

# Connectomic insights into brain development before birth

## Organizers:

*Moriah Thomason, Ph.D.*

Wayne State University, Detroit, MI, United States

We propose a multinational symposium presenting leading-edge brain connectomic research focused on the beginning of human life. The brain is subject to dramatic developmental processes during the antinatal period, and yet our understanding of this critical early time in development is limited. Emergent non-invasive MRI methodologies are changing the paradigm and allowing investigators to deconstruct the living human connectome, or connectional architecture of the brain, beginning in utero. We will present challenges inherent in fetal and neonatal MRI and will propose solutions for those. We will also present new findings regarding maternal prenatal stress, the preterm brain, and relevance of prenatal brain development to child outcomes. This symposium will increase researcher and clinician knowledge about emergent MRI technologies for non-invasive examination of early human brain development, and will highlight some of the newest discoveries emerging in this area.

## Symposia Schedule:

8:00-8:15

### **Understanding Fetal Brain Development Across Multiple Modalities**

*Georg Langs, Medical University of Vienna, Vienna, Austria*

8:15-8:30

### **Exploring the Fetal Functional Connectome**

*Martijn van den Heuvel, Brain Center Rudolf Magnus, Dutch Connectome Lab, University Medical Center Utrecht, Utrecht, The Netherlands*

8:30-8:45

### **Influence of the Environment on the Developing Fetal Connectome**

*Moriah Thomason, Ph.D., Wayne State University, Detroit, MI, United States*

8:45-9:00

### **Amygdala Connectivity Develops Across the 3rd Trimester and is Reduced in Preterm Neonates with Prenatal Stress Exposure**

*Dustin Scheinost, PhD., Yale School of Medicine, New Haven, CT, United States*

9:00-9:15

### **Questions and Answers**