



Brain Plasticity Unit CNRS - ESPCI Paris



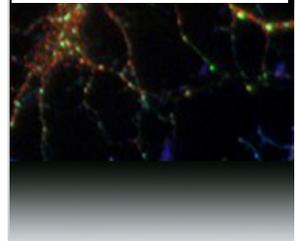
About the Laboratory

The ability to learn, i.e. to alter behaviour according to previous experience, is certainly one of the most fascinating property of the nervous system. Such a capacity depends on the inherent flexibility, or plasticity, of neuronal networks and synapse activity. The cellular and molecular mechanisms underlying this fundamental and conserved process are far from being elucidated, nor how the proper balance between stabilised networks and adaptability is equilibrated to ensure brain stability. Molecular and cellular interactions play a crucial instructive role in neuronal plasticity. Specific neurotransmitters or neuromodulators, released by local interneurons, can regulate efficiently (but how?) remodelling of synapses, neurites or functional circuits. Finally, devastating neuropathologies can affect cognitive ability, as in the cases of inherited mental retardation or Alzheimer's disease, or alter specific neuromodulator systems, as in Parkinson's disease.

The ESPCI ParisTech Brain Plasticity Unit, CNRS Unit 8249, headed by Thomas Preat since January 1st, 2012, gathers neurobiologists and physicists interested by brain functioning and neuroplasticity. This laboratory includes about 45 people and is composed of five independent research teams:

- Zsolt Lenkei** (Neuronal Structure and Dynamics)
- Thomas Pr eat** (Genes and dynamics of memory systems)
- Serge Birman** (Genes, Circuits, Rhythms and Neuropathology)
- Fran ois Vialatte** (Brain-computer Interfaces)
- Karim Benchenane** (Memory, Oscillations and Brain states).

Three related topics, i.e. neuroplasticity, neuromodulation and applied studies of various neuropathologies, are addressed in this Laboratory by an integrated multidisciplinary approach combining genetics, molecular and cellular biology, advanced imaging methods, electrophysiology and behaviour tests. Complementary neurobiological models are being studied, from the single neuron to fly and mammalian integrated circuits. The insertion of the Laboratory in the ESPCI ParisTech campus allows fruitful exchanges between neurobiologists and other scientists, all the more since experienced physics scientists or students, who are acquainted with both scientific fields, are present in our laboratory.





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Job Offer

Junior group leader

The Brain Plasticity Unit, CNRS-ESPCI Paris, currently comprises 5 teams and hosts 50 scientists, students, and staff. The Unit is headed by Thomas Preat. Our work focuses on understanding brain plasticity in physiological conditions and in various neuropathologies. We carry out highly collaborative and multi-disciplinary studies using a variety of model organisms. The insertion of the Brain Plasticity Unit in the ESPCI campus, which enjoys a strong culture of scientific excellence (6 Nobel prizes), allows fruitful exchanges between neurobiologists and other scientists including physicists.

We are seeking to recruit a junior group leader. Applicants who develop an integrated physiological approach, such as studies combining molecular genetics and functional brain imaging, will be considered in priority.

Candidates must hold a French institutional research position (CNRS, INSERM etc.), or they must meet criteria to obtain a French starting grant (such as Atip-Avenir) and a French institutional research position.

Women are encouraged to apply.

Interested candidates should send a full CV, a brief description of their research achievements and of their projects, and a personal statement, to Thomas Preat via email: thomas.preat@espci.fr

There is no specific deadline for the application because the selection process will be ongoing until a successful candidate has been identified.

For more information:

<https://www.bio.espci.fr/-Home->

<https://www.espci.fr/en/>

