

# BBB Seminar (BMED380)



Thursday, February 13. 14:30 at the BBB, Auditorium 4

## From multi-omics to better health – managing the biological data resource in the Norwegian Mother, Father and Child Cohort Study

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The Norwegian Mother, Father and Child Cohort Study (MoBa) is one of the world's largest pregnancy cohorts (n=280.000). Since recruitment began in 1999, hundreds of thousands of biological samples including blood, urine, saliva and teeth have been collected from MoBa participants and stored at the biobank at the Norwegian Institute of Public Health (NIPH). These samples were primarily collected during pregnancy and at birth, in addition to a number of follow-up collections during childhood and adolescence and have since been sent to laboratories all over the world to generate biological data on biomarkers linked to health and wellbeing. Despite their high value and hitherto untapped potential these data have not been available for re-use to the wider scientific research community in line with the FAIR principles. Historic large scale sensitive data poses several challenges to ensure data quality, governance, and data privacy. To make data available we propose a stepwise process that incorporates legal and scientific assessment together with thorough documentation and standardization. The digital biological resource in MoBa now provides genetic, epigenomic, metabolomic, proteome and exposure data, made available for research. Combining data types across diverse omics categories linked to Norwegian health registries, allows for higher precision in identifying biological mechanisms associated with complex disease.

The biological data resource in MoBa now includes whole genome SNP-array on 235.000 participants, methylation array on 15.000 participants, metabolomics of 15.000 participants with steadily increasing overlap on data from each participant, all thanks to individual research projects. The nature of large-scale molecular data demands tailored infrastructures and management models to ensure data quality, increased availability, and ease of use.

Chairperson: Harald Barsnes, Department of Biomedicine