

Department Biozentrum



BIOZENTRUM The Center for Molecular Life Sciences

Basel Computational Biology Seminar: Current Topics in Bioinformatics

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Navigating Ageing Through Omic Layers

Ageing and its associated diseases are influenced by a complex interplay of genetics, lifestyle, environment, and increasingly recognized, the microbiome. Understanding these relationships is crucial for identifying therapeutic targets and designing preventive strategies. In this presentation, I will discuss our omic data-driven approach, mainly leveraging public resources such as the UK Biobank, to understand the intricacies of ageing. We use a wide range of omic data, allowing us to uncover shared genetics of age-related diseases, track molecular alterations throughout development and ageing, and identify drugs that might counteract age-related changes. Additionally, by combining machine learning with our omic data analysis, we further explore the role of the microbiome in ageing. I will summarize our discoveries on tissue-specific gene expression alterations, emphasizing the increased convergence in tissues in later stages, suggesting a loss of tissue and potentially cellular identity with ageing. Through a GWAS approach, we've detected a shared genetics for ageingrelated conditions, which led to our drug repurposing efforts aimed at mitigating age-related health decline and reducing polypharmacy by targeting multiple conditions simultaneously. In essence, through this exhaustive multi-layered approach, we aim to better understand, predict, and counteract ageing and its associated diseases.

Date:	Monday, September 18, 2023
Time:	16:15 h – 17:30h
Location:	Online via Zoom
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