



Bio-Modeling Systems and the Foundation FondaMental join forces to decipher the immuno-inflammatory mechanisms that could give rise to psychiatric diseases, such as bipolar disorders and schizophrenia, and thus open novel therapeutic strategies.

Paris, France - April 2, 2013 : [Bio-Modeling Systems](#) (BMSystems) and the Foundation for Scientific Cooperation [FondaMental](#) have decided to merge their respective competences. Conscious of the urgent needs to significantly improve knowledge and treatments in the realm of psychiatry, where the challenges are considerable and therapeutic responses non satisfactory, the partners have launched an innovative research program which combines the scientific and clinical know-how of the research teams attached to the foundation FondaMental and the heuristic, non-mathematical (CADI™*) modeling talents of BMSystems' team of biologists.

More specifically, Bio-Modeling Systems and the Foundation FondaMental aim to construct a new CADI™ model that describes and explains the immuno inflammatory mechanisms that can underlie the pathogenesis and clinical progression of bipolar disorders and schizophrenia. The purpose of this collaboration is to open new avenues that will be decisive for the understanding, the diagnosis and the treatment of severe psychiatric disorders. The A1 phase of this program is entirely self-financed by the partners, revealing their confidence in their capacity to jointly identify and characterize mechanisms that will allow adapting treatments to the physiopathological profiles of patients.

The scientific program is placed under the shared leadership of Pr. Marion Leboyer, director of the Foundation FondaMental, and Dr. François Iris, scientific director of Bio-Modeling Systems.

Mental health, a major, yet severely under-estimated component of public health, needs novel, disruptive conceptual frameworks that can drive the renewal and the evolution of clinical psychiatry.

Mental diseases represent a major public health problem. However, they remain misunderstood and underestimated: their life-long prevalence is of one person in three and, by 2020, current estimates place them as the first cause of invalidity in the world (OMS, 2002). Mental disorders are also the main contributors to the global financial burden of non-transmissible diseases, well head of cardiovascular diseases and cancer. In 2011, the OMS estimated that one person in 4 will require mental health treatment at some point in life while the human and financial resources allocated to this sector remain vastly insufficient.

80 millions European individuals (38.2% of the general population) currently suffer, or will suffer, from one of these diseases during their life time. They generally appear during childhood or early adulthood, with highly deleterious consequences upon personal, familial and professional life. Brain and central nervous system diseases represent 35 % of the total morbidity burden, and 23 % of years in good health lost – for a total cost of 800 Mds € /year, in Europe alone.

About Bio-Modeling Systems (BMSystems):

Bio-Modeling Systems, an innovative company founded in 2004, is the first and, to date, only company to successfully create in-silico heuristic models validated in-vivo. BMSystems' heuristic models, built by its biologists using an integrated IT solution called CADI™ (Computer Assisted Deductive Integration) have led to discoveries, patents, and operational businesses in the fields of infectious diseases, immunology, neurology, psychiatry, oncology, dermatology and innovative bioprocesses for industrial biotech. BMSystems' models describe the biological phenomena involved in pathological states and provide new mechanisms to explain the

cause of certain diseases, identify and select predictive biomarkers, offer new combinations of molecules and new therapeutic strategies, thereby contributing to the development of Mechanism-Based Medicine.

This i) results in a significant reduction of short-term risks in therapeutic developments, ii) provides a new life to clinically well characterized molecules while iii) concurrently preserving the medium term potential for new drugs development.

Bio-Modeling Systems has made central and peripheral neurological diseases its primary axis of research, embodied by on-going programs and filed patents:

- DECIUS: On-going European collaborative research program addressing the identification of biomarkers attached to chronic anxiety. The first scientific results have been obtained and will be formally presented in May, at the 9th International Workshop on Computational Neuropsychiatry in Munich.
- IDUNN: Successfully completed research program that led to a novel combinatorial treatment addressing age-related degenerative disorders, such as Parkinson's disease; Patent pending.
- WO/2010/029131. Combinatorial treatment for psychiatric disorders; Patent ownership shared with the CEA and exclusively licensed to a start-up created at the CEA in 2013.
- FIBROMYLAGIA. Identification of the mechanisms leading to the disease; program initiated.

BMSystems has successfully completed programs in infectious diseases, oncology, neurology, psychiatry, dermatology, immunology and metabolic disorders which led to patents and the creation of new companies exploiting these patents.

For more information and access to presentations & publications, please visit <http://www.bmsystems.net>.

About the Foundation FondaMental.

FondaMental is a foundation for scientific cooperation created in June 2007 by decree from the Ministry of Higher Education and Research, within the context of the "Thematic Research and Treatments Networks" (RTRS). The Foundation has for ambition to defeat psychiatric diseases and the hardships they generate. To this end, the foundation harnesses a scientific and medical network of excellence that most particularly addresses those pathologies regarded as amongst the most invalidating: schizophrenia, bipolar disorders, severe autism (Asperger's syndrome), resistant depression, suicidal behaviors and post-traumatic stress. The Foundation's strength lies in its unique ability to merge research and clinical care to better understand better treat and prevent psychiatric diseases.

To meet the challenges imposed by these pathologies, the Foundation FondaMental attached itself to four missions:

- Favor early diagnosis through the inception of a national network of Expert Centers;
- Accelerate research in psychiatry at the national level;
- Educate and train health professionals and all actors implicated;
- Better inform the public in order to change the perception of mental diseases.

For more information, please visit www.fondation-fondamental.org

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