**Topic 4: Unlocking mineralization in development**

Supervisor: [Athina Samara](https://www.odont.uio.no/iko/?vrtx=person-view&uid=athinasa) / [Janne Elin Reseland - Institute of Clinical Dentistry (uio.no)](https://www.odont.uio.no/iko/personer/vit/jreselan/index.html)

has been working on different aspects of adipokines, expression and effects, since 1996, and was instrumental in identifying the expression of adipokines (leptin, adiponectin and resitin) in bone.  Prof. Reseland has been working with primary human bone cells, bone remodelling and quality since 2001. Tags: Physiology; growth hormones, signaling, regulation, Stem cells, Biomineralization, Bone regeneration and remodelling, Craniofacial molecular and developmental biology, Bone functional genomics and proteomics, matrix biology.

Area of research for the MSCA candidate - To successfully regenerate and repair bone, in depth understanding of bone biology, osteoinduction and development are crucial. This is an interdisciplinary project that will employ transcriptomics, biomaterials, 2D and 3D models to comprehensively approach functional mineralization in bone development and tissue formation. The project will unlock and correlate age dependent transcriptional expression variation to core gene co-expression networks. The project aims to identify spatiotemporal variations in mineralization and contribute to the field of bone replacement. The successful candidate will have:

* Experience with cell and molecular biology techniques and
* Experience in use of biomaterials in tissue engineering cell culture systems
* Knowledge of microscopy techniques
* Experience in bioinformatics will be an additional and welcome skill
* Ability to independently conduct experiments, work individually and in a team