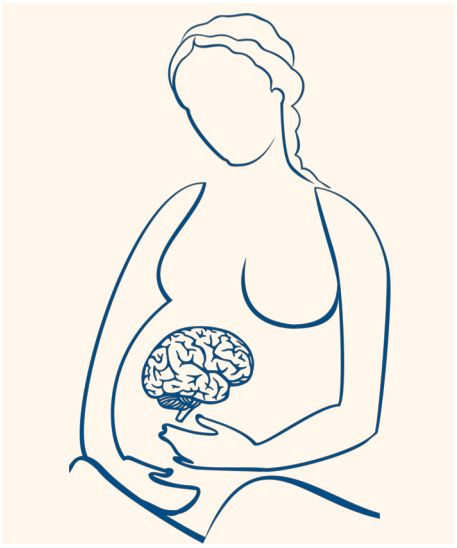

1st INTERNATIONAL CONFERENCE

Perinatal Origins of Neuropsychiatric Disorders:
from molecular mechanisms to therapeutic perspectives

MAY 29 – 31, 2019

Sala Gialla, Palazzo dei Normanni
Palermo, ITALY

ORGANIZERS

Carla Cannizzaro – University of Palermo
Miriam Melis – University of Cagliari

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The perinatal temporal window is a highly vulnerable time in which environmental factors, such as nutrients, drugs, infections, chemicals and stress, experienced by the mother can be communicated to the offspring and produce lasting consequences on the new-born brain, thus contributing the evolutionary origin of non-communicable neuropsychiatric diseases.

Most of these disorders are preventable, since they are due to modifiable risk factors such as lifestyle and the environment.

Nevertheless, the increase in perinatal exposure to drugs, substances of abuse, pathogens, nutritional deficits and in immune over-reactivity can partly explain the high prevalence of neuropsychiatric disorders over recent decades. They include teratogenesis, dysfunction of the reproductive, neurocognitive and immune systems, autism, and addiction, all of which may have a substantial economic and societal impact.

It is therefore necessary to take stock of the latest evidence regarding the underlying molecular mechanisms of epigenetics leading to vulnerability - or resilience - to neuropsychiatric diseases.

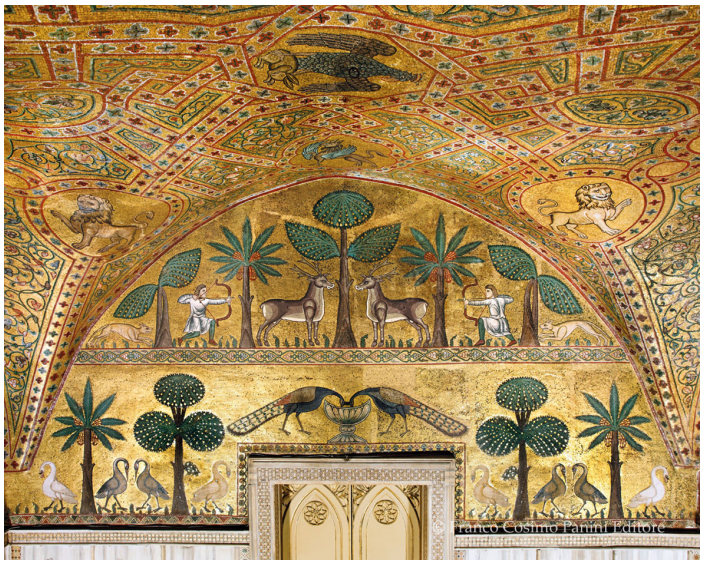
On this basis the major experts in the field will gather in Palermo from May 29 to 31 in order to share the most recent findings with the academic, the medical and the health practitioners.

Covering the topic of the perinatal origins of neuropsychiatric disorders will have worldwide implications to orient the healthcare professionals towards a broader awareness, effective prevention and successful therapeutic strategies.

Carla Cannizzaro, MD, University of Palermo
Miriam Melis, PhD, University of Cagliari

Venue

Sala Gialla
Palazzo dei Normanni
Palermo, Italy



Social Events

The welcome cocktail will be held on the evening of May 29th . The social dinner will be held on the evening of May 31st. at Alle Terrazze (Mondello). A guided tour along the Arab-Norman Palermo, UNESCO World Heritage Site, will take place on the morning of June 1st .

Organizers

Carla Cannizzaro – University of Palermo
Miriam Melis – University of Cagliari

Secretariat

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Website: sites.unica.it/perinatal/

Scientific Programme

DAY 1 - 29 May 2019

15:00 – 17:00 Registration

17:00 – 18:00 Opening remarks

18:00 – 19:00 **Liana Fattore,** Cagliari, introducing:
Carolyn Salafia, New York City
Lectio magistralis - *Placenta as a marker /mediator of fetal origins of lifelong health risks*

19:00 Welcome cocktail

DAY 2 - 30 May 2019

8:30 – 10:00 Session 1 **- *Glial – immuno activation: from the mother to the foetus***
Chairpersons: **Antonello Bonci**, Baltimore - **Patrizia Romualdi,** Bologna

Sophie Layé (Bordeaux) - Perinatal lipid nutrition role in brain development and later-life emotional behavior and cognition

Michela Matteoli (Milan) - Immune-synaptopathies: when the immune system affects synapse development and function
Tania Marcourakis (San Paolo) - Tobacco smoke exposure during pregnancy increases the offspring susceptibility to a neuroinflammatory process
Paola Bezzi (Lausanne) - Dysfunction of homeostatic control of dopamine by astrocytes in the developing prefrontal cortex induces core features of neurodevelopmental disorders

10:00 – 10:30 Coffee break

10:30 – 12:00 **Platform presentation I –** Chairperson: **Claudio D'Addario**, Teramo
Serena Stamatakos (Bologna) - Alterations of BDNF and class I HDAC enzymes induced by repeated MDMA ("ecstasy") exposure could favour the onset of psychiatric disorders
Laura Rullo (Bologna) - Striatal antioxidant machinery and nigral dopaminergic neurons after MDMA binge intoxication in the mouse: age and gender influence.
Valeria Serra (Cagliari) - Mao-A Hypomorphic Mice And Their Vulnerability Traits
Luisa Ponzoni (Milan) - Perinatal Deletion Of Shank3 Gene In Pv Positive Neurons Induces Neurological Alterations Which Are Rescued By Ganaxolone Treatment
Silvia Bussone (Rome)- Early-life Stress, Global Methylation and Psychopathology
Lucia Caffino (Milan)– Activity – based anorexia alters the glutamate synapses in adolescent female rats: focus on the prefrontal cortex
Martina Di Bartolomeo (Teramo) - Perinatal delta-9-tetrahydrocannabinol exposure induces a selective regulation of CB1 and D2 receptor genes transcription at adulthood.
Francesco Traccis (Cagliari) - Psychotic-like endophenotype induced by prenatal THC exposure is rectified by pregnenolone
Antonia Manduca (Marseille) - Sex-dependent effects of in utero cannabinoid exposure on behavioral and cortical function
Fabio Bellia (Teramo) - Prenatal alcohol exposure and postpartum alcohol use patterns: preliminary data on the effects of environment enrichment on transcriptional regulation of relevant key genes
Andrew Scheyer (Marseille) - Enduring effects of perinatal cannabis exposure
Mihaela Bobić Rasonja (Zagreb) - Transcriptome analysis of the human fetal anterior cingulate gyrus
Francesca Manuella (Zurich) - The impact of early life trauma can be reversed by environmental enrichment

12:00 – 13:45 Session 2 **- *Prenatal exposure to substance of abuse as risk factor for neuropsychiatric disorders***

Chairpersons: **Yasmin Hurd**, New York City – **Miriam Melis**, Cagliari

Roh Yu Shen (Buffalo) - Prenatal ethanol exposure leads to persistent cognitive, emotional, and behavioral deficits- rescued by environmental enrichment
Olivier Manzoni (Bordeaux) - Effects of perinatal cannabinoids during lifetime
Sarah Beggiato (Ferrara) - Prenatal THC exposure permanently disturbs kynurenic acid and glutamate levels and amplifies the responsivity to an acute kynurenine challenge in the rat prefrontal cortex
Elisabetta Gerace (Florence) - Chronic ethanol and ethanol withdrawal differentially affect the neuronal circuits in immature and mature hippocampal slice cultures
Aranza Wille Bille (Cordoba) - Prenatal ethanol exposure induces an anxiety phenotype, enhance voluntary ethanol consumption and alter both DNA methylation and gene expression of kappa opioid system

13:45 – 14:30 Light lunchl

Scientific Programme

DAY 2 - 30 May 2019

15:30 – 17:10 Session 3 - ***Perinatal exposure to prescription drugs: consequences on neurodevelopment***

Chairpersons: **Carla Cannizzaro**, Palermo - **Olivier Manzoni**, Bordeaux

Viviana Trezza (Rome)- Prenatal valproate in rodents as a tool to identify underlying molecular mechanisms and new therapeutic targets for Autism Spectrum Disorder
Guido Mannaioni (Florence) - Functional investigation of the reward striatal system in the valproic acid model of Autism
Tim F. Oberlander (Vancouver) - Prenatal exposure to SSRI antidepressants and the perinatal origins of neuropsychiatric disorders
Jodi L. Pawluski (Rennes) - Perinatal SSRI exposure effects on social behaviors and neuroplasticity: role of fetal sex
Erica Zamberletti (Varese) - Cannabinoid treatment rescues autism-like behaviors and dampens hippocampal microglia activation induced by prenatal valproic acid exposure in rats

17:10 – 17:30 Coffee break

17:30 – 18:30 **Gaetano Di Chiara**, Cagliari, introducing:
Antonello Bonci, Baltimore
Lectio magistralis - *Therapeutic potential of transcranial magnetic stimulation during pregnancy*

19:30 Charming Palermo – food & music in a secret venue

DAY 3 - 31 May 2019

9:00 – 10:30 Session 4 - ***Perinatal insults and adversities on neurodevelopmental trajectories***

Chairpersons: **Viviana Trezza**, Rome - **Christian Chiamulera**, Verona

Marco Bortolato (Salt Lake City) - The interplay of nature and nurture in antisocial behavior: insights from animal model
Stefano Musardo (Geneve) - Critical period in the development of social behavior
Claire Thornton (London) - Exendin-4: targeting an antidiabetic drug at neonatal hypoxic-ischaemic brain injury
Clarissa Catale (Rome) - Long-term effects of early-life stressful experiences on brain plasticity: an analysis through perineuronal nets
Stefania Schiavone (Foggia) - Effects of pharmacological NOX-inhibition on neuropathological alterations induced by ketamine administration in early postnatal life

10:30 – 11:00 Coffee break

11:00 – 12:00 **Micaela Morelli,** Cagliari, introducing:
Yasmin Hurd, New York City
Lectio Magistralis - *Unlocking the neurobiological impact of developmental cannabis and psychiatric risk*

12:00 – 13:00 Session 5 - ***Role of the maternal milieu on offspring vulnerability to develop neuropsychiatric disorders***

Chairpersons: **Sophie Laye**, Bordeaux - **Domenico Pellegrini-Giampietro**, Florence

Vincenzo Micale (Catania) - Behavioral and neurochemical alterations induced by perinatal Δ9-THC
exposure are counteracted by early cannabidiol treatment
Muriel Koehl (Bordeaux) - Vulnerability to PTSD-like memory impairments induced by stress in utero
Bice Chini (Milan) - The Oxytocin system in the developing brain: evidence from mouse models of neurodevelopmental disorders
Giuseppe Di Giovanni (Malta) - Epileptogenesis and neuropsychiatric comorbidities in absence epilepsy

13:00 – 14:00 Light lunch

Scientific Programme

DAY 3 - 31 May 2019

14:00 – 15:30 **Platform presentation II -** Chairperson **Daniela Parolaro**, Varese
Samantha Baglot (Calgary) - Inhaled delivery of cannabis during pregnancy: Pharmacokinetics and level of exposure in developing offspring
Florencia Anunziata (Cordoba) - Ethanol's sensory attributes trigger respiratory disruptions and appetitive facial responses in human newborns prenatally exposed to maternal binge drinking episodes
Juan P. Luaces (Buenos Aires) - Neurorestorative and protective effects of palmitoylethanolamide in perinatal asphyxia: an analysis of the rat striatum
Julieta P Aguggia (Cordoba) - Multiparity dampened the neubehavioral consequences of mother-pup separation stress in dams
Luca Posa (Montreal) – **to be determined**
Rafik Marir (Constantine) – to be determined
Jessica Duarte (San Paolo) - to be determined
Theresa M. Kisko (Marburg) - The effects of Cacna1c haploinsufficiency on maternal behaviour and offspring anxiety levels in rats.
Salvatore Lecca (Lausanne) - Limiting habenular hyperactivity ameliorates maternal separation-driven depressive-like symptoms.
Gianluca Lavanco (Bordeaux) – Binge drinking during adolescence as a vulnerability factor for migraine? Focus on Calcitonine gene-related peptide
Martinat Maud (Bordeaux) – Role of dietary n-3 polyunsaturated fatty acid in memory and hippocampal synaptic plasticity in male and female mice
Chiara Boscardin (Zurich) - Transgenerational inheritance of early life trauma
Indrek Heinla (Tromsø) – **to be determined**

15:30 – 16:00 Coffee break

16:00 – 17:30 Session 6 - ***Bridging the gap from bench to bed evidence: the emergence of therapeutic strategies***
Chairpersons: **Marco Bortolato**, Salt Lake City - **Marco Diana**, Sassari

Eva Redei (Chicago)- Endocrine and behavioral characteristics of Fetal Alcohol Spectrum Disorder: treatment strategies

Omry Koren (Bar Ilan) - A microbiome is born: how microbes contribute to a healthy pregnancy and infancy
Chloe J. Jordan (Baltimore)– Developmental exposure to drugs of abuse: scope of the problem and treatment strategies for impending psychiatric risk
Marta Busnelli (Milan) - Targeting the oxytocin system: novel therapeutic agents for neuropsychiatric disorders

17:30 – 18:30 **Round Table -** *Protecting the brain: from scientific evidence to institutional trajectories*

20:30 **Social Dinner** – Award ceremony and closing remarks