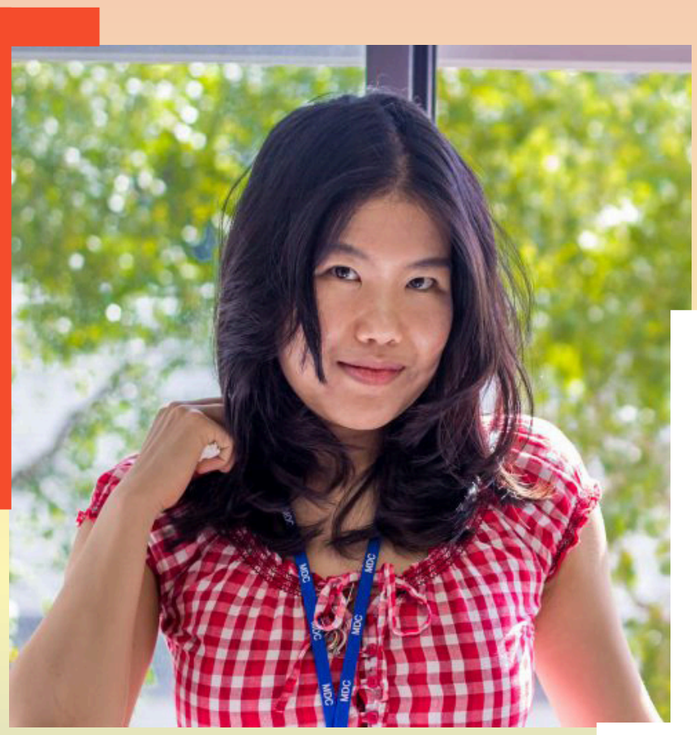
UNIVERSITÀ DI TRENTO
Dipartimento di Biologia Cellulare, Computazionale e Integrata - CIBIO

25 JUNE

11:00 A.M.
ROOM A208 - POVO1



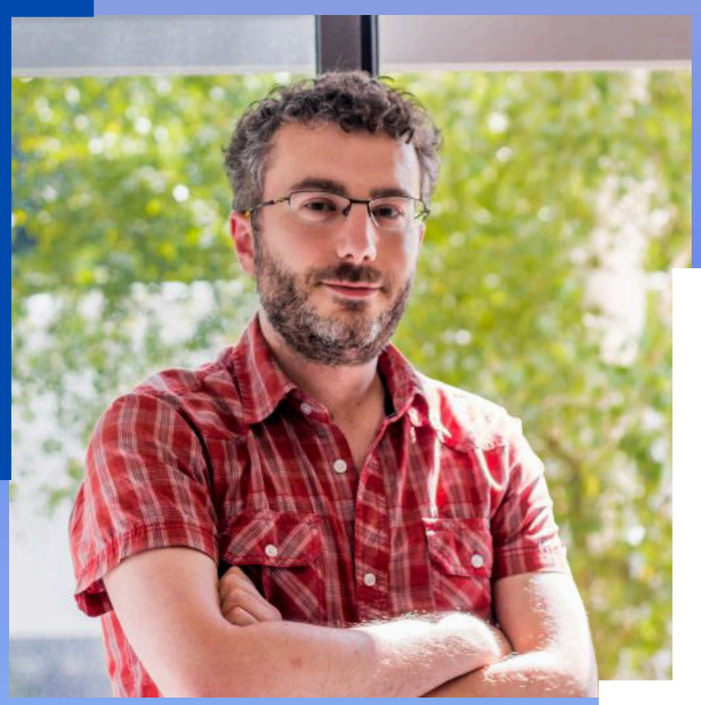
SUPHANSA SAWAMIPHAK

MAX DELBRÜCK CENTER FOR MOLECULAR MEDICINE, BERLIN, GERMANY

DECODING SYSTEMIC NEURO-IMMUNE CIRCUITS IN CARDIOMETABOLIC DISEASE

This seminar presents a **multi-scale systems** biology approach to demonstrate how **tissue plasticity and regeneration** are governed by integrated systemic **neuro-immune and metabolic circuits** rather than local mechanics alone. Integrating in vivo zebrafish models, single-cell transcriptomics, and human translation, I will show how **microbial dyshomeostasis** drives hypertensive cardiac remodeling via a **gut-brain-heart axis,** and how systemic metabolic stress corrupts **neuro-immune crosstalk** to impair tissue self-renewal. Finally, I will discuss how mechanical and metabolic signals dictate the balance between r**egeneration and fibrosis**, highlighting our ongoing efforts to model these complex biophysical interactions using **human 3D hiPSC-derived systems.**

EXTERNAL SEMINARS



ALESSANDRO FILOSA

MAX DELBRÜCK CENTER FOR MOLECULAR MEDICINE, BERLIN, GERMANY

NEURONAL CIRCUITS FOR NEUROMODULATION AND BEHAVIORAL FLEXIBILITY

Surviving in dynamic environments requires organisms to continuously adapt their behavior based on **external sensory information** and **internal states**, such as physiological needs and emotions. While the circuits governing these processes are essential for survival, their dysregulation is a primary driver of **psychiatric conditions**, such as **anxiety and post-traumatic stress disorder**. This talk highlights recent insights from our research group into the molecular and circuit mechanisms underlying **behavioral flexibility.** By exploiting the **optical transparency and genetic tractability of larval zebrafish**, we bridge different scales of neuroscience, linking **molecular signaling and subcellular events** directly to the large-scale network dynamics that drive **neuromodulation**.