

Postdoctoral position – 22 months, beginning March 2024.



L'UMR 1280 Physiopathologie des Adaptations Nutritionnelles, PhAN (Nantes Université-INRAE, FRANCE), is expert in the concept of DOHaD (Developmental Origins of Health and Disease). Using a translational approach, from incubator to bench, combining animal models and clinical studies, UMR PhAN's research focuses on nutrition during the first 1,000 days and the mechanisms by which it can regulate fetal and postnatal growth and neurodevelopment, thus conditioning cognitive capacities and metabolic outcomes via the phenomenon of nutritional programming.

The postdoctoral project is part of the PreciCare FHU, which aims to improve the follow-up and care of children born with Congenital Heart Defects (CHD). CHDs are the leading cause of birth defects associated with a high risk of NeuroDevelopmental Disorders (NDDs), representing a major public health challenge. Apart from genetic causes, the developmental origins of neurodevelopmental disorders in MCC children remain largely unknown.

The proposal aims to increase our knowledge of the developmental origins of neurological disorders in children born with congenital heart defects.

This project is made possible by a major collaborative effort between the obstetrics and gynecology, pediatric and congenital cardiology, and neuropsychiatry departments of Nantes University Hospital, the Thorax Institute and UMR PhAN.

The aim of this project is to study the factors of external exposures during pregnancy on the regulation of placental function in MCC children and the consequences on the development of neurodevelopmental disorders. We will undertake a multi-omics approach combining transcriptomics and epigenetic on placenta with metabolomic/lipidomic analysis of the mother-placenta-fetal triad and analysis of the children's microbiota.

We are looking for a highly motivated, enthusiastic, autonomous and rigorous candidate with excellent synthesis and writing skills, who wishes to work in a highly collaborative environment. The postdoctoral fellow will be involved in building up the biocollection (placental biopsies, maternal and cord blood) and collecting maternal antenatal nutritional data, maternal and fetal clinical parameters, placental methylome and metabolome/lipidome analysis of mother-placenta-fetal triads. He/she will be in charge of developing and using multi-omics bioinformatics and statistical approaches to integrate clinical, nutritional, metabolomic, lipidomic, transcriptomic and epigenetic data.

Education level: PhD in biology/physiopathology/genomics and **skills** in development of bioinformatics and biostatistics tools dedicated to omics analyses. A CV with a presentation of research activities and a cover letter should be addressed to:

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