

CSCS-/RCB–Colloquium

Thursday, January 29th, 2026, at 2 p.m.

H53



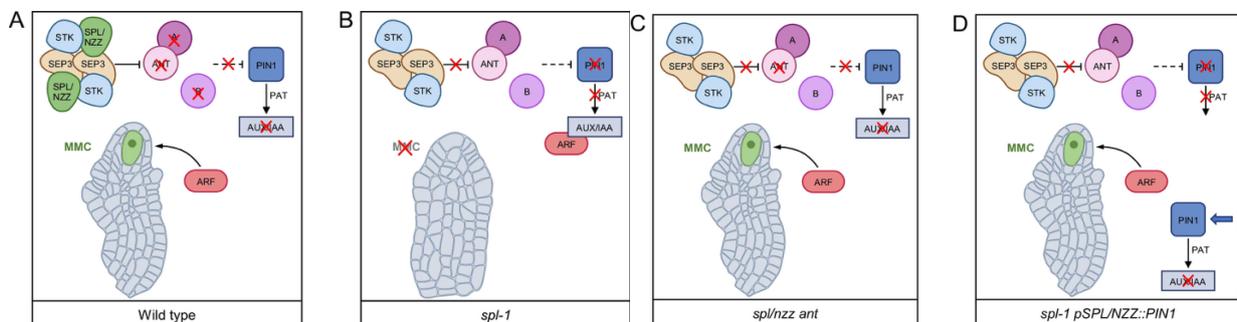
Prof. Dr. Lucia Colombo

Plant Development

(University of Milan, Italy)

“Regulatory mechanisms controlling female germline initiation”

The Colombo lab focuses on the genetic and molecular mechanisms of plant reproductive development, particularly ovule and seed formation in angiosperms, primarily using the model plant *Arabidopsis*. The lab's work explores transcriptional regulatory networks, including MADS-box transcription factors, cell differentiation pathways, hormonal and epigenetic control, and the genetic determinants of female germline differentiation and apomixis. In this presentation, Prof. Colombo will report on a master regulator of megaspore mother cell (MMC) differentiation: NOZZLE/SPOROCYTELESS (NZZ/SPL). Mutations in the NZZ/SPL gene result in complete female and male sterility due to the absence of both the MMC and the PMC (pollen mother cell). Although NZZ/SPL does not directly bind to DNA, it has been suggested that it controls target genes by interacting with transcription factors such as TPC, as well as recruiting co-repressors like TPL and TPR, which then repress the transcription of target genes. Despite the importance of NZZ/SPL, its molecular partners and target genes remain largely unknown. They have used CO-IP/MS to investigate its interactors in ovules and have identified a potential downstream gene regulatory network.



Host: Prof. Dr. Thomas Dresselhaus <thomas.dresselhaus@ur.de>



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Plant Cell Biology, Biochemistry, and Biotechnology