

## Special Issue on System Biology Studies in Human Pregnancy and Early Infancy

# CALL FOR PAPERS

The intrauterine and early childhood phase is the most critical and challenging period of development in human life. Parental metabolic state and behavior during pregnancy, as well as placental function and infant feeding practices (e.g., breastfeeding and its duration), are all important factors that influence offspring development, with potential to set the stage for increased propensity towards disease development in later life, such as cardiovascular diseases or asthma. Thus, it is worthwhile to investigate metabolic alterations of the mother, the fetus, and the newborn in order to further our understanding of the earliest time points during development at which susceptibility to later disease risk may be modified or, ideally, prevented.

The scientific study of a large set of genes, transcripts, proteins, or metabolites in a given biological matrix, such as blood plasma, urine, or breastmilk, provides a novel tool to identify metabolic changes associated with environmental exposures or potential biomarkers of future disease risk that may be already present during intrauterine or early infant life. In this way, these OMICs technologies may inform the design of new interventions in pregnancy and infancy for improved offspring health outcomes.

This special issue is seeking high quality manuscripts reporting original research results and review articles of exceptional merit. It is anticipated that this issue will provide the readers with a comprehensive insight into fundamental progress in the area of system biology during early development, with critical long-term human health outcomes.

Potential topics include but are not limited to the following:

- ▶ Genomics, epigenetics, transcriptomics, proteomics, or metabolomics studies in pregnancy with focus on offspring health outcomes
- ▶ Genomics, epigenetics, transcriptomics, proteomics, or metabolomics studies in early infancy
- ▶ Combined studies of different system biology approaches in early life
- ▶ Early-life biomarker identification of obesity, CVD, diabetes, asthma, and other chronic diseases in childhood
- ▶ Short- and/or long-term metabolic changes occurring due to interventions in pregnancy and early childhood
- ▶ The long-term impact of metabolic changes arising from pregnancy or early childhood interventions on future disease risk
- ▶ The influence of environmental exposures during pregnancy or infancy on the metabolism including behavioral factors, like smoking, diet, or stress, environmental factors as toxins, or metabolic exposures like diabetes or obesity

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