



UNIVERSITÀ DI PAVIA  
Department of Brain  
and Behavioral Sciences

**Postdoctoral position available**

A 2-year (1+1) postdoctoral position is available at the Neurophysiology laboratory at the Dept. of Brain and Behavioral Sciences of the University of Pavia.

**Project title:** *Functional and computational investigation of brain networks in PCDH19-related developmental and epileptic encephalopathy-9 (DEE9)*

**Background:** DEE9 is a form of developmental and epileptic encephalopathy caused by mutations in the X-linked gene PCDH19. This gene encodes protocadherin-19, an adhesion molecule widely expressed in the central nervous system, in particular in the limbic system and cerebellum. Previous research showed that PCDH19 is involved in maintaining the excitatory/inhibitory balance and interacts with GABA-A receptors.

**Project:** Here, we propose to investigate PCDH19 role in parvalbumin (PV) interneurons, which are already known to be involved in autism spectrum disorders and epilepsy. We will explore the consequences of PCDH19 deletion selectively in PV neurons in the prefrontal cortex and cerebellar networks. In particular, we will combine high-density multielectrode array recordings (HD-MEA, 3Brain) in acute slices and microendoscopic calcium imaging using miniscopes (nVoke2, Inscopix) in freely moving mice. This multilevel approach will allow us to study the alterations in neuronal networks in PV-Pcdh19 KO mice and their impact on network activity *in vivo* and on mice behavior.

The project is in collaboration with Maria Passafaro's lab (Neuroscience Institute, National Research Council, Milan, Italy).

**Candidate Requirements:** We are looking for a highly motivated candidate, holding a PhD in neuroscience (or related subjects), with experience in neurophysiology. Previous experience with electrophysiological techniques and animal handling / surgery is welcome. The candidate will work in a highly cooperative environment with other postdocs and PhD students.

**Starting date:** Beginning of 2024

If you are interested, please contact Lisa Mapelli ([lisa.mapelli@unipv.it](mailto:lisa.mapelli@unipv.it)).



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