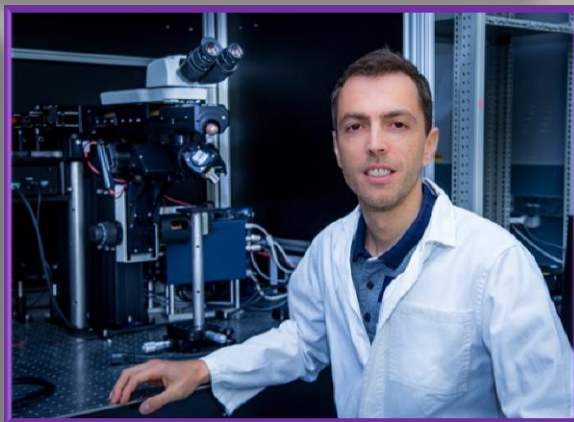


# OPTICAL DISSECTION OF THE NEURAL CIRCUITS UNDERLYING SENSORY PERCEPTION IN THE MOUSE CORTEX BY TOMMASO FELLIN

The cortex is crucially involved in the processing of sensory information, and its functional properties are strictly dictated by its architecture. Sensory cortices are organized in multiple interconnected layers and contain several functionally distinct neuronal subnetworks. Elucidating the logic of interaction within and between cortical layers and networks is essential for understanding the cellular basis of cortical function. In this seminar, I will focus on the role of specific layers in the modulation of sensory responses in the mouse somatosensory cortex. I will also present the development and application of new optical methods to monitor and bidirectionally manipulate the activity of neurons with unprecedented spatial and temporal resolution in vivo. I will discuss how these new technologies may greatly facilitate our understanding of the network mechanisms underlying cortical function.



*Tommaso Fellin, Ph.D. is senior team leader at the Italian Institute of Technology, head of the Optical Approaches to Brain Function Laboratory, and co-funder of the start-up SmartMicroOptics. His research activity focuses on the study of the brain microcircuits involved in the processing of sensory information and on the development of innovative optical methods to probe circuit function.*

**29**

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