



University
of Basel

Department of
Biomedical Engineering



Seminar Series:

Latest Breakthroughs in Biomedical Engineering Research

Location: DBE Science Lounge, Hegenheimermattweg 167C, 4123 Allschwil

Date & Time: Thursday 28.05.2026 | 16:30 – 17:30

Host: Prof. Elke Viehweger

From Genes to Joints: Using Multi-Omics to Dissect Musculoskeletal Disease

Prof. Dr. Tristan März

ETH Zürich

Abstract

Musculoskeletal diseases such as arthritis and intervertebral disc degeneration represent the leading cause for disability and chronic pain worldwide. Without effective treatments addressing the root cause of these conditions, more and more individuals suffer from musculoskeletal ailments as the population continues to age. Multi-omic technologies are revolutionizing the discovery of disease mechanisms and have become critical in the development of new therapeutic strategies. With a strong bioengineering focus, Prof. März will summarize the use of multi-omics to understand the pathobiology of arthritis, emphasizing its application to identify new targets for disease-modifying treatments.

Biosketch

Prof. Dr. Tristan März is the Associate Professor of Musculoskeletal Bioengineering at ETH Zürich, where he leads the Musculoskeletal Bioengineering Laboratory within the Department of Health Sciences and Technology at the Institute for Biomechanics. His research is focused on the molecular mechanisms of arthritis, encompassing studies of synovial inflammation and fibrosis to cartilage degeneration and pain signaling. He employs advanced imaging, multi-omic profiling, mechanobiological models, and emerging AI-driven analytical approaches to uncover actionable therapeutic target. Before joining ETH Zürich in 2025, he led an interdisciplinary research group as Associate Professor of Orthopaedic Surgery, Biomedical Engineering, and Rheumatology at the University of Michigan. His goal is to foster a dynamic environment in which young scientists can contribute to ambitious, forward-looking bioengineering projects so that effective treatments for musculoskeletal diseases can finally be developed.