

## **Brain and Behaviour**

The UNIGE opens the MRI scanner of its future Brain & Behaviour Laboratory (BBL), acquired through a donation from the Academic Society of Geneva

In today's opening of the MRI scanner of its future Brain & Behaviour Laboratory (BBL), the University of Geneva (UNIGE) laid the foundations of a complex unique in Europe, dedicated exclusively to the study of brain and human behaviour. The BBL results from a close collaboration between the Neuroscience Center and the Swiss Centre for Affective Sciences of the UNIGE, and was created thanks to a donation of 6 million Swiss francs from the Academic Society of Geneva. Over the past 120 years the Academic Society has been dedicated to the development of research and teaching at the UNIGE. This contribution is part of a long-term approach which began with the establishment in 2006 of the chair in cognitive neuroscience held by Prof. Patrik Vuilleumier. The Academic Society strengthens its support to research, which, at the BBL, will focus on mental functions and neurodegenerative diseases, including multiple sclerosis.

The UNIGE has inaugurated this afternoon the MRI scanner of its Brain & Behaviour Laboratory, in the presence of Prof. Pierre Buri, president of the Academic Society, Jean-Michel Dayer, president of the research fund for neurodegenerative diseases, Jean-Dominique Vassalli, rector of the UNIGE, and Jean-Louis Carpentier, Dean of the Faculty of Medicine. Fully dedicated to neuroscience research, this state-of-the-art 3 Teslas MRI scanner is the « foundation stone » of the Brain & Behaviour Laboratory (BBL), a unique platform in Europe, dedicated to the study of brain and behaviour.

### **Six millions for neuroscience**

This laboratory was created at the UNIGE thanks to a donation of 6 million Swiss francs from the Academic Society of Geneva. "I think that Eugène Choisy and Charles Borgeaud, the two students who founded the Academic Society in 1888, would be proud of the role played by their institution, 120 years later, in a scientific adventure as ambitious as the BBL," said Prof. Buri. For Dean Jean-Louis Carpentier, this financial boon demonstrates the necessary input of the private sector in medical research, as well as the ability of scientists from the University to attract donations. "

Originating from an anonymous patron, this financial support is part of a process that began in 2006 with the creation of the chair in cognitive neuroscience and the appointment of Prof. Patrik Vuilleumier as its head. This project takes on a new dimension today with the arrival of its MRI scanner.

### **Towards better detection of multiple sclerosis**

For Jean-Michel Dayer, "the MRI scanner reflects the need to increase research on neurodegenerative diseases like Alzheimer's or multiple sclerosis." Indeed, it is on this latter disease that Prof. Vuilleumier and his team will be working on at the BBL.

"A key objective of the research on multiple sclerosis is to be able to detect the disease as early as possible in order to propose an early and effective treatment," says Prof. Vuilleumier. "Since it is not part of standard clinical protocols, functional MRI promises to provide interesting results in detecting these early lesions." This research will address the issue of identification, in patients, of functional alterations and defective connections between different brain regions.

### **Into the Brain & Behaviour Laboratory**

Although the BBL will not open its doors until next spring, we can already bet that the BBL will be a unique facility of its kind that will provide cutting-edge research in neuroscience.

Located at the University Medical Center of UNIGE, the BBL was conceived as an interdisciplinary platform which combines and integrates different experimental units dedicated to complementary areas of investigation. For example, the sleep laboratory will be close to that of virtual reality, as well as to the MRI scanner and to the EEG (electroencephalography), making it possible to directly test the effect of emotions induced in the laboratory of virtual reality on sleep (and vice versa) and to record during sleep the electrical (EEG) and functional (MRI) activity of the brain.

Co-directed by Prof. Vuilleumier from the Neuroscience Center of UNIGE and Prof. Klaus Scherer from the Swiss Centre for Affective Sciences, the BBL will also combine different techniques and methods of investigation of the brain to study, under the most realistic conditions, human behaviour, emotion and cognition, and particularly the relations between them and the diseases that affect them.