



THE JACOBS CENTER
RESEARCH SEMINAR SERIES

PROF. DR. RER. NAT.
CLAUDIA BUß

Institute for Medical Psychology, Charité
Universitätsmedizin Berlin, Germany
Northwestern University, IL, U.S.A.

FETAL PROGRAMMING OF BRAIN DEVELOPMENT

**ROLE OF INTRAUTERINE STRESS AND STRESS BIOLOGY
FOR PSYCHOPATHOLOGY**

The origins of alterations in brain anatomy and connectivity, that may underlie mental illness and cognitive impairment, can be traced back to the fetal period of life when the developing embryo/fetus responds to suboptimal conditions during critical periods of brain development ("Fetal Programming"). Data from two prospective longitudinal studies of pregnant mothers and their children will be presented that provide evidence for maternal gestational stress to be associated with alterations in their offsprings' brain anatomy and connectivity, which may underlie the higher prevalence of mental health problems and cognitive impairment in these children. Evidence is provided in support of alterations in maternal cortisol and interleukin-6 concentrations being likely biological mediators that provide cues about maternal conditions to the fetus with the potential of altering the developmental trajectory of its brain. Not only maternal stress during pregnancy can alter fetal development but also experiences she has made before she became pregnant (e.g., maternal adverse childhood experiences). A conceptual model and preliminary data will be presented supporting the role of alterations in maternal-placental-fetal stress biology in the intergenerational transmission of maternal adverse childhood experiences. An overview of advances in theory and methodology will be provided that afford an unprecedented opportunity to gain new and valuable insights into the developmental origins of human brain disorders and to develop targeted interventions to prevent these.

Tuesday, May 8th, 2018, 11:00-12:15 h

At the Jacobs Center for Productive Youth Development
Andreasstrasse 15, 4th floor, AND 4.19, 8050 Zürich