:50: Neurotoxicity screening for acute effects of NPS on neuronal activity using cortical neurons and human iPSC-derived neurons grown on microelectrode array (mwMEA) plates

Remco Westerink Ph.D., Utrecht University, Utrecht, The Netherlands

13:50-14:10: Effects of NPS on in vitro receptor and transporter binding and function in relation to locomotor activity and drug discrimination in vivo

Michael Gatch Ph.D., University of North Texas Health Science Center, Fort Worth, TX, USA

14:10-14:30: Overview of human effects following NPS exposure, including desired effects, managing acute toxicity and clinical toxicology upon (human) overdose

Paul Dargan M.D. and David Wood, Ph.D., King's College London. London, UK

**14:30-14:50: Break**

**14:50-15:50: Neurodegeneration**

Chair: Marta C. Antonelli, Ph.D.

14:50-15:10: p75NTR regulates amyloidogenesis by interacting with both APP and BACE1

Xin-Fu Zhou Ph.D., University of South Australia, Sydney, Australia

15:10-15:30: FUSsion of physiological RNA granules and pathological aggregates

Vladimir Buchman Ph.D., Cardiff University, Cardiff, Wales

15:30-15:50: Metabotropic glutamate receptors and neurodegeneration

Ferdinando Nicoletti, M.D., University of Catania, Catania, Italy

**16:00-17:00: Platform Session in Room B**

Chair: TBA

16:00-16:20: Talk from the abstracts

16:20-16:40: Talk from the abstracts

16:40-17:00: Talk from the abstracts

**17:30-19:30 Poster Session with light refreshments**

**20:00-22:00: Dinner at Santo Antonio de Losbona**

**May 22**

**Room A**

**8:30-12:50: Mechanisms for Neurodegeneration, Neuroprotection and Treatment in Parkinson's disease**

Chairs: Maria Trinidad Herrero, Ph.D., Juan Segura-Aguilar, Ph. D., and Daniel Prediger, Ph.D.

8:30-8:50: Mechanisms of neuroprotection and immunomodulation of fitoestrogens: application for Parkinson disease in perspective

Silvia Costa, Federal University of Bahia, Bahia, Brasil

8:50-9:10: Dopamine D2 Receptor Supersensitization - effect on dopamine release and actions

Richard Kostrzewa, Ph.D., East Tennessee State University, Johnson City, TN, USA

9:10-9:30: Aminochrome as preclinical model for Parkinson's disease

Juan Segura-Aguilar, Ph.D., University of Chile. Santiago, Chile

9:30-9:50: The role of deep brain stimulation and epigenetics on changes in the expression of dopaminergic cells in the rat substantia nigra and ventral tegmental area

Harry W.M. Steinbusch, Ph.D., Maastricht University, Maastricht, The Netherlands

9:50-10:10: Cutting edge methods to study phasic dopamine release in animal models of Parkinson's disease

Claudio Da Cunha, M.D., Universidade Federal do Parana. Curitiba, Brasil

10:10-10:30: Norepinephrine upregulates the expression of tyrosine hydroxylase and protection against 6-hydrodopamine toxicity in dopamine neurons

Meng-Yang Zhu, Ph.D., East Tennessee State University, Johnson City, TN, USA

**10:30-10:50 Break**

10:50-11:10: Neuroprotective role of full-length human cerebral dopamine neurotrophic factor (CDNF) against  $\alpha$ -synuclein oligomers

Débora Foguel, Ph.D., Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brasil

11:10-11:30: The effects of physical exercise on neurotoxin-induced animal models of Parkinson's Disease

Aderbal Aguiar Ph.D., Universidade Federal de Santa Caterina, Santiago, Chile

11:30-11:50: Magnetic resonance imaging of neuromelanin in normal and Parkinsonian subjects: mechanisms and investigation of the procedure

Luigi Zecca, M.D., Ph.D., Istituto di Tecnologie Biomediche Consiglio Nazionale delle Ricerche, Milan, Italy

11:50-12:10: Superimposed control by ATP and adenosine of behavioral dysfunction in animal models of Parkinson's disease

Rodrigo A. Cunha, M.D., University of Coimbra. Coimbra, Portugal

12:10-12:30: Physical activity improves the effects of antiinflammatory treatment in Parkinson's disease

María Trinidad Herrero, M.D., Ph.D., University of Murcia, Murcia, Spain

12:30-12:50: Agmatine and physical exercise in Parkinson's disease: new antidyskinetic and neuroprotective agents

Rui Daniel Prediger, Ph.D., Federal de Santa Catarina, Florianopolis, Brasil

## **12:50-14:00: Lunch**

### **14:00-16:00 Regulated necrosis and associated non-apoptotic mechanisms in neurotoxicity**

Chair: Michael A. Collins, Ph.D.

14:00-14:20: Binge alcohol and brain neuronal necrosis

Michael A. Collins, Ph.D., Loyola University Chicago, Stritch School of Medicine, Maywood IL, USA

14:20-14:40: Excitotoxic Programmed Necrosis in Acute Neuronal Injury

Denson G. Fujikawa, M.D., David Geffen School of Medicine, University of California, Los Angeles, CA, USA

14:40-15:00: Programmed Necrosis in Photoreceptors: Implications for AMD and other retinal degenerations

Demetrios G. Vavvas, M.D., Ph.D., Harvard Medical School, Boston MA, USA

15:00-15:20: Cellular senescence as an alternative programmed pathway in brain cells under stress: potential role in Parkinson's disease

Julie K. Andersen, Ph.D., Buck Research Institute for Age Research, Novato CA, USA

## **Room B**

### **8:30-12:50 Developing an Integrated Testing Strategy for Developmental Neurotoxicity (DNT) testing using in vitro data to screen and prioritize compounds with High Throughput / High Content Methods**

Chairs: Magdalini Sachana, Ph.D., Anna Price, Ph.D., Mamta Behl, Ph.D., Tim Shafer, Ph.D., Milou ML Dingemans, Ph.D. and David Reif, Ph.D.

8:30-8:50: Analytical/visual methods to distill useful information from high-throughput screening of chemicals

David Reif Ph.D., North Carolina State University, Raleigh, NC, USA

8:50-9:10: Ontogeny of parameters of synaptogenesis in rat neurons by high content imaging

Josh Harrill Ph.D., Hamner Institute for Health Sciences, Research Triangle Park, NC, USA

9:10-9:30: Screening for acute neurotoxicity using cortical neurons grown on multi-well microelectrode array (mwMEA) plates

Jenna Strickland, Ph.D., Michigan State University, East Lansing, MI, USA

9:30-9:50: Using developing cortical cultures on microelectrode arrays to identify and prioritize compounds based on changes in network formation

Tim Shafer, Ph.D., US-Environmental Protection Agency, Research Triangle Park, NC, USA

9:50-10:10: Towards in vitro DT/DNT testing: Assaying chemical susceptibility in early differentiating NT2 cells

Daniel F Gilbert, Ph.D., Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany

10:10-10:30: Applications of human induced pluripotent stem cell (3D) models for neurotoxicity testing

Anke Tukker, Ph.D., Utrecht University, Utrecht, The Netherlands

## **10:30-10:50 Break**

11:50-11:10: High content approaches to study developmental neurotoxicity in 3D cell models

Helena Hogberg, Ph.D., Center for Alternatives to Animal Testing, Baltimore MD, USA

11:10-11:30: Utilization of data from multiple in vitro and alternative assays to prioritize compounds for DNT testing.

Mamta Behl, Ph.D., National Institute for Environmental health Sciences, Research Triangle Park, NC, USA

11:30-11:50: Results of the EFSA systematic review and the OECD follow-up report on DNT in vitro methods: proposed DNT testing strategies

Ellen Fritsche, Ph.D., IUF – Leibniz Research Institute for Environmental Medicine, Düsseldorf, Germany

11:50-12:10: A path forward for developmental neurotoxicity testing based on the OECD/EFSA DNT workshop (October 2016)

Magdalini Sachana Ph.D., Organization for Economic Co-operation and Development, Paris, France

12:10-12:30: Creating a developmental neurotoxicity testing (DNT) roadmap for regulatory purposes

Anna Price, Ph.D., Institute for Health and Consumer Protection, European Commission JRC. Ispra, Italy

12:30-12:50: Discussion

### **12:50-14:00: Lunch**

### **14:00-16:00 Physiological assessment of sensory toxicity and the role in human risk assessment in the 21<sup>st</sup> century**

Chairs: Jordi Llorens, Ph.D. and William K. Boyes, Ph.D.

14:00-14:20: Detecting and assessing vestibular function in laboratory rodents

Jordi Llorens, Ph.D., Universitat de Barcelona, Barcelona, Spain

14:20-14:40: Membrane fluidity does not explain how solvents act on the middle-ear reflex

Pierre Campo, Ph.D., Institut National de Recherche et de Sécurité, Vandoeuvre-les-Nancy, France

14:40-15:00: Visual impact of exposure to mercury

Dora F. Ventura, Ph.D., Universidade de Sao Paulo, Sao Paulo, Brasil

15:00-15:20: Evaluating visual system toxicity in relation to human risk assessments in the 21<sup>st</sup> century

William K. Boyes, Ph.D., US-Environmental Protection Agency, Research Triangle Park, USA

### **16:00-21:00: Florianópolis Tour and Dinner**

## **May 23**

### **Room A**

### **8:30-10:10: Mitochondria-related metabolism leading to neurodegeneration and neuroprotection**

Chair: Gustavo C. Ferreira, Ph.D.

8:30-8:50: Mechanisms of neurotoxicity at physiological O<sub>2</sub>

Brian Polster, Ph.D., University of Maryland School of Medicine, Baltimore MD, USA

8:50-9:10: Astrocyte dysfunction in experimental models of glutaric acidemia type I

Silvia Olivera-Bravo, Ph.D, Instituto de Investigaciones Biológicas Clemente Estable, Montevideo, Uruguay

9:10-9:30: Carnosine and its potential efficacy with respect to reactive bicarbonyls

Alan Hipkiss, Ph.D., University of Birmingham, Birmingham, UK

9:30-9:50: Carnosine and related peptides: Therapeutic potential in age-related disorders

Gustavo Ferreira, Ph.D., Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brasil

9:50-10:10: Mitochondria talk from abstracts

### **10:10-10:30: Break**

### **10:30-11:30: Neuroprotective and/or neurotoxic roles of SUMOylation in neurodegenerative diseases**

Chairs: Jeremy Henley, Ph.D. and Dean Pountney, Ph.D.

10:30-10:50: SUMO wrestling at the synapse  
Jeremy Henley, Ph.D., University of Bristol. Bristol, UK

10:50-11:10: SUMO, stress response and neurodegenerative diseases  
Jin Xu, Ph.D., Chinese Academy of Sciences, Shanghai, China

11:10-11:30: SUMO and mitochondrial dysfunction  
Helena Cimarosti, Ph.D., University of Santa Catarina, Florianopolis, Brasil

### **11:30-12:10: Platform Session in Room A**

11:30-11:50: Talk from the Abstracts

11:50-12:10: Talk from the Abstracts

### **12:10-13:30 Lunch and Business Meetings**

### **13:30-15:30: Metabolic Derangements Predisposing to neurotoxicity and neurodegenerative disease**

Chairs: Andreza Fabro de Bem, Ph.D., Alexandra Latini, Ph.D. and Arne Schousboe. Ph.D.

13:30-13:50: Hypothalamic dysfunction in obesity  
Lício Velloso, Ph.D., University of Campinas, Campinas, Brasil

13:50-14:10: Hypercholesterolemia as a risk factor for neurocognitive impairments  
Andreza Fabro de Bem, Ph.D., Federal University of Santa Catarina, Florianópolis, Brasil

14:10-14:30: Chronic hyperglycemia promotes hippocampal REST epigenetic gene inactivation with cognitive impairment and neurotoxicity  
Alexandra Latini, Ph.D., Federal University of Santa Catarina, Florianópolis, Brasil

14:30-14:50: Hepatic encephalopathy and hyperammonemia leads to altered brain energy metabolism, GABAergic neurotransmission and behavioral deficits in the animal model of bile duct-ligation  
Renata Leke, Ph.D., University of Göteborg. Göteborg, Sweden

14:50-15:10: The Diabetic Brain and Cognition  
Peter Riederer, Ph.D., University of Wurzburg. Wurzburg, Germany

### **Room B**

### **8:30-10:10: Advancing Mechanistic Understanding of Neurotoxic Contributors to Autism**

Chair: Edward D. Levin, Ph.D.

8:30-8:50: What we do and don't know about environmental contributors to autism spectrum disorder  
Irva Hertz-Piccolto, Ph.D., M.P.H., University of California, Davis, CA, USA

5:50-9:10: Developmental neurotoxicity of traffic-related air pollution  
Lucio Guido Costa, Pharm.D., University of Washington, Seattle, WA, USA

9:10-9:30: The epidemiology of air pollution and autism  
Marc Weisskopf, Ph.D., Sc.D., Harvard University School of Public Health, Cambridge, MA, USA



9:30-9:50: Environmental toxins and microglia-synapse interactions in autism  
Staci Bilbo, Ph.D., Harvard University School of Medicine, Cambridge, MA, USA

9:50-10:10: Persisting impairment of neurobehavioral function in zebrafish caused by early developmental exposure to disrupting retinoic acid receptor and vitamin D signaling  
Edward D. Levin, Ph.D., Duke University Medical Center, Durham, NC, USA

**10:10-10:30 Break**

**10:30-12:30: Neurodevelopmental Effects of Early Stress**

Chairs: Sandra Ceccatelli, Ph.D. and Michael Aschner, Ph.D.

10:30-10:50: Neurological disease co-morbidities in adult rats exposed to early life stress  
Andrew Tasker, Ph.D., University of Prince Edward Island, Charlottetown, Canada

10:50-11:10: Developmental exposure to excess glucocorticoids alters neuronal differentiation and induces long-term behavioral changes  
Sandra Ceccatelli, Ph.D., Karolinska Institutet, Stockholm, Sweden

11:10-11:30 : Glutamate metabolism impairment in a rat model of prenatal restraint stress  
Marta C. Antonelli, Ph.D., Universidad de Buenos Aires, Buenos Aires, Argentina

11:30-11:50: Maternal behavior, glutamate and oxytocin balance in the perinatal stress rat model  
Sara Morley-Fletcher, Ph.D., University of Lille, France; Sapienza University of Rome/I.R.C.C.S. Rome, Italy

11:40-12:10: Interruption of oxygen at delivery and permanent vulnerability to recurrent metabolic insults: in vitro and in vivo experiments  
Mario Herrera-Marschitz, Ph.D., University of Chile, Santiago, Chile

**12:10-13:30: Lunch and Business Meetings**

**13:30-15:10: Neurodevelopmental Effects of Chemical Exposure**

Chair: Micaela Morelli Ph.D.

13:30-13:50: Prenatal exposure of alcohol produces morphological changes in developing brain  
Alicia Brusco, Ph.D., University of Buenos Aires, Buenos Aires, Argentina

13:50-14:10: Effects of developmental alcohol exposure on neuronal plasticity and multisensory integration in the cortex  
Alexandre Medina, University of Maryland Medical Center, Baltimore, MD, USA

14:10-14:30: Long lasting neurotoxic effects of MDMA administration during adolescence  
Micaela Morelli Ph.D., University of Cagliari, Cagliari, Italy

14:30-14:50: Enduring neurotoxic effects of perinatal exposures to pro-oxidant xenobiotics: a focus on paraquat and methylmercury  
Marcelo Farina Ph.D., Universidade Federal de Santa Catarina, Florianópolis, Brasil

14:50-15:10: Sex- and structure-specific differences in antioxidant responses to methylmercury during early development  
Michael Aschner, Ph.D., Albert Einstein College of Medicine, Bronx, NY, USA

15:10-15:30: Break

**15:30-16:50: Joint Student Symposium**

15:30-15:45: Student Talk 1

15:45-16:00: Student Talk 2

16:00-16:15: Student Talk 3

16:15-16:30: Student Talk 4

16:30-16:45: Student Talk 5

16:45-17:00: Student Talk 6

**17:30-19:00: Soccer Game**

**19:30-24:00: Awards**

**Banquet**

**Party/Dancing**