



## Colloquium

# Fundamental Principles during the Egg-to-Embryo Transition

**Andrea Pauli**

IMP

Host: Carl-Philipp Heisenberg

Life of sexually reproducing organisms starts with the fusion of two highly specialized cells, the egg and the sperm, which gives rise to a single cell, the zygote. Fertilization initiates the egg-to-embryo transition, one of the most dramatic developmental transition resulting in the transformation of the egg from a dormant state into regulatorily and functionally distinct embryonic cells. While this transition has been studied extensively in respect to zygotic genome activation, the molecular mechanisms that mediate sperm-egg binding and fusion during fertilization and regulate the maintenance of dormancy in the egg and re-activation in the embryo remain poorly understood. The vision of the Pauli lab is to gain mechanistic insights into the egg-to-embryo transition, with a specific focus on the molecular control of fertilization and developmentally programmed dormancy and re-activation. Andrea (Andi) Pauli will talk about recent findings from her lab related to their work towards uncovering the mechanism of vertebrate fertilization and translational regulation during the egg-to-embryo transition. By combining genetic, molecular, cellular, biochemical, structural and genomics approaches in their main model organism, the zebrafish, the long-term vision of the Pauli lab is to unravel new concepts and molecular mechanisms governing this fascinating developmental transition that marks the beginning of life.

**Monday, March 24, 2025 11:30am - 12:30pm**

Raiffeisen Lecture Hall



This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station. Please find a schedule of the ISTA Shuttle on our webpage: <https://ista.ac.at/en/campus/how-to-get-here/> The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.