

## **“Neurovascular interactions during CNS development”**

The development of the nervous and the vascular systems exhibit extensive similarities, both on the anatomical and the molecular level. Blood vessels and nerves are structurally similar and often aligned, following parallel routes. The brain is the most vascularized tissue in our body. In the past, we have discovered that the same molecular mechanisms are used to orchestrate the development of the nervous and the vascular system. It is now believed that blood vessels in the brain exert instructive functions that go beyond supplying nutrients and oxygen, for example supplying ligands that directly influence neuronal behavior by activating corresponding receptors and signaling pathways in neuronal cells. We are interested in elucidating the molecular pathways involved in the crosstalk between vessels and nerves and how this crosstalk signaling is integrated among the different cellular players (neurons, endothelial cells, astrocytes) at the neurovascular interface during CNS development and during adult functions such as blood brain barrier maintenance and synaptic plasticity.