



Bio-Modeling Systems discloses the first scientific results of its European research program on chronic anxiety mechanisms (DECIUS™) during the 9th International Workshop on Computational Neuropsychiatry in Munich. It is really time to think different.

Paris, France – May 2, 2013: [Bio-Modeling Systems](#) (BMSystems) will present during the 9th International Workshop on Computational Neuropsychiatry in Munich (May 03-04, 2013), the first scientific results of its self-funded DECIUS™ European research program on chronic anxiety mechanisms. The main results obtained so far, following quantitative proteomic data integration demonstrate that, in the cingulate cortex:

- Chronic anxiety is functionally characterized by considerable reinforcement of the strength of existing glutamatergic synapses concurrently with relatively little de novo synaptogenesis. This is apparently associated with hyperactivation of serotonergic signaling concurrently with down-regulation of both dopaminergic and gabaergic signaling.
- Constitutive low anxiety is functionally associated with highly active de novo production of glutamatergic synapses characterized by very low stability. These synapses seem to disappear as easily as they have appeared.

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 while the Industry is massively disinvesting, Bio-Modeling Systems and its partners have launched an innovative research program which combines the scientific and clinical know-how of European research teams and the heuristic, non-mathematical (CADI™\*) modeling talents of BMSystems' team of biologists.

More specifically, Bio-Modeling Systems and its European partners are constructing a CADI™ model aiming to describe and explain the mechanisms associated with chronic anxiety. The purpose of this collaboration is to open new avenues that will be decisive for the understanding, the diagnosis and the treatment of this disorder.

The scientific program is placed under the leadership of Dr. François Iris, scientific director of Bio-Modeling Systems.

[Download our latest publication](#): Psychiatric Systems Medicine: From concepts to the first industrially operational results. PharmacoPsychiatry publishes our latest invited review: Psychiatric Systems Medicine: Closer at Hand than Anticipated but not with the Expected Portrait.

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 self-funded 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.
- [PSY-LICO](#): On-going research program with the FondaMental Foundation 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.
- [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>.

#### Press Contacts

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