

THE INSTITUTE



The Institute of Neurosciences of the University of Barcelona is a frontrunner in international neuroscience research, being one of the few institutes in the world that investigates the brain at every level. Director: Jordi Alberch

This includes research groups in neurobiology, neuropharmacology, pathophysiology, neurology, psychiatry, clinical psychology, neuropsychobiology and cognitive neurosciences.

The Institute has been awarded the Maria de Maeztu Excellence Unit accreditation, and gathers about

300 researchers from the Faculties of Psychology, Medicine, Pharmacy and Biology, distributed among four university campuses (Mundet, Clinic, Bellvitge and Diagonal) in the multicultural city of Barcelona.

The Institute promotes close collaboration between basic and clinical neuroscientists in all the research areas to tackle the biggest challenges in neurosciences.

We encourage and welcome collaboration with international research groups and organisations to boost the global vision of the Institute.

Institute of Neurosciences of the University of Barcelona

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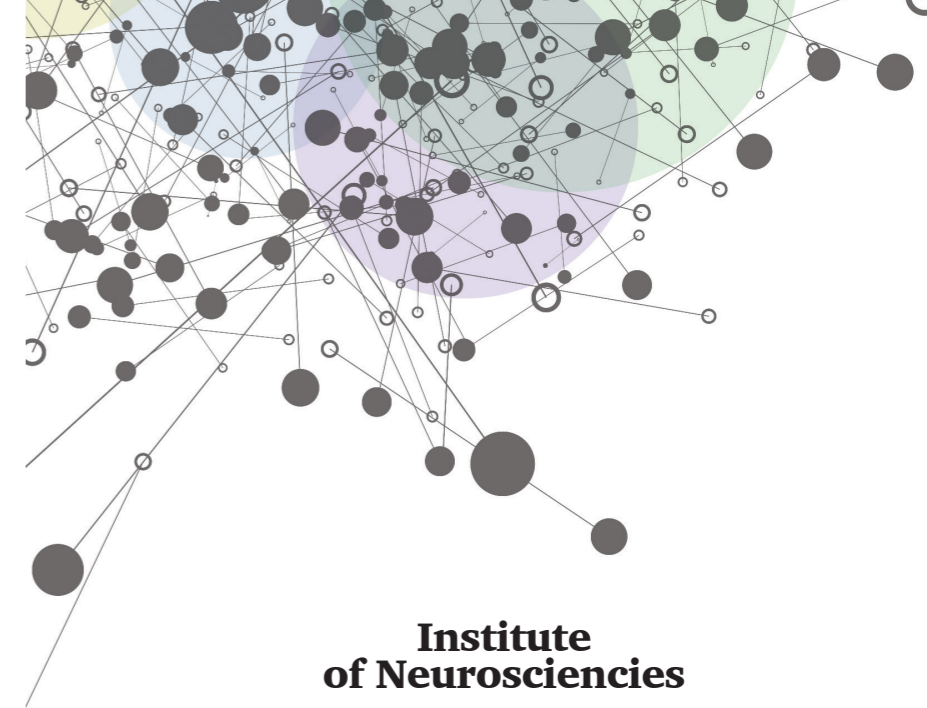
Campuses

Mundet Campus
Passeig de la Vall d'Hebron, 171
08035 Barcelona

Barcelona Knowledge Campus
Diagonal, 643
08028 Barcelona

Medicine Campus- Hospital Clínic August Pi i Sunyer
Casanova, 143
08036 Barcelona

Bellvitge Health Sciences Campus
Feixa Llarga, s/n
08907 L'Hospitalet de Llobregat



Institute of Neurosciences ANNUAL REPORT 2018



475 Publications

2017 Impact Factor

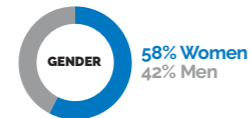


4 Research professors

1 Starting grants

4 Academia professors

2 Advanced grants



Institut de Neurociències
UNIVERSITAT DE BARCELONA



Institut de Neurociències
UNIVERSITAT DE BARCELONA



EXCELENCIA
MARÍA
DE MAEZTU

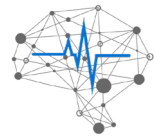


Research Areas



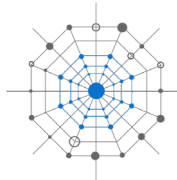
Pathophysiology of Nervous System Disease

Research in this area focuses on defining the pathophysiological mechanisms involved in the loss of normal and neuronal plasticity related to these diseases. A deeper understanding of neuronal connectivity and dynamics, signaling molecules, cell-cell interaction and epigenetic factors in the nervous system will enable us to devise new pharmacological targets for therapeutic strategies to prevent or delay nervous system diseases.



Cognitive and Behavioural Neuroscience

This research area addresses the cerebral circuits, networks, processes and computational mechanisms that underpin a plethora of functions, such as perception, attention, memory, language, decision making, emotion and the control of action.



Mental Health

Under a multidisciplinary approach, the Institute actively embraces the challenge of advancing mental health knowledge around underlying neurobiological mechanisms, cognitive and daily life functioning, and new treatments and therapies in psychotic and affective disorders in childhood, adolescence, and adulthood.



Experimental Neurology

This area is focused on the study of the nervous system in normal conditions and during neurologic disorders. This includes studies about the correlation between genetic markers, cerebrospinal spinal fluid biomarkers and structural, functional and molecular imaging in patients with movement disorders, dementia, autoimmune synaptic disorders and other neurological disorders.

Outstanding Publications in 2018

Sanchez-Mut, J., Heyn, H., Silva, B., Dixsaut, L., Garcia-Esparcia, P., Vidal, E. et al. (2018). PM20D1 is a quantitative trait locus associated with Alzheimer's disease. **Nature Medicine**, 24(5), 598-603.

Armangue, T., Spatola, M., Vlagea, A., Mattozzi, S., Cárceles-Cordon, M., Martinez-Heras, E. et al. (2018). Frequency, symptoms, risk factors, and outcomes of autoimmune encephalitis after herpes simplex encephalitis: a prospective observational study and retrospective analysis. **The Lancet Neurology**, 17(9), 760-772.

Freeman, D., Haselton, P., Freeman, J., Spanlang, B., Kishore, S., Albery, E. et al. (2018). Automated psychological therapy using immersive virtual reality for treatment of fear of heights: a single-blind, parallel-group, randomised controlled trial. **The Lancet Psychiatry**, 5(8), 625-632.

Kahn, R., Winter van Rossum, I., Leucht, S., McGuire, P., Lewis, S., Leboyer, M. et al. (2018). Amisulpride and olanzapine followed by open-label treatment with clozapine in first-episode schizophrenia and schizophreniform disorder (OPTIMISE): a three-phase switching study. **The Lancet Psychiatry**, 5(10), 797-807.

Haselmann, H., Mannara, F., Werner, C., Planagumà, J., Miguez-Cabello, F., Schmidl, L. et al. (2018). Human Autoantibodies against the AMPA Receptor Subunit GluA2 Induce Receptor Reorganization and Memory Dysfunction. **Neuron**, 100(1), 91-105.e9.

Ruderfer, D., Ripke, S., McQuillin, A., Boocock, J., Stahl, E., Pavlides, J. et al. (2018). Genomic Dissection of Bipolar Disorder and Schizophrenia, Including 28 Subphenotypes. **Cell**, 173(7), 1705-1715.e16.

Hervera, A., De Virgiliis, F., Palmisano, I., Zhou, L., Tantarini, E., Kong, G. et al. (2018). Reactive oxygen species regulate axonal regeneration through the release of exosomal NADPH oxidase 2 complexes into injured axons. **Nature Cell Biology**, 20(3), 307-319.

Royal, P., Andres-Bilbe, A., Ávalos Prado, P., Verkest, C., Wdziekonski, B., Schaub, S. et al. (2019). Migraine-Associated TRESK Mutations Increase Neuronal Excitability through Alternative Translation Initiation and Inhibition of TREK. **Neuron**, 101(2), 232-245.e6.

Freixo, F., Martinez Delgado, P., Manso, Y., Sánchez-Huertas, C., Lacasa, C., Soriano, E. et al. (2018). NEK7 regulates dendrite morphogenesis in neurons via Eg5-dependent microtubule stabilization. **Nature Communications**, 9(1).

Ripollés, P., Ferreri, L., Mas-Herrero, E., Alicart, H., Gómez-Andrés, A., Marco-Pallares, J. et al. (2018). Intrinsically regulated learning is modulated by synaptic dopamine signaling. **eLife**, 7.

Outstanding Projects Granted in 2018

2,000,000€

María de Maeztu Excellence Unit: Institute of Neurosciences
Spanish Ministry of Economy, Industry and Competitiveness
[Jordi Alberch](#)

501,809€

Training for Advanced Stem Cell Technologies in Neurology (ASCTN-Training)
European Union
[Josep Maria Canals](#)

498,718€

A Translational Model of Antibody-mediated Synaptic Disease: Symptoms, Neuronal Circuits, and the Mechanisms of Memory Loss and Recovery
HR17-00149, Fundació Caixa de Pensions 'la Caixa'
[Josep Dalmau-Obrador](#)

326,700€

Modulation of the dynamics of the neural networks as a therapeutic strategy to recover the dysfunction of the basal ganglia in movement diseases
Spanish Ministry of Economy, Industry and Competitiveness
[Jordi Alberch](#)

266,200€

Illuminating the dopamine, adenosine and GPR37 receptors in neurological and neuropsychiatric diseases
Spanish Ministry of Economy and Competitiveness
[Francisco Ciruela](#)

169,400€

Analysis of RNAs with CAG repeats as pathogenic factors in Huntington's disease: translational implications in polyglutamine diseases
Spanish Ministry of Economy, Industry and Competitiveness.
[Eulalia Martí Puig](#)

145,200€

Does RTP801 / REDD1 protein mediate synaptic dysfunction in neurodegenerative processes?
Spanish Ministry of Economy and Competitiveness
[Cristina Malagelada](#)

133,100€

Modulation of the hippocampal insulin receptor pathway as a therapeutic strategy for the treatment of cognitive loss
Spanish Ministry of Economy, Industry and Competitiveness
[Antonio Camins Espuny](#)

133,100€

Paying attention to the rhythm: temporal prediction and selective attention in language learning
Spanish Ministry of Economy, Industry and Competitiveness
[Ruth de Diego-Balaguer](#)