

The bulletin of the Institute for Brain and Spinal Cord Disorders

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The year 2008 will have been a giant leap in the history of the Institute for Brain and Spinal Cord disorders. The primary reason for this is that in spring 2008, building construction began with the laying of the first stone, and since then the building has been moving steadily towards completion. Even as I write these lines, there are already four levels of concrete which have been built, proving how significant this building will be. The outer walls and roof will be complete before summer 2009, and if the building deadlines continue to be met, we anticipate meeting our projected delivery timeframe of summer 2010 as planned, with commissioning programmed for 1st October 2010.

The other major event of this year was the launch, on November 7, of the fundraising campaign under the authority of a steering committee led by Honorary President Jean Todt, and the co-Presidents Lindsay Owen-Jones and David de Rothschild. The goal to raise 60 million euros to finance the ICM research projects is an ambitious one, especially when compared with the 17 million already collected in the last few years.

Step by step, we're seeing all the details fall into place for the great ICM challenge to be met in the years to come.

Jean Glavy

→ Laying the first stone of the ICM building at the Pitié-Salpêtrière Hospital

Countdown has begun for the opening of the ICM!

On Wednesday, June 18, 2008, at the Pitié-Salpêtrière Hospital, the first stone of the Institute for Brain and Spinal Cord Disorders building was laid in the presence of Valérie Pécresse, Minister of Higher Education and Research, Bertrand Delanoë, Mayor of Paris, Jean-Paul Huchon, President of the Regional Council of the Ile-de-France Region and founding members, the ICM sponsor actress Michelle Yeoh, and over 200 representatives from the scientific, economic and institutional sectors.

Designed by the architect Jean-Michel Wilmotte, the ICM building will house 22,000 sqm of laboratories and technical facilities.

It will be one of the largest research center in the world for neurological and psychiatric disorders, such as multiple sclerosis, Alzheimer's and Parkinson's diseases, epilepsy, autism, schizophrenia, depressions, and brain and spinal cord trauma.

The ICM will open its doors in 2010...



From left to right: Valérie Pécresse, Minister of Higher Education and Research, Michelle Yeoh, the ICM sponsor actress, Gérard Saillant, ICM Foundation Chairman

Figure to remember: 7

Because the organization considers itself as a state-of-the-art institute on an international level, the ICM must be equipped with the latest high technology equipment: a 7-tesla MRI* machine for human clinical research will record advances in brain neurology on the basis of the depth and variety of the contrasts revealed by this technology.

* The tesla is the unit of measurement which defines the density of the magnetic flow.
A "normal" MRI is 1.5 tesla.

OCD, 2 to 3% of the population

Dr Luc Mallet (Inserm Avenir Team) – Behaviour,

Two electrodes
implanted
in the subthalamic
nucleus



Results of a study coordinated by Dr. Luc Mallet's team and set to integrate the ICM, on the treatment of patients suffering from OCD, have just been published in the high-ranking *New England Journal of Medicine*. Such advances illustrate the importance of the link between fundamental research and clinical application – core of scientific strategy at the ICM.

Obsessive-compulsive disorder (OCD) is a neuropsychiatric disorder which is most commonly characterized by intrusive, anxious thoughts (obsessions) and repetitive behaviour (compulsions) which are a severe handicap causing daily suffering.

OCD symptoms are varied but the most common are irrational doubts resulting in compulsive checks (doors, taps, position of objects, etc.) and fears, like contamination from germs, that prevent touching objects or cause repeated washing at regular intervals (hands, showering, housework). OCD affects 2 to 3% of the population, men and women, as well as children.

Doubts and fears of OCD sufferers go far beyond the disturbing thoughts that everyone has from time to time. They are intrusive, uncontrollable and can seriously disturb daily life. This is not a psychosis; sufferers realize that their fears are unfounded, but they cannot detach themselves from them. Symptoms may persist for several hours a day seriously affecting a person's ability to work, live with others or even carry out the most simple of tasks. Family and friends of OCD sufferers are often at a loss as to what to do, as they hesitate between excessive help and utter rejection through discouragement and lack of understanding. Over half of OCD people fall into a state of depression.

Two types of treatment are effective: antidepressants, which act on the metabolism of serotonin – even in the absence of depression – and cognitive behaviour therapy (CBT). For patients severely affected, medication blocking the dopaminergic transmission may be of benefit. These help the majority of patients, but the treatment is often long, difficult to follow and sadly inadequate in around 20% of cases. There is not one cause for the onset of OCD. Psychological, biological and social factors comprise a number of causes.

Psychological factors may be linked to past experiences and/or a personality defect.

THE ICM SITE

This photograph of the work in progress clearly illustrates how the construction of the ICM building is advancing. The main shell of the building stretching over 4 floors is already complete, which gives an idea of the lay-out of the rooms and the position of large machines: logistic space (storage of equipment, delivery area), 1,200 sqm platform dedicated to neuroimaging (MRI rooms), reception area and amphitheatre (180 seats) in the mezzanine. Before summer 2009, 8 levels will have been built.



November 2008 – 4th level (of 8) already built

affected

Emotion and Basal Ganglia

However, different brain dysfunctions are the cause of OCD. Multiple research aims to find new treatments. The therapeutic effectiveness of medication used suggests the involvement of the serotonergic and dopaminergic systems in the physiopathology of OCD. Studies in neuroimaging have also brought to the fore an excessive functioning of certain neuronal circuits (orbitofrontal, dorsolateral prefrontal and cingulate cortices), and basal ganglia (in particular the ventral striatum).

One hypothesis being investigated is that of a deregulation of these cerebral networks involved in the detection of errors committed in the evaluation of risks incurred, to explain the frequent doubts and the ongoing uncontrollable checks by patients. Such research in neuroimaging is enhanced by the results of deep cerebral stimulation, an innovative therapeutic technique which acts by electrically modulating the functioning of the brain network, is offered to patients suffering from severe OCD and resistant to all conventional therapies. In short, the objective is to understand the cerebral mechanisms causing OCD so as to treat patients more effectively.

→ AT A GLANCE

Swings and generosity

On June 23, 2008, after 18 holes on the Joyenval golf course, the golfers invited by the partners of the 1st *Trophée du Luxe* very kindly participated in the putting competition organized to support the ICM in the Ritz gardens. Sincere thanks to Boucheron, the Banque Pictet, Le Touessrok and Tee off Event.

Saint-Tropez

"Serve first": members of the Saint-Tropez Rotary Club demonstrated their slogan perfectly by their generous participation in aid of research. The evening event took place on 26 July 2008 in the magic venue of the Citadelle. Simultaneously, at the Mas Candille in Mougins, a *Paris-Match* exhibition of photographs by Richard Melloul illustrated the answers given by celebrities to the question "When I am big, I will be...". A part of the auction sale profits from these works will be donated to the ICM.

2nd week-end of Excellence Automobile

The unfavorable weather forecast did not spoil the 2nd week-end of *Excellence Automobile* held on September 13-14 2008 in Reims. The ICM occupied the place of honor at this large gathering of vintage cars on the mythical circuit at Gueux. Please note the date of the next event in 2009.

Record beaten for the Route de la Découverte yacht race!

On Friday 7 November 2008, Francis Joyon was first to cross the line of the Route de la *Découverte* race in San Salvador, Bahamas. In a record time of 9 days, 20 hours, 35 minutes, he set a new record in solo navigation covering the 3,885 miles of the race, averaging 16.4 knots, ousting Thomas Coville. Francis had set out from Cadix (Spain) on 28 October 2008. He effectively covered a distance of 4,304 nautical miles, averaging 17.7 knots on his maxi trimaran IDEC, wearing the colours of the ICM.

The ICM and the FFSA

United to advance research, for each ticket bought for the *Grand Prix de France* 2008 at Magny-Cours, one euro will be donated to the Institute, thus enabling each spectator to support the neuroscience research. Spins around the circuit with Kimi Räikkönen, Felipe Massa and Sébastien Bourdais as well as autographed racing suits were prizes to be won on this occasion.

Michael Schumacher still an ICM supporter

The Race of Champions 2008 on December 14, 2008 including top formula 1 drivers competing on the circuit constructed in London's Wembley stadium whose lawn is to be covered with 2,000 tons of asphalt. Like last year, Michael Schumacher will wear the colours of the Institute: "Whatever the result, I am proud to help the ICM", he declared.

"À fleur d'îles"

"À fleur d'îles" is first and foremost an art book, containing 36 original works of the painter François Cante Pacos, then a log book with 36 sailing souvenirs from Jean Glavany, founding member of the ICM. It is also a book of maritime friendship since the introduction is by Erik Orsenna, member of the Académie française. Last, but not least, it is a book of generosity as the authors will donate their royalties to the ICM. Exhibition at the Galerie Dutko - Ile Saint-Louis in Paris from 12 December to 31 January.

"À fleur d'îles": 80 pages - with 36 reproductions, 24 x 31 cm, 29 € publisher Gourcuff Gradenigo. Galerie Jean-Jacques Dutko : 4, rue de Bretonvilliers - 75004 Paris Tel: 01 43 26 17 77 - <http://www.dutko.com>



